

# SOFTWARE DEVELOPEMENT LIFE CYCLE

## Software Development Life Cycle or SDLC

It is a sequence of activities that leads to the production of a Software product.

OR

It is a well-defined, structured sequence of stages in software engineering to develop the intended software product.

## SDLC FRAMEWORK

Steps to be followed to design and develop a software product efficiently.

# SDLC

- Communication
- Requirement Gathering
- Feasibility Study
- System Analysis
- Software Design
- Coding
- Testing
- Integration
- Implementation
- Operations & Maintenance
- Disposition

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## • Communication :-

Very first step where user contact the Service provider i.e. **Software Organization** and initiates the request for a desired Software Product in writing and tries to negotiate the terms.

## • Requirement Gathering :-

Here team of Software Developer holds discussions with various Stakeholders from **problem Domain** and brings out as much as information as possible on their requirements.

**Requirements**

- User Requirement
- System Requirement
- Functional Requirement.

**Ways of Collecting Requirement**

- Referring to Database
- Studying existing System and Software
- Interviews b/w user & Developers.
- Collecting Answers from Questionnaires

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## • Feasibility Study :-

After Requirement gathering, with the help of many algorithms, team analyzes if a Software can be designed to fulfill all Requirements of the user and also analyze if the project is **financially, Practically and Technologically** feasible for the organization to take up.



## • System Analysis :- A planning phase

Developers decide a Roadmap of their plan and try to bring up the best Software model Suitable for project.

- System Analysis Includes
- Understanding of product limitation
  - Changes to be done in existing System before hand.
  - Identifying and addressing the impact of project on organization and personnel.

The project Team Analyzes the Scope of the project and plans the Schedule and resources Accordingly.

## • Software Design :-

Whole knowledge of Requirements and Analysis are taken together to plan up Design the Software product.

- Input :-
- From users
  - Information gathered in Requirement Gathering phase

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- Output in form of Design
- Logical Design
  - physical Design

Engineer produces Exactly

- Meta Data
- Data Dictionaries
- Logical Diagrams
- Data Flow Diagrams
- Pseudo Code



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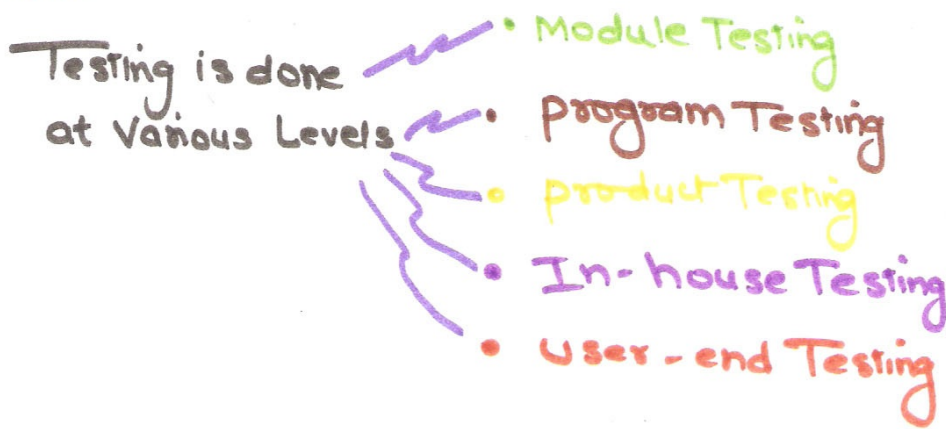
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## • Coding :- Programming phase

This step is also known as programming phase. The implementation of software design starts in terms of writing program code in the suitable programming language and developing error-free executable programs efficiently.

## • Testing :-

Software Testing is done while coding, by the Testers i.e. Developing Team Members.



## • Integration :-

Software is integrated with the Libraries, Databases, and other Program(s)

## • Implementation :-

We install software on user machine.

Software is tested for.

- Portability
- Adaptability
- Integration

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## Operation and Maintenance :

This phase Confirms the Software Operations in terms of more **efficiency and less errors**. If required , the users are trained on, or aided with the documentation on **how to operate the Software** and **how to keep the Software operational**.

The Software is maintained **timely** by **updating** the code according to the changes taking place in user and environment or technology.

This phase may face challenges from hidden bugs and real-world unidentified problems.

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