UML Diagram Types Guide: Learn About All Types of UML Diagrams with Examples

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UML stands for **U**nified **M**odeling **L**anguage. It's a rich language to model software solutions, application structures, system behavior and business processes (https://creately.com/blog/diagrams/importance-of-business-process-modeling/). There are **14 UML diagram types** to help you model these behaviors.

You can draw UML diagrams online (https://creately.com/lp/uml-diagram-tool) using our software, or check out some UML diagram (https://creately.com/diagram-type/templates/uml-diagram) examples at our diagramming community.

List of UML Diagram Types

So what are the different UML diagram types? There are two main categories; **structure diagrams** and **behavioral diagrams**. Click on the links to learn more about a specific diagram type.

- Structure Diagrams
  - Class Diagram
  - Component Diagram
  - Deployment Diagram
  - Object Diagram
  - Package Diagram
  - Profile Diagram
  - Composite Structure Diagram

- Behavioral Diagrams
  - [Use Case Diagram](#)
  - [Activity Diagram](#)
  - [State Machine Diagram](#)
  - [Sequence Diagram](#)
  - [Communication Diagram](#)
  - [Interaction Overview Diagram](#)
  - [Timing Diagram](#)
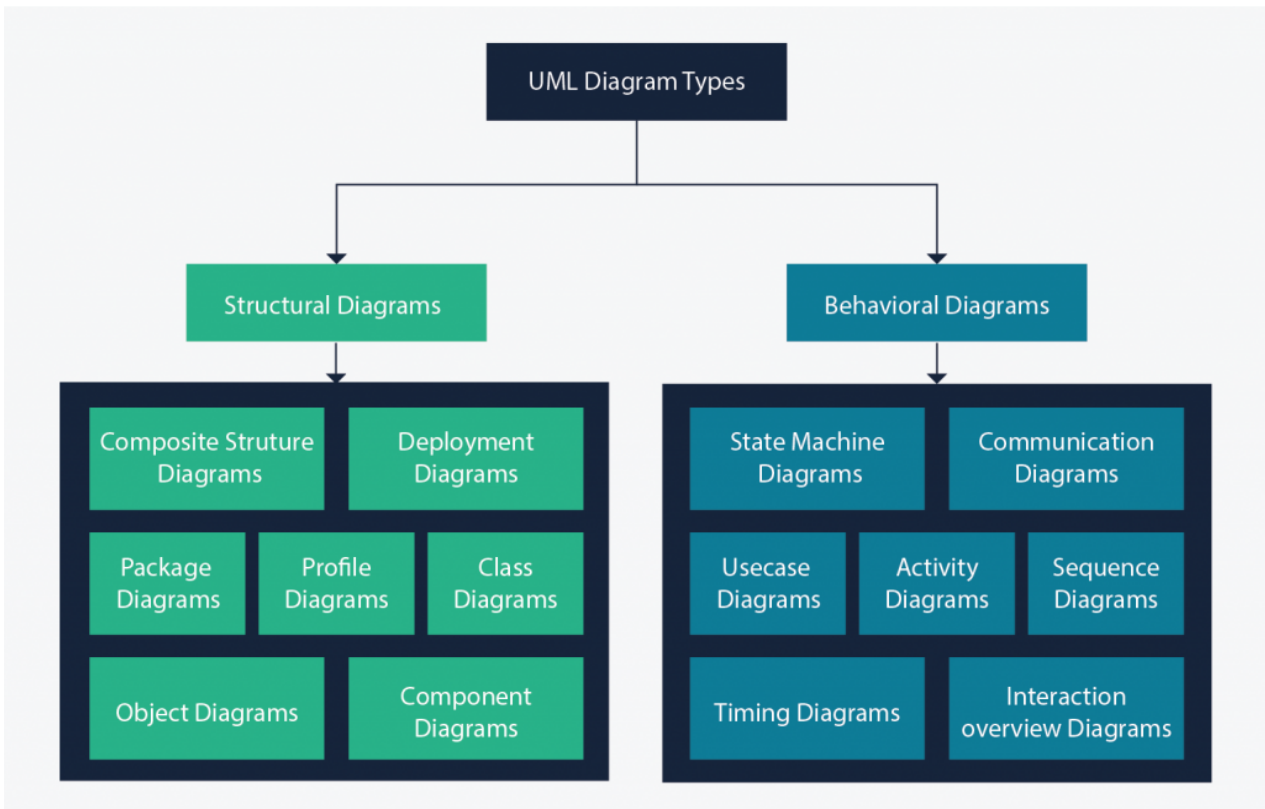
Structure diagrams show the things in the modeled system. In a more technical term, they show different objects in a system. **Behavioral diagrams** show what should happen in a system. They describe how the objects interact with each other to create a functioning system.
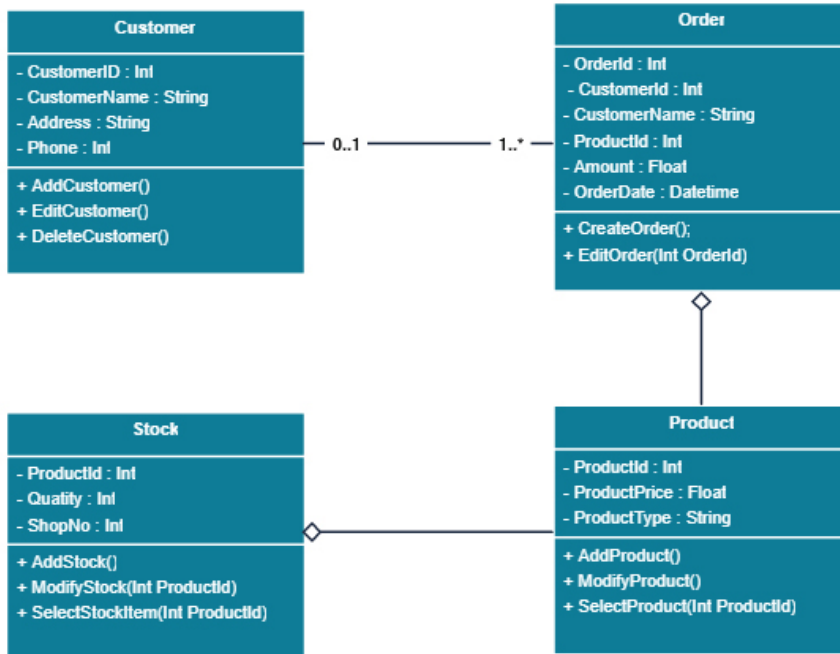
Class Diagram

Class diagrams are the main building block of any object-oriented solution. It shows the classes in a system, attributes, and operations of each class and the relationship between each class.

In most modeling tools, a class has three parts. Name at the top, attributes in the middle and operations or methods at the bottom. In a large system with many related classes, classes are grouped together to create class diagrams. Different relationships between classes (https://creately.com/diagram-type/article/relationships-that-exist-between-classes) are shown by different types of arrows.

Below is an image of a class diagram. Follow the link below for more class diagram examples or get started instantly with our class diagram templates (https://creately.com/diagram-type/templates/class-diagram).

Class Diagram for Order Processing System

(https://creately.com/demo-start/?templd=gsxncbybu)

Click on the image to edit the above class diagram (opens in new window)

Get More UML Class Diagram Examples >> (https://creately.com/diagram-community/examples/t/class-diagram)

Component Diagram

A component diagram (https://creately.com/diagram-community/popular/t/component-diagram) displays the structural relationship of components of a software system. These are mostly used when working with complex systems with many components. Components communicate with each other using interfaces (http://en.wikipedia.org/wiki/Interface_(object-oriented_programming)). The interfaces are linked using connectors. The image below shows a component diagram.

INVENTORY MANAGEMENT SYSTEM

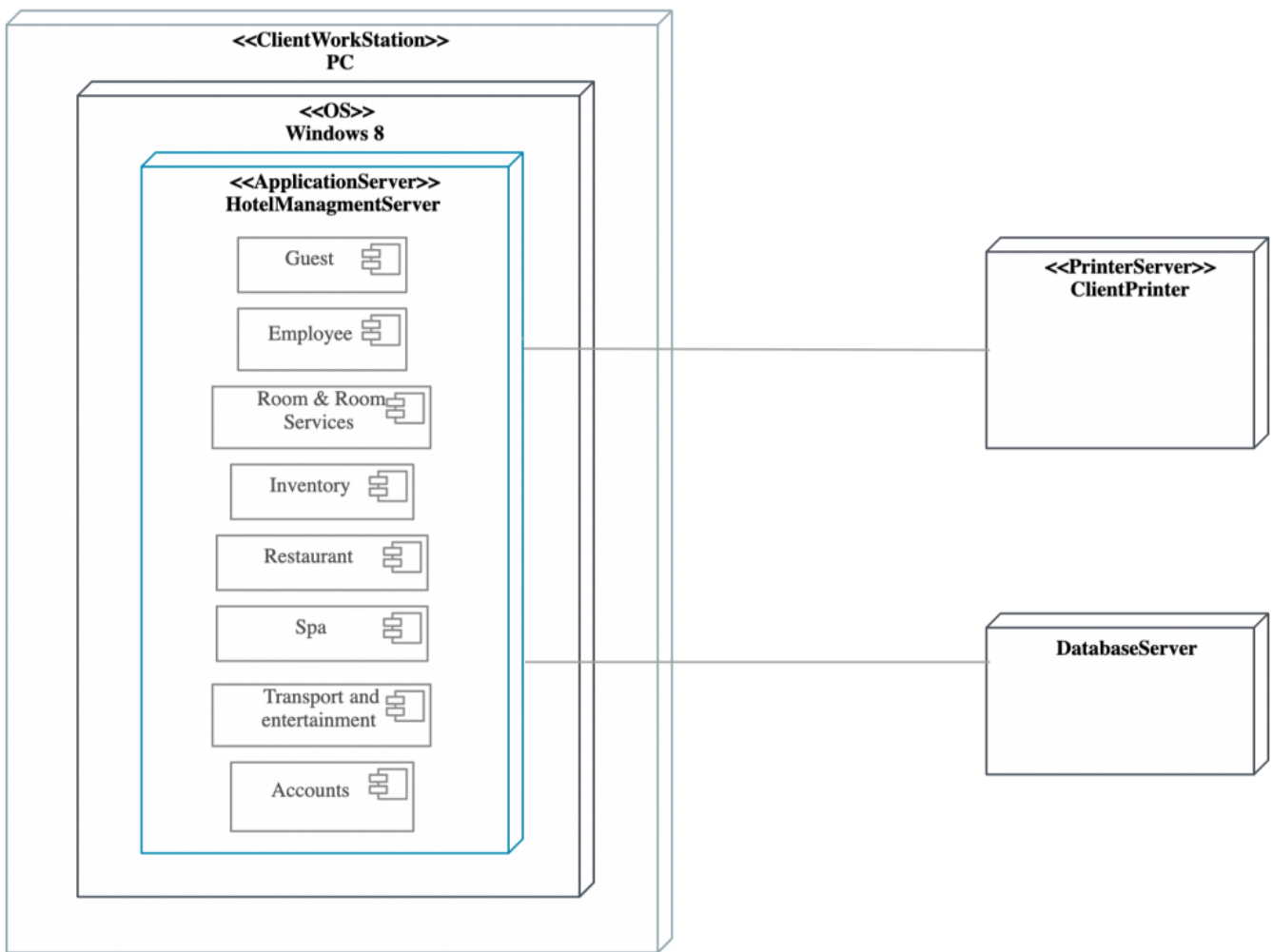(https://creately.com/demo-start/?templd=jma3qob49)
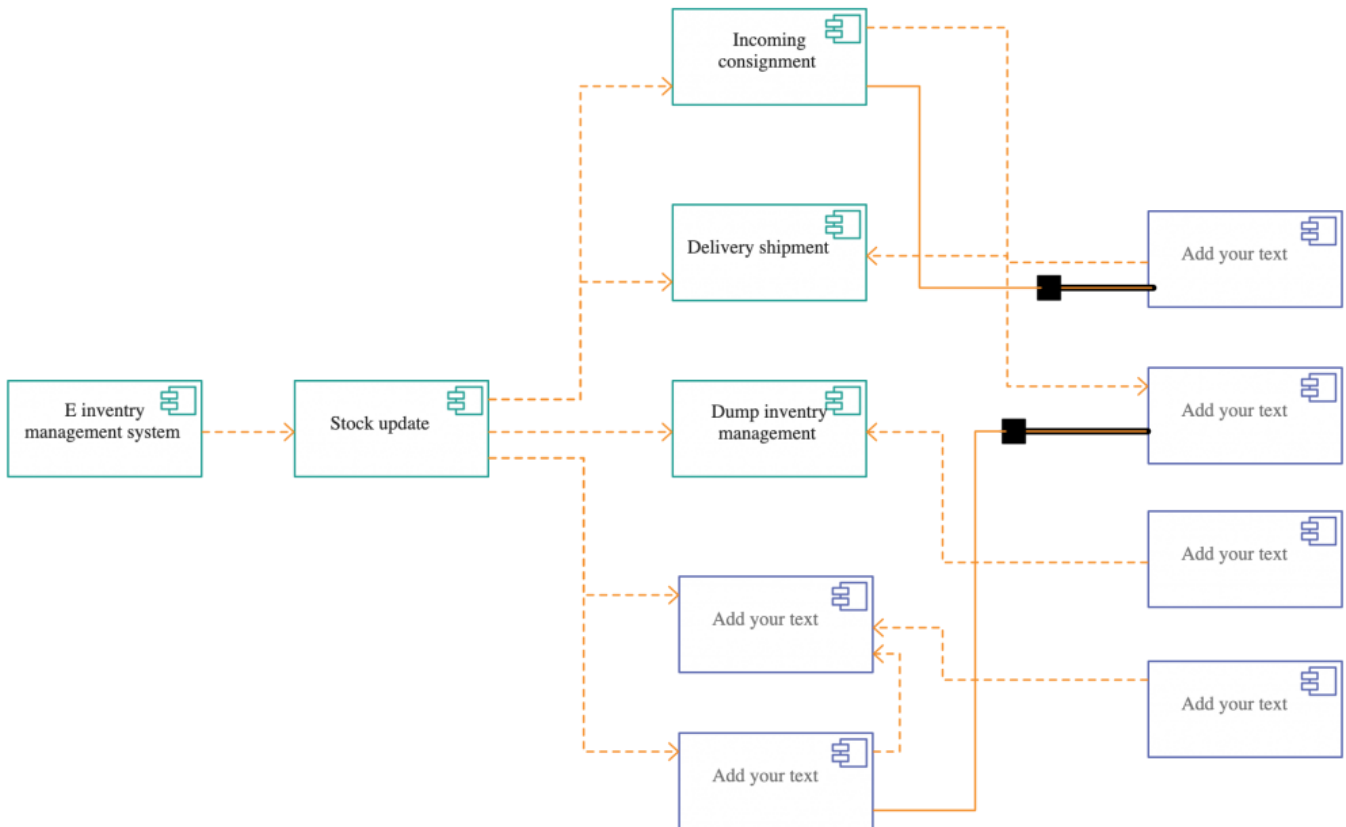
Click on the image to edit the component diagram above

Get More Component Diagram Templates >> (https://creately.com/diagram-community/examples/t/component-diagram)

Deployment Diagram

A deployment diagram (https://creately.com/blog/diagrams/deployment-diagram-tutorial/) shows the hardware of your system and the software in that hardware. Deployment diagrams are useful when your software solution is deployed across multiple machines with each having a unique configuration. Below is an example deployment diagram.

HOTEL MANAGEMENT SYSTEM

Click on the image to edit the deployment diagram above

Get More Deployment Diagram Templates >> (https://creately.com/diagram-community/examples/t/deployment-diagram)

Object Diagram

Object Diagrams (https://creately.com/lp/object-diagram-tool/), sometimes referred to as Instance diagrams are very similar to class diagrams (https://creately.com/blog/diagrams/class-diagram-tutorial/). Like class diagrams, they also show the relationship between objects but they use real-world examples.

They show what a system will look like at a given time. Because there is data available in the objects, they are used to explain complex relationships between objects.
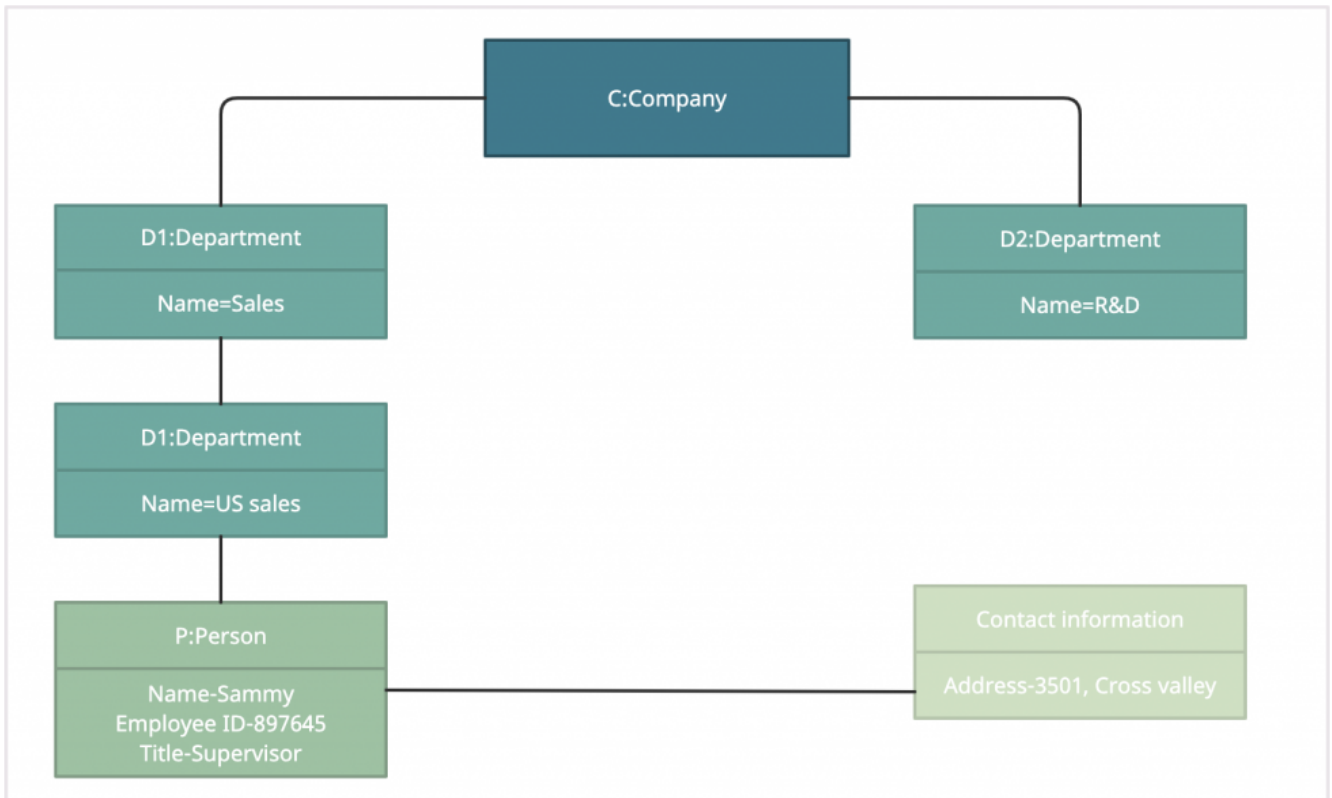
Click on the image to use the object diagram as a template

Get More Object Diagram Templates >> (https://creately.com/diagram-community/popular/t/object-diagram)

Package Diagram

As the name suggests, a package diagram shows the dependencies between different packages in a system. Check out this wiki article (http://en.wikipedia.org/wiki/Package_diagram) to learn more about the dependencies and elements found in package diagrams.
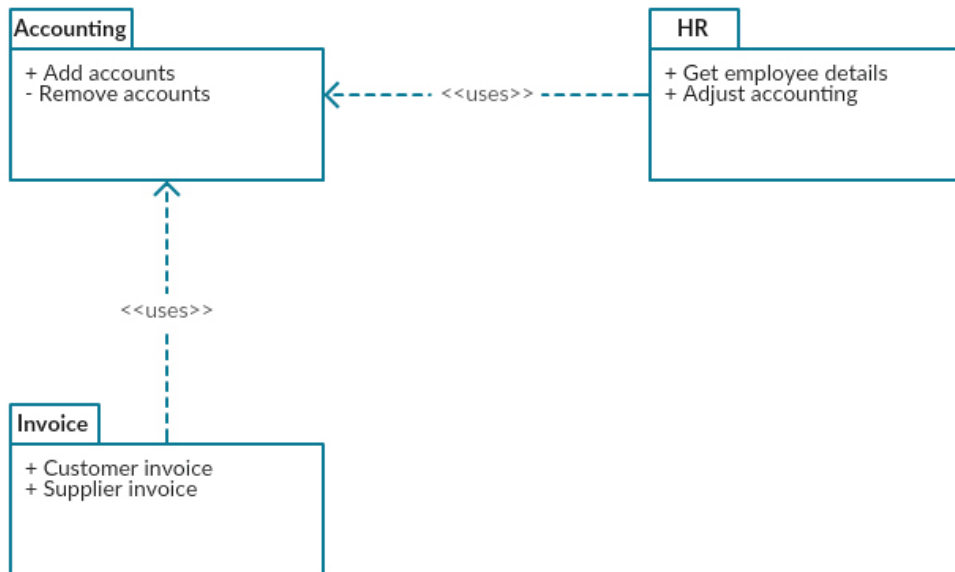
Profile Diagram

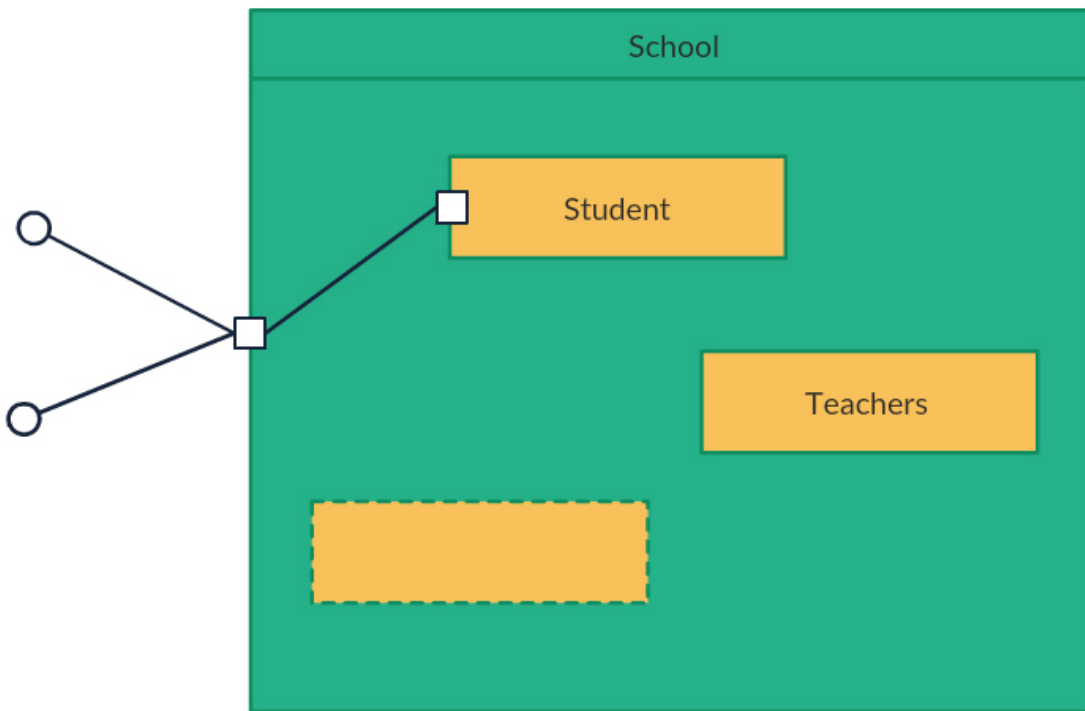Profile diagram (https://creately.com/diagram/example/j6dbkbqz2/profile-diagram) is a new diagram type introduced in UML 2. This is a diagram type that is very rarely used in any specification. For more profile diagram templates, visit our diagram community (https://creately.com/diagram-community/all?term=Profile%2520Diagram).

Composite Structure Diagram

Composite structure diagrams are used to show the internal structure of a class. Some of the common composite structure diagrams (https://creately.com/diagram-community/all?term=composite).
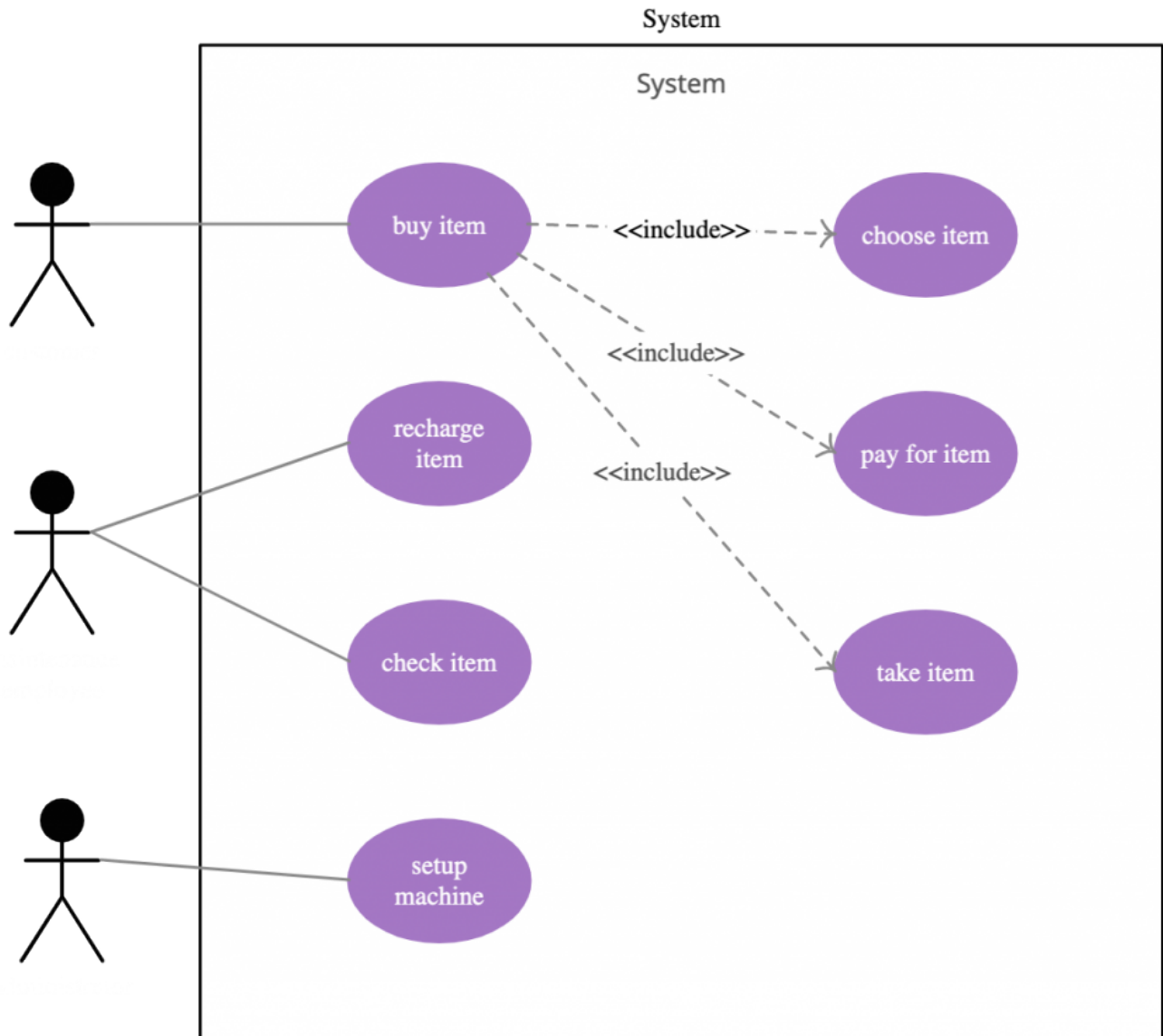
Use Case Diagram

As the most known diagram type (https://creately.com/blog/diagrams/which-diagram-to-use/) of the behavioral UML types, Use case diagrams (https://creately.com/diagram-community/popular/t/use-case) give a graphic overview of the actors involved in a system, different functions needed by those actors and how these different functions interact.

It's a great starting point for any project discussion because you can easily identify the main actors involved and the main processes of the system. You can create use case diagrams (https://creately.com/diagram-type/use-case) using our tool and/or get started instantly using our use case templates (https://creately.com/blog/examples/use-case-templates-uml/).

Use Case Diagram Relationships Explained with examples (https://creately.com/blog/diagrams/use-case-diagram-relationships/)
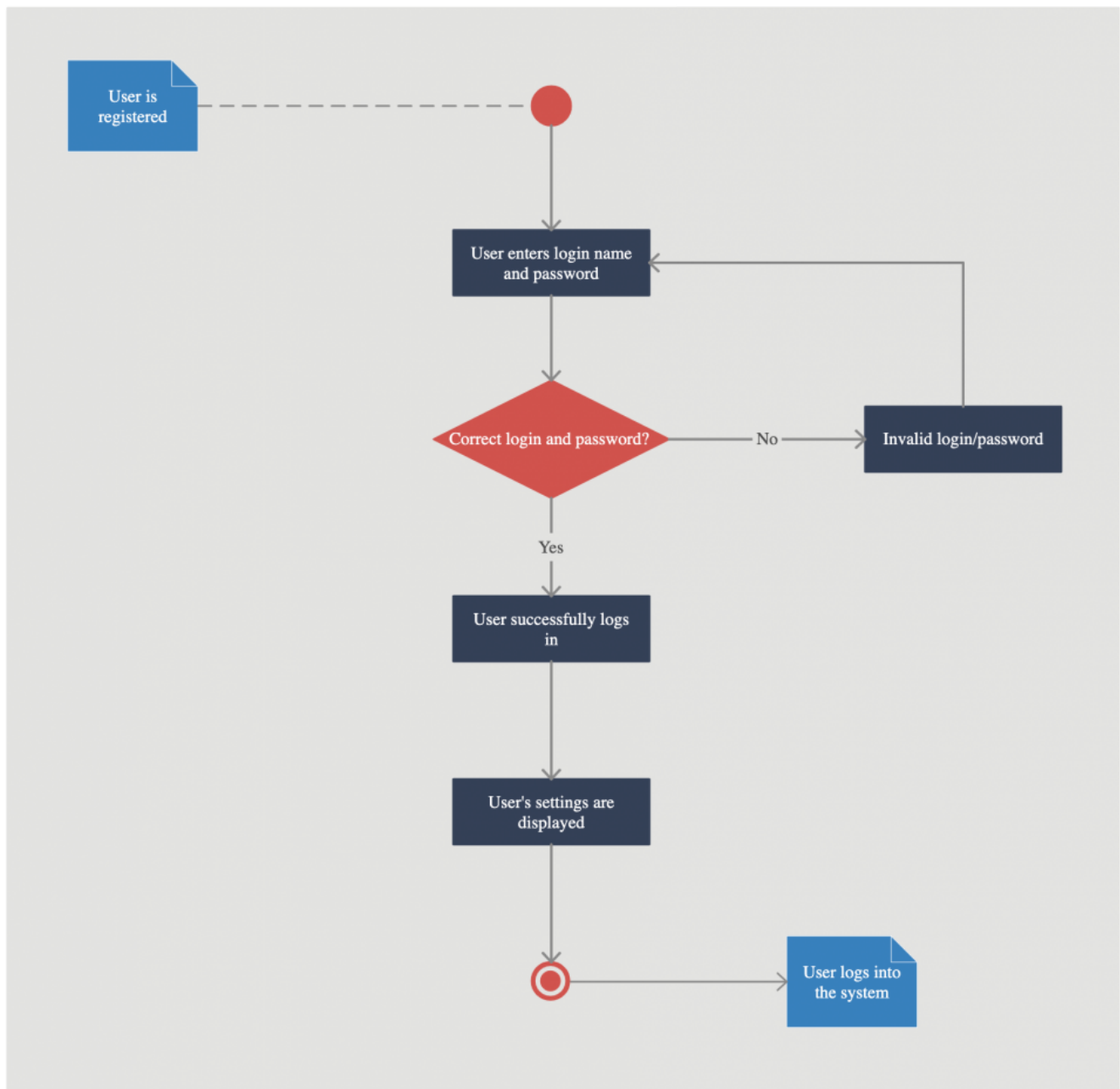
Click on the image to edit this template

Get More Use Case Diagram Examples >> (https://creately.com/diagram-community/examples/t/use-case)

Activity Diagram

Activity diagrams represent workflows in a graphical way. They can be used to describe the business workflow or the operational workflow of any component in a system. Sometimes activity diagrams (https://creately.com/diagram-community/popular/t/activity-diagram) are used as an alternative to State machine diagrams. Check out this wiki article (http://en.wikipedia.org/wiki/Activity_diagram) to learn about symbols and usage of activity diagrams. (https://creately.com/lp/activity-diagram-tool/) You can also refer this easy guide (https://creately.com/blog/diagrams/activity-diagram-tutorial/) to activity diagrams.

USER LOGIN SYSTEM for XYZ App

(https://creately.com/demo-start/?tempId=jlg33xw41)

Click on the image to edit this template

Get More Activity Diagram Templates >> (https://creately.com/diagram-community/examples/t/activity-diagram)

State Machine Diagram

State machine diagrams (https://creately.com/lp/state-machine-diagram-tool/) are similar to activity diagrams, although notations (https://creately.com/lp/state-machine-diagram-tool/) and usage change a bit. They are sometimes known as state diagrams (https://creately.com/diagram/example/h1xtnwwh1/New%20Facebook%20Login%20Activity%20Diagram) or state chart diagrams (https://creately.com/diagram-community/popular/t/state-chart) as well. These

are very useful to describe the behavior of objects that act differently according to the state they are in at the moment. The State machine diagram (https://creately.com/lp/state-machine-diagram-tool) below shows the basic states and actions.

(https://creately.com/demo-start/?templd=jy9osxz11)
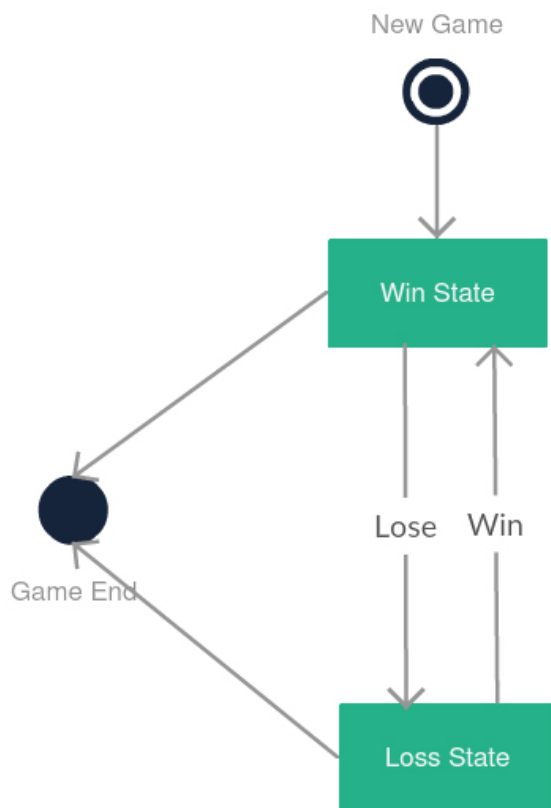
State Machine diagram in UML, sometimes referred to as State or State chart diagram (https://creately.com/diagram-community/examples/t/state-chart)
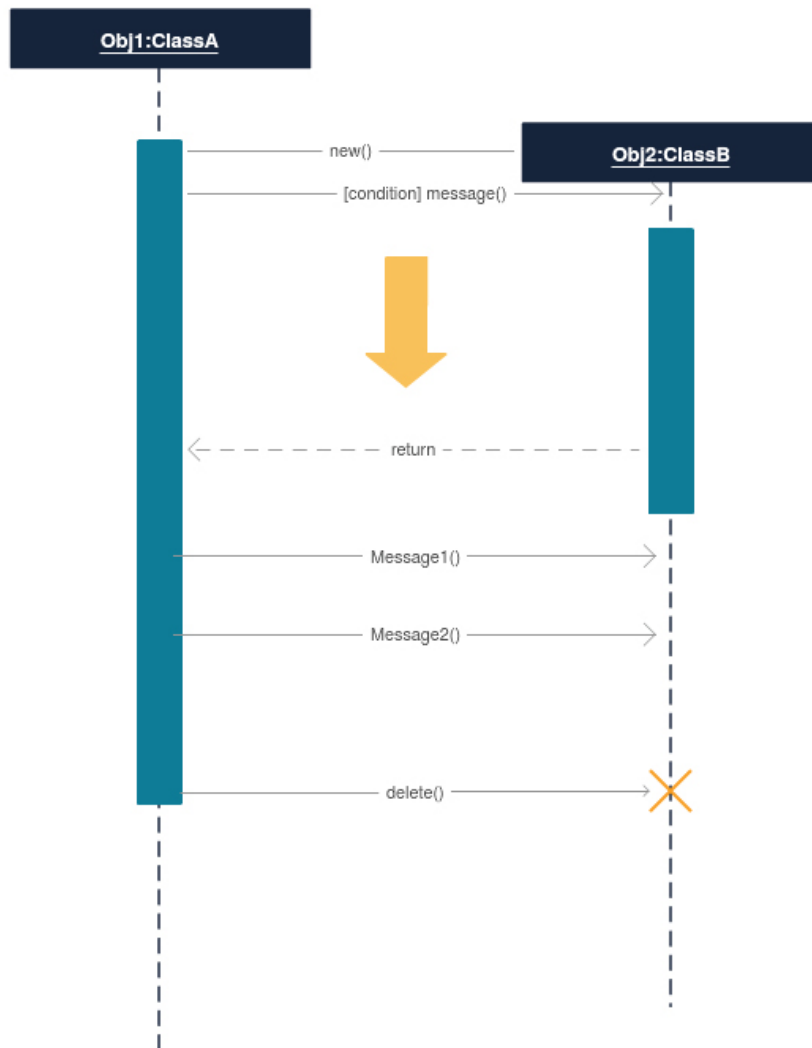
Get More State Chart Diagram Examples >> (https://creately.com/diagram-community/examples)

Sequence Diagram

Sequence diagrams (https://creately.com/diagram-community/popular/t/sequence-diagram) in UML (https://creately.com/lp/uml-diagram-tool) show how objects interact with each other and the order those interactions occur. It's important to note that they show the interactions for a particular scenario. The processes are represented vertically and interactions are shown as arrows. This article explains the purpose and the basics of Sequence diagrams (https://creately.com/blog/diagrams/the-basics-the-purpose-of-sequence-diagrams-part-1/). Also, check out this complete Sequence Diagram Tutorial (https://creately.com/blog/diagrams/sequence-diagram-tutorial/) to learn more about sequence diagrams.

You can also instantly start drawing using our sequence diagram templates (https://creately.com/diagram-community/examples/t/sequence-diagram).

(https://creately.com/demo-start/?templId=gsx1cnemi)

Sequence diagram drawn using Creately (https://creately.com/app/)

Communication Diagram

In UML 1 they were called collaboration diagrams (https://creately.com/diagram/example/jgi94q647/Collaboration%20diagram). Communication diagrams are similar to sequence diagrams, but the focus is on messages passed between objects. The same information can be represented using a sequence diagram and different objects. Click here to understand the differences using an example (http://www.sparxsystems.com/resources/uml2_tutorial/uml2_communicationdiagram.html).
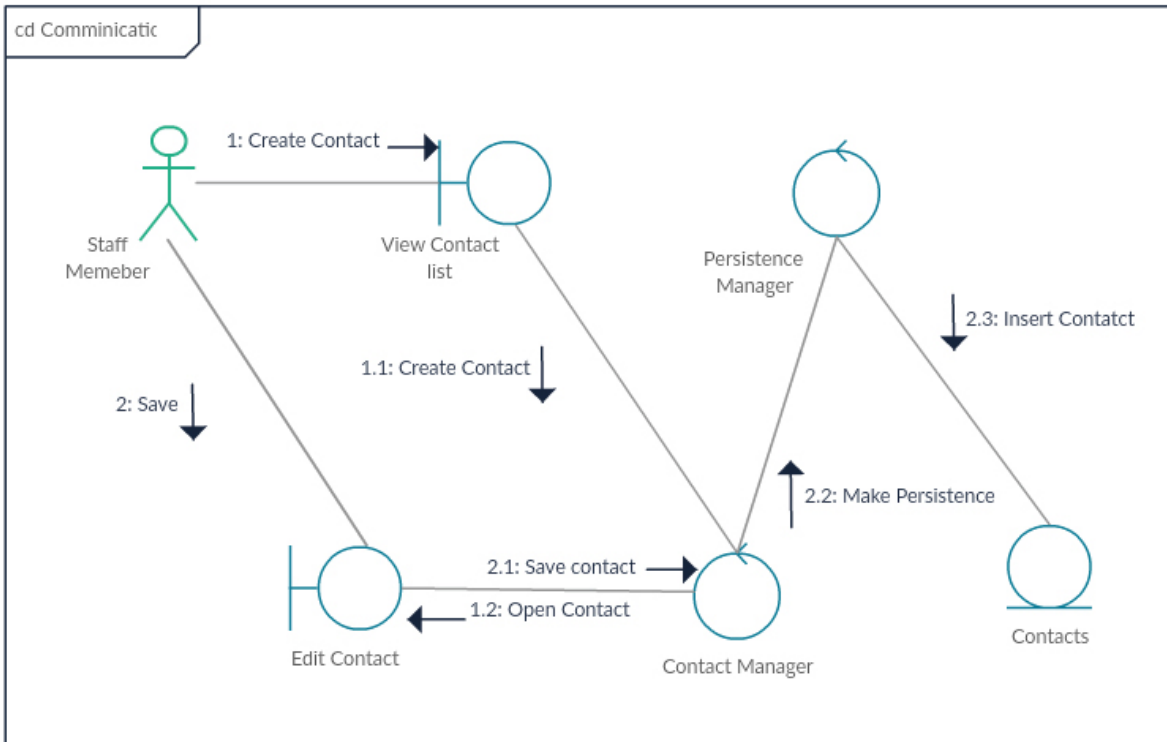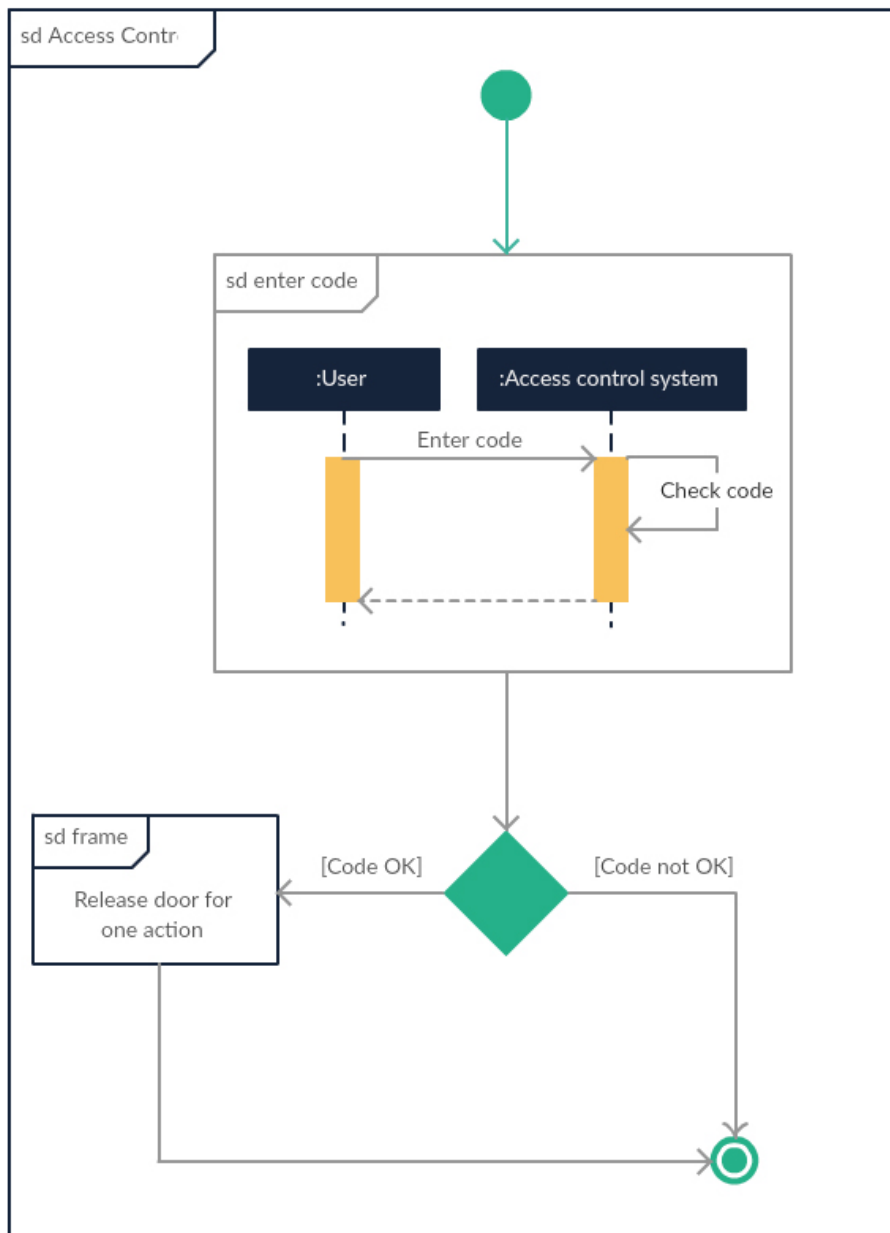
Click on the image to edit this template

Interaction Overview Diagram

Interaction overview diagrams are very similar to activity diagrams. While activity diagrams show a sequence of processes, Interaction overview diagrams (https://creately.com/diagram/example/hoz91qr31/Interaction%20Overview%20Diagram) show a sequence of interaction diagrams.

They are a collection of interaction diagrams and the order they happen. As mentioned before, there are seven types of interaction diagrams, so any one of them can be a node in an interaction overview diagram (https://creately.com/diagram/example/jk0ehse02/Interaction%20Overview%20Diagram).
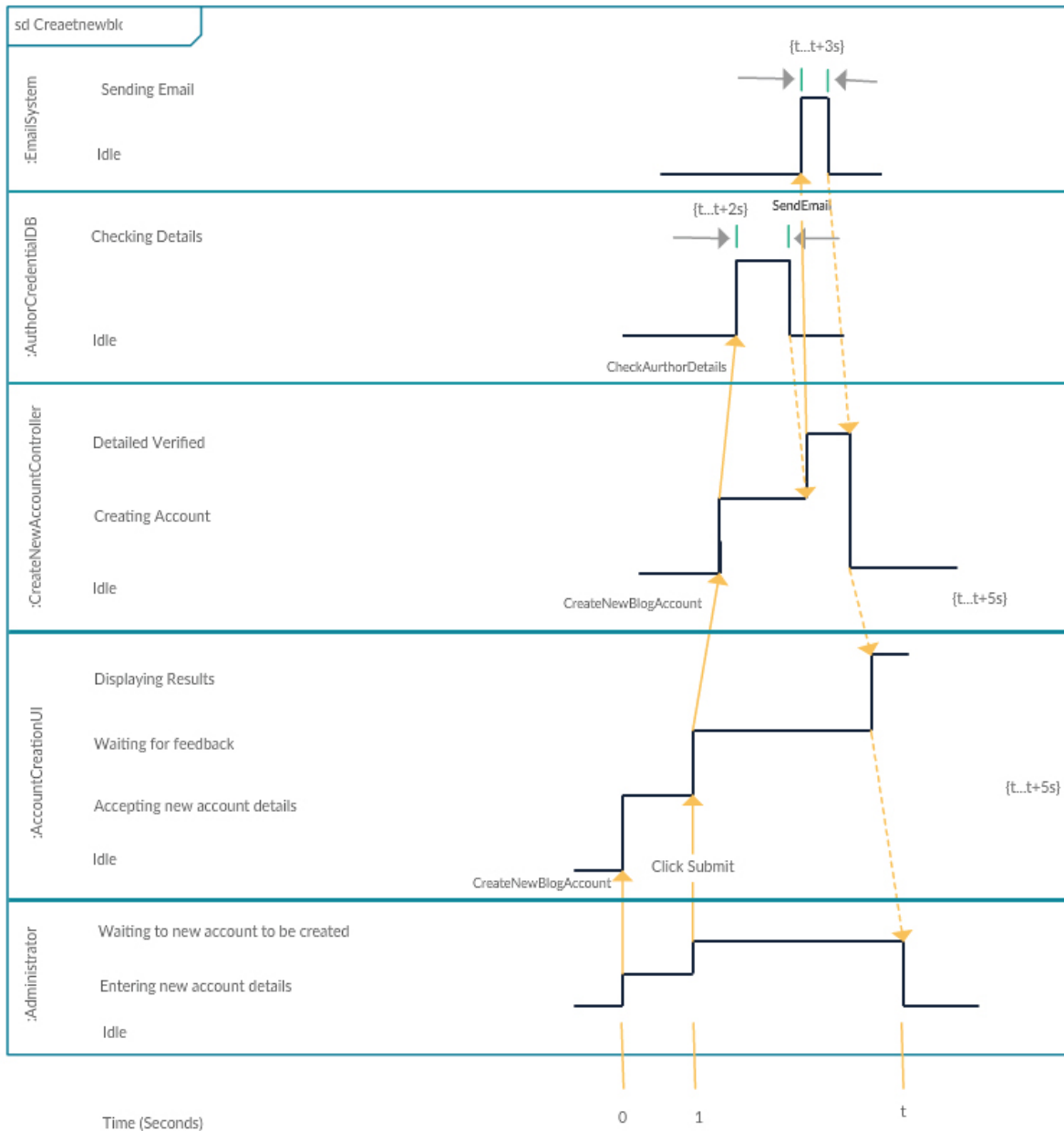
Click on the image to edit this template

Timing Diagram

Timing diagrams are very similar to sequence diagrams. They represent the behavior of objects in a given time frame. If it's only one object, the diagram is straightforward. But, if there is more than one object is involved, a Timing diagram is used to show interactions between objects during that time frame.

Click here to create your timing diagram (https://creately.com/lp/timing-diagram-software/).

Mentioned above are all the UML diagram (https://creately.com/lp/uml-diagram-tool/) types. UML offers many diagram types (https://creately.com/blog/diagrams/which-diagram-to-use/), and sometimes two diagrams can explain the same thing using different notations.

Check out this blog post to learn which UML diagram best suits you (https://creately.com/blog/diagrams/part-2-what-type-of-uml-diagram-should-you-be-using/). If you have any questions or suggestions, feel free to leave a comment.

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