

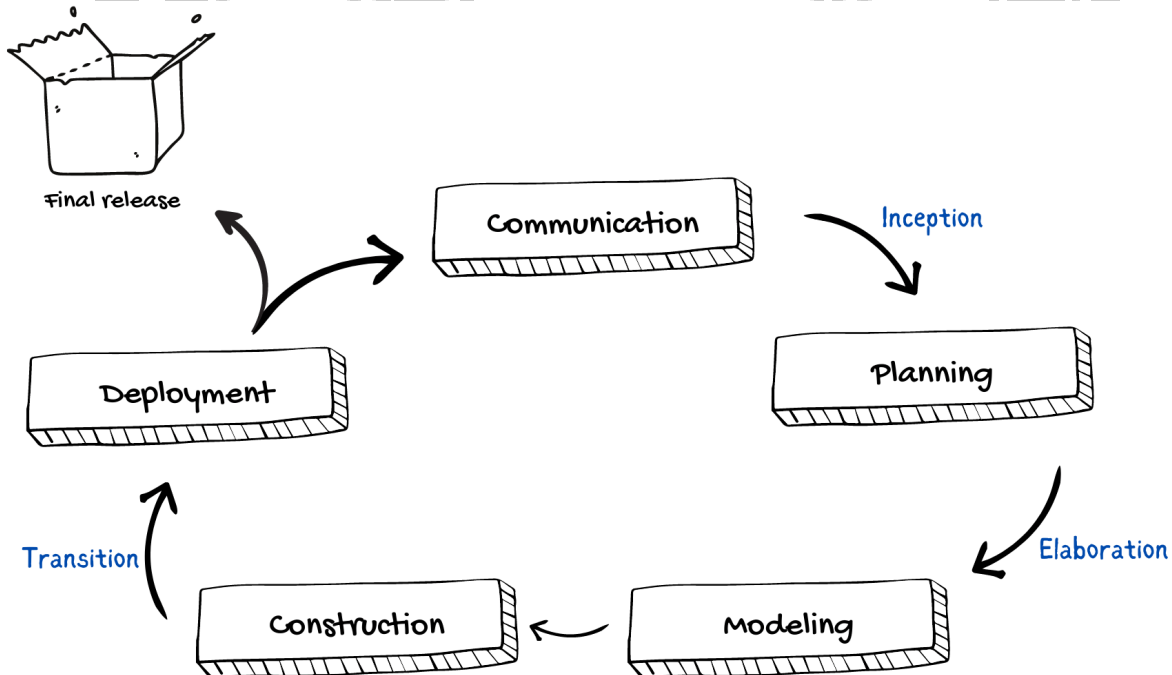
UNIT 1

Unified Process

UNIFIED PROCESS

The **Unified Process (UP)** is a software development framework used for **object-oriented modeling**. The framework is also known as Rational Unified Process (RUP) and the Open Unified Process (Open UP). Some of the key features of this process include:

- It defines the order of phases.
- It is component-based, meaning a software system is built as a set of software components. There must be well-defined interfaces between the components for smooth communication.
- It follows an iterative, incremental, architecture-centric, and use-case driven approach



A visual representation of the unified process

Let's have a look at these approaches in detail.

The case-driven approach

Use a case-driven approach that follows a set of actions performed by one or more entities. A use case refers to the process of the team performing the development work from the functional requirements. The functional requirements are made from the list of requirements that were specified by the client. For example, an online learning management system can be specified in terms of use cases such as "add a course," "delete a course," "pay fees," and so on.

The architecture-centric approach

The architecture-centric approach defines the form of the system and how it should be structured to provide a specific functionality whereas the use case defines the functionality.

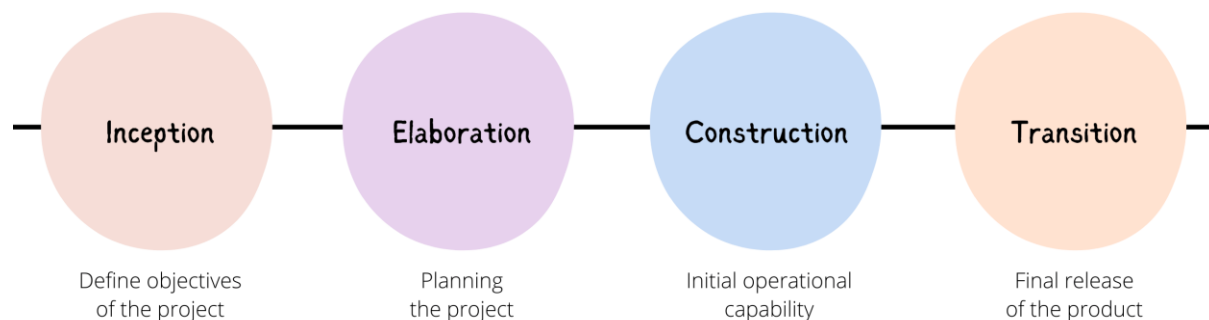
The iterative and incremental approach

An iterative and incremental approach means that the product will be developed in multiple phases. During these phases, the developers evaluate and test.

Phases

We can represent a unified process model as a series of cycles. Each cycle ends with the release of a new system version for the customers. We have four phases in every cycle:

- Inception
- Elaboration
- Construction
- Transition



The phases of the unified process

Inception

The main goal of this phase involves delimiting the project scope. This is where we define why we are making this product in the first place. It should have the following:

- What are the key features?
- How does this benefit the customers?
- Which methodology will we follow?
- What are the risks involved in executing the project?
- Schedule and cost estimates.

Elaboration

We build the system given the requirements, cost, and time constraints and all the risks involved. It should include the following:

- Develop with the majority of the functional requirements implemented.
- Finalize the methodology to be used.
- Deal with the significant risks involved.

Construction

This phase is where the development, integration, and testing take place. We build the complete architecture in this phase and hand the final documentation to the client.

Transition

This phase involves the deployment, multiple iterations, beta releases, and improvements of the software. The users will test the software, which may raise potential issues. The development team will then fix those errors.

Conclusion

This method allows us to deal with the changing requirements throughout the development period. The unified process model has various applications which also makes it complex in nature. Therefore, it's most suitable for smaller projects and should be implemented by a team of professionals.