**What is a communication diagram?**

A Communication diagram **models the interactions between objects or parts in terms of sequenced messages**. Communication diagrams represent a combination of information taken from Class, Sequence, and Use Case Diagrams describing both the static structure and dynamic behavior of a system.

A communication diagram offers the same information as a [sequence diagram](https://www.lucidchart.com/pages/uml-sequence-diagram), but while a sequence diagram emphasizes the time and order of events, a communication diagram emphasizes the messages exchanged between objects in an application.

## Communication diagrams vs. sequence diagrams

Sequence and communication diagrams both use UML, and both can be used to show the same systems. In fact, it’s quite easy to change a communication diagram into a sequence diagram, or vice versa. Though they show the same information, there are differences between the two that must be recognized.

### Sequence diagrams:

* Emphasize time, and order of operations
* Difficult to see relationships between objects
* Best used in the early analysis stages
* Time-ordered, dynamic model
* Single use case with multiple scenarios
* Supported by Gleek

### Communication diagrams:

* Emphasize relationships and messages between objects
* Difficult to see sequence and timing of processes
* Best used to show behaviors between objects that cannot be completed without other objects. Meaning, objects must collaborate to perform the process.
* Static model, not time-ordered
* Used to describe the organizational structure of the system for several use cases

**Symbols and notations of communication diagrams**

**Numbers:** Numbers show the order in which messages are sent, as well as how many messages are required to complete a process.

**Rectangles:** A simple shape with a simple purpose, rectangles are used to show the objects in the system. They are labeled with the object’s name.

**Lines:** Lines connecting rectangles show the relationships between two or more objects

**Arrows:** These show the flow of messages sent and received throughout the process in the diagram.

### Elements

Elements are the components of a system, represented in diagram form.

### Objects

There are two types of objects presented in a communication diagram.

* Supplier objects – These objects supply the method, or process. Supplier objects are the message receivers.
* Client objects – These objects send messages to request supplier methods.

### Links

Lines represent the links between objects. They show which objects are connected, and how. They also show which objects send and receive messages. Sometimes, an object sends messages to itself, which is represented with a loop.

### Messages

While lines represent links, arrows represent the flow of messages. Client and supplier objects are connected with arrows, and labeled with numbers. Messages are numbered in sequential order; 1, 2, 3, for example. The numbers on a diagram are also for the reader’s benefit, because you know which messages to read first. If a message is attached to a parent message, it can be expressed with multiple numbers and decimal points. There will also usually be a short description next to each number. There are two types of messages:

* Synchronous messages – After a client object sends a message, it must wait for a response from the supplier. These messages are represented by a solid line, and a filled in, triangular arrowhead.
* Asynchronous messages – The client object, after sending a message, does not need to wait for a response before continuing. These messages are shown with a dashed line and a ‘hollow’ arrowhead.
* Self message: Here, object send messages to itself.
* Conditional message:If an object sends a message with a condition to be executed,those messages are called conditional message.

### Frames

Frames are the spaces that contain diagrams, like a picture frame. The title or heading of the diagram is located in the upper left corner.

**How to make a communication diagram**

In Lucidchart, while we have plenty of UML templates to choose from, you can easily create a communication diagram in UML from scratch. Just follow the steps below:

1. Open a blank document or start with a template.
2. Enable the UML shape library. Click "Shapes" in the upper-left corner of the editor, and once you're in the Shape Library Manager, select "UML" and click "Save." Because the shapes in a communication diagram are the same as a sequence diagram, make sure you have the UML sequence diagram shapes enabled.
3. Select the symbol you want and drag it from the toolbox out onto the canvas.
4. Model the process flow by drawing lines between shapes. Adding text and numbers to designate your commands and the order in which they take place.

