Velalar College of Engineering and Technology

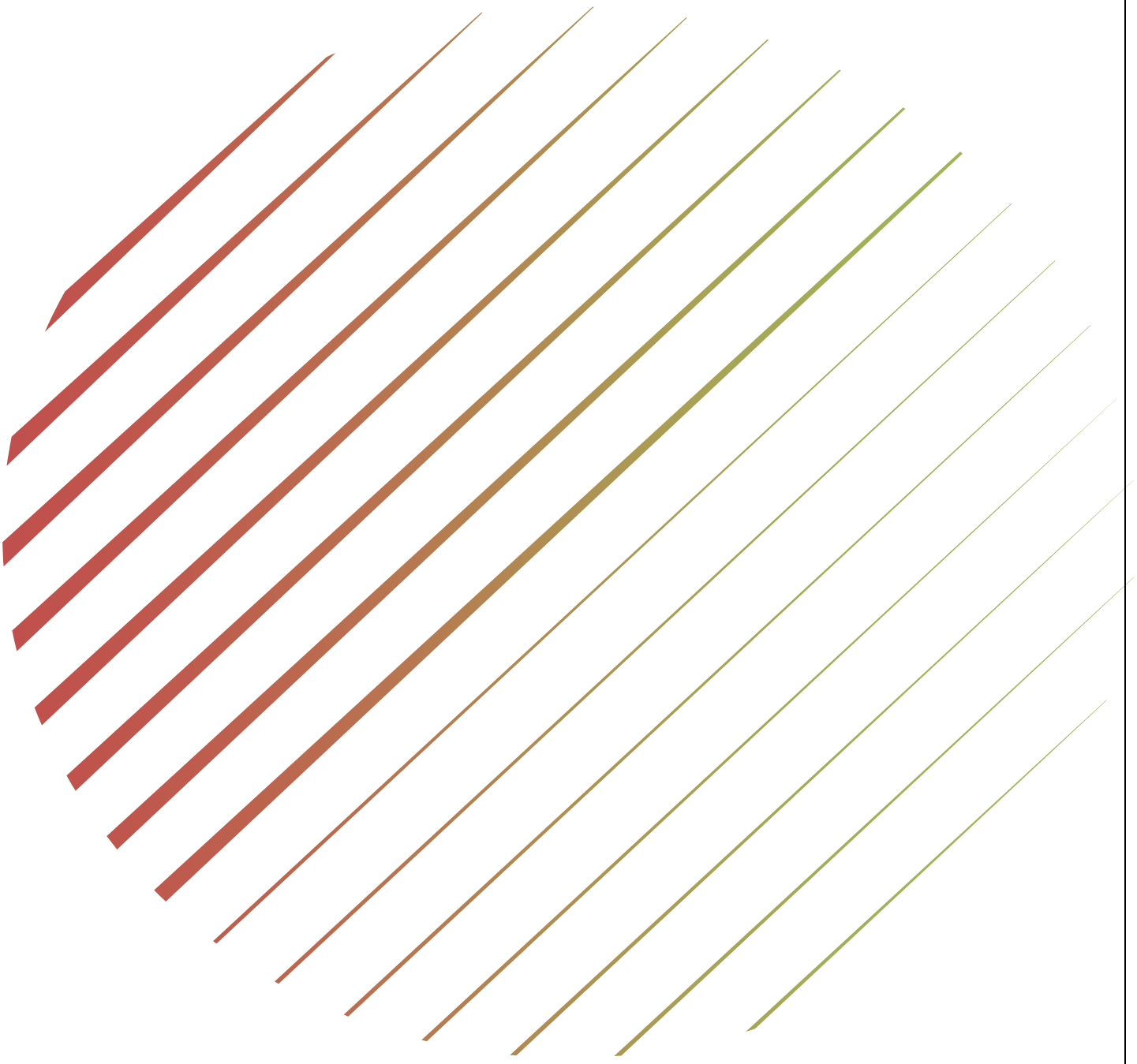
(Autonomous)

Training and Placement Cell

Programming Languages

Changing the World

C - PROGRAMMING



TRAINING AND PLACEMENT CELL

VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous)

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Accredited by NAAC with 'A' Grade

Thindal, Erode - 638012, Tamilnadu, India

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BASICS

1. **Write a program to print "Hello, World!"**
   Sample Output: "Hello, World!"
2. **Write a program to print Hello World with tab**
   Sample Output: Hello World Hello World
3. **Write a program to print the given sample output.**
   Sample Output:
   Hello World
   Hello World
4. **Write a Program To Accept & Display A Number.**
   Sample Input: 6 **Sample Output:** 6
5. **Write a C program to Add Two Numbers.**
   Sample Input: 6 5 **Sample Output:** 11
6. **Write a program to print the details of a student. The student's details consist of his/her name, age, CGPA, and grade.**
   Input Format: The input consists of one string, one integer, one float, and one character. The string corresponds to the name of a student. The integer corresponds to the age of a student. The float corresponds to the CGPA of a student. The character corresponds to the grade of a student.
   Constraints: The CGPA (float value) should be printed with 2 decimal places.
   Output Format: The output prints all the details of a student. Refer to the sample Output.
   Sample Input: Rajeev 20 8.6467B
   Sample Output:
   Name: Rajeev Age: 20 CGPA: 8.64 Grade: B
   Sample Input: Meera 18 9.123 A
   Sample Output:
   Name: Meera Age: 18 CGPA: 9.12 Grade: A
7. **Write a program to get a character as an input and print its ASCII value.**
   Input Format: Input consists of one character
   Constraints: Character should be an alphabet both lowercase & uppercase
   Output Format: Output prints the ascii value
   Sample Input : a **Sample Input :** A
   Sample Output : 97 **Sample Output :** 65
8. **Write a program to get a number (ASCII value) as input and print its equivalent character.**
   Input Format: **Input consists of one integer**
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   Sample Input : **119** Sample Input : **105**
   Sample Output :**w** Sample Output : **i**
9. **Write a program to get a float value from the user and display it in the below-mentioned format.**
   HINT: Use ceil() and floor() functions from the header file.
   Input Format: Input consists of one float value.
   Output Format: The output consists of one integer, its rounded-up value, and its rounded-down value.
   Sample Input 0: 54.5

Sample Output 0: 54 55 54
Sample Input 1: 66.7
Sample Output 1: 66 67 66

10. **Write a C program to obtain and display the newly joined student's name and age detail.**
Input Format: The First line of input consists of a string that corresponds to the name of the student. The second line of input consists of an integer that corresponds to the age of the student.
Output Format: The output prints the name and age details of the student.

Sample Input	***Sample Output***
Damon 20	Damon age is 20
Sample Input	**Sample Output**
Elena 17	Elena age is 17

11. **In Westeros, the fighting ground is rectangular in shape. The King of Westeros, Bran Stark decides to build a fence around the ground. In order to help the construction workers to build a straight fence, he planned to place a thick rope around the ground. He decided to buy a rope of length that exactly fits the boundary. He also wanted to cover the entire ground with a thick carpet during the rainy season. The carpet should also be bought in such a way that it exactly covers the entire ground. Being the three-eyed Raven, he was lost in his thoughts and requested your help. Can you please help King Bran by writing a program to find the exact length of the rope and the exact area of the carpet that is required?**
Hint: Area of rectangle = length * breadth perimeter of a rectangle = 2* (length + breadth)
Input Format: Input consists of 2 integers. The first integer corresponds to the length of the ground. The second integer corresponds to the breadth of the ground.
Constraints: length>0 breadth>0
Output Format: Refer to the sample Input and Output for exact formatting specifications
Sample Input 0 50 20
Sample Output 0
The required length is 140 m
The required area of carpet is 1000 sqm
Sample Input 1 20 90
Sample Output 1
The required length is 220 m
The required area of carpet is 1800 sqm

12. **Each Saturday, The Herald sells 'a' copies of a special edition newspaper for Rs. b per copy. The cost to him for printing each newspaper is Rs. c. He pays a fixed cost of Rs.100 per Saturday for storage, delivery, and so on. He wants to calculate the profit which it obtains only on Saturdays. Can you please help him out by writing a program to compute the profit if a, b, and c are given?**
Input Format: Input consists of 3 integers: a, b, and c. a is the number of copies sold, b is the cost per copy and c is the cost The Herald spends per copy.
Output Format: The output consists of a single integer which corresponds to the profit obtained by The Herald.
Sample Input 0: 1000 2 1
Sample Output 0: 900
Sample Input 1: 600 4 2
Sample Output 1: 1100

13. **Having crossed the three-headed faun, Harry, Dumbledore, and Snape went through a secret trap door in search of the Sorcerer's tomb. On the way, they passed through a room and found that the room has only one door opposite to them, and the door through which they entered shut once they entered the room. The door was very large with a four-digit number imprinted on it. When Harry and Dumbledore tried to open it by casting out spells, it didn't open. Having tried various spells, both got fed up and left the task to Snape. Snape curiously observing the room found that a statement was written on the top of the room. It was written as follows "I will be always four" "I can only be opened when you add my first and last digit and enter it" and "If you find a sign, you should not consider it" help Snape break the code and open the door so that they can save the Sorcerer's tomb.**

Input Format: Input consists of an integer which is a four-digit number present on the door.

Output Format: The output is a single integer.

Sample Input 0 : 1001 ***Sample Output 0:*** 2

Sample Input 1: 1110 ***Sample Output 1:*** 1

14. **Write a C Program To Swap Two Numbers Using Temporary Variables.**

Sample Input 0 : a=10, b=20 ***Sample Output 0:*** a=20, b=10

15. **Write a C program to swap the values of two variables of different data types.**

Input Format: The First line of input consists of a number of int datatype. The second line of input consists of a number of float datatype.

Output Format: The First line of output prints the values before swapping. The second line of output prints the values after swapping.

Note: Print the float value up to 2 decimal places.

Sample Input ***Sample Output***

5 10.7 A=5 and B=10.7 A=10 and B=5.00

Sample Input ***Sample Output***

10 15.7854 A=10 and B=15.78 A=15 and B=10.00

OPERATORS

1. **Write a C program that computes the sum of two numbers a and b, and then multiplies the result by a third number c. Use the operator precedence rules to write the expression without parentheses.**

   Input Format: The input consists of 3 numbers separated by a space.

   Output Format: The output prints the result of the expression.

   Sample Input ***Sample Output***

   10 20 30 The result of a + b * c is 610

   Sample Input ***Sample Output***

   78 30 24 The result of a + b * c is 798

2. **Write a program to find the greatest number using a conditional operator.**

   Input Format: The input consists of three integers, separated by spaces.

   Output Format: The output prints the greatest number.

   Sample Input ***Sample Output***

   13 25 6 25

   Sample Input ***Sample Output***

   12 34 67 67

3. **Write a C Program To Swap Two Numbers Without Using Temporary Variables.**

   Sample Input 0 : a=10, b=20 ***Sample Output 0:*** a=20, b=10

4. **Write a C program to get the input from the user and find the result of the expression (x && y && z++).**

   Example

   Sample Input ***Sample Output***

   1 0 5 0

   Explanation:

   The input values are 1, 0, and 5 for x, y, and z respectively. Since y is false, the expression (x && y && z++) short-circuits and the value of z is not incremented. Therefore, the result of the expression is 0.

   Sample Input ***Sample Output***

   5 4 3 1

   Explanation:

   The first condition x is true (non-zero) because x is equal to 5. The second condition y is also true (non-zero) because y is equal to 4 Finally the third condition z++ is evaluated which increments the value of z from 3 to 4 Since all the conditions of the logical operators are true.

5. **Write a C program to find the sum of the first n natural numbers.**

   Input Format: The input consists of the number n.

   Output Format: The output prints the sum of the first n natural numbers.

   Sample Input ***Sample Output***

   5 The sum of the first 5 natural numbers is 15

   Sample Input ***Sample Output***

   10 The sum of the first 10 natural numbers is 55

6. **During the weekend, Ross Geller has decided to conduct some team games. He wants to split his friends into equal-sized teams. In some cases, some friends may be left out of the teams, and he wanted to use the left-out friends to assist him in conducting the team games. For instance, if there are 50 friends and they have to be divided into 7 equal-sized teams, then there will be 7 in each team and 1 friend will be left out. Ross asks for your help to automate this team-splitting task. Can you please help him out?**

   Input Format: Input consists of 2 integers. The first integer corresponds to the number of friends Ross has. The second integer corresponds to the number of teams.

   Output Format: Refer sample input and output for formatting specifications.

   Sample Input 0: 60 8

   Sample Output 0 : The number of friends in each team is 7 and left out is 4

   Sample Input 1 : 78 6

   Sample Output 1: The number of friends in each team is 13 and left out is 0

7. **Leena wanted to start a business and she was looking for a venture capitalist. Through her friend, she met a construction company owner Meena, who was interested in investing in an emerging business. Looking at the business proposal, the owner was very much impressed with Leena's work. So she decided to invest in Leena's business and hence gave a green signal to go ahead with the project. Leena got a loan of Rs. X for a period of Y years from the owner at R% interest per annum. Find the rate of interest and the total amount to be returned by Leena to the owner. The owner was impressed by the proper repayment of the financed amount and decides to give a special offer of a 2% discount on the total interest at the end of the settlement. Find the discount amount and also find the total amount given back by Leena.**

   Note: All rupee values should be in two decimal points.

   Input Format: Input consists of 3 floating point values. The first one corresponds to the principal amount borrowed by Leena. The second one corresponds to the rate of interest The third one corresponds to the number of years.

   Output Format: The output consists of 4 floating point values. The first value corresponds to the interest. The second value corresponds to the amount. The third value corresponds to the discount. The last value corresponds to the final settlement. All floating point values are to be rounded off to two decimal places.

   Sample Input 0: 100 1 10

   Sample Output 0: 10.00 110.00 0.20 109.80

   Sample Input 1: 40 1 10

   Sample Output 1: 4.00 44.00 0.08 43.92

8. **Mani, Arun, and Kumar were very close friends at school. They were very good in Mathematics and were the pets of Ranjani Ma'am. Mani, Arun, and Kumar live in the same locality and their gang was known as 3 - Psychos. A new student Logan joins their class and he wanted to be friends with the 3 - Psychos. Logan asked Arun about his home address. Arun wanted to test Logan's mathematical skills and hence told that his house is at the midpoint of the line joining Mani's house and Kumar's house. Logan was puzzled. Can you help Logan out? Given the coordinates of the 2 endpoints of a line (x1,y1) and (x2,y2). Write a program to find the midpoint of the line.**

   Input Format: Input consists of 4 integers. The first and second value corresponds to x1 and y1 respectively. The third and fourth value correspond to x2 and y2 respectively.

Output Format: Refer sample input and output for the exact formatting specifications.
Print with 1 decimal place
Sample Input 0: 2 4 10 15
Sample Output 0: Arun's house is located at(6.0,9.5)
Sample Input 1: 9 6 5 3
Sample Output 1: Arun's house is located at(7.0,4.5)

9. **Peter Rabbit lives in a colony. He is the only rabbit in his colony who is not able to hop. On his 5th birthday, his father Rabbit gifted him a pogo stick as he could not jump like the other rabbits. He is so excited to play with the pogo stick. The pogo stick hops one unit per jump. He wanders around his house jumping with pogo sticks. He wants to show the pogo stick to his friend and decides to go using his pogo stick. Write a program to find the number of hops needed to reach his friends' house (x,y). Assume that Peter Rabbit's house is in the coordinates (3,4).**
Input Format: Input consists of two integers x and y.
Output Format: The output is an integer. It corresponds to the number of hops needed to reach his friend's house.
Sample Input 0: 5 10
Sample Output 0: 6
10. **Kamal was traveling from Korea to USA and he was not aware of the currency system of USA. Can you please help him to add two dollars and cents?**
Note: 1 dollar=100 cents
Input Format: Input consists of 4 integers. The first two inputs correspond to the value of the first dollar and cent. The next two inputs correspond to the value of the second dollar and cent.
Output Format: The output should print the sum of dollars and cents.
Sample Input 0: 30 10 140 99
Sample Output 0: 171 9
Sample Input 1: 99 99 99 99
Sample Output 1: 199 98
11. **Though there have been more successful pirates, Blackbeard is one of the best-known and widely feared of his time. He commanded four ships and had a pirate army of 300 at the height of his career and defeated the famous warship, HMS "Scarborough" in a sea battle. He was known for barreling into the battle clutching two swords with several knives and pistols at the ready. He captured over forty merchant ships in the Caribbean and without flinching killed many prisoners. Now, Blackbeard and his three pirates found a treasure of gold coins. Long Ben too joined them. They decided to share the treasure. Blackbeard agreed to give x% share for Long Ben. He then decided to take y% share from the remaining treasure. His other pirates will share the remaining gold coins equally. Write a program to compute their shares. After sharing the gold coins in this manner, if there are any leftover coins they decided to throw them into the sea.**
Input Format: Input consists of 3 integers. The first input corresponds to the number of gold coins in the treasure. The second input corresponds to Ben's share percentage. The last input corresponds to Blackbeard's share percentage.

Output Format: The output consists of three integers. The first output integer corresponds to Long Ben's share. The second output integer corresponds to Blackbeard's share. The third output should correspond to the other 3 pirates' equally divided shares.
Sample Input 0: 729 65 87
Sample Output 0: 473 222 11
Sample Input 1: 654 87 65
Sample Output 1: 568 55 10

DECISION MAKING

1. **Write a C program to find whether a character is an alphabet (lower case or Upper case), digit, or special character.**

Input Format: The input consists of a character.

Output Format: The output prints the message indicating whether the input character is an alphabet, digit, or special

Constraints: The program must take a single character as input.

The input character can be any ASCII character (including letters, digits, and special characters).

The program should output a message indicating whether the input character is an alphabet, digit, or special character.

Sample Input: *a* ***Sample Output:*** This is a Lower Case alphabet

Sample Input: *H* ***Sample Output:*** This is an Upper Case alphabet

Sample Input: *8* ***Sample Output:*** This is a digit

Sample Input: *@* ***Sample Output:*** This is a special character

2. **Problem Statement:**

The basic eligibility criteria required to apply for a Bank Loan are as follows,

- **Age of the primary applicant must be between 21 years to 60 years.**
- **CIBIL Score should be checked for its status**
- **Primary applicant should have a stable income (gross) of up to Rs.3 lakh per year.**

CIBIL Score	Status	Eligible/Not Eligible
750-850	Excellent	Eligible
700-749	Good	Eligible
650-699	Fair	Eligible
550-649	Poor	Not Eligible
<500	Not Applicable	

Write a program to check if the person meets the bank's eligibility criteria.

Input Format: The first line of input consists of an integer representing the age. The second line of input consists of an integer representing the income. The third line of input consists of an integer representing the CIBIL score.

Output Format: The output displays status and eligibility as strings. Refer to the sample output for formatting specifications.

Sample Input ***Sample Output***

25 NOT ELIGIBLE

20000

549

Sample Input ***Sample Output***

30 GOOD - ELIGIBLE

400000
726

Sample Input	*Sample Output*
25 359865 750	EXCELLENT - ELIGIBLE
Sample Input	*Sample Output*
29 847956 654	FAIR - ELIGIBLE

3. **Write a program to reverse a 3-digit number.**
   Input Format: Input consists of an integer.
   Output Format: The output will be the reverse of the input integers.
   Sample Input 0: 456
   Sample Output 0: 654
   Sample Input 1: 123
   Sample Output 1: 321
4. **Jeni and her brothers Joseph and John found themselves in Narnia, the land of magic during World War III. Narnia was completely filled with gentle people and also it is where the trees sing, the fauns dance, and animals talk. Being from England, Jeni wanted to teach the kids the English language. She started teaching them the alphabet but then she remembered that she might have to go to London and felt sad. John and Joseph discussed with each other and suggested an idea to Jeni to come up with a program so that the kids can learn on their own when she was not there. Can you help Jeni to write a program to check whether the given character is a vowel or consonant or alphabet?**
   Input Format: The input consists of a character.
   Output Format: The output should be any one of the below-given strings. Vowel or Consonant or Not an alphabet.
   Sample Input 0: e
   Sample Output 0: Vowel
   Explanation 0: The input character e is a vowel and hence it prints Vowel.
   Sample Input 1: Z
   Sample Output 1: Consonant
   Explanation 1: The input character Z is a consonant and hence it prints Consonant.
5. **In the city of Rajkot, Gujarat the Golden company is taking care of the expenses for the Court's discussion room. Due to continuous discussions regarding the upcoming 'Ring Road' project at Rajkot, the electricity bill was high and they need to pay it with all the money they have.**
   The electricity board has decided to charge money based on the units consumed by a particular home. If the units consumed are less than or equal to 200, the cost for one unit is 0.5paise. If the unit is less than or equal to 400, the cost for one unit is 0.65paise plus Rs.100 extra charge. If the unit is less than or equal to 600, the cost for one unit is 0.80paise plus Rs.200 extra charge.

If the unit is greater than 600 the cost for one unit is Rs.1.25 plus Rs.425 extra charge. You need to calculate the electricity bill based on the units consumed.

Input Format: Input consists of one integer which corresponds to the units consumed.

Output Format: The output consists of one integer which corresponds to the electricity bill in Rupees.

Sample Input 0: 200

Sample Output 0: Rs.100

Explanation 0: Here, the units consumed are equal to 200, and the cost for one unit is 0.5. Hence the electricity bill will be Rs.100.

6. **Richard Castle wants to buy a shirt. As he is very lazy, he decided to buy the shirt online. He chooses a shirt on Flipkart and is surprised to see the same shirt on Snapdeal, and Amazon as well. So he decided to buy the shirt from the website which offers the least price. The price of the shirt, the discount percentage, and the shipping charges of all three websites have been given as input. Help him in calculating the price of the shirt on each website and decide which website has the lowest price.If the price in all the three websites are same then first priority goes to Flipkart, then Snapdeal and finally Amazon.**

Input Format: Input consists of 9 integers. The first three input corresponds to Flipkart details such as the price of the shirt, discount offered, and shipping charges. The next three input corresponds to Snapdeal details such as the price of the shirt, discount offered, and shipping charge. The last three input corresponds to Amazon details such as the price of the shirt, discount offered, and shipping charge.

Output Format: The Output consists of three integers that denote the prices on Flipkart, Snapdeal, and Amazon and should suggest the website that has the lowest price.

Sample Input 0

1000
50
50
900
50
70
800
10
200

Sample Output 0

In Flipkart: Rs.550
In Snapdeal: Rs.520
In Amazon: Rs.920
Choose Snapdeal

Sample Input 1

1000
60
80
900

50
30
1000
10
200

Sample Output 1

In Flipkart: Rs.480
In Snapdeal: Rs.480
In Amazon: Rs.1100
Choose Flipkart

7. **Jon Snow and the men in the north decided to open Castle Black for the northerners and the Castle was turned into a Hotel. The Hotel was flourishing and there was high demand for the rooms. So Jon Snow decided to modify the tariff accordingly. Write a program to calculate the hotel tariff. The room rent is 20% high during peak seasons [April-June and November-December].**

Input Format: The first input integer denotes the count of the month. The second input integer denotes the room rent per day. The third input integer denotes the number of days stayed in the hotel.

Output Format: Print the hotel tariff to be paid. (Note: if the month value entered is not ranging from 1-12, print as Invalid Input)

Sample Input 0

3
1500
2

Sample Output 0

3000

Sample Input 1

14
1500
2

Sample Output 1

Invalid Input

8. **Penny is celebrating her 25th birthday. Her friend Leonard promised her that he will buy her a pair of new shoes on her birthday if she solves the question asked by him. He asks Penny to find out whether the year in which she was born is a leap year or not. Help her to solve this puzzle so that she celebrates her birthday happily. If her birth year is 1995 and it is a leap year display "1995 is a leap year." Else display "1995 is not a leap year."**

Input Format: The input consists of 1 integer.

Output Format: The output consists of 1 string.

Sample Input 0: 2016

Sample Output 0: 2016 is a leap year

Sample Input 1: 1999

Sample Output 1: 1999 is not a leap year

9. **Joey Tribbiani wanted to buy a meatball Sandwich and went to the nearby sandwich shop. There was a poster that said if anyone comes up with a program for Trendy Number they can get free Sandwiches for a lifetime as a gift. Can you help Joey to write a program to check whether the given number is a trendy number or not?**
   A number is said to be a trendy number if it has 3 digits and the middle digit is divisible by 3.
   Input Format: The input is an integer 'n' which denotes the given number.
   Output Format: If the given number is a trendy number, then print "Trendy Number". Otherwise, print "Not a Trendy Number". If the given number is not a 3 digit number, then print "Invalid Number"
   Sample Input 0: 791
   Sample Output 0: Trendy Number
   Explanation 0: Here, 791 is a three-digit number, as well as the middle digit(9), which is divisible by 3. Hence the output is a "Trendy Number".
   Sample Input 1: 275
   Sample Output 1: Not a Trendy Number
   Explanation 1: Here, 275 is a three-digit number, but the middle digit(7), is not divisible by 3. Hence the output is "Not a Trendy Number".
10. **John Watson just started to work as a programming trainer for Bart's Placement Cell. He is paid Rs.100 an hour, with a few exceptions. He earns an extra Rs.15 an hour for any part of a day where he works for more than 8 hours. Also, he earns a 25% bonus for working on Saturdays and a 50% bonus for working on Sundays. The bonuses for Saturday and Sunday are computed based on the hours worked on those days. You'll be given the number of hours John Watson worked on each day in a week (Sunday, Monday, ..., Saturday), and you need to compute his salary for the week.**
   Input Format: Input consists of 7 integers
   Output Format: Print John's salary for a week.
   Sample Input 0: 0 8 8 8 10 6 0
   Sample Output 0: 4030
   Sample Input 1: 4 5 0 8 0 6 0
   Sample Output 1: 2500
11. **The given are two positive integers Year and Month, the task is to find the number of days corresponding to each month of the given year where 1 is January, 2 is February, 3 is March, and so on.**
   Note: The Input range of year: Minimum Year = 1900 and Maximum Year = 9999 i.e (1900<=Year<=9999). The Input range of month: Minimum Month = 12 and Maximum Year = 12 i.e (1<=month<=12) If the given year does not lie between the given range, output 0.
   Input Format: The input consists of two lines. The first line contains an integer, which is the Year. The second line contains an integer, which is the Month.
   Output Format: The output prints the number of days. Refer to the sample output
   Sample Input 0
   2000
   2
   Sample Output 0: 29 Days

Explanation 0: In a given year 7 months consist of 31 days 4 months consist of 30 days 2nd month consists of 28 days (29 days if leap year) Given year=2000 and month=2 (i.e) February 2000 consists of 29 days

Sample Input 1

1999

8

Sample Output 1: 31 Days

Explanation 1: In a given year 7 months consist of 31 days 4 months consist of 30 days 2nd month consists of 28 days (29 days if leap year) Given year=1999 and month=8 (i.e) August 1999 consists of 31 days

12. **The Government of India has decided to provide scholarships for Engineering students. The following are the eligibility criteria. Students passing out on or after 2021 are eligible. Standing arrears shall be maximum of 2. Family Income should be less than or equal to 200000 annually. Students' age should be greater than or equal to 18 and less than 21. The score on the scholarship test should be greater than or equal to 60%. Attendance percentage to date should be greater than or equal to 80%. There are some relaxations provided by the government for the above-mentioned criteria. If the student has more than 2 standing arrears he/she should score 80% of marks in the scholarship test and attendance should be greater than 90% to date. If the family income is greater than 200000 but less than 250000 half the scholarship amount will be granted if he/she satisfies all the other criteria. Write a program to tell the eligibility of the students for the scholarship by providing "Eligible", "Not Eligible", "Partially Eligible"**

Input Format: The first is an Integer denoting age. The second is an Integer denoting the year of passing. The third is an Integer denoting family income. The fourth is an Integer input denoting standing arrears. The fifth is a float denoting the percentage of marks obtained in the scholarship test. The sixth is a float denoting attendance percentage.

Output Format: A string telling the eligibility as mentioned above.

Sample Input 0

19

2022

190000

0

100

100

Sample Output 0: Eligible

Sample Input 1

20

2022

240000

4

85

90

Sample Output 1: Partially Eligible

13. **In the kingdom of Terebinthia, Leslie Burke is so much interested in gardening and hence she plants more trees in her garden. She plants trees in a rectangular fashion with the order of rows and columns and numbers the trees in a row-wise order. She planted the mango trees only in the 1st row, 1st column, and last column. So, given the tree number, your task is to find out whether the given tree is a mango tree or not. Now, write a program to check whether the given number denotes a mango tree or not.**

    Input Format: Input consists of 3 integers. The first input denotes the number of rows. The second input denotes the number of columns. The third input denotes the tree number.

    Output Format: If the given number is a mango tree, print "Yes". Otherwise, print "No"

    Sample Input 0: 5 5 11

    Sample Output 0: Yes

    Sample Input 1: 2 5 8

    Sample Output 1: No

14. **Praveen is crazy about IPL. He was watching Mumbai Indians vs. Chennai Super Kings final match. Mumbai won the toss and elected to bat first. They finished batting with a score of X. Next, Chennai started to bat and scored Y runs in N number of balls. Now, Praveen wants to calculate the run rate and check whether there is a probability for Chennai to win or not. Help him calculate the run rate and check the probability.**

    Input Format: Input consists of 4 integers. The first input corresponds to the total number of balls. The second input corresponds to the total number of runs. The third input corresponds to the number of runs scored. The fourth input corresponds to the number of balls bowled.

    Output Format: The first output corresponds to the total number of overs. The second output corresponds to the total number of overs finished. The third output corresponds to the current run rate. The fourth output corresponds to the total run rate. The fifth output corresponds to the eligibility. If eligible print "Eligible to Win" else print "Not Eligible to Win"

    Sample Input 0:

    300 375 78 45

    Sample Output 0:

    50

    7.3

    10.7

    7.5

    Eligible to Win

    Sample Input 1: 300 268

    23

    45

    Sample Output 1:

    50

    7.3

    3.2

    5.4

    Not Eligible to Win

15. Problem Statement

Write a C program to generate Electricity bills.

If the type of the EB connection is Domestic, calculate the amount to be paid as follows:

First 100 units - Rs. 1 per unit

101-200 units - Rs. 2.50 per unit

201 -500 units - Rs. 4 per unit

> 501 units - Rs. 6 per unit

If the type of the EB connection is Commercial, calculate the amount to be paid as follows:

First 100 units - Rs. 2 per unit

101-200 units - Rs. 4.50 per unit

201 -500 units - Rs. 6 per unit

> 501 units - Rs. 7 per unit

Examples 1:

Input:

D

150

Output: Electricity Bill Amount: Rs. 225.00

Explanation: For a domestic connection with 150 units consumed, the electricity bill amount would be calculated as follows:

First 100 units: Rs. 1.0 per unit = Rs. 100

next 50 units: Rs. 2.5 per unit = Rs. 125

Total amount = Rs. 100 + Rs. 125 = Rs. 225.

Examples 2:

Input:

C

600

Output: Electricity Bill Amount: Rs. 3150.00

Explanation:

For a commercial connection with 600 units consumed, the electricity bill amount would be calculated as follows:

rst 100 units: Rs. 2.0 per unit = Rs. 200

next 100 units: Rs. 4.5 per unit = Rs. 450

next 300 units: Rs. 6.0 per unit = Rs. 1,800

remaining 100 units: Rs. 7.0 per unit = Rs. 700

Total amount = Rs. 200 + Rs. 450 + Rs. 1,800 + Rs. 700 = Rs. 3,150.

LOOPING STATEMENTS

1. **Write a C Program To Find The Sum Of N Numbers.**
2. **Write a C Program To Print Sum Of Series 1 + 3 + 5 + ... N.**
3. **Write a C Program To Print Sum Of Digits In A Number.**
4. **Write a C program to display all the factors of the given number.**

   Input Format: The input consists of a number.

   Output Format: The output prints all the factors of the given number, separated by spaces.

Sample Input	***Sample Output***
20	1 2 4 5 10 20
Sample Input	***Sample Output***
3	1 3

5. **Problem Statement: Write a C program to check if the given number is a palindrome or not.**

   Note: A palindrome is a number that is the same when reversed.

   Input Format: The input consists of an integer.

   Output Format: The output prints if the given number is a palindrome or not.

Sample Input	***Sample Output***
2552	Palindrome

6. **Penny wanted to complete her graduation from the Community College of California. But being the newbee she is , she does not how to multiply two numbers. Sheldon being a good friend wanted to help Penny by writing a program to print the multiplication table of an integer n.**

   Input Format: Input consists of 2 integers. The first integer corresponds to n. The second integer corresponds to m(rows).

   Output Format: Refer to the sample output for formatting specifications.

   Sample Input 0

   5
   4

   Sample Output 0

   Enter n
   Enter m
   The multiplication table of 5 is
   1*5=5
   2*5=10
   3*5=15
   4*5=20

   Explanation 0: Multiplication of the 5th table from 1 to 4 is printed.

   Sample Input 1

   5
   6

   Sample Output 1

   Enter n
   Enter m

The multiplication table of 5 is

1*5=5

2*5=10

3*5=15

4*5=20

5*5=25

6*5=30

Explanation 1: Multiplication of the 5th table from 1 to 6 is printed.

7. **A prime number is divisible only by 1 and itself. You are given a positive integer. Write an algorithm to find all the prime numbers from 2 to the given positive number**

   Input Format: The input consists of an integer.

   Constraints: 1 < n< 109

   Output Format: Print space-separated integers representing the prime numbers till the given positive number.

   Sample Input 0: 11

   Sample Output 0: 2 3 5 7 11

   Explanation 0: For the given number the list of special numbers is [2, 3, 5, 7, 11]

   Sample Input 1: 30

   Sample Output 1: 2 3 5 7 11 13 17 19 23 29

   Explanation 1: For the given number the list of special numbers is [2,3, 5, 7, 11, 13, 17, 19, 23, 29]

8. **Professor Kishore wanted the kids to learn about Special numbers. (A two-digit number is said to be a special number if the sum of sum of its digits and the product of its digits is equal to the number itself. For example, 19 is a special number. The digits in 19 are 1 and 9. The sum of the digits is 10 and the product of the digits is 9. 10+9 = 19.)**

   Can you help Kishore to write a program to find all special numbers between 2 limits m and n (both inclusive)? Assume that m and n are two-digit numbers.

   Input Format: Input consists of 2 integers m and n.

   Output Format: Refer to the sample output for the output format.

   Sample Input 0:

   11

   19

   Sample Output 0: 19

   Sample Input 1

   12

   45

   Sample Output 1

   19

   29

   39

9. **The Research team led by Bernadette Wolowitz at Cal-tech University has discovered a new Amoeba that grows in the order of a Fibonacci series every month. They are exhibiting this amoeba at a national conference. They want to know the size of the amoeba at a particular time**

instant. If a particular month's index is given, write a program to display the amoeba's size. For Example, the size of the amoeba in months 1, 2, 3, 4, 5, 6,... will be 0, 1, 1, 2, 3, 5, 8.... respectively.

Input Format: The input is an integer that denotes the count of the month.

Output Format: The output is an integer denoting the amoeba size.

Sample Input 0: 13

Sample Output 0: 144

Sample Input 1: 9

Sample Output 1: 21

10. **Write a program to generate the following series 0,2,8,14,...,34.**

Input Format: The input is an integer that denotes 'n'.

Output Format: Print the series and refer to the sample output for formatting.

Sample Input 0: 10

Sample Output 0: 0 2 8 14 24 34 48 62 80 98

Sample Input 1: 4

Sample Output 1: 0 2 8 14

11. **Write a program to print the hollow square pattern.**

Input Format: Input consists of one integer that corresponds to the number of rows and columns.

Output Format: Output prints the hollow square pattern for the given number of rows and columns.

Sample Input 0: 5

Sample Output 0

```
*****
*   *
*   *
*   *
*****
```

Explanation 0: Here the input is 5 and hence hollow square gets printed with 5 rows and 5 columns.

Sample Input 1

3

Sample Output 1

```
***
* *
***
```

Explanation 1: Here the input is 3 and hence hollow square gets printed with 3 rows and 3 columns.

12. **Nikitha and Danny are close friends. They both are studying in the same school. Now they are on summer vacation. As they are bored, they ask their parents to take them to an exhibition. Nikitha and Danny play a game. In this game, there are three boxes with some number written on top. There is a treasure in one of the three boxes and it is present in the box with the second largest number on top. Also, to open the box, they need to decode the correct code of this box. The clue given to them to find the code is that it is the largest number that divides all three given numbers. So, now help Nikitha and Danny to decode the code.**

Input Format: Input consists of three integers. The first input corresponds to the number of the first box. The second input corresponds to the number of the second box. The third input corresponds to the number of the third box.

Output Format: Refer to the sample output.

Sample Input 0:

2
4
6

Sample Output 0

The treasure is in the box which has the number 4
The code to open the box is 2

Sample Input 1

7
5
6

Sample Output 1

The treasure is in the box which has the number 6
The code to open the box is 1

13. **Chander started working for Bing and he wanted him to write a program to generate Collatz Sequence. The rules for generating the Collatz sequence are: If n is even, n = n / 2. If n is odd, n = 3n + 1. For example, if the starting number is 5 the sequence is: 5 -> 16 -> 8 -> 4 -> 2 -> 1 It has been proved for almost all integers, that the repeated application of the above rule will result in a sequence that ends in 1.**

Input Format: The input is an integer 'n' which denotes the first term of the sequence.

Output Format: As output, print the numbers in the sequence and also print the number of times the rule has to be applied in order to reach 1.

Sample Input 0: 18

Sample Output 0

18
9
28
14
7
22
11
34
17
52
26
13
40
20

10
5
16
8
4
2
1
20

Sample Input 1: 1

Sample Output 1

1
0

14. **A number can be said as a strong number when the sum of the factorial of the individual digits is equal to the number. For example, 145 is a strong number. 1! + 4! + 5! = 145. Write a program to check whether a given number is a strong number or not.**

Input Format: Input consists of 1 integer.

Output Format: If it is a strong number print "Yes" or print "No".

Sample Input 0: 145

Sample Output 0: Yes

Explanation 0:

= 1! + 4! +5! = 1+24+120 = 145

15. **Write a program to print an inverted right-angled triangle in a star pattern.**

Input Format: Input consists of one integer that corresponds to the number of pattern rows.

Output Format: Output prints the inverted right-angled triangle star pattern.

Sample Input 0: 10

Sample Output 0

****
****
****
****
******
*****
****
***
**
*

Sample Input 1: 4

Sample Output 1

****
***
**
*

16. **Write a program to find the sum of digits of a number until the sum becomes a single digit.**

Input Format: Input format consists of a number

Output Format: Output format consists of an integer

Sample Input 0: 78945623

Sample Output 0: 8

Sample Input 1: 45678

Sample Output 1: 3

17. **Jaffer wanted to excel in Math. He was learning about the Kaprekar number from Meena, his Maths teacher. She gave him a few random numbers and asked him to find out whether they are Kaprekar number or not.**

(Consider an n-digit number k. Square it and add the right n digits to the left n or n-1 digits. If the resultant sum is k, then k is called a Kaprekar number. For example, 9 is a Kaprekar number since 9^2 = 81 & 8 + 1 = 9, similarly, 297 is a Kaprekar number as 297^2 = 88209 & 88 + 209 = 297).

Can you help Jaffer to write a program to find whether the given number is a Kaprekar number or not?

Input Format: Input consists of a single integer.

Output Format: If the output is a Kaprekar number print "Kaprekar Number" else "Not a Kaprekar Number".

Sample Input 0: 45

Sample Output 0: Kaprekar Number

Sample Input 1: 23

Sample Output 1: Not a Kaprekar Number

18. **Write a program to print the trapezium pattern.**

Input Format: Input consists of one integer that represents the number of rows.

Output Format: Output prints the pattern

Sample Input 0: 4

Sample Output 0:

1*2*3*4*17*18*19*20

--5*6*7*14*15*16

----8*9*12*13

------10*11

Sample Input 1: 2

Sample Output 1

1*2*5*6

--3*4

19. **The Modern World Cinderella was happy to meet Prince Charming at the ballroom and she danced with him happily. While she was dancing, Prince wanted to check whether Cinderella is a perfect match for him. He asked her a question to check her knowledge of Arrays. Can you help Cinderella to write a program to find whether the two arrays are the same or not?**

Note: Two arrays are said to be the same if the sum of both arrays is the same and the size of the arrays is the same.

Input Format: Input consists of 2 integers and 2 arrays. The integers should correspond to the size of the arrays.

Output Format: If two arrays are the same, display "Same" else display "Not Same"

Sample Input 0

4 4

1 2 3 4

1 2 3 4

Sample Output 0: Same

Explanation 0: Here, the sum and size of both arrays are the same. Hence it prints "Same".

Sample Input 1

3 3

1 2 1

2 3 6

Sample Output 1: Not Same

Explanation 1: Here, the sum and size of both arrays are not the same. Hence it prints "Not Same".

ARRAYS – 1D

1. **Write a program to accept n numbers in an array. Accept a search element and print if the search element is available in the array. If available, print "Yes, The element exists" else print "No, The element does not exists".**

   Input Format:

   The first line of the input consists of the value of n.

   The second line of input is the elements of an array separated by a single space.

   The third line of input is the element to be searched.

   Output Format:

   The output prints whether the searched element is present or not.

   If the searched element is present, the output prints "Yes, The element exists."

   If the searched element is not present, the output prints "No, The element does not exist."

   Sample Input:

   4

   10 20 30 40

   10

   Sample Output:

   Yes, The element exists.

2. **Write a program to perform a binary search on an array of integers.**

   Input Format: The first line of input consists of the number of elements in the array. The second line of input consists of the elements of the array in ascending order, separated by spaces. The third line of input consists of the target value to search for in the array elements.

   Output Format: The output displays whether the target value is present in the array and at what index it is present, or else it displays that the target value is not present in the array.

   Refer to the sample output for formatting specifications.

   Sample Input

   5

   22 33 44 55 66

   44

   Sample Output: The target value 44 is present at index 2.

   Sample Input : 5

   100 111 112 113 114

   116

   Sample Output: The target value 116 is not present in the array

3. **Write a program to find the frequency of each element in an array.**

   Input Format: The First line of input consists of an integer N. The second line of input consists of N integers separated by spaces.

   Output Format: The output prints the frequency of each element in the given array. Refer to the sample output for formatting specifications.

   Sample Input:: 5

   1 1 2 2 3

Sample Output:

1 - 2

2 - 2

3 – 1

4. **Write a program to find the Sum of absolute differences of the given Array.**

Input:

5

1 3 9 6 3

Output: 14

Explanation: The Absolute difference is calculated by:

|1-3| + |3-9| + |9-6| + |6-3| = 2 + 6 + 3 + 3 = 14

5. **Write a program to get n elements in an array and get a number to be multiplied by the array elements. In descending order, show the multiplied result.**

Input Format:

The first input consists of the value of n.

The second input is the n array elements separated by a single space.

The third input is the number to be multiplied by the elements.

Output Format:

The output prints the multiplied result in descending order, separated by space.

Sample Input:

5

10 50 20 30 40

2

Sample Output:

100 80 60 40 20

6. **Problem Statement**

You are given an array of integers representing the scores of students in a class. You want to find out the position of some students in the array based on their scores. Write a C program that prompts the user to enter the size of the array and its elements (the scores of students). The program should then ask the user to enter the number of students whose positions need to be determined and their scores. Finally, the program should search for each score in the array using a linear search algorithm and print the score and its position

in the array if found. If a score is not found, the program should print a message indicating that the score was not found.

Input Format: The first line of input consists of the size of the array. The second line of input consists of an array of elements separated by spaces. The third line of the input consists of the size of the elements to be searched. The fourth line of input consists of the searched elements separated by spaces.

Output Format: The output displays the elements are present and found at the index position or else it prints the elements are not found in the array

Constraints: The index starts at 1.

Sample Input: 5

10 20 30 40 50
4
20 30 40 60

Sample Output:

20 found at position 2
30 found at position 3
40 found at position 4
60 not found in the array

Sample Input

4
11 22 33 44
2
22 55

Sample Output:

22 found at position 2
55 not found in the array

7. **The Modern World Cinderella was happy to meet Prince Charming at the ballroom and she danced with him happily. While she was dancing, Prince wanted to check whether Cinderella is a perfect match for him. He asked her a question to check her knowledge of Arrays. Can you help Cinderella to write a program to find whether the two arrays are the same or not?**

Note: Two arrays are said to be the same if the sum of both arrays is the same and the size of the arrays is the same.

Input Format: Input consists of 2 integers and 2 arrays. The integers should correspond to the size of the arrays.

Output Format: If two arrays are the same, display "Same" else display "Not Same"

Sample Input 0

4
4
1
2
3
4
1
2
3
4

Sample Output 0: Same

Explanation 0: Here, the sum and size of both arrays are the same. Hence it prints "Same".

Sample Input 1

3
3
1

2
1
2
3
6

Sample Output 1: Not Same

Explanation 1: Here, the sum and size of both arrays are not the same. Hence it prints "Not Same".

8. **Harish and Rajesh were developing a plan to find the ideal woman for Sheldon Cooper. There were puzzles, translations, and questions to check a person's intelligence. One such question was to come up with a program to count the number of distinct elements in an array. Harini is a postdoctoral researcher and a former graduate student of Caltech who is a huge fan of Sheldon's work and she wanted to impress Sheldon by writing a program to count the number of distinct element in an array. Can you help Harini?**

Input Format: Input consists of 1 integer and 1 array. The first integer corresponds to the size of the array.

Output Format: The output prints the number of distinct element in an array.

Sample Input 0:

5
1
2
3
3
4

Sample Output 0: There are 4 distinct element in the array.

Explanation 0: Since there are 4 distinct elements it will print There are 4 distinct element in the array.

Sample Input 1

5
1
1
2
3
3

Sample Output 1: There are 3 distinct element in the array.

Explanation 1: Since there are 3 distinct element it will print There are 3 distinct element in the array.

9. **Two arrays are said to be compatible if they are of the same size and if the ith element in the first array is greater than or equal to the ith element in the second array for all the values of i. Write a program to find whether 2 arrays are compatible or not.**

Input Format: Input consists of 2n+2 integers. The first integer corresponds to 'n1', the size of the first array. The next 'n1' integers correspond to the elements in the first array. The next (n+1) integer corresponds to 'n2', the size of the second array. The last 'n2' integers correspond to the elements in the second array.

Output Format: The output is any one of the two strings "Compatible" or "Incompatible"

Sample Input 0

5
2
3
6
8
1
5
1
1
1
1
1

Sample Output 0: Compatible

Sample Input 1

5
2
3
6
8
1
5
1
1
1
1
2

Sample Output 1: Incompatible

10. **Mahe and Mani are playing a puzzle game with a given set of numbers. They need to find the sum of the odd number and the even number. Write a program to help them to solve the puzzle game.**

Input Format: Input consists of n+1 integers. The first integer corresponds to 'n', the size of the array. The next 'n' integers correspond to the elements in the array. Assume that the maximum value of n is 15.

Output Format: Refer to the sample output for details.

Sample Input 0

5
2
3
6
8

-1

Sample Output 0

The sum of the even numbers in the array is 16

The sum of the odd numbers in the array is 2

Sample Input 1

4

1

2

3

-1

Sample Output 1

The sum of the even numbers in the array is 2

The sum of the odd numbers in the array is 3

11. **Kailash and his daughter Keerthana were arguing about who is the smartest person in the family. Kailash who is a world-known Computer Engineer asked Keerthana who has not yet completed college to write a program to sort the given array in ascending order. Can you help Keerthana?**

Input Format: Input consists of 1 integer and 1 array. The integer corresponds to the size of the array.

Output Format: The output consists of an array of elements after sorting.

Sample Input 0

5

54

68

25

14

74

Sample Output 0

The Sorted array is:

14

25

54

68

74

Sample Input 1

4

6

7

8

3

Sample Output 1

The Sorted array is:

3

6
7
8

Explanation 1: Here we can compare the 1st value(6)with all the other values,6 is greater than 3 and hence 6 will get printed in the second position. Repeat the same process for all the remaining values to get the output in sorted order.

12. **A bus stop queue has 'n' groups of people. The i-th group from the beginning has 'ai' people. Every 30 minutes an empty bus arrives at the bus stop, it can carry atmost 'm' people. Naturally, the people from the first group enter the bus first. Then goes the people from the second group and so on. Note that the order of groups in the queue never changes. Moreover, if some group cannot fit all of its members into the current bus, it waits for the next bus and joins with the other groups standing after them in the queue. Your task is to determine the number of buses needed to transport all 'n' groups to the Jeju Island countryside.**

Input Format: The first line contains two integers n and m (1 ≤ n, m ≤ 100). The next line contains n integers: a1, a2, ..., an (1 ≤ ai ≤ m).

Output Format: Print a single integer — the number of buses needed to transport all n groups to the Jeju Island countryside.

Sample Input 0

4 3
2 3 2 1

Sample Output 0: 3

Sample Input 1

4 4
3 3 3 3

Sample Output 1: 4

13. **Arjuna and Karna were playing cards. Arjuna has 5 cards. Karna wants to insert a new card in between Arjuna's cards. Karna wants to find the position to insert the card. So help him to find the position to insert a certain card. If Karna inserts a card in a position other than the position of 5 cards, the game will be over. So play carefully.**

For example, consider an array having three elements in it initially and a[0] = 1, a[1] = 2 and a[2] = 3 and you want to insert a number 45 at location 1 i.e. a[0] = 45, so we have to move elements one step below after insertion a[1] = 1, and a[2] = 2 and a[3] = 3.

Input Format: The input consists of four integers. The first input corresponds to the size of an array. The second input corresponds to the array elements. The third input corresponds to the location where you wish to insert an element. The fourth input corresponds to the element to be inserted.

Output Format: The output consists of array elements in a format after insertion. If the position where the element has to be inserted is greater than size of the array, then print Invalid Input.

Sample Input 0

5
1
2
3

4
5
4
10

Sample Output 0

Array after insertion is
1
2
3
10
4
5

Sample Input 1

4
1
2
3
4
8

Sample Output 1: Invalid Input

14. **Jack and John were investigating a murder and the murderer was Ms.Isha Adler. She wanted Jack to find her by solving the puzzles. Jack was able to solve all but one. The last task was to write a program to remove duplicate elements from an array. Can you help Jack?**

Input Format: Input consists of 1 integer and 1 array. The first integer corresponds to the size of the array. The next integers correspond to the elements in the array.

Output Format: The output consists of an array with no duplicate elements.

Sample Input 0

5
1
2
2
3
4

Sample Output 0

1
2
3
4

Explanation 0: Here, among the array elements, 1 is repeated twice, removing the duplicate ones we can print the remaining array elements. Hence the output is 1 5

Sample Input 1

4

3
2
1
2

Sample Output 1

3
2
1

15. **You are playing an online game. In the game, a list of N numbers is given. The player has to arrange the numbers so that all the odd numbers on the list come after the even numbers. Write an algorithm to arrange the given list such that all the odd numbers of the list come after the even numbers.**

Input Format: The first line of the input consists of an integer num, representing the size of the list(N). The second line of the input consists of N space-separated integers representing the values of the list.

Output Format: Print N space-separated integers such that all the odd numbers of the list comes after the even numbers

Sample Input 0

8
10 98 3 33 12 22 21 11

Sample Output 0

Array after Segregation
10 98 22 12 33 3 21 11

Sample Input 1

5
73 4 63 23 65

Sample Output 1

Array after Segregation
4 73 63 23 65

16. **In the city of Toyland, there are N houses. Noddy is looking for a piece of land in the city to build his house. All the houses in the city lie in a straight line and all of them are given a house number and position of the house from the entry point of the city. Noddy wants to find the house numbers between which he can build the largest house. Write an algorithm to help Noddy to find the house numbers between which he can build his house.**

Hint: No two houses will have the same position in case of multiple such answers, print the one with the least distance from the reference point.

Input Format: The first line of the input consists of an integer num, representing the number of houses (N). The next N lines consist of two space-separated integers – house Num and pos, representing the house number and the position of the houses.

Constraints: 2 < num < 10^6
1 < house Num < num
0 < pos < 10^6

Output Format: Print two space-separated integers representing the house numbers in ascending order between which the largest plot is available.

Sample Input 0

5
3 7
1 9
2 0
5 15
4 30

Sample Output 0

4 5

Sample Input 1

4
1 2
2 3
3 1
4 20

Sample Output 1

2 4

17. **An oil factory has N number of containers and each has a different capacity. During renovation, the manager decided to make some changes with the containers. He wishes to make different pairs for the containers in such a way that in the first pair, the container of maximum capacity is paired with the container of minimum capacity, and so on for the rest of the containers, to maintain a balance throughout all the pairs of containers.**

Write an algorithm to make different pairs of containers in such a way that the first container in the pair is of maximum capacity and second container in the pair is of minimum capacity.

Input Format: The first line of the input consists of an integer - numContainers, representing the number of containers (N).

The next line consists of N space-separated integers - cont1, cont2, ... contN, representing container capacity.

Constraints: 1 <= numContainers <= 1000

1 <= conti <= 1000

1 <= i <= numContainers

Output Format: Print K lines consisting of two space-separated integers representing the pairs that will be formed to maintain the balance by pairing the container of maximum capacity with the container of minimum capacity and so on.

Note: If only one container is left and no pair is possible then print the capacity of that container and the second value will be '0'.

Sample Input 0

6
100 560 23 19 53 20

Sample Output 0

560 19
100 20
53 23

Sample Input 1

5
15 25 35 45 55

Sample Output 1

55 15
45 25
35 0

18. **You are given an array a[] of n integers. The task is to find the smallest positive number missing from the array.**

Input Format: First line - n, the size of an array Second line - all the n elements (a[i] can be positive, negative, zero)

Output Format: Print the smallest positive number missing from the array.

Sample Input 0

6
4 2 0 -1 1 -3

Sample Output 0: 3

Sample Input 1

5
1 3 4 5 2

Sample Output 1: 6

ARRAYS – 2D

1. **Write a program to obtain a matrix and print the same.**

   Input Format: The first line of the input consists of the number of rows M and the number of columns N. The next M lines of input consist of N elements in each line separated by space.

   Output Format: The output displays the given matrix in M rows and N columns.

   Sample Input:

   3 4
   12 45 78 56
   78 96 85 45
   33 44 66 88

   Sample Output:

   12 45 78 56
   78 96 85 45
   33 44 66 88

   Sample Input:

   2 8
   98 87 65 54 32 21 22 25
   12 23 45 56 78 89 87 85

   Sample Output:

   98 87 65 54 32 21 22 25
   12 23 45 56 78 89 87 85

2. **Write a program to find the transpose of a matrix.**

   Input Format: The input consists of the number of rows and columns separated by space.
   The next n lines consist of the elements of the matrix.

   Output Format: The output prints the transpose of the matrix.

   Sample Input:

   3 4
   1 2 3 4
   5 6 7 8
   9 10 11 12

   Sample Output:

   1 5 9
   2 6 10
   3 7 11
   4 8 12

3. **Sheldon Cooper has a square-shaped puzzle made up of small square pieces containing numbers on them. He wants to rearrange the puzzle by changing the elements of a row into a column element and the column element into a row element without altering the shape of the**

puzzle. Help Sheldon solves this puzzle. Write a program to find the transpose of the given 2D matrix.

Input Format: The first line consists of an integer which represents the number of rows and columns. The next line consists of the elements in the matrix.

Output Format: Output prints the transpose of the input matrix.

Sample Input 0

3
1 2 3
4 5 6
7 8 9

Sample Output 0

1 2 3
4 5 6
7 8 9
Transpose matrix is:
1 4 7
2 5 8
3 6 9

Sample Input 1

4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16

Sample Output 1

1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
Transpose matrix is:
1 5 9 13
2 6 10 14
3 7 11 15
4 8 12 16

4. **Irene who is one of the organizers of the event has arranged the audience(boys and girls)in a matrix format. Separate values were given to boys and girls which are 1 and 0 respectively. The arrangement should be done based on one condition. She should arrange all the girls below the main diagonal since it is done in a matrix format. If she did the arrangement in a proper way she will win the prize or else not. Help the Judges to find out whether she wins the prize. If she wins you can print "Upper triangular matrix" or else "Not an Upper triangular matrix". Write a program to check whether the given matrix is an upper triangular matrix or not**

   Input Format: The input consists of the number of rows and columns and the matrix

Output Format: The output is any one of the following two strings Upper triangular matrix or Not an Upper triangular matrix.

Sample Input 0

3
0 0 1
0 2 3
0 0 5

Sample Output 0: Upper triangular matrix

Explanation 0: Since all the elements below the diagonal of the matrix are 0 it prints the Upper triangular matrix.

Sample Input 1

3
0 0 0
0 8 0
4 9 7

Sample Output 1: Not an Upper triangular matrix

Explanation 1: Since all the elements below the diagonal of the matrix are not 0 it prints Not an Upper triangular matrix.

5. **In a family, the people are arranged in rows and columns. Male persons in the families are arranged in a row and females are arranged in a column. Find the eldest woman in each column. Write a program to find the maximum element in each column of the matrix.**

Input Format: The input consists of (m*n+2) integers. The first integer corresponds to m, the number of rows in the matrix, and the second integer corresponds to n, the number of columns in the matrix. The remaining integers correspond to the elements in the matrix. The elements are read in row-wise order, the first row first, then the second row, and so on.

Output Format: Refer to the sample output for details.

Sample Input 0

3
2
4 5
6 9
0 3

Sample Output 0

6
9

Explanation 0: Here the maximum element in each column is 6 and 9 respectively and hence it prints, 6 9

Sample Input 1

3
3
22 23 25
25 22 26

26 27 23

Sample Output 1

26
27
26

Explanation 1: Here the maximum element in each column is 26,27 and 26 respectively and hence it prints, 26 27 26

6. **Write a program to multiply two matrices of the same dimensions together.**

   Input Format: The first two integer inputs, m, and n represent the dimensions of both of the matrices that have to be multiplied. Next (m*n) integers represent the elements in the first matrix and followed by another (m*n) integer representing the elements in the second matrix

   Output Format: The output consists of (m*n) integers representing the values of the matrix that is the product of both the input matrices.

   Sample Input 0

   3 3
   1 2 3
   4 5 6
   7 8 9
   9 8 7
   6 5 4
   3 2 1

   Sample Output 0

   30 24 18
   84 69 54
   138 114 90

   Sample Input 1

   3 3
   4 5 1
   9 8 5
   2 5 8
   1 2 3
   4 5 6
   7 8 9

   Sample Output 1

   31 41 51
   76 98 120
   78 93 108

7. **Ravi is not able to figure out the method to calculate the sum of the Zig-Zag pattern in the Matrix. Can you help Ravi to write a program to find the sum of Zig-Zag patterns in a given matrix?**

   Input Format: Input consists of 2 integers and 1 2D array. Integers corresponding to the size of rows and columns.

Output Format: The output prints the sum of the zig-zag pattern. Refer to the sample output.
Note: Size of row and column should be same

Sample Input 0

3
3
1 2 3
4 5 6
7 8 9

Sample Output 0

Sum of Zig-Zag pattern is 35

Explanation 0: The sum of zig-zag pattern is 1+2+3+5+7+8+9=35 and hence its prints 35

Sample Input 1

3
3
1 3 5
2 4 6
7 8 9

Sample Output 1: Sum of Zig-Zag pattern is 37

Explanation 1: The sum of zig-zag pattern is 1+3+5+4+7+8+9=37 and hence its prints 37

8. **Write a program to move all zeroes to the end of a given integer.**

Input Format: The first line of input contains a number of test cases T. For each test case, the first line of input contains a single integer of 0's and 1's.

Constraints: $1 \le T \le 10$, $1 \le N \le 109$

Output Format: The output contains a single-line integer value.

Sample Input 0

2
1010101
1000111

Sample Output 0

1111000
1111000

Sample Input 1

1
1100110

Sample Output 1: 1111000

9. **Rohit likes to play with numbers. He started to frame a matrix called uniformity matrix where he will be using either completely odd numbers or completely even numbers but not both. Write a program to check whether he has framed the matrix in the correct order or not.**

Input Format: The input consists of (n*n+1) integers. The first integer corresponds to the number of rows/columns in the matrix. The remaining integers correspond to the elements in the matrix. The elements are read in row-wise order, the first row first, then the second row, and so on.

Output Format: Print Yes if it is a uniformity matrix. Print No if it is not a uniformity matrix.

Sample Input 0

2

4 5

5 4

Sample Output 0: No

Sample Input 1:

3

2 4 6

8 10 12

14 16 18

Sample Output 1: Yes

10. **A magic square is an arrangement of numbers (usually integers) in a square grid, there are numbers in the forward and backward main diagonals, all add up to the same number. Write a program to find whether a given matrix is a magic square or not.**

Input Format: The input consists of (n*n+1) integers. The first integer corresponds to the number of rows/columns in the matrix. The remaining integers correspond to the elements in the matrix. The elements are read in row-wise order, the first row first, then the second row, and so on.

Output Format: Print yes if it is a magic square. Print no if it is not a magic square.

Sample Input 0:

2

4 5

5 4

Sample Output 0: No

Sample Input 1:

4

1 2 3 4

5 6 7 8

9 10 11 12

13 14 15 16

Sample Output 1: Yes

11. **Ram has a fruit shop. He has arranged some set of fruits in the column and row-wise. Ram needs to find which row and column have a maximum number of fruits. Help him to find out.**

Input Format: Input consists of 2 integers(size of rows and columns) and 1 2D array.

Output Format: The output prints the sum of all rows and columns as well as print the row and column which has the maximum sum. Refer to the sample output.

Sample Input 0:

3

3

1 6 8

2 5 1

3 8 2

Sample Output 0

The Sum of rows is 15 8 13
Row 1 has a maximum sum
The Sum of columns is 6 19 11
Column 2 has the maximum sum

Explanation 0: Here the sum of rows and columns is 15,18,13 and 6,9,11 respectively. Then it will compare the values and print the greatest sum(row and column).

Sample Input 1

2
2
5 7
9 7

Sample Output 1

The Sum of rows is 12 16
Row 2 has a maximum sum
The Sum of columns is 14 14
Column 1 has the maximum sum

Explanation 1: Here the sum of rows and columns is 12,16 and 14,14 respectively. Then it will compare the values and print the greatest sum(row and column).

12. **Given an integer matrix of size n*n. n is the number of rows and columns. Traverse it in a spiral form.**

Input Format: The first line contains N, which represents the number of rows and columns of a matrix. The next N lines contain N values, each representing the values of the matrix.

Output Format: A single line containing integers with space represents the desired traversal.

Sample Input 0

3
1 2 3
4 5 6
7 8 9

Sample Output 0

1 2 3 6 9 8 7 4 5

Sample Input 1

4
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16

Sample Output 1

1 2 3 4 8 12 16 15 14 13 9 5 6 7 11 10

13. **Mr. Bean has saved an image in a 2D array and he wants to rotate the image by 90 degrees in clockwise direction. Please help him code for array rotation by 90 degrees in clockwise direction.**

Input Format: The first line contains the size of the matrix N. The next N lines contain the elements of the matrix

Output Format: The output prints the rotated matrix

Sample Input 0

3
1 2 3
4 5 6
7 8 9

Sample Output 0

7 4 1
8 5 2
9 6 3

Explanation 0: The output is the 90-degree clockwise rotated matrix. Try to visualize.

Sample Input 1

3
-5 -10 -4
3 -6 3
-1 0 -6

Sample Output 1

-1 3 -5
0 -6 -10
-6 3 -4

Explanation 1: The output is the 90-degree clockwise rotated matrix. Try to visualize.

FUNCTIONS

1. **Write a program to compute the factorial of a number using recursion.**
   Input Format: Input consists of an integer.
   Output Format: The output consists of an integer that corresponds to the factorial value.
   Sample Input 0: 5
   Sample Output 0: The factorial of 5 is 120
   Explanation 0: Since the input is 5, its factorial is 120 which will get printed.
   Sample Input 1: 10
   Sample Output 1: The factorial of 10 is 3628800
   Explanation 1: Since the input is 10, its factorial is 3628800 which will get printed.
2. **Write a program to find the number of digits in a number using recursion.**
   Input Format: Input consists of a non-negative integer.
   Output Format: Refer sample output for formatting specifications.
   Sample Input 0: 432
   Sample Output 0: The number of digits in 432 is 3
   Sample Input 1: 6723978
   Sample Output 1: The number of digits in 6723978 is 7
3. **Write a program to find the sum of array elements using recursion.**
   Input Format: The Input consists of one integer and a set of integers. The first integer corresponds to the number of array elements. The second Input corresponds to the array elements.
   Output Format: The output consists of one integer that corresponds to the sum of the array elements.
   Sample Input 0
   5
   1
   2
   3
   4
   5
   Sample Output 0: 15
   Explanation 0: Here the sum of the array elements(1+2+3+4+5) is 15 and hence the output is 15.
   Sample Input 1
   2
   1
   2
   Sample Output 1: 3
   Explanation 1: Here the sum of array elements (1+2) is 3 and hence the output is 3.

4. **Write a program to find the nth term in the Fibonacci series using recursion. Note that the first 2 terms in the Fibonacci Series are 0 and 1.**
   Input Format: Input consists of an integer.
   Output Format: The output consists of an integer(nth term of the Fibonacci series).
   Sample Input 0: 5
   Sample Output 0: The term 5 in the Fibonacci series is 3
   Explanation 0: The fibonacci series is - 0, 1, 1, 2, 3, 5, 8, 13...., so the 5th term in this series is 3, that's why the answer will be 3.
   Sample Input 1: 8
   Sample Output 1: The term 8 in the Fibonacci series is 13
   Explanation 1: The fibonacci series is - 0, 1, 1, 2, 3, 5, 8, 13...., so the 5th term in this series is 13, that's why the answer will be 13.
5. **When the inventor of the game showed the game to the emperor of India, the emperor was so impressed by the new game, that he said to the man "Name your reward!" The man responded, "Oh emperor, my wishes are simple. I only wish for this. Give me one grain of rice for the first square of the chessboard, 2^2 for the next square, 3^3 for the next, 4^4 for the next, and so on for all 64 squares". The emperor agreed, amazed that the man had asked for such a small reward. After a week, his treasurer came back and informed him that the reward would add up to an astronomical sum, far greater than all the rice that could conceivably be produced in many many centuries. The Emperor wanted to check it for himself. Can you help the Emperor to write a program to compute a^n (a power n) using recursion?**
   Input Format: The input consists of two integers a and n.
   Output Format: Refer to sample output.
   Sample Input 0
   2
   8
   Sample Output 0: The value of 2 power 8 is 256
   Explanation 0: In this case value of a and n is 2 and 8 respectively. Then the answer will be like this 2 ^ 2 ^ 2 ^ . . . . (8 times) = 256.
   Sample Input 1
   3
   1
   Sample Output 1: The value of 3 power 1 is 3
   Explanation 1: In this case values of a and n are 3 and 1 respectively. Then the answer will be like this 3 ^ 1 ^ = 1.
6. **Write a program to find the sum of the positive odd numbers present in an array using recursion.**
   Input Format: The first integer input represents the size of the array (n), next n lines consist of values present in the array.
   Output Format: The output prints the sum of positive odd numbers in an array. Refer to the sample output for formatting specifications.
   Sample Input 0

3
1
1
1

Sample Output 0: Sum = 3

Sample Input 1

5
1
2
3
4
5

Sample Output 1: Sum = 9

7. **Write a program to find the maximum element in an array using recursion.**

   Input Format: Input consists of the size of the array and array elements

   Output Format: The output prints the maximum element in an array. Refer sample input and output for formatting specifications.

   Sample Input 0

   6
   2
   5
   1
   7
   4
   2

   Sample Output 0: Maximum element in the array is 7

   Sample Input 1

   5
   23
   43
   14
   76
   98

   Sample Output 1: Maximum element in the array is 98

8. **Write a program to find whether the given number is a prime number or not using recursion.**

   Input Format: The Input consists of an integer.

   Output Format: Prints Prime Number or Not a Prime number.

   Sample Input 0: 13

   Sample Output 0: Prime Number

   Sample Input 1: 246

   Sample Output 1: Not a Prime Number

9. **Write a program to compute the GCD of 2 numbers using recursion.**

Input Format: Input consists of 2 integers.
Output Format: Output consists of one integer that represents the GCD of two numbers.
Sample Input 0:
36
27
Sample Output 0: 9
Sample Input 1
4
6
Sample Output 1: 2

10. **Write a program to convert a decimal number to a binary number by recursion.**
Input Format: The Input consists of an Integer
Output Format: The Output consists of the input binary form
Sample Input 0: 10
Sample Output 0: 1010
Sample Input 1: 123
Sample Output 1: 1111011

STRINGS

1. **Write a program to find the length of the string without using the library function.**
   Input Format: The input consists of a string.
   Output Format: The output prints the length of the given string.
   Constraints: 1 <= Length of the string <= 1000

Sample Input	Sample Output
Hermione	8

2. **Write a program to count the number of vowels in the given string.**
   Input Format: Input consists of 1 string.
   Output Format: Output print the number of Vowels.
   Sample Input 0: face
   Sample Output 0: Number of vowels: 2
   Sample Input 1: Antarctica
   Sample Output 1: Number of vowels: 4
3. **Write a program to find whether the given string is a palindrome or not without using string library functions.**
   Note: The string reads the same backward and forward.
   Input Format: Input consists of 1 string.
   Output Format: If the given string is a Palindrome display "Palindrome", else display "Not a Palindrome".
   Sample Input 0: mam
   Sample Output 0: Palindrome
   Sample Input 1: string
   Sample Output 1: Not a Palindrome
4. **Lee conducted a word game for his colleagues. The game is everyone should say a word that should not have any repeating characters in it. If a single character is repeated then the particular person can't continue the game. Lee finds it difficult to disqualify the person from the game since he is not able to find the nonrepetitive character for all the words. Help him to find the winner of the game by writing a program to find the first element which is non -repetitive i.e that element must not be present anywhere else in the string.**
   Input Format: The first line of the input consists of a string.
   Output Format: The output displays a character that is non-repetitive. If all the characters in an input string are repetitive, then display All characters are repetitive.
   Sample Input 0: teeterson
   Sample Output 0: r
   Explanation 0:

Here in the word teeterson the first non-repeating character is r and hence it prints r.

Sample Input 1: goog

Sample Output 1: All the characters are repetitive

Explanation 1: Here in the word goog all the characters are repetitive and hence it prints All the characters are repetitive.

5. **Write a program to sort a string in ascending order. Note: Do not use inbuilt functions.**

   Input Format: The input consists of the string s in a single line.

   Output Format: Display the sorted string in ascending order.

   Sample Input 0: faceprep

   Sample Output 0: aceefppr

   Sample Input 1: bac

   Sample Output 1: abc

6. **Antakshari is a popular parlor game played in India. Many word games are similar to antakshari. One such game is wordakshari. The game can be played by two or more people. The first player has to recite a word. The last letter of the word is then used by the next player to recite another word starting with that letter. The winner or winning team is decided by a process of elimination. The person or the team that cannot come up with a word with the right consonant is eliminated. - The following rules need to be followed while playing this game. - (i) All other words except the first word have to begin with the last letter of the previous word - (ii) No words can be repeated. write a program to print the wordakshari chain.**

   Input Format: Input consists of n+1 lines. The first n lines contain strings corresponding to the words in the chain. The last line of input contains the string #### to mark the end of the input.

   Output Format: The output consists of the valid wordakshari chain.

   Sample Input 0

   oracle
   error
   rohit
   ####

   Sample Output 0

   oracle
   error
   rohit

   Explanation 0: In oracle the last letter is e and so the next word will be error since it starts with e and it goes on like that and hence the output is

   oracle
   error
   rohit

   Sample Input 1

   word
   diameter
   run
   nest

high
####
Sample Output 1
word
diameter
run
nest
Explanation 1: Here the last letter of the first word is d and so the second output is an diameter and it goes on. Hence the output is
word
diameter
run
nest

7. **Write the program to reverse each word of a string.**
   Input Format: Input consists of one string
   Output Format: The output consists of one string (reverse of the input string)
   Sample Input 0: Hello World
   Sample Output 0: World Hello
   Sample Input 1: welcome to face
   Sample Output 1: face to welcome
8. **Given two strings s and t, return 1 if s is a subsequence of t, or 0 otherwise.**
   A subsequence of a string is a new string that is formed from the original string by deleting some (can be none) of the characters without disturbing the relative positions of the remaining characters. (i.e., "abe" is a subsequence of "abcde" while "aed" is not).
   Input Format: Two strings t and s in order.
   Output Format: A single integer(1 or 0)
   Sample Input 0
   abcde
   abe
   Sample Output 0: 1
   Sample Input 1
   faceprep
   aprf
   Sample Output 1: 0
9. **Write a program to find whether the given string is the anagram of the first string.**
   Note: An anagram of a string is another string that contains the same characters, only the order of characters can be different.
   Input Format: The input consists of two strings.
   Output Format: The output Print "Anagram", if strings are Anagram otherwise print "Not Anagram"
   Sample Input 0
   eat
   ate

Sample Output 0: Anagram

Sample Input 1

eat

abc

Sample Output 1: Not Anagram

10. **A company transfers an encrypted code to one of its clients. The code needs to be decrypted so that it can be used for accessing all the required information. The code can be decrypted by interchanging each consecutive digit and once a digit has been interchanged then it cannot be used again. If at a certain point there is no digit to be interchanged with, then the single digit must be left as it is.**

    Write an algorithm to decrypt the code so that it can be used to access the required information.

    Input Format: The first line of the input consists of an integer - encrypted code, representing the encrypted code given to the client.

    Output Format: Print an integer representing the decrypted code that can be used for accessing the required information

    Sample Input 0: 39631

    Sample Output 0: 93361

    Explanation 0: Step 1 - Interchange the first two digits, 3 and 9, which form 93631. Step 2 - Interchange the third and fourth digits, 6 and 3 which form 93361, Step 3 - For the fifth digit as there is no digit to be interchanged with, it is left it is so it will be kept as 93361. So, the output is 93361.

    Sample Input 1: 1234

    Sample Output 1: 2143

    Explanation 1: Step 1 - Interchange the first two digits, 1 and 2, which form 2134. Step 2 - Interchange the third and fourth digits, 3 and 4 which form 2143 So, the output is 93361.

11. **A game has to be played by Varun whereas he is not supposed to take the characters into account. His task is to add the numbers given in a string containing alphanumeric characters. If he adds the character values he will die. Help him to win the game by writing a program to print the sum of numbers**

    Input Format: Input consists of one string.

    Output Format: The Output consists of one integer that corresponds to the sum of all numbers present in the string.

    Sample Input 0: 1abc23

    Sample Output 0: 24

    Explanation 0: Here the numbers are 23 and 1 and so its sum is 24 that will get printed.

    Sample Input 1: Fa33ce1

    Sample Output 1: 34

    Explanation 1: Here the numbers are 33 and 1 and so its dum is 34 that will get printed.

12. **An online test was conducted for the students for taking up a new course. In the test, the students will be provided with two words. They need to remove the characters in the second word which is present in the first word and have to type the rest. Write a program to remove all characters in the second string which are present in the first string**

    Input Format: Input consists of two strings.

Output Format: The output consists of one string.

Sample Input 0

Motor

Motorcycle

Sample Output 0: cycle

Explanation 0: The characters which are not present in the first string but present in the second string are a cycle and hence the output is cycle.

Sample Input 1

Bike

BikeWay

Sample Output 1: Way

Explanation 1: The character which is not present in the first string but presents in the second string is a Way and hence the output is Way

UNION

1. **Write a program to read and display student data using union.**

   Input Format: The first character input consists of the grade of the student. The second character array input consists of the roll number of student. The third float input consists of the mark of the student. The fourth integer input consists of the fees for student

   Output Format: Refer to the sample output

   Sample Input 0

   A
   15EC110
   78.98
   25000

   Sample Output 0

   Grade is: A
   Rollno is: 15EC110
   Mark is: 78.98
   Fees paid is: 25000

   Sample Input 1

   C
   15EC089
   56
   50000

   Sample Output 1

   Grade is: C
   Rollno is: 15EC089
   Mark is: 56
   Fees paid is: 50000

STRUCTURE

1. **Measurements continue to play an important role throughout everybody's life. Hari who is a sportsman has studied how to add two distances in inch feet system. Now he needs to do the programming for the same. Help him to write a program to add two distances in inch feet system using Structure**

   Note: 1feet = 12inch

   Input Format

   Input 1: feet1 and Inch1

   Input 2: feet2 and Inch2

   Feet is in integer data type and inch is in float data type

   Output Format

   The output prints the Sum of Distance.

   Sample Input 0

   22
   4.7
   23
   7.9

   Sample Output 0

   46'-0.6"

   Sample Input 1

   14
   4.5
   22
   4.5

   Sample Output 1

   36'-9"

2. **Write a program to calculate the difference between two time periods using structure.**

   Input Format

   The first input consists of hours of time1

   The second input consists of minutes of time1

   The third input consists of seconds of time1

   The fourth input consists of hours of time2

   The fifth input consists of minutes of time2

   The sixth input consists of seconds of time2

   Note: hours, minutes, and seconds are denoted as structure variables.

   Output Format

   Refer sample output format

   Sample Input 0

   12 45 56 2 39 45

   Sample Output 0

   TIME DIFFERENCE: 12:45:56 - 2:39:45 = 10:6:11

   Sample Input 1

   4 56 60 5 4 10

Sample Output 1

TIME DIFFERENCE: 4:56:60 - 5:4:10 = -1:52:50

PATTERN PRINTING

1. Write a C program to print following Pattern

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

2. Write a C program to print following Pattern

```
*
* *
* * *
* * * *
* * * * *
```

3. Write a C program to print following Pattern

```
    *
   * *
  * * *
 * * * *
* * * * *
```

4. Write a C program to print following Pattern

```
* * * * *
 * * * *
  * * *
   * *
    *
```

5. Write a C program to print following Pattern

```
* * * * *
* * * *
* * *
* *
*
```

6. Write a C program to print following Pattern

```
    *
   * *
  * * *
 * * * *
```

7. Write a C program to print following Pattern

```
    *
   * *
  * * *
 * * * *
* * * * *
 * * * *
  * * *
   * *
    *
```

8. Write a C program to print following Pattern

```
      0
     1 0 1
    2 1 0 1 2
   3 2 1 0 1 2 3
  4 3 2 1 0 1 2 3 4
5 4 3 2 1 0 1 2 3 4 5
```

9. Write a C program to print following Pattern

```
    1
   2 2
  3 3 3
 4 4 4 4
5 5 5 5 5
```

10. Write a C program to print following Pattern

```
    1
```

```
 1 2
 1 2 3
 1 2 3 4
1 2 3 4 5
```

11. Write a C program to print following Pattern

```
    1
   1 2 3
  1 2 3 4 5
 1 2 3 4 5 6 7
1 2 3 4 5 6 7 8 9
```

12. Write a C program to print following Pattern

```
A B C D E F G G F E D C B A
  A B C D E F F E D C B A
    A B C D E E D C B A
      A B C D D C B A
        A B C C B A
          A B B A
            A A
```

13. Write a C program to print following Pattern

```
AAA AAB AAC ABA ABB ABC ACA ACB ACC
BAA BAB BAC BBA BBB
BBC BCA BCB BCC CAA CAB CAC CBA CBB
CBC CCA CCB CCC
```

14. Write a C program to print following Pattern

```
11111
2222
333
44
5
```

15. Write a C program to print following Pattern

```
1234567
12345
123
1
```

16. Write a C program to print following Pattern

```
55555
45555
34555
23455
12345
```

17. Write a C program to print following Pattern

```
1
10
101
1010
10101
```

18. Write a C program to print following Pattern

```
12344321
123**321
12****21
1******1
```

19. Write a C program to print following Pattern

```
5432*
543*1
54*21
5*321
*4321
```

20. Write a C program to print following Pattern

```
0
909
89098
7890987
678909876
56789098765
4567890987654
345678909876543
23456789098765432
1234567890987654321
```

21. Write a C program to print following Pattern

```
    1
   21
  321
 4321
```

54321

22. Write a C program to print following Pattern
Example:
When n=5
```
1            1
12          21
123        321
1234     4321
1234554321
```

23. Write a C program to print following Pattern
```
1
2*2
3*3*3
4*4*4*4
4*4*4*4
3*3*3
2*2
1
```

24. Write a C program to print following Pattern
```
1
232
45654
78910987
```

25. Write a C program to print following Pattern
```
11
12 13
13 14 15
14 15 16 17
```

26. Write a C program to print following Pattern
```
          1
        2 3
      4 5 6
    7 8  9 10
11 12 13 14 15
```

27. Write a C program to print following Pattern
```
1
212
32123
4321234
```

28. Write a C program to print following Pattern
```
1   2   3   4  5
6   7   8   9
10  11  12
13  14
15
```

29. Write a C program to print following Pattern
```
1
23
345
4567
56789
```

30. Write a C program to print following Pattern
```
11111
0000
111
00
1
```

31. Write a C program to print following Pattern
```
1234
2341
3421
4321
```

32. Write a C program to print following Pattern
```
11111
1    1
1    1
1    1
11111
```

33. Write a C program to print following Pattern
```
                1
            4     9   16
        25  36   49  64  81
    100 121 144 169 196  225 256
```

289 324 361 400 441 484 529 576 625

34. Write a C program to print following Pattern

```
    1
   123
  12345
 1234567
1234 56789
 1234567
  12345
   123
    1
```

35. Write a C program to print following Pattern

```
    1
   1 2
  1 2 3
 1 2 3 4
1 2 3 4 5
```

36. Write a C program to print following Pattern

```
*000*000*
0*00*00*0
00*0*0*00
000***000
```

37. Write a C program to print following Pattern

```
4444444
4333334
4322234
4321234
4322234
4333334
4444444
```

38. Write a C program to print following Pattern

```
1
2  4
3  6  9
4  8  12 16
5  10 15 20 25
6  12 18 24 30 36
7  14 21 28 35 42 49
8  16 24 32 40 48 56 64
9  18 27 36 45 54 63 72 81
10 20 30 40 50 60 70 80 90 100
```

39. Write a C program to print following Pattern

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

40. Write a C program to print following Pattern

```
E
DE
CDE
BCDE
ABCDE
```

41. Write a C program to print following Pattern

```
ABCDE
BCDE
CDE
DE
E
```

42. Write a C program to print following Pattern

```
EDCBA
EDCB
EDC
ED
E
```

43. Write a C program to print following Pattern

```
EDCBA
DCBA
CBA
BA
A
```

44. Write a C program to print following Pattern

```
EEEEE
```

DDDD
CCC
BB
A

45. Write a C program to print following Pattern

AAAAA
BBBB
CCC
DD
E

46. Write a C program to print following Pattern

A
AB
ABC
ABCD
ABCDE

47. Write a C program to print following Pattern

E
DE
CDE
BCDE
ABCDE

48. Write a C program to print following Pattern

1
1 2
3 5 8
13 21 34 55
89 144 233 377 610

49. Write a C program to print following Pattern

11111
10001
10001
10001
11111

50. Alphabet Triangle

Write a c program to print alphabet triangle.

Output:

A
ABA
ABCBA
ABCDCBA
ABCDEDCBA

51. Number Triangle

Write a c program to print number triangle.

Input: 7

Output:

enter the range= 6

1
121
12321
1234321
123454321
12345654321

52. Fibonacci Triangle

Write a c program to generate fibonacci triangle.

Input: 5

Output:

1
1 1
1 1 2
1 1 2 3
1 1 2 3 5

53. Write a c program to print Pascal triangle

OUTPUT:

Enter the no. of lines: 6

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1

54. Write a c program for Floyd's triangle

OUTPUT:

```
Enter the range: 10
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54 55
```

55. To print the various below shown Pyramid pattern programs using stars.

Inverted
Half Pyramid

Hollow Inverted
Half Pyramid

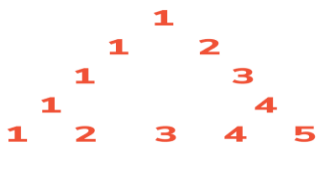
Inverted Full Pyramid

Hollow Full Pyramid

56. To print the various below shown Pyramid pattern programs using numbers.

Inverted
Half Pyramid

Hollow
Half Pyramid



Hollow Full Pyramid

Hollow Inverted
Half Pyramid

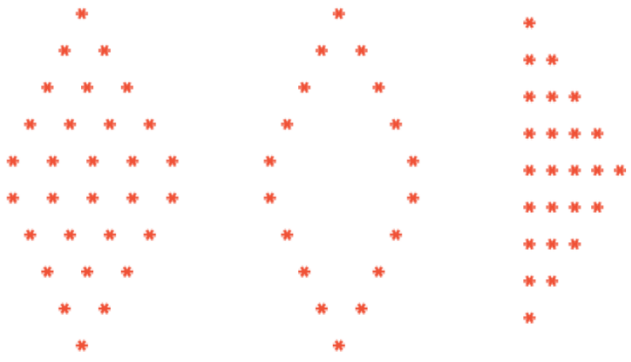
57. To print the various below given palindromic pyramid pattern programs using numbers and alphabets.

```
1                       A
1 2 1                   A B A
1 2 3 2 1               A B C B A
1 2 3 4 3 2 1           A B C D C B A
1 2 3 4 5 4 3 2 1       A B C D E D C B A
```

```
        1                       ********1********
      1 2 1                     *******2*2*******
    1 2 3 2 1                   ******3*3*3******
  1 2 3 4 3 2 1                 *****4*4*4*4*****
1 2 3 4 5 4 3 2 1               ****5*5*5*5*5****
```

Different types of Palindrome Pyramid Patterns

58. To print the various below given Diamond pattern programs using stars.



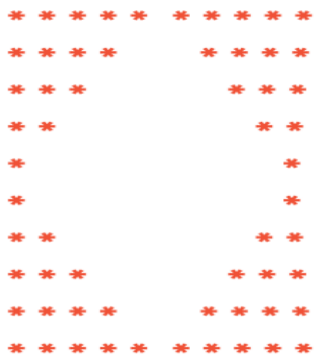
Solid Diamond | Hollow Diamond | Solid Half Diamond

59. To print the various below given Diamond pattern programs using numbers and stars.

```
3          1          1          *
44         2*2        2*3        * 1 *
555        3*3*3      4*5*6      * 1 2 1 *
6666       4*4*4*4    7*8*9*10   * 1 2 3 2 1 *
555        4*4*4*4    7*8*9*10   * 1 2 1 *
44         3*3*3      4*5*6      * 1 *
3          2*2        2*3        *
           1          1
```

60. Hollow Diamond Inscribed in a Rectangle

Input: 5
Output:



C PRACTICE MCQs

1. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
 printf("Hello World! %d \n", x);
   return 0;
}
```

Answer: Compile time error

2. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
 enum {ORANGE = 5, MANGO,
BANANA = 4, PEACH};
 printf("PEACH = %d\n", PEACH);
}
```

Answer: PEACH = 5

3. What will be the output of the following C code?

```
#include <stdio.h>
    int main()  {
     int a[5] = {1, 2, 3, 4, 5};
     int i;
     for (i = 0; i< 5; i++)
        if ((char)a[i] == '5')
      printf("%d\n", a[i]);
           else
      printf("FAIL\n");
  }
```

Answer: The program will compile and print FAIL for 5 times

4. What will be the output of the following C code?

```
#include  <stdio.h>
void main()  {
  signed char chr;
 chr = 128;
 printf("%d\n", chr);
}
```

Answer: -128

5. What will be the output of the following C code?

```
#include <stdio.h>
    int main()  {
       float f1 = 0.1;
       if (f1 == 0.1)
 printf("equal\n");
       else
 printf("not equal\n");
}
```

Answer: not equal

6. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   float f1 = 0.1;
   if (f1 == 0.1f)
 printf("equal\n");
      else
 printf("not equal\n");
  }
```

Answer: equal

7. What will be the output of the following C code on a 32-bit machine?

```
#include <stdio.h>
int main()  {
   int x = 10000;
   double y = 56;
   int *p = &x;
   double *q = &y;
 printf("p and q are %d and %d",
sizeof(p), sizeof(q));
   return 0;
}
```

Answer: p and q are 8 and 8

8. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   float x = 'a';
 printf("%f", x);
   return 0;
}
```

Answer: 97.000000

9. What will be the output of the following C code?

```
#include <stdio.h>
#define a 10
int main()
{
   const int a = 5;
 printf("a = %d\n", a);
}
```

Answer: Compilation error

Explanation: The #define substitutes a with 10 without leaving any identifier, which results in Compilation error.

10. What will be the output of the following C code?

```
#include <stdio.h>
  int main()  {
    int var = 010;
   printf("%d", var);
  }
```

Answer: 8

11. What will be the output of the following C function?

```
#include <stdio.h>
 enum birds {SPARROW, PEACOCK,
PARROT};
 enum animals {TIGER = 8, LION,
RABBIT, ZEBRA};
  int main()  {
   enum birds m = TIGER;
    int k;
    k = m;
   printf("%d\n", k);
    return 0;
  }
```

Answer: 8

12. What will be the output of the following C code?

```
#include <stdio.h>
#define MAX 2
enum bird {SPARROW = MAX + 1,
PARROT = SPARROW + MAX};
  int main()  {
   enum bird b = PARROT;
```

```
    printf("%d\n", b);
      return 0;
    }
```

Answer: 5

13. What will be the output of the following C code?

```
#include <stdio.h>
void foo(const int *);
int main()  {
   const int i = 10;
 printf("%d ", i);
       foo(&i);
 printf("%d", i);
 }
void foo(const int *i)  {
   *i = 20;
}
```

Answer: Compile time error(Cannot change a const type value)

14. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   const int i = 10;
   int *ptr = &i;
   *ptr = 20;
 printf("%d\n", i);
   return 0;
}
```

Answer: Compile time warning and printf displays 20

15. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   j = 10;
 printf("%d\n", j++);
   return 0;
}
```

Answer: Compile time error

16. Will the following C code compile without any error?

```
#include <stdio.h>
int main()  {
   for (int k = 0; k < 10; k++);
      return 0;
}
```

Answer: Depends on the C standard implemented by compilers (Emptyscreen)

17. Will the following C code compile without any error?

```
#include <stdio.h>
int main()  {
   int k;
   {
      int k;
      for (k = 0; k < 10; k++);
   }
}
```

Answer: Yes

18. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 4;
   float k = 4;
 printf("%d", k);
}
```

Answer: Compile time error

19. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 3;
   int l = i / -2;
   int k = i % -2;
```

```
    printf("%d %d\n", l, k);
    return 0;
  }
```

Answer: -1 1

20. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = -3;
   int k = i % 2;
  printf("%d\n", k);
}
```

Answer: -1

21. What will be the output of the following C code?

```
#include <stdio.h>
 voidmain()  {
      int i = 5;
 i = i / 3;
 printf("%d\n", i);
}
```

Answer: 1

22. What will be the output of the following C code?

```
 #include <stdio.h>
 int main()  {
   int i = -5;
 i = i / 3;
 printf("%d\n", i);
   return 0;
}
```

Answer: -1

23. What will be the final value of x in the following C code?

```
#include <stdio.h>
void main()  {
   int x = 5 * 9 / 3 + 9;
}
```

Answer: 24

24. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 5.3 % 2;
printf("Value of x is %d", x);
}
```

Answer: Compile time error

25. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int y = 3;
   int x = 5 % 2 * 3 / 2;
 printf("Value of x is %d", x);
}
```

Answer: Value of x is 1

26. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = 3;
   int b = ++a + a++ + --a;
 printf("Value of b is %d", b);
}
```

Answer: Value of b is 13

27. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 10;
   double b = 5.6;
   int c;
   c = a + b;
 printf("%d", c);
}
```

Answer: 15

28. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
  int d, a = 10, b = 5, c = 5;
   d = a == (b + c);
 printf("%d", d);
}
```

Answer: 1

29. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 1, y = 0, z = 5;
   int a = x && y || z++;
 printf("%d", z);
}
```

Answer: 6

30. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 1, y = 0, z = 5;
   int a = x && y && z++;
 printf("%d", z);
}
```

Answer: 5

31. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 1, y = 0, z = 3;
   x >y ?printf("%d", z) : return z;
}
```

Answer: Compile time error

32. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 1, z = 3;
   int y = x << 3;
 printf(" %d\n", y);
}
```

Answer: 8

33. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 0, y = 2, z = 3;
   int a = x & y | z;
 printf("%d", a);
}
```

Answer: 3

34. What will be the final value of j in the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0, j = 0;
   if (i&& (j = i + 10))
      //do something
      ;
}
```

Answer: (Empty Screen)

35. What will be the final value of j in the following C code?

```
#include <stdio.h>
int main()  {
   int i = 10, j = 0;
   if (i || (j = i + 10))
; //do something
   }
```

Answer: (Empty Screen)

36. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
```

```
  int i = 1;
  if (i++ && (i == 1))
 printf("Yes\n");
  else
 printf("No\n");
}
```

Answer: No

37. What will be the final value of d in the following C code?

```
#include <stdio.h>
int main()  {
  int a = 10, b = 5, c = 5;
  int d;
  d = b + c == a;
 printf("%d", d);
}
```

Answer: 1

38. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
  int a = 10, b = 5, c = 3;
 b != !a;
  c = !!a;
 printf("%d\t%d", b, c);
}
```

Answer: 5 1

39. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
  int a = 10;
  if (a == a--)
 printf("TRUE 1\t");
    a = 10;
    if (a == --a)
 printf("TRUE 2\t");
}
```

Answer: Compiler Dependent (TRUE 2 - in some compiler)

40. What is the difference between the following 2 codes?

```
#include <stdio.h> //Program 1
int main()  {
  int d, a = 1, b = 2;
  d =  a++ + ++b;
 printf("%d %d %d", d, a, b);
}
#include <stdio.h> //Program 2
int main()  {
  int d, a = 1, b = 2;
  d =  a++ +++b;
 printf("%d %d %d", d, a, b);
}
```

Answer: Program 2 has syntax error, program 1 is not

41. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
  int a = 1, b = 1, c;
  c = a++ + b;
 printf("%d, %d", a, b);
}
```

Answer: 2, 1

42. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
  int a = 1, b = 1, d = 1;
 printf("%d, %d, %d", ++a +
++a+a++, a++ + ++b, ++d + d++ + a++);
}
```

Answer: Undefined (Compiler Dependent) (15, 4, 6)

43. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 10, b = 10;
   if (a = 5)
   b--;
 printf("%d, %d", a, b--);
}
```

Answer: 5, 9

44. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0;
   int j = i++ + i;
 printf("%d\n", j);
}
```

Answer: 1

45. What will be the output of the following C code?

```
 #include <stdio.h>
int main()  {
   int i = 2;
   int j = ++i + i;
 printf("%d\n", j);
}
```

Answer: 6

46. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 2;
   int i = i++ + i;
 printf("%d\n", i);
}
```

Answer:(Compile time error)

47. What will be the output of the following C code?

```
#include <stdio.h>
 voidmain()  {
      int i = 0;
      int x = i++, y = ++i;
 printf("%d % d\n", x, y);
}
```

Answer: 0 2

48. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 10;
   int *p = &i;
 printf("%d\n", *p++);
}
```

Answer: 10

49. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 4, y, z;
   y = --x;
   z = x--;
 printf("%d%d%d", x,  y, z);
}
```

Answer: 2 3 3

50. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 4;
   int *p = &x;
   int *k = p++;
   int r = p - k;
 printf("%d", r);
}
```

Answer: 1

51. What will be the output of the following C code?

```
#include <stdio.h>
  void main()  {
     int a = 5, b = -7, c = 0, d;
     d = ++a && ++b || ++c;
   printf("\n%d %d %d %d", a,  b, c,
d);
  }
```

Answer: 6 -6 0 1

52. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = -5;
   int k = (a++, ++a);
 printf("%d\n", k);
}
```

Answer: -3

53. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int c = 2 ^ 3;
 printf("%d\n", c);
}
```

Answer: 1

54. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   unsigned int a = 10;
   a = ~a;
 printf("%d\n", a);
}
```

Answer: -11

55. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   if (7 & 8)
 printf("Honesty");
        if ((~7 & 0x000f) == 8)
 printf("is the best policy\n");
}
```

Answer: is the best policy

56. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 2;
   if (a >> 1)
 printf("%d\n", a);
}
```

Answer: 2

57. Comment on the output of the following C code.

```
#include<stdio.h>
int main()  {
   int i, n, a = 4;
 scanf("%d", &n);
   for (i = 0; i< n; i++)
      a = a * 2;
}
```

Answer: No output

58. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 97;
   int y = sizeof(x++);
 printf("x is %d", x);
}
```

Answer: x is 97

59. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
```

```
    int x = 2;
    x = x << 1;
    printf("%d\n", x);
  }
```

Answer: 4

60. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = -2;
   x = x >> 1;
  printf("%d\n", x);
 }
```

Answer: -1

61. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   if (~0 == 1)
  printf("yes\n");
       else
  printf("no\n");
 }
```

Answer: no

62. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = -2;
   if (!0 == 1)
  printf("yes\n");
       else
  printf("no\n");
 }
```

Answer: yes

63. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int y = 0;
   if (1 |(y = 1))
  printf("y is %d\n", y);
       else
  printf("%d\n", y);

 }
```

Answer: y is 1

64. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int y = 1;
   if (y & (y = 2))
  printf("true %d\n", y);
       else
  printf("false %d\n", y);

 }
```

Answer: true 2

65. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 0;
   if (x = 0)
     printf("Its zero\n");
          else
     printf("Its not zero\n");
 }
```

Answer: Its not zero

66. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 8;
   int x = 0 == 1 && k++;
    printf("%d%d\n", x, k);
```

```
}
```
Answer: 0 8

67. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   char a = 'a';
   int x = (a % 10)++;
   printf("%d\n", x);
}
```
Answer: Compile time error

68. What will be the output of the following C code snippet?

```
#include <stdio.h>
void main()  {
   1 <2 ? return 1: return 2;
}
```
Answer: Compile time error

69. What will be the output of the following C code snippet?

```
#include <stdio.h>
void main()  {
   unsigned int x = -5;
 printf("%d", x);
}
```
Answer: -5

70. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 2, y = 1;
   x *= x + y;
 printf("%d\n", x);
   return 0;
}
```
Answer: 6

71. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 2, y = 2;
   x /= x / y;
    printf("%d\n", x);
   return 0;
}
```
Answer: 2

72. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 1, y = 0;
   x &&= y;
   printf("%d\n", x);
}
```
Answer: Compile time error

73. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 1, b = 2;
   a += b -= a;
 printf("%d %d", a, b);
}
```
Answer: 2 1

74. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 2, y = 0;
   int z = (y++) ? y == 1 && x : 0;
   printf("%d\n", z);
   return 0;
}
```
Answer: 0

75. What will be the output of the following C code?

```
#include <stdio.h>
```

```
int main()  {
   int x = 1;
   int y =  x == 1 ? getchar(): 2;
    printf("%d\n", y);
}
```

Answer: prints ASCII value of character getchar function returns (ASCII value of the input)

76. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 1;
   short int i = 2;
   float f = 3;
   if (sizeof((x == 2) ? f : i) ==
sizeof(float))
      printf("float\n");
          else if (sizeof((x == 2) ? f : i)
== sizeof(short int))
      printf("short int\n");
}
```

Answer: float

77. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
 int a = 2;
 int b = 0;
 int y = (b == 0) ? a :(a > b) ? (b = 1): a;
      printf("%d\n", y);
}
```

Answer: 2

78. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int y = 1, x = 0;
   int l = (y++, x++) ? y : x;
 printf("%d\n", l);
}
```

Answer: 1

79. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 8;
   int m = 7;
   int z = k <m ? k++ : m++;
    printf("%d", z);
}
```

Answer: 7

80. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 8;
   int m = 7;
   int z = k <m ? k = m : m++;
   printf("%d", z);
}
```

Answer: 7

81. What will be the output of the following C code?

```
#include <stdio.h>
void main()
 {
    int k = 8;
    int m = 7;
    k <m ? k++ : m = k;
    printf("%d", k);
}
```

Answer: Compile time error

82. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 8;
   int m = 7;
```

```
    k <m ? k = k + 1 : m = m + 1;
   printf("%d", k);
  }
```

Answer: Compile time error

83. What will be the output of the following C function?

```
  #include <stdio.h>
  int main()  {
reverse(1);
  }
  void reverse(int i)  {
    if (i> 5)
exit(0);
   printf("%d\n", i);
    return reverse(i++);
  }
```

Answer: Stack overflow (loop runs infinitely)

84. What will be the output of the following C function?

```
  #include <stdio.h>
  void reverse(int i);
  int main()  {
reverse(1);
  }
  void reverse(int i)  {
    if (i> 5)
return ;
     printf("%d ", i);
    return reverse((i++, i));
  }
```

Answer: 1 2 3 4 5

85. What will be the output of the following C code?

```
  #include <stdio.h>
voidmain()  {
    int x = 2, y = 0;
    int z = y && (y |= 10);
   printf("%d\n", z);
  }
```

Answer: 0

86. What will be the output of the following C code?

```
  #include <stdio.h>
voidmain()  {
    int x = 2, y = 0;
    int z = (y++) ?2 : y == 1 && x;
     printf("%d\n", z);  }
```

Answer: 1

87. What will be the output of the following C code?

```
  #include <stdio.h>
   voidmain()  {
    int x = 2, y = 0;
    int z;
    z = (y++, y);
     printf("%d\n", z);  }
```

Answer: 1

88. What will be the output of the following C code?

```
  #include <stdio.h>
   voidmain()  {
    int x = 2, y = 0, l;
    int z;
    z = y = 1, l = x && y;
     printf("%d\n", l);  }
```

Answer: 1

89. What will be the output of the following C code?

```
  #include <stdio.h>
    voidmain()  {
    int y = 2;
    int z = y +(y = 10);
     printf("%d\n", z);
  }
```

Answer: 20

90. What will be the output of the following C code?

```
#include <stdio.h>
voidmain()  {
  int x = 2, y = 2;
  float f = y + x /= x / y;
 printf("%d %f\n", x, f);
}
```

Answer: Compile time error

91. What will be the output of the following C code?

```
#include <stdio.h>
voidmain()  {
      int x = 1, y = 2;
      if (x && y == 1)
printf("true\n");
      else
printf("false\n");
}
```

Answer: false

92. What will be the output of the following C code?

```
#include <stdio.h>
 voidmain()  {
       int x = 1, y = 2;
       int z = x & y == 2;
  printf("%d\n", z);
}
```

Answer: 1

93. What will be the output of the following C code?

```
#include <stdio.h>
      int main()  {
         int x = 3, y = 2;
         int z = x /= y %= 2;
   printf("%d\n", z);
}
```

Answer: Floating point exception

94. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 3, y = 2;
   int z = x << 1 > 5;
   printf("%d\n", z);
}
```

Answer: 1

95. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 3; //, y = 2;
   const int *p = &x;
   *p++;
   printf("%d\n", *p);
}
```

Answer: Some garbage value

96. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 2, y = 2;
   int z = x ^ y & 1;
 printf("%d\n", z);
}
```

Answer: 2

97. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 2, y = 0;
   int z = x && y = 1;
   printf("%d\n", z);
}
```

Answer: Compile time error

98. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0, y = 2;
   if (!x&& y)
    printf("true\n");
   else
    printf("false\n");
}
```

Answer: True

99. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0, y = 2;
   int z = ~x & y;
    printf("%d\n", z);
}
```

Answer: 2

100. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = 5 * 3 + 2 - 4;
 printf("%d", a);
}
```

Answer: 13

101. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = 2 + 4 + 3 * 5 / 3 - 5;
 printf("%d", a);
}
```

Answer: 6

102. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = 5 * 3 % 6 - 8 + 3;
 printf("%d", a);  }
```

Answer: -2

103. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 6;
   int c = 7;
   int a = ++b + c--;
 printf("%d", a);
}
```

Answer: 14

104. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double b = 8;
   b++;
 printf("%lf", b);
}
```

Answer: 9.000000

105. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double b = 3 % 0 * 1 - 4 / 2;
 printf("%lf", b);
}
```

Answer: Floating point Exception

106. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double b = 5 % 3 & 4 + 5 * 6;
 printf("%lf", b);
}
```

Answer: 2.000000

107. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double b = 3 && 5 & 4 % 3;
 printf("%lf", b);
}
```

Answer: 1.000000

108. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double b = 5 & 3 && 4 || 5 | 6;
 printf("%lf", b);  }
```

Answer: 1.000000

109. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 0;
   double b = k++ + ++k + k--;
 printf("%d", k);
}
```

Answer: 1

110. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 - 4 + 2 * 5;
 printf("%d", b);
}
```

Answer: 11

111. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 & 4 & 6;
 printf("%d", b);
}
```

Answer: 4

112. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 & 4 | 6;
 printf("%d", b);
}
```

Answer: 6

113. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 + 7 * 4 - 9 * (3, 2);
 printf("%d", b);
}
```

Answer: 15

114. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int h = 8;
   int b = 4 * 6 + 3 * 4 <3 ?4 : 3;
 printf("%d\n", b);
}
```

Answer: 3

115. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int a = 2 + 3 - 4 + 8 -  5 % 4;
 printf("%d\n", a);
}
```

Answer: 8

116. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   char a = 'A';
   char b = 'B';
   int c = a + b % 3 - 3 * 2;
   printf("%d\n", c);
}
```

Answer: 59

117. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 - 4 + 2 * 5;
  printf("%d", b);
}
```

Answer: 11

118. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 & 4 & 6;
  printf("%d", b);
}
```

Answer: 4

119. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 & 4 | 6;
  printf("%d", b);
}
```

Answer: 6

120. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int b = 5 + 7 * 4 - 9 * (3, 2);
  printf("%d", b);
}
```

Answer: 15

121. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int h = 8;
   int b = (h++, h++);
  printf("%d%d\n", b, h);
}
```

Answer: 9 10

122. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int h = 8;
   int b = h++ + h++ + h++;
   printf("%d\n", h);
}
```

Answer: 11

123. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int h = 8;
   int b = 4 * 6 + 3 * 4 <3 ?4 : 3;
   printf("%d\n", b);
}
```

Answer: 3

124. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   char a = '0';
   char b = 'm';
   int c = a && b || '1';
```

```
        printf("%d\n", c);
    }
```

Answer: 1

125. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 3, i = 0;
   do {
      x = x++;
     i++;
         } while (i != 3);
     printf("%d\n", x);
}
```

Answer:3

126. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = -1, b = 4, c = 1, d;
   d = ++a && ++b || ++c;
    printf("%d, %d, %d, %d\n", a, b,
 c, d);
    return 0;
  }
```

Answer: 0, 4, 2, 1

127. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int p = 10, q = 20, r;
   if (r = p = 5 || q > 20)
    printf("%d", r);
         else
    printf("No Output\n");
  }
```

Answer: 1

128. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   float x = 0.1;
   if (x == 0.1)
    printf("Computer");
         else
    printf("Programming");
}
```

Answer:Programming

129. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   float x = 0.1;
    printf("%d, ", x);
    printf("%f", x);
}
```

Answer: Junk value, 0.100000

130. What will be the output of the following C code? (Initial values: x= 7, y = 8)

```
#include <stdio.h>
void main()  {
   float x;
   int y;
    printf("enter two numbers \n", x);
    scanf("%f %f", &x, &y);
    printf("%f, %d", x, y);  }
```

Answer: 7.000000(value of x), junk

131. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double x = 123828749.66;
   int y = x;
    printf("%d\n", y);
    printf("%lf\n", y);
```

}**Answer: 123828749, 0.000000**

132. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 97;
   char y = x;
    printf("%c\n", y);
}
```

Answer: a

133. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   unsigned int i = 23;
   signed char c = -23;
   if (i> c)
    printf("Yes\n");
        else if (i< c)
    printf("No\n");
}
```

Answer: No

134. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 23;
   char c = -23;
   if (i< c)
    printf("Yes\n");
        else
    printf("No\n");
}
```

Answer: No

135. What will be the output of the following C code considering the size of a short int is 2, char is 1 and int is 4 bytes?

```
#include <stdio.h>
 voidmain()  {
   short int i = 20;
   char c = 97;
    printf("%d, %d, %d\n", sizeof(i),
sizeof(c), sizeof(c + i));
  }
```

Answer: 2, 1, 4

136. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
    printf("C programming %s", "Class
by\n%s Sound", "WOW");
  }
```

Answer:

C programming Class by
%s Sound

137. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
 printf("foundation\rclass\n");
   return 0;
}
```

Answer: classation

138. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int x = 5;
   if (x < 1)
    printf("hello");
    if (x == 5)
    printf("hi");
    else
    printf("no");
}
```

Answer: hi

139. What will be the output of the following C code?

```
#include <stdio.h>
int x;
void main()  {
  if (x)
   printf("hi");
  else
   printf("how are you");
}
```

Answer: compile time error

140. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
  int x = 5;
  if (true);
   printf("hello");  }
```

Answer: It will throw an error

141. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
  int x = 0;
  if (x == 0)
   printf("hi");
   else
   printf("how are u");
   printf("hello");
}
```

Answer: hihello

142. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
  int x = 5;
  if (x < 1);
    printf("Hello");
  }
```

Answer: Hello

143. What will be the output of the following C code? (Assuming that we have entered the value 1 in the standard input)

```
#include <stdio.h>
void main()  {
  double ch;
   printf("enter a value between 1 to
 2:");
   scanf("%lf", &ch);
   switch (ch)     {
     case 1:        printf("1");
      break;
     case 2:        printf("2");
      break;
   }
}
```

Answer: Compile time error

144. What will be the output of the following C code? (Assuming that we have entered the value 1 in the standard input)

```
#include <stdio.h>
void main()  {
    char *ch;
    printf("enter a value between 1 to
 3:");
    scanf("%s", ch);
    switch (ch)     {
   case "1":  printf("1");
    break;
   case "2":  printf("2");
    break;
 }  }
```

Answer: Compile time error

145. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 1;
   if (x > 0)
     printf("inside if\n");
   else if (x > 0)
    printf("inside elseif\n");
      }
```

Answer: inside if

146. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0;
   if (x++)
     printf("true\n");
          else if (x == 1)
     printf("false\n");
     }
```

Answer: false

147. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0;
   if (x == 1)
      if (x == 0)
    printf("inside if\n");
           else
    printf("inside else if\n");
         else
    printf("inside else\n");
}
```

Answer: inside else

148. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0;
   if (x == 0)
  printf("true, ");
       else if (x = 10)
  printf("false, ");
  printf("%d\n", x);
}
```

Answer: true, 0

149. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 0;
   if (x == 1)
      if (x >= 0)
    printf("true\n");
           else
    printf("false\n");
}
```

Answer: Nothing will be printed

150. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 1;
   if (a--)
  printf("True");
          if (a++)
  printf("False");
}
```

Answer: True

151. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 1;
   if (a)
  printf("All is Well ");
```

```
        printf("I am Well\n");
            else
        printf("I am not a River\n");
       }
```

Answer: Compile time errors during compilation

152. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   if (printf("%d", printf("")))
    printf("We are Happy");
        else if (printf("1"))
    printf("We are Sad");
}
```

Answer: compile time error

153. What will be the output of the following C code? (Assuming that we have entered the value 1 in the standard input)

```
#include <stdio.h>
void main()  {
   double ch;
    printf("enter a value between 1 to 2:");
    scanf("%lf", &ch);
    switch (ch)     {
      case 1:  printf("1");
        break;
      case 2:  printf("2");
        break;
    }
}
```

Answer: Compile time error

154. What will be the output of the following C code? (Assuming that we have entered the value 1 in the standard input)

```
#include <stdio.h>
void main()  {
   char *ch;
    printf("enter a value between 1 to 3:");
    scanf("%s", ch);
   switch (ch)     {
     case "1":printf("1");
       break;
     case "2":  printf("2");
       break;
   }  }
```

Answer: Compile time error

155. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 1, b = 1;
   switch (a)     {
     case a*b: printf("yes ");
     case a-b:  printf("no\n");
       break;
   }
}
```

Answer: Compile time error

156. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int x = 97;
   switch (x)     {
     case 'a': printf("yes ");
       break;
     case 97: printf("no\n");
       break;
   }
}
```

Answer: Duplicate case value error

157. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   float f = 1;
   switch (f)     {
     case 1.0:  printf("yes\n");break;
     default:   printf("default\n");
   }
}
```

Answer: Compile time error

158. What will be the output of the following C code?

```
#include <stdio.h>
const int a = 1,  b = 2;
int main()  {
   int x = 1;
   switch (x)     {
     case a: printf("yes ");
     case b: printf("no\n");
       break;
   }
}
```

Answer: Compile time error

159. What will be the output of the following C code?

```
#include <stdio.h>
#define max(a) a
int main()  {
   int x = 1;
   switch (x)     {
     case max(2): printf("yes\n");
     case max(1): printf("no\n");
       break;
   }  }
```

Answer: no

160. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   switch (printf("Do"))     {
     case 1: printf("First\n");
       break;
     case 2: printf("Second\n");
       break;
     default: printf("Default\n");
       break;
   }  }
```

Answer: DoSecond

161. Comment on the output of the following C code.

```
#include <stdio.h>
int main()  {
   int a = 1;
   switch (a)
   case 1:  printf("%d", a);
   case 2:  printf("%d", a);
   case 3:printf("%d", a);
   default: printf("%d", a);
}
```

Answer: Compile time error, case label outside switch statement

162. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int a = 1;
   switch (a)     {
     case a: printf("Case A ");
     default: printf("Default");
   }
}
```

Answer: Compile time error

163. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 0;
   for (k)
    printf("Hello");
}
```

Answer: Compile time error

164. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int k = 0;
   for (k < 3; k++)
    printf("Hello");
}
```

Answer: Compile time error

165. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double k = 0;
   for (k = 0.0; k < 3.0; k++)
    printf("Hello");
}
```

Answer: HelloHelloHello

166. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   double k = 0;
   for (k = 0.0; k < 3.0; k++);
      printf("%lf", k);
}
```

Answer: 3.000000

167. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
    for (int k = -3; k < -5; k++)
          printf("Hello");
}
```

Answer: Nothing will be printed

168. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0;
   for (; ; ;)
     printf("In for loop\n");
     printf("After loop\n");
}
```

Answer: Compile time error

169. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0;
   for (i++; i == 1; i = 2)
    printf("In for loop ");
    printf("After loop\n");
}
```

Answer: In for loop After loop

170. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0;
   for (foo(); i == 1; i = 2)
  printf("In for loop\n");
  printf("After loop\n");
}
int foo()  {
   return 1;
}
```

Answer: After loop

171. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   int *p = NULL;
   for (foo(); p; p = 0)
       printf("In for loop\n");
   printf("After loop\n");
```

}**Answer: Compile time error**

172. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   for (int i = 0;i< 1; i++)
      printf("In for loop\n");
}
```

Answer: In for loop

173. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   while ()
     printf("In while loop ");
     printf("After loop\n");
}
```

Answer: Compile time error

174. What will be the output of the following C code?

```
#include <stdio.h>
int main()  {
   do
     printf("In while loop ");
      while (0);
     printf("After loop\n");
}
```

Answer:In while loop After loop

175. What will be the output of the following C code?

```
   #include <stdio.h>
   int main()  {
      int i = 0;
      do {
    i++;
    printf("In while loop\n");
      } while (i< 3);
   }
```

Answer:

In while loop
In while loop
In while loop

176. How many times i value is checked in the following C code?

```
#include <stdio.h>
int main()  {
   int i = 0;
   while (i< 3)
     i++;
     printf("In while loop\n");
}
```

Answer: In while loop

177. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int i = 2;
   do     {
    printf("Hi");
   } while (i< 2)
}
```

Answer: Compile time error

178. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int i = 0;
   while (++i)
      {
      printf("H");
      }
}
```

Answer: H is printed infinite times

179. What will be the output of the following C code?

```
#include <stdio.h>
void main()  {
   int i = 0;
```

```
    do      {
      printf("Hello");
    } while (i != 0);
  }
```

Answer: Hello

180. What will be the output of the following C code?

```
#include <stdio.h>
void main()   {
   char *str = "";
   do      {
      printf("hello");
   } while (str);
}
```

Answer: Hello is printed infinite times

181. What will be the output of the following C code?

```
#include <stdio.h>
void main(){
  int i = 0;
  while (i< 10)   {
   i++;
   printf("hi\n");
     while (i< 8)
{
         i++;
         printf("hello\n");
     }
 }
}
```

Answer: Hi is printed once, hello 7 times and then hi 2 times

182. What will be the output of the following C code?

```
#include <stdio.h>
int main()   {
   int i = 0;
   while (i = 0)
    printf("True\n");
    printf("False\n");
  }
```

Answer: False

183. What will be the output of the following C code?

```
#include <stdio.h>
int main()   {
   int i = 0, j = 0;
   while (i< 5, j < 10)
   {
      i++;
      j++;
   }
    printf("%d, %d\n", i, j);
}
```

Answer: 10, 10

184. What will be the output of the following C code on a 64 bit machine?

```
#include <stdio.h>
union Sti   {
   int nu;
   char m;
};
int main()   {
   union Sti s;
   printf("%d", sizeof(s));
   return 0;
}
```

Answer: 4

185. What will be the output of the following C code?

```
#include <stdio.h>
#include <string.h>
int main()   {
   char *str = "x";
   char c = 'x';
   char ary[1];
   ary[0] = c;
```

```
        printf("%d %d", strlen(str),
    strlen(ary));
        return 0;
      }
```

Answer: 1 5(any undefined value)

186.
```
#include <stdio.h>
void main(){
int const *p=5;
printf("%d",++(*p));
}
```

Answer:Compilererror.Cannot modify constant

187.
```
main(){
char s[]=”man”;
int i;
for(i=0;s[i];i++)
printf(“\n%c%c%c%c”,s[i],*(s+i),*(i+s
),i[s]);
}
```

Answer:
mmmm
aaaa
nnnn

188.
```
main(){
float me=1.1;
double you=1.1;
if(me==you)
printf(“I LOVE YOU”);
else
printf(“I HATE YOU”);
}
```

Answer: I HATE YOU

189.
```
main(){
static int var=5;
printf(“%d”,var--);
if(var)
main();
}
```

Answer: 54321

190.
```
main(){
int c[]={2,8,3,4,4,6,7,5};
int j,*p=c,*q=c;
for(j=0;j<5;j++){
printf(“%d”,*c);
++q;
}
for(j=0;j<5;j++){
printf(“%d”,*p);
++p;
}
}
```

Answer: 2222228344

191.
```
main(){
extern int i;
i=20;
printf(“%d”,i);
}
```

Answer:Linkererror.Undefined symbol “_i”

192.
```
main(){
int i=-1,j=-1,k=0,l=2,m;
m=i++&&j++&&k++||l++;
printf(“%d%d%d%d%d”,i,j,k,l,m);
}
```

Answer:00131

193.
```
main(){
char *p;
printf(“%d%d”,sizeof(*p),sizeof(p));
}
```

Answer: 1 8

194.
```
main(){
int i=3;
switch(i){
default:printf(“zero”);
case 1:printf(“one”); break;
```

case 2 :printf(“two”); break;
case 3:printf(“three”); break;
}}
Answer: three

195. main(){
printf(“%x”,-1<<4);
}
Answer:fffffff0

196. main(){
char string[]=”Hello World”;
display(string);
}
void display(char *string){
printf(“%s”,string);
}
Answer: Hello World(with warning)

197. main(){
int c= -2;
printf(“c=%d”,c);
}
Answer:c=-2

198. #include <stdio.h>
#define int char
int main(){
int i=65;
printf("sizeof(i)=%d",sizeof(i));
}**Answer:sizeof(i)=1**

199. void main(){
int i=10;
i=!i>14;
printf(“i=%d”,i);
}
Answer:i=0

200. #include <stdio.h>
int main(){
char s[]={'a','b','c','\n','c','\0'};
char *p,*str,*str1;
p=&s[3];
str=p;
str1=s;
printf("%d",++*p+ ++*str1-32);
}
Answer: 77

201. #include<stdio.h>
void main(){
int a[2][2][2]={{10,2,3,4},{5,6,7,8}};
int *p,*q;
p=&a[2][2][2];
*q=***a;
printf(“%d-----%d”,*p,*q);
}
Answer:Some garbage value-----1

202. #include<stdio.h>
void main(){
struct xx{
int x=3;
char name[]=”hello”;
};
struct xx *s;
printf(“%d”,s→x);
printf(“%s”,s→name);
}
Answer:Compilererror.Cannot initialize variable during declaration

203. #include<stdio.h>
main(){
struct xx{
int x;
struct yy{
char s;
struct xx *p;
}
struct yy *q;
};

}

Answer:Compiler Error

204. main(){
int i=5;
printf("%d%d%d%d%d%d",i++,i--
,++i,--i,i);
}

Answer:45545

205. main(){
printf("\nab);
printf("\bsi");
printf("\rha");
}

Answer:Hai

Explanation: \n-newline\b-backspace
\r-linefeed

206. #include <stdio.h>
#define square(x) x*x
void main(){
int i;
i=64;//square(4);
printf("%d",i);
}

Answer:64

207. #include<stdio.h>
#define a 10
void main(){
#define a 50
printf("%d",a);
}

Answer:50

208. #include<stdio.h>
#define clrscr() 100
int main(){
clrscr();
printf("%d\n",clrscr());
}

Answer:100

209. #include<stdio.h>
int main(){
printf("%p",main);
}

Answer:Some address will be printed

210. #include<stdio.h>
int main(){
clrscr();
}
clrscr();

Answer:compile time error

211. #include<stdio.h>
enumcolors{BLACK,BLUE,GREEN};
int main(){
printf("%d..%d..%d",BLACK,BLUE,GRE
EN);
return(1);
}

Answer:0..1..2

212. #include<stdio.h>
void main(){
char *farther,*farthest;
printf("%d..%d",sizeof(farther),sizeof(f
arthest));
}

Answer:8..8

213. #include<stdio.h>
void main(){
int i=400,j=300;
printf("%d..%d");
}

Answer:(garbage value)..(garbage value)

214. #include<stdio.h>
```
void main(){
char *p;
p="Hello";
printf("%c\n",*&*p);
}
```
Answer:H

215. #include<stdio.h>
```
void main(){
        int i=1;
        while(i<=5)        {
printf("%d",i);
         if(i>2)
goto here;
i++;
     }     }
fun()     {
   here:
          print("PP");
}
```
Answer:Compilererror:Undefined label 'here' in function main

216. #include<stdio.h>
```
void main(){
static char
names[50][20]={"pascal","ada","cobol"
,"fortran","perl"};
int i;
char *t;
t=names[3];
names[3]=names[4];
names[4]=t;
for(i=0;i<=4;i++)
printf("%s",names[i]);
}
```
Answer:Compile time error

217. #include<stdio.h>
```
void main(){
        int i=5;
printf("%d",i+++++i);
   }
```
Answer:output cannot be predicted exactly

218.
```
void main()  {
        int i=5;
        print("%d",i++++i);  }
```
Answer:compiler error

219. #include <stdio.h>
```
void main(){
int i=1,j=2;
switch(i){
case  1:printf("GOOD");
       break;
case j:pirntf("BAD");
        break;
}}
```
Answer:compilererror:constant expression required in function main.

220. #include <stdio.h>
```
void main(){
   int i;
printf("%d",scanf("%d",&i));
}
```
Answer:1

221. #include <stdio.h>
```
#define f(g,g2) g##g2
void main(){
int var12=100;
printf("%d",f(var,12));
}
```
Answer:100

222. #include <stdio.h>
```
void main(){
int i=0;
for(;i++;printf("%d",i));
printf("%d",i);
```

}

Answer:1

223. #include <stdio.h>

```
int main(){
 struct xx{
    int x=3;
    char name[]="hello";
};
struct xx *s=malloc(sizeof(struct xx));
printf("%d",s->x);
printf("%s",s->name);
}
```

Answer:Compiler error

224. #include <stdio.h>

```
int main(){
extern int I;
i=20;
printf("%d",sizeof(i));
}
```

Answer:Error:undefined symbol '_i'.

225. #include <stdio.h>

```
int main(){
printf("%d",out);
}
int out=100;
```

Answer:Compiler error:undefined symbol out in function main.

226. #include <stdio.h>

```
int main(){
 extern out;
printf("%d",out);
}
int out=100;
```

Answer:100

227. #include <stdio.h>

```
int main(){
    int
a[2][3][2]={{{2,4},{7.8},{3,4}},{{2,2},{2,3},{3,4
}}};
    printf("%u %u %u
%d\n",a,*a,**a,***a);
    printf("%u %u %u
%d\n",a+1,*a+1,**a+1,***a+1);
    }
```

Answer:2763184288 2763184288 2763184288 2

2763184312 2763184296 2763184292 3

228. #include <stdio.h>

```
int main(){
static int a[]={0,1,2,3,4};
int *p[]={a,a+1,a+2,a+3,a+4};
int **ptr=p;
ptr++;
printf("\n %d %d %d",ptr-p,*ptr-
a,**ptr);
*ptr++;
printf("\n %d %d %d",ptr-p,*ptr-
a,**ptr);
*++ptr;
printf("\n %d %d %d",ptr-p,*ptr-
a,**ptr);
++*ptr;
printf("\n %d %d %d",ptr-p,*ptr-
a,**ptr);
}
```

Answer:

111
222
333
444

229. #include <stdio.h>

```
void main(){
void *vp;
char ch='g',*cp="goofy";
int j=20;
```

```
vp=&ch;
printf("%c",*(char *)vp);
vp=&j;
printf("%d",*(int *)vp);
vp=cp;
printf("%s",(char *)vp+3);
}
```
Answer:g20fy

230.
```
#include <stdio.h>
void main(){
static char
*s[]={"black","white","yellow","violet"}
;
char **ptr[]={s+3,s+2,s+1,s},***p;
p=ptr;
**++p;
printf("%s",*--*++p+3);
}
```
Answer:ck

231.
```
#include<stdio.h>
void main(){
int i=-1;
+i;
printf("i=%d,+i=%d\n",i,+i);
}
```
Answer:i=-1,+i=-1

232.
```
#include<stdio.h>
void main(){
char name[10],s[12];
scanf("\"%[^\"]",s);
}
```
How scanf will execute?

Answer:First it checks for leading white space and discards it.Then it matches with quotation mark and then it reads all character upto another quotation mark.

233.
```
main(){
main();
}
```
Answer:Runtime error:Stack overflow

234.
```
#include<stdio.h>
void main(){
char *cptr,c;
void *vptr,v;
c=10;
v=0;
cptr=&c;
vptr=&v;
printf("%c %v",c,v);}
```
Answer:Compiler error size of v is unknown

235.
```
#include<stdio.h>
void main(){
char *str1="abcd";
char str2[]="abcd";
printf("%d %d
%d",sizeof(str1),sizeof(str2),sizeof("ab
cd"));
```
}**Answer: 8 5 5**

236.
```
#include<stdio.h>
void main(){
char not;
not=!2;
printf("%d",not);
}
```
Answer:0

237.
```
#define FALSE -1
#define TRUE 1
#define NULL 0
void main(){
if(NULL)
puts("NULL");
else if(FALSE)
puts("TRUE");
```

```
else
puts("FALSE");
}
```
Answer:TRUE

238.
```
#include<stdio.h>
void main(){
int k=1;
printf("%d==1 is
%s",k,k==1?"TRUE":"FALSE");
}
```
Answer:1==1 is TRUE

239.
```
#include<stdio.h>
void main(){
int y;
scanf("%d",&y);
if((y%4==0 &&
y%100!=0)||y%100==0)
printf("%d is a leap year",y);
else
printf("%d is not leap year",y);}
```
Answer:2000 is a leap year

240.
```
#include<stdio.h>
int i=10;
void main(){
extern int i;
{
int i=20;
{
const volatile unsigned i=30;
printf("%d,",i);
}
printf("%d,",i);
}
printf("%d",i);}
```
Answer: 30,20,10

241.
```
#include<stdio.h>
void main(){
int *j;
{
int i=10;
j=&i;
}
printf("%d",*j);
}
```
Answer:10

242.
```
#include<stdio.h>
void main(){
int i=-1;
-i;
printf("i=%d,-i=%d\n",i,-i);
}
```
Answer:i=-1,-i=1

243.
```
#include<stdio.h>
void main(){
const int i=4;
float j;
j=++i;
printf("%d %f",i,++j);
}
```
Answer:Compiler error

244.
```
#include <stdio.h>
void main(){
register i=5;
char j[]="hello";
printf("%s %d",j,i);
}
```
Answer:hello 5

245.
```
#include <stdio.h>
void main(){
int i=5,j=6,z;
printf("%d",i+++j);
}
```
Answer:11

246.
```
#include <stdio.h>
void main(){
```

```
static int i,j,k;
i++;j++;k++;
printf("i=%d j=%d k=%d",i,j,k);
}
```
Answer: i=1 j=1 k=1

247.
```
#include <stdio.h>
void main(){
while(1){
if(printf("%d",printf("%d")))
break;
else
continue;
}}
```
Answer:Garbage value

248.
```
#include <stdio.h>
void main(){
unsigned int i=10;
while(i-- >=0)
printf("%u",i);
}
```
Answer:10 9 8 7 6 5 4 3 2 1 0 65535 65534…….(infinitely runs)

249.
```
#include <stdio.h>
void main(){
int x,y= 2,z,a;
if(x=y%2)z=2;
a=2;
printf("%d%d",z,x);
}
```
Answer: **Garbage value**

250.
```
#include <stdio.h>
void main(){
int a[10];
printf("%d",*a+1-*a+3);
}
```
Answer:4

251.
```
#include <stdio.h>
#define prod(a,b) a*b
void main(){
int x=3,y=4;
printf("%d",prod(x+2,y-1));
}
```
Answer: **10**

252.
```
#include <stdio.h>
void main(){
unsigned int i=65000;
while(i++!=0);
printf("%d",i);
}
```
Answer:1

253.
```
#include <stdio.h>
void main(){
int i=0;
while(+(+i--)!=0)
i-=i++;
printf("%d",i);
}
```
Answer:-1

254. What is the output of the program given below?
```
#include <stdio.h>
void main(){
signed char i=0;
for(;i>=0;i++);
printf("%d\n",i);
}
```
Answer:-128

255.
```
#include <stdio.h>
void main(){
unsigned char i=0;
for(;i>=0;i++);
printf("%d\n",i);
}
```
Answer: Infinite loop

256. #include <stdio.h>
```
void main(){
char i=0;
for(;i>=0;i++);
printf("%d\n",i);
}
```
Answer: -128

257. #include <stdio.h>
```
#ifdef something
int some=0;
#endif
void main(){
int thing =0;
printf("%d %d\n",some,thing);
}
```
Answer: Compiler error

258. #include <stdio.h>
```
#if something == 0
int some=0;
#endif
void main(){
int thing=0;
printf("%d %d\n",some,thing);
}
```
Answer: 0 0

259. What is the output for the following program?
```
#include <stdio.h>
void main(){
int arr2D[3][3];
printf("%d\n",((arr2D==*arr2D)&&(*a
rr2D==arr2D[0])));
}
```
Answer: 1

260. #include<stdio.h>
```
void main(){
if(~0==(unsigned int)-1)
printf("You can answer this if you know how values are represented in memory");
}
```
Answer: You can answer this if you know how values are represented in memory

261. #include <stdio.h>
```
int swap(int *a,int *b){
*a=*a+*b;*b=*a-*b;*a=*a-*b;
}
void main(){
int x=10,y=20;
swap(&x,&y);
printf("x=%d y=%d\n",x,y);
}
```
Answer: x=20 y=10

262. #include <stdio.h>
```
void main(){
int i=5;
printf("%d",++i++);
}
```
Answer: Compiler error

263. #include <stdio.h>
```
int aaa() {printf("Hi");}
int bbb() {printf("hello");}
int ccc() {printf("bye");}
void main(){
int (* ptr[3]) ();
ptr[0] = aaa;
ptr[1] = bbb;
ptr[2] = ccc;
ptr[2]();
}
```
Answer: bye

264. #include <stdio.h>
```
void main(){
int i=5;
```

```
printf("%d",i=++i ==6);
}
```
Answer: 1

265.
```
#include <stdio.h>
void main(){
char p[]="%d\n";
p[1] = 'c';
printf(p,65);
}
```
Answer: A

266.
```
#include <stdio.h>
void main(){
while(strcmp("some","some\0"))
printf("strings are not equal\n");
}
```
Answer: No output

267.
```
#include <stdio.h>
void main(){
char str1[] = {'s','o','m','e'};
char str2[] = {'s','o','m','e','\0'};
while(strcmp(str1,str2))
printf("strings are not equal\n");
}
```
Answer: "strings are not equal" (prints as infinitely)

268.
```
#include <stdio.h>
void main(){
int i = 3;
for(;i++=0;) printf("%d",i);
}
```
Answer: Compiler error: Left operand value required

269.
```
#include <stdio.h>
void main(){
int i=10,j=20;
j=i,j?(i,j)?i:j:j;
printf("%d %d",i,j);
}
```
Answer: 10 10

270.
```
#include <stdio.h>
void main(){
int i=5,j=10;
i=i&=j&&10;
printf("%d %d",i,j);
}
```
Answer: 1 10

271.
```
#include <stdio.h>
void main(){
int i=4,j=7;
j=j || i++ &&printf("YOU CAN");
printf("%d %d",i,j);
}
```
Answer: 4 1

272.
```
#include <stdio.h>
void main(){
register int a=2;
printf("Address of a=%d",&a);
printf("Value of a = %d",a);
}
```
Answer:
Compiler error. '&' on register variable

273.
```
#include <stdio.h>
void main(){
float i=1.5;
switch(i){
case 1: printf("1");
case 2: printf("2");
default:printf("0");
}}
```
Answer: Compiler error.switch quantity not an integer

274.
```
#include <stdio.h>
void main(){
extern i;
```

```
printf("%d\n",i);
{
int i=20;
printf("%d\n",i);
}}
```

Answer: Linked error.unresolved external symbol i

275.
```
#include <stdio.h>
void main(){
int a=2,*f1,*f2;
f1=f2=&a;
*f2+=*f2+=a+=2.5;
printf("\n%d %d %d",a,*f1,*f2);
}
```

Answer: 16 16 16

276.
```
#include <stdio.h>
void main(){
char *p="GOOD";
char a[]="GOOD";
printf("\n
sizeof(p)=%d,sizeof(*p)=%d,strlen(p)=
%d",sizeof(p),sizeof(*p),strlen(p));
printf("\n
sizeof(a)=%d,strlen(a)=%d",sizeof(a),st
rlen(a));
}
```

Answer:
sizeof(p)=8,sizeof(*p)=1,strlen(p)=4
sizeof(a)=5,strlen(a)=4

277.
```
#include <stdio.h>
#define DIM(array,type)
sizeof(array)/sizeof(type)
void main(){
int arr[10];
printf("The dimension of the array is
%d",DIM(arr,int));
}
```

Answer: The dimension of the array is 10

278.
```
#include <stdio.h>
int DIM(int array[]){
return sizeof(array)/sizeof(int);
}
void main(){
int arr[10];
printf("The dimension of the array is
%d",DIM(arr));
}
```

Answer: The dimension of the array is 2

279.
```
#include <stdio.h>
void main(){
void swap();
int x=10,y=8;
swap(&x,&y);
printf("x=%d y=%d",x,y);
}
void swap(int *a,int *b){
*a^=*b,*b^=*a,*a^=*b;
}
```

Answer: x=8 y=10

280.
```
#include <stdio.h>
void main(){
int i=257;
int *iptr=&i;
printf("%d
%d",*((char*)iptr),*((char*)iptr+1));
}
```

Answer: 1 1

281.
```
#include <stdio.h>
void main(){
int i=258;
int *iptr=&i;
printf("%d
%d",*((char*)iptr),*((char*)iptr+1));
}
```

Answer: 2 1

282. #include <stdio.h>
void main(){
int i=300;
char *ptr=&i;
*++ptr=2;
printf("%d",i);}
Answer: 556

283. What is the subtle error in the following code segment?
void fun(int n,intarr[]){
int *p=0;
int i=0;
while(i++<n)
p=&arr[i];
*p=0;
}**Answer: Null pointer error**

284. Is the following code legal?
struct a{
int x;
struct a b;
} **Answer: No**

285. Is the following code legal?
struct a{
int x;
struct a *b;
}
Answer: Yes

286. Is the following code legal?
typedef struct a{
int x;
aType *b;
}aType
Answer: No

287. Is the following code legal?
typedef struct aaType;
struct a{
int x;
aType *b;
};
Answer: Yes

288. Is the following code legal?
void main(){
typedef struct aaType;
atypesomeVariable;
struct a
{
int x;
aType *b;
}
};
Answer: No

289. Is this legal?
int *ptr;
ptr=(int *)0x400;
Answer: Yes.

290. #include <stdio.h>
void main(){
char a[4]="HELLO";
printf("%s",a);
}
Answer: HELL

291. #include <stdio.h>
void main(){
char a[4]="HELL";
printf("%s",a);}
Answer:HELL

292. #include <stdio.h>
void main(){
int i=0,j=0;
if(i&&j++)
printf("%d..%d",i++,j);
printf("%d..%d",i,j);
}

Answer: 0..0

Explanation:The value of I is 0. Since this information is enough to determine the truth value of the Boolean expression. So the statement following the if statement is not executed. The values if I and j remain unchanged and get printed.

293. #include <stdio.h>

```
int i;
void main(){
int t;
for(t=4;scanf("%d",&i)-
t;printf("%d\n",i))
printf("%d- -",t--);}
```

//If inputs are 0,1,2,3 find o/p

Answer: 4- -0

3- -1

2- -2

Explanation: Let us aasume some x = scanf("%d",&i)-t the values during execution will be,

t	i	x
4	0	-4
3	1	-2
2	2	0

294. In the following pgm add a stmt in function fun such that the address of 'a' gets stored in 'j'

```
main(){
int *j;
void fun(int **);
fun(&j);
}
void fun(int **k)
{
int a=0;
/*add stmt here*/
}
```

Answer: *k = &a

Explanation: The argument of the function is a pointer to a pointer.

295. #include <stdio.h>

```
void main(){
static int i=5;
if(--i){
main();
printf("%d",i);
}}
```

Answer: 0000

Explanation: The variable "I" is declared as static, hence memory for I will be allocated for as it encounters the statement. The function main() will be called recursively unless I equal to 0, and since main() is recursively called, so the value of static I i.e, 0 will be printed every time the control is returned

296. #include <stdio.h>

```
void main(){
int k=ret(sizeof(float));
printf("\n here value is %d",++k);
}
int ret (int ret){
ret+=2.5;
return (ret);
}
```

Answer: here value is 7

Explanation: The int(int ret), ie., the function name and the argument name can be the same. Firstly, the function ret() is called in which the sizeof(float) ie., 4 is passed, after the first expression the value in ret will be 6, as ret is integer hence the value stored in ret will have implicit type conversion from float to int. The ret is returned in main() it is printed after pre-increment

297. #include <stdio.h>
void main(){
char a[]="12345\0";
int i=strlen(a);
printf("here in 3 %d\n",++i);
}
Answer: here in 3 6
Explanation: The char array 'a' will hold the initialized string, whose length will be counted from 0 till the character. Hence the 'I' will hold the value equal to 5, after the pre-increment in the print statement, the 6 will be printed.

298. #include <stdio.h>
void main(){
unsigned giveit=-1;
int gotit;
printf("%u",++giveit);
printf(" %u \n",gotit= --giveit);
}
Answer: 0 4294967295

299. #include <stdio.h>
void main(){
int i;
char a[]="\0";
if(printf("%s\n",a))
printf("Ok here \n");
else
printf("Forget it \n");
}
Answer: Ok here
Explanation: printf will return how many characters does it print. Hence printing a null character returns which makes the if statement true, thus "Ok here" is printed

300. #include <stdio.h>
void main(){
void*v;
int integer=2;
int *i=&integer;
v=i;
printf("%d",(int*)*v);
}**Answer: Compiler Error.We cannot apply indirection on type void***

INTERVIEW SPECIFIC C PROGRAMMING MCQs

Predict the output or errors for the following:

1.void main()
{
int const *p=5;
printf("%d",++(*p));
}
Ans:Compiler error.Cannot modify constant

2.main()
{
char s[]="man";
int i;
for(i=0;s[i];i++)
printf("\n%c%c%c%c",s[i],*(s+i),*(i+s),i[s]);
}
Ans:
mmmmm
aaaa
nnnn

3.main()
{
float me=1.1;
double you=1.1;
if(me==you)
printf("I LOVE YOU");
else
printf("I HATE YOU");
}
Ans: I HATE YOU

4.main()

```
{
static int var=5;
printf("%d",var--);
if(var)
main();
}
```
Ans: 54321

```
5.main()
{
int c[]={2,8,3,4,4,6,7,5};
int j,*p=c,*q=c;
for(j=0;j<5;j++)
{
printf("%d",*c);
++q;
}
for(j=0;j<5;j++)
{
printf("%d",*p);
++p;
}}
```
Ans: 2222223465

```
6.main()
{
extern int i;
i=20;
printf("%d",i);
}
```
Ans: Linker error.Undefined symbol "_i"

```
7.main()
{
int i=-1,j=-1,k=0,l=2,m;
m=i++&&j++&&k++||l++;
printf*"%d%d%d%d%d",i,j,k,l,m);
}
```
Ans:001310

```
8.main()
{
char *p;
printf("%d%d",sizeof(*p),sizeof(p));
}
```
Ans: 1 2

```
9.main()
{
int i=3;
switch(i)
{
default:printf("zero");
case 1:printf("one"); ;break;
case 2 :printf("two"); break;
case 3:printf("three"); break;
}
}
```
Ans: three

```
10.main()
{
printf("%x",-1<<4);
}
```
Ans:fff0

```
11.main()
{
char string[]="Hello World";
display(string);
}
void display(char *string)
{
printf("%s",string);
}
```
Ans:Compiler error.Type mismatch in re declaration of function display.

```
12.main()
{
int c= -2;
printf("c=%d",c);
}
```
Ans: c=-2

```
13.#define int char
main()
{
```

```
int i=65;
printf("sizeof(i)=%d",sizeof(i));
}
```
Ans:sizeof(i)=1

```
14.main()
{
int i=10;
i!i>14;
printf("i=%d",i);
}
```
Ans:i=0

```
15.#include
main()
{
char s[]={'a','b','c','\n','c','\0'};
char *p,*str,*str1;
p=&s[3];
str=p;
str1=s;
printf("%d",++*p+ ++*str1-32);
}
```
Ans:77

```
16.#include
main()
{
int a[2][2][2]={{10,2,3,4},{5,6,7,8}};
int *p,*q;
p=&a[2][2][2];
*q=***a;
printf("%d-----%d",*p,*q);
}
```
Ans:Some garbage value-----1

```
17.#include
main()
{
struct xx{
int x=3;
char name[]="hello";
};
struct xx *s;
printf("%d",s→x);
printf("%s",s→name);
}
```
Ans:Compiler error.Cannot initialize variable during declaration

```
18#include
main()
{
struct xx
{
int x;
struct yy
{
char s;
struct xx *p;
}
struct yy *q;
};
}
```
Ans:Compiler Error

```
19.main()
{
int i=5;
printf("%d%d%d%d%d%d",i++,i--,++i,--i,i);
}
```
Ans:45545

```
20.main()
{
printf("\nab);
printf("\bsi");
printf("\rha");
}
```
Ans:Hai
\n-newline
\b-backspace
\r=linefeed

```
21.#define square(x) x*x
main()
{
int i;
```

```
i=64//square(4);
printf("%d",i);
}
```
Ans:64

```
22.main()
{
char *p="hai friends",*p1;
p1=p;
while(*p!='\0')++*p++;
printf("%s %s",p,p1);
}
```
Ans:ibj!gsfoet

```
23.#include
#define a 10
main()
{
#define a 50
printf("%d",a);
}
```
Ans:50

```
24.#define clrscr()100
main()
{
clrscr();
printf("%d\n,clrscr());
}
```
Ans:100

```
25.main()
{
printf("%p",main);
}
```
Ans:Some address will be printed

```
26.main()
{
clrscr();
}
clrscr();
```
Ans:No output/error

```
27.enum colors{BLACK,BLUE,GREEN}
main()
{
printf("%d..%d..%d",BLACK,BLUE,GREEN);
return(1);
}
```
Ans:0..1..2

```
28.void main()
{
char far *farther,*farthest;
printf("%d..%d',sizeof(farther),sizeof(farthest
));
}
```
Ans:4..2

```
29.main()
{
int i=400,j=300;
printf("%d..%d);
}
```
Ans:
400..300

```
30.main()
{
char *p;
p="Hello";
printf("%c\n",*&*p);
}
```
Ans: H

```
31. main()
    {
      int i=1;
      while(i<=5)
      {
        printf("%d",i);
        if(i>2)
            goto here;
        i++;
      }
    }
    fun()
    {
   here:
```

```
        print("PP");
    }
```
Ans: Compiler error:Undefined label 'here' in function main

32.
```
main()
{
static char
names[50][20]={"pascal","ada","cobol","fortr
an","perl"};
  int i;
 char*t;
t=names[3];
names[3]=names[4];
names[4]=t;
for(i=0;i<=4;i++)
        printf("%s",names[i]);
}
```
Ans:Compiler error:L value required in funcition main

33.
```
voice main()
 {
          int i=5;
          printf("%d",i+++++i);
}
```
Ans:output cannot be predicted exactly

34.
```
void main()
  {
           int i=5;
           print("%d",i++++i);
  }
```
Ans:
compiler error

35.
```
#include
main()
{
int i=1,j=2;
switch(i)
{
case  1:printf{"GOOD");
        break;
case j:pirntf('BAD");
         break;
}
}
```
Ans:compiler error:constant expression required in function main.

36.
```
main()
   {
   int i;
   print("%,scanf("%d",&i);//value 10 is given
as input here
    }
```
Ans:1

37.
```
#define f(g.g2) g##g2
main()
{
int var12=100;
printf("%d",f(var,12));
      }
```
Ans:100

38.
```
main()
{
int i=0;
for(;i++;printf("%d",i));
printf("%d",i);
}
```
Ans:1

39.
```
#include
main()
{
char s[]={'a','b','c','\n','c','\0'};
char *p,*str,*strrl;
```

```
stp=&s[3];
str=p;
strl=s;
printf("%d",++*p+  ++*strl-32);
```
Ans:M

40.
```
#include
main()
{
struct xx
{            int x=3;
          char name[]="hello";
   };
 struct xx *s=malloc(sizeof(struct xx));
printf("%d",s->x);
printf("%s",s->name);
}
```
Ans:Compiler error

41.
```
#include
main()
{
struct xx
{
          int x;
          struct yy
           {
              char s;
               struct xx *p;
           };
                    struct yy*q;
};
}
```
Ans:Compiler error

42.
```
main()
{
extern int I;
i=20;
printf("%d",sizeof(i));
}
```
Ans:Linked error:undefined symbol '_i'.

43.
```
main()
   {
  print("%d",out);
   }
int out=100;
```
Ans:Compiler error:undefined symbol out in function main.

44.
```
main()
  {
    extern out;
     print("%d",out);
  }
     int out=100;
```
Ans:100

45.
```
main()
{
show();
}
voice show()
{
printf("I'm the greatest ");
}
```
Ans:Compiler error:type mismatch in redeclaration of show

46.
```
 main()
{
int
a[2][3][2]={{2,4},{7.8},(3,4)},{{2,2},{2,3},{3,4}
}};
printf("%u%u%u%d\n",a,*,a**a,***a);

printf("%u%u%u%d\n"a+1,*a+!,**a+1,***a+
1);
    }
```
Ans:
100,100,100,2

114,104,102,3

47.

```
main()
{
int a[ ]={10,20,30,40,50},j,*p;
for(j=0;j<5;j++)
    {
printf("%d",j++)
     {
printf("%d",*p);
p++;
     }
}
```

Ans:Compiler error:1 value required

48.

```
main()
{
static int a[]={0,1,2,3,4};
int *p[]={a,a+1,a+2,a+3,a+4};
int **ptr=p;
ptr++;
printf("\n %d %d %d",ptr-p,*ptr-a,**ptr);
*ptr++;
printf("\n %d %d %d",ptr-p,*ptr-a,**ptr);
*++ptr;
printf("\n %d %d %d",ptr-p,*ptr-a,**ptr);
++*ptr;
printf("\n %d %d %d",ptr-p,*ptr-a,**ptr);
}
```

Ans: 111
222
333
444

49.

```
main()
{
void *vp;
char ch='g',*cp="goofy";
int j=20;
vp=&ch;
printf("%c",*(char *)vp);
vp=&j;
printf("%d",*(int *)vp);
vp=cp;
printf("%s",(char *)vp+3);
}
```

Ans:g20fy

50.

```
main()
{
static char
*s[]={"black","white","yellow","violet"};
char **ptr[]={s+3,s+2,s+1,s},***p;
p=ptr;
**++p;
printf("%s",*--*++p+3);
}
```

Ans: ck

51.

```
main()
   {
   int i,n;
   char*x="girl";
    n=strlen(x);
    *x=x[n];
   for(i=0;i
     {
   printf("%s\n",x);
   x++;
       }
      }
```

Ans:
(blank space)
irl
rl
l

52.

```
int i,j;
      for(i=0;i<=10;i++)
{
j+=5;
assert(i<5);
```

```
}
```
Ans:Runtime error:Abnormal program termination,assert failed

```
53.main()
{
int i=-1;
+I;
printf("i=%d,+i=%d\n",I,+i);
}
```
Ans:i=-1,+i=-1

```
54.main()
{
char name[10],s[12];
scanf("\"%[^\"]"",s);
}
```
How scanf will execute?
Ans:First it checks for leading white space and discards it.Then it matches with quotation mark and then it reads all characterbupto another quotation mark.

```
55.main()
{
main();
}
```
Ans:Runtime error:Stack overflow

```
56.main()
{
char *cptr,c;
void *vptr,v;
c=10;v=0;
cptr=&c;vptr=&v;
printf("%c%v",c,v);
}
```
Ans:Compiler error size of v is unknown

```
57.main()
{
char *str1="abcd";
char str2[]='abcd";
printf("%d %d
%d",sizeof(str1),sizeof(str2),sizeof("abcd"));
}
```
Ans:2 5 2 5

```
58.main()
{
char not;
not=!2;
printf("%d,not);
}
```
Ans:0

```
59.#define FALSE -1
#define TRUE 1
#define NULL 0
main(0
{
if(NULL)
puts("NULL");
else if(FALSE)
puts("TRUE");
else
puts("FALSE");
}
```
Ans:TRUE

```
60.main()
{
int k=1;
printf("%d==1 is
""%s",k,k==1?"TRUE":"FALSE");
}
```
Ans:1==1 is True

```
61.main()
{
int y;
scanf("%d",&y);
if(y%4==0 && y%100!=0)||y%100==0)
printf("%d is a leap year");
else
printf("%d is not leap year");
}
```

Ans:2000 is a leap year

62.
```
#define max 5
#define int arr1[max]
main()
{
type def char arr2[max];
arr1 list ={0,1,2,3,4};
arr2 name="name";
printf("%d %s",list[0],name);
}
```
Ans:Compiler error in line arr1 list={0,1,2,3,4}

63.
```
int i=10;
main()
{
extern int I;
{
int 20;
{
const volatile unsigned i=30;
printf("%d",i);
}
printf("%d",i);
}
printf("%d",i);
}
```
Ans: 30,20,10

64.
```
main()
{
int *j;
{
int i=10;
j=&I;
}
printf("%d",*j);
}
```
Ans:10

65.
```
main()
{
int i=-1;
-i;
printf("i=%d,-i=%d\n",I,-i);
}
```
Ans:i=-1,-i=1

66.
```
#include
main()
{
const int i=4;
float j;
j=++i;
printf("%d %f",i,++j);
}
```
Ans:Compiler error

67.
```
#include
main()
{
int a[2][2][2]={{10,2,3,4},{5,6,7,8}};
int *p,*q;
p=&a[2][2][2];
*q=**a;
printf("%d..%d",*p,*q);
}
```
Ans:garbage value..1

68.
```
#include
main()
{
register i=5;
char j[]="hello";
printf("%s %d",j,i);
```
Ans:hello 5

69.
```
main()
{
int i=5,j=6,z;
printf("%d",i+++j);
}
```
Ans:11