SDLC

Introduction

Software Development Life Cycle is a structured approach to **design, develop, test and deploy** software applications by software developers. It guides us to build a project **efficiently, meets user requirements, delivers on time and within budget**. SDLC is mainly used to **build a quality project**.

Phases

- ➤ Requirement Gathering & Analysis
- ➤ Design
- ➤ Coding
- ➤ Testing
- ➤ Deployment
- ➤ Maintenance & Support

Requirement Gathering & Analysis

In this phase, Developers **collect and analyze the project requirements from stakeholders** (the people who have an influence in the software project) to understand the system's **objectives, requirements and functionalities**. With the help of gathered details, they prepare **SRS (Software Requirement Specification).**

Design

In this phase, Developers **design the architecture and components** for the software like blueprints **(HLD & LLD)** for the project.

High-Level Design - Focus on system architecture, modules and data flow.

Low-Level Design - Detailed logical algorithms and individual components.

Coding

In this phase, Developers **write the code** in their appropriate programming languages. Also, they do **unit testing, version control**, etc.

Testing

In this phase, Once the development completed, the software undergoes various types of testing to **identify and resolve bugs and issues**. Testing includes **functional testing, system testing, integration testing, system testing, acceptance testing**, etc. Testing people finally deliver test reports to resolve the bugs.

Deployment

After successful testing, the software is **released to the production environment**. Also include user training and the setup of user documentation.

Maintenance & Support

It involves **fixing bugs, performance issues, adding new features** and ensuring the software continues to operate as expected over time. Developers give **version updates** to support software performance and features.