

**Name:** Gautam K K

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## SDLC

**SDLC** is a software development lifecycle is a process to build a high-quality software, and it ensures that it meets the client's requirements

It provides the detail plan to develop, maintain and enhance the software application

There are 6 phases in SDLC

- Requirement gathering & Analysis
- Design
- Development
- Testing
- Deployment
- Maintenance

### Requirement gathering & Analysis

- In this stage, SRS is documented by the project manager with the requirements given from the business analyst or client
- The requirement of the application is used to conduct the feasibility.
- In this phase they also define the scope of the project, time constraints, and resources need.

### Design

- The SRS document from the previous phase is used to define a architecture for the product
- In this phase we can create the DDS – Design Document Specification
- DDS have several product architectures such as Low-level design, high level design, data flow diagram, sequence diagram, class diagram, entity relationship diagram and flow diagram
- The DDS is reviewed and approved by all important stakeholders based on the time, cost, risk assessment and so on the best design approach will be selected for the product/application.

## Development

- In this phase, with the help of SRS & DDS prepared in the previous phase is used as input
- This is the longest phase in SDLC, here the developers generate the code
- And the code developed by the developer should follow the coding standard
- The code can be reviewed and ensure it is bug free and working they will upload to remote repository.
- Here developers will do the Unit testing for the code they developed

## Testing

- The testing team takes the SRS to understand the requirements and Code to test.
- Testing is the necessary phase to ensure that the product developed is free of defects or issues and it meets the client requirements or not
- Testers create the test case and execute by that defects are reported, tracked, fixed and retested the fixed defects.
- In this phase all the defects & issues are sorted after that the product is ready for the deployment

## Deployment

- After the testing, the product is ready for deployment.
- Sometimes the deployment happens in stages it may be released in limited segments and tested in real time environment
- Based on the feedback they will deploy the application entirely.
- By the end of this phase after the release of the application contract closure is signed

## Maintenance

If any feedback or further enhancements are needed in an application after the application is released in the market they will develop, test, deploy that.

## SDLC Models

There are many SDLC models according to the application which models suits for the application is selected

The popular SDLC models are

- **Waterfall Model** – suits for fixed requirements, small projects
- **Agile model** – suits for changing requirements, large projects, need client feedback, long-term maintenance
- **Iterative model** – suits for changing requirements, large projects
- **Spiral Model** – suits for high risk projects, flexible time & budget
- **VV – model** – for faster execution and testing is important, minimal maintenance
- **Prototype model** – client need quick demo of project