

Software Engineering

Software Development Life Cycle

■ Recognition of need/ requirement collection

- Initial investigation
- Getting the detail and precise requirement
- Performed by senior team members
- Defines the scope, objectives of the project

■ Feasibility study

- Software Requirement Specification (SRS): Product requirements to be **designed and developed throughout the lifecycle**. Everything which should be designed and developed
- Technical: Whether the current computer **system can support the new software**
- Economic: Is the **budget sufficient** for developing the software?
- Legal: **Cyber law and other regulations**
- Operation: Can operations be created which are expected by the client?
- Schedule: Can the software be developed **within the given time frame?**

■ Design

- Based on SRS, usually more than one design approach is proposed and documented in Design Document Specification (DDS)
- Describes the system from the software developer's viewpoint
- System design
- Program design

Software Development Life Cycle

■ Design

- High level design

- Brief description and name of each module
- Outline about the functionality of each module
- Dependencies between modules
- Database tables with key elements
- Complete architecture diagram

- Low level design

- Complete input, output of each module
- Functional logic of the modules
- Database tables with type, size
- Error messages

■ Implementation/ coding

- Whole task is divided into modules
- Different modules are assigned to different developers
- Developers write code to develop the module and thus the software
- Raw code/ framework
- Longest phase

Software Development Life Cycle

■ Testing

- Verifying that the software works according to the customer requirement
- Quality Assurance (QA) team and testing team tries to find bugs/ defects
- If they find so then the inform it to the developing team
- Developing team solves the issue
- Tested again by the QA and testing team until it is bug/ defect free and the quality standard defined in SRS is met

■ Installation/ deployment

- Releasing to a limited number of selected users
- Releasing the final software

■ Maintenance

- Bug fixing: Bugs are reported by users and fixed
- Update: Updating to newer versions
- Enhancement: Adding new features