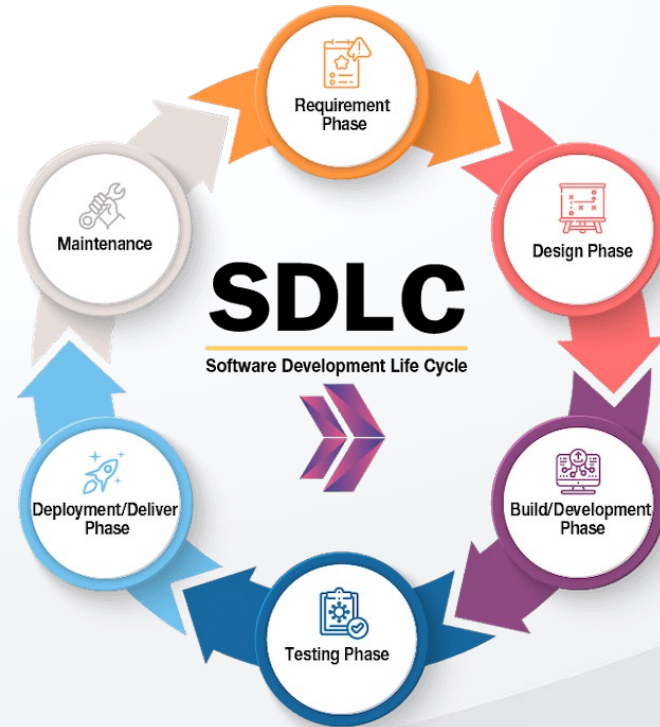


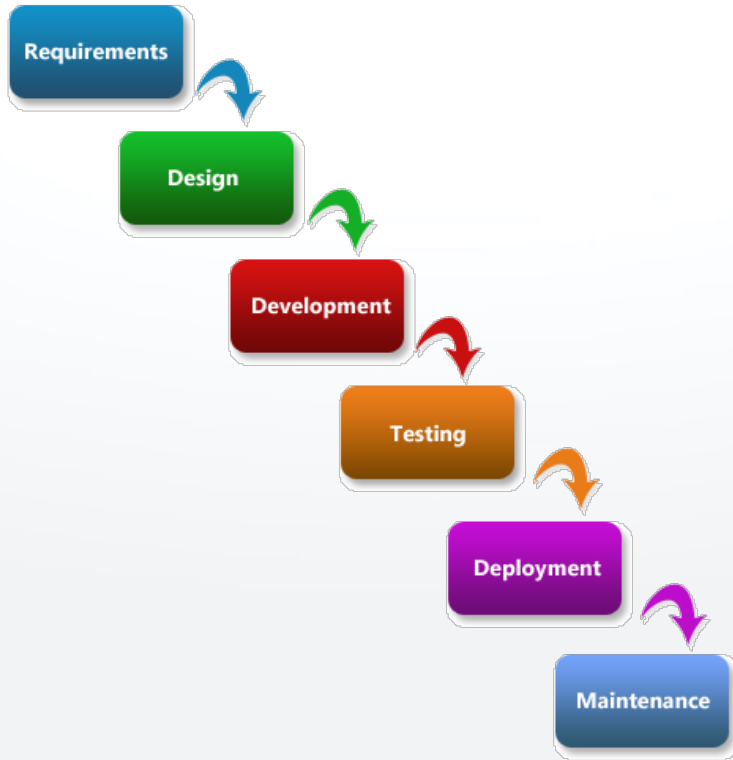
SESSION 2

SDLC

- SDLC, Software Development Life Cycle is a process used by software industry to design, develop and test software's.



Waterfall Model



Waterfall Model

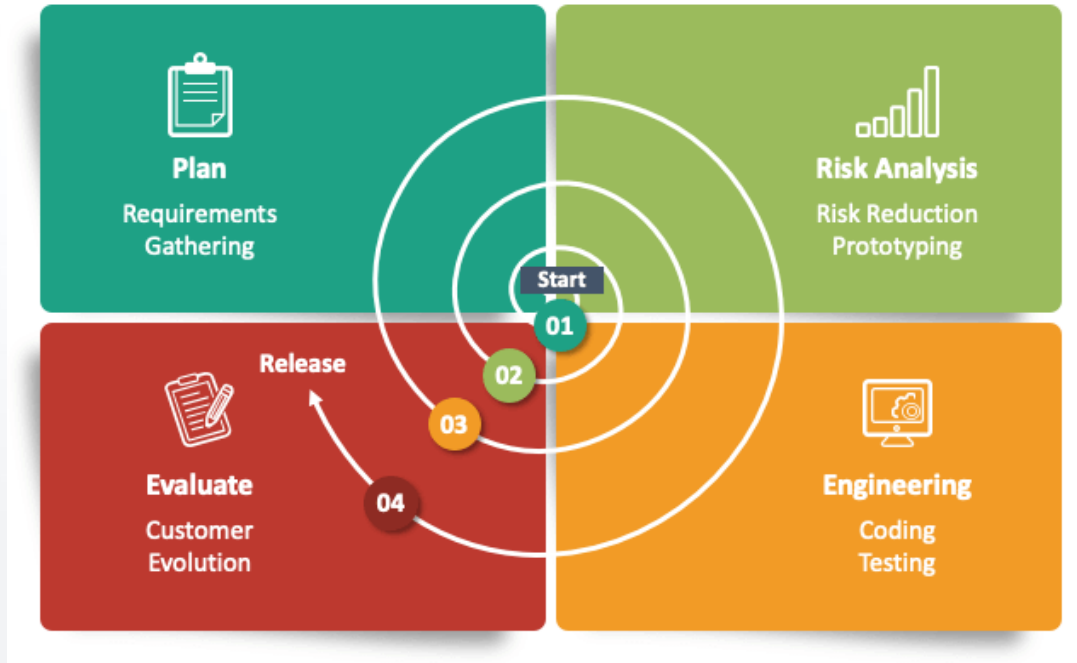
Advantages of Waterfall Model

- Quality of the product will be good.
- Since Requirement changes are not allowed , chances of finding bugs will be less.
- Initial investment is less since the testers are hired at the later stages.
- Preferred for small projects where requirements are freezed.

Disadvantages of Waterfall Model

- Requirement changes are not allowed.
- If there is defect in Requirement that will be continued in later phases.
- Total investment is more because time taking for rework on defect is time consuming which leads to high investment.
- Testing will start only after coding.

Spiral Model



Spiral Model

- Spiral Model is iterative model.
- Spiral Model overcome drawbacks of Waterfall model.
- We follow spiral model whenever there is dependency on the modules.
- In every cycle new software will be released to customer.
- Software will be released in multiple versions. So it is also called version control model.

Spiral Model

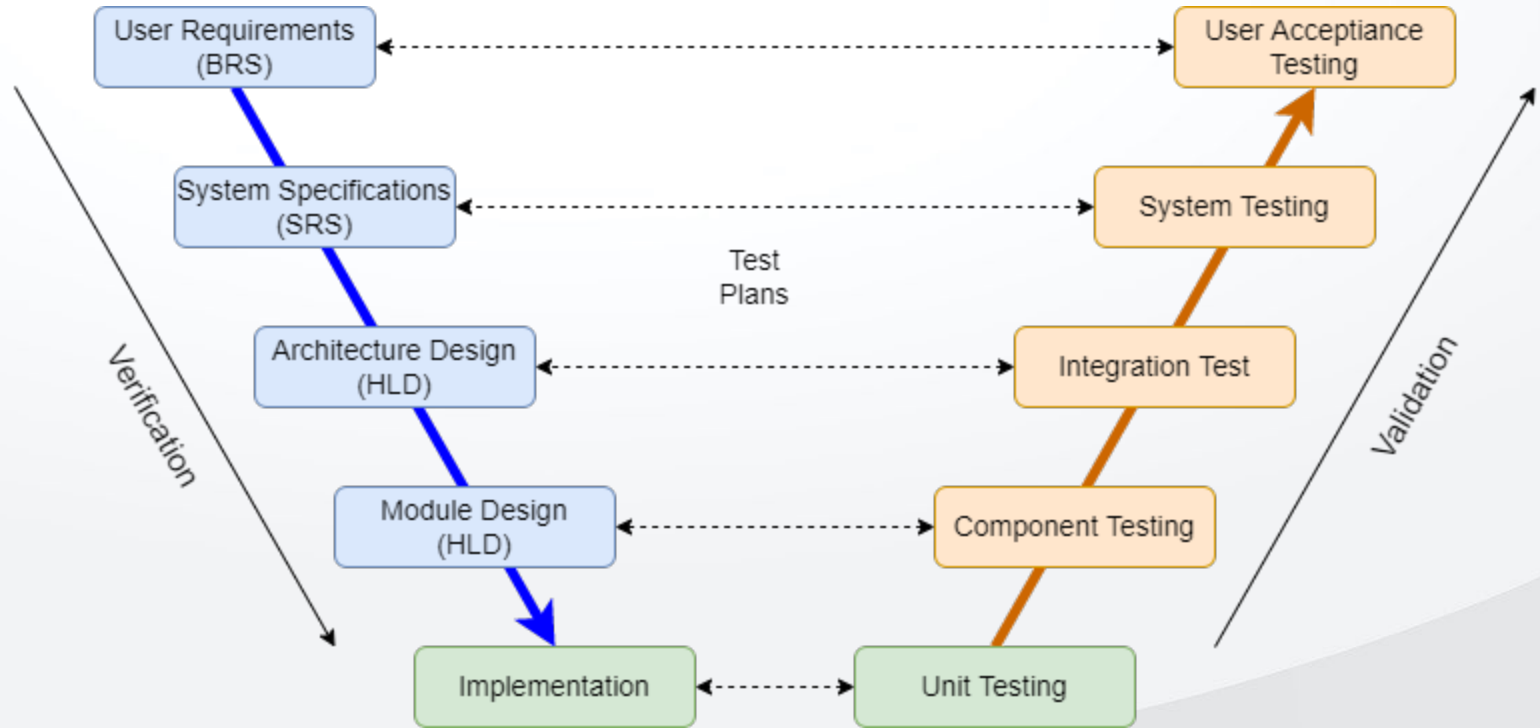
Advantages of Spiral Model

- Testing is done in every cycle, before going to the next cycle.
- Customer will get to use the software for every module.
- Requirement changes are allowed after every cycle before going to the next cycle.

Disadvantages of Spiral Model

- Requirement changes are NOT allowed in between the cycle.
- Every cycle of spiral model looks like waterfall model.
- There is no testing in requirement & design phase.

V-Model



V-Model

Advantages

- Testing is involved in each and every phase.

Disadvantages

- Documentation is more.
- Initial investment is more.

Verification Vs Validation

- **Verification** checks whether we are building the right product.
- Focus on Documentation
- Verification typically involves.
 - Reviews
 - Walkthroughs
 - Inspections
- **Validation** checks whether we are building the product right.
 - Takes place after verifications are completed.
 - Focus on Software
 - Validation typically involves actual testing.
 - Unit testing, integration, system testing, UAT testing



**Verification
Vs
Validation**

Static Testing Vs Dynamic Testing

- **Static testing** is an approach to test project documents in the form of Reviews, Walkthroughs and Inspections.
- **Dynamic testing** is an approach to test the actual software by giving inputs and observing results.

Static Testing Techniques

Reviews:

- Ensuring correctness and completeness of documents through a thorough examination.
- Examples: Requirement Reviews, Design Reviews, Code Reviews, Test Plan Reviews, Test Cases Reviews, etc.

Walkthrough:

- Informal review where the author discusses documents or code with peers.
- Execution: Not pre-planned, conducted whenever needed.
- Documentation: No formal minutes of the meeting are recorded.

Inspections:

- Formality: The most formal review type involving 3-8 participants, including a reader, writer, and moderator.
- Scheduling: Follows a proper schedule communicated via email to concerned developers or testers.

Dynamic Testing Techniques

- **Unit Testing:** Testing individual components or functions to verify that they work correctly in isolation.
- **Integration Testing:** Checking how different modules or components interact with each other to ensure seamless integration.
- **System Testing:** Evaluating the complete software system to ensure it meets specified requirements and functions as intended.
- **UAT (User Acceptance Testing):** Real users test the software to verify if it meets their needs and expectations.