V Model

Presented By

Anamika

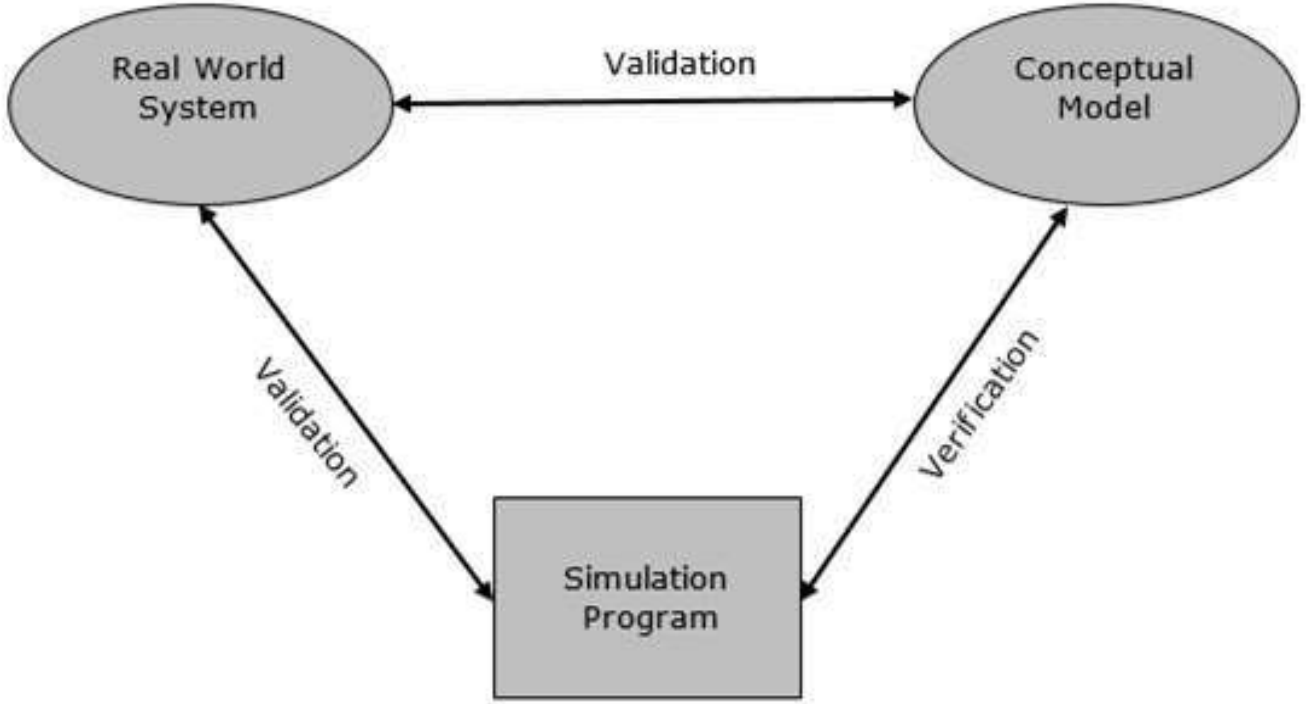
Prithvi R

Rukhiya Khanum

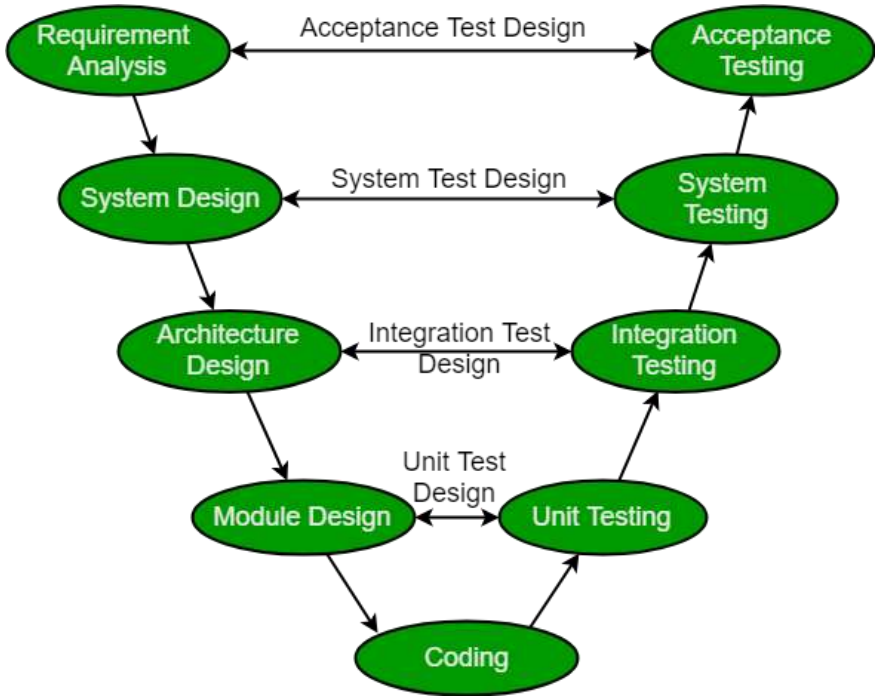
Sanjana

Introduction

- The V-model is an SDLC model where execution of processes happens in a sequential manner in a V-shape. It is also known as Verification and Validation model.
- The V-Model is an extension of the waterfall model and is based on the association of a testing phase for each corresponding development stage. This means that for every single phase in the development cycle, there is a directly associated testing phase.
- This is a highly-disciplined model and the next phase starts only after completion of the previous phase.
- Testing of device is planned in parallel with corresponding stage of development.
- So this model consist verification phase on one side and validation phase on otherside.


Real World System
Validation
Conceptual Model
Validation
Verification
Simulation Program

Flow of the model



Design Phase:

- **Requirement Analysis:** This phase contains detailed communication with the customer to understand their requirements and expectations. This stage is known as Requirement Gathering.
- **System Design:** This phase contains the system design and the complete hardware and communication setup for developing product.
- **Architectural Design:** System design is broken down further into modules taking up different functionalities. The data transfer and communication between the internal modules and with the outside world (other systems) is clearly understood.
- **Module Design:** In this phase the system breaks dowm into small modules. The detailed design of modules is specified, also known as Low-Level Design (LLD).

Testing Phases:

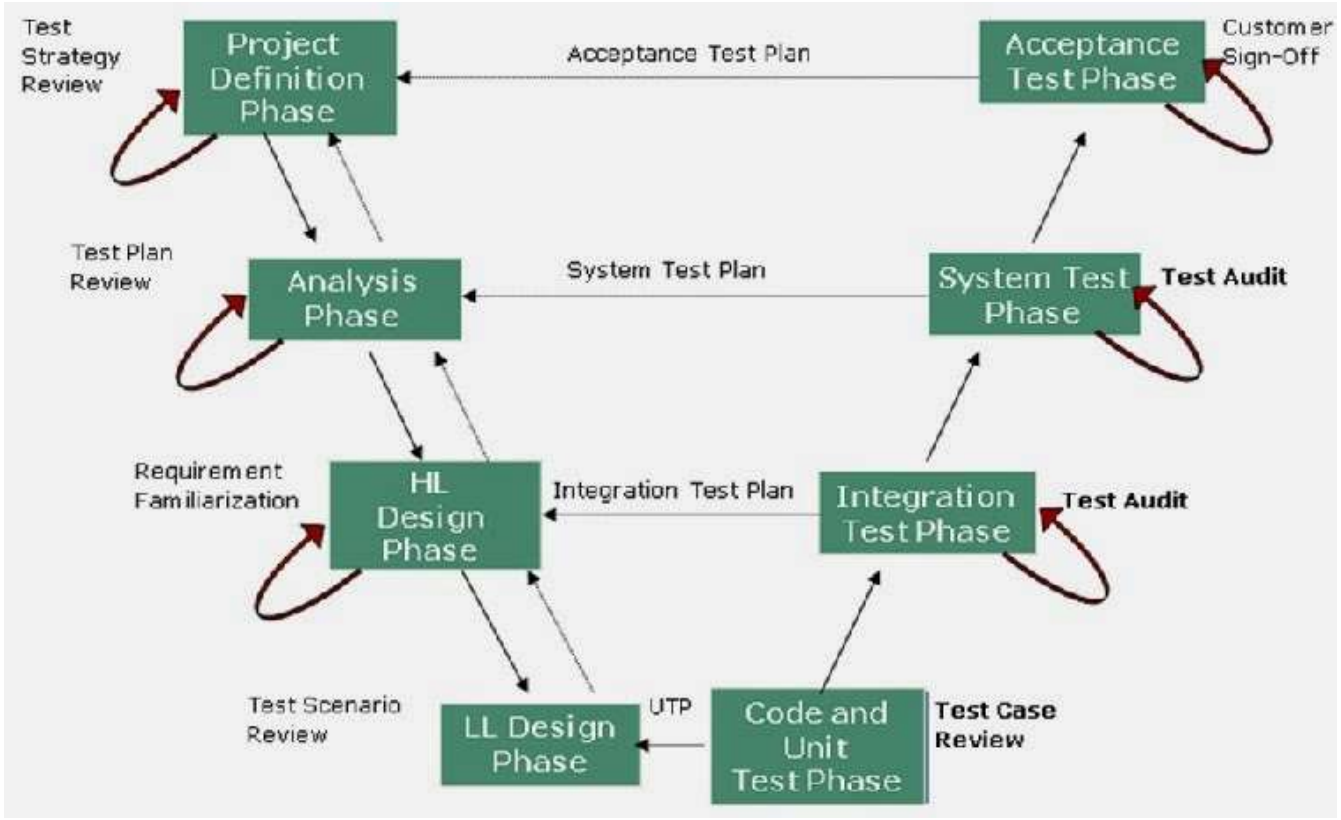
- **Unit Testing:** Unit Test Plans are developed during module design phase. These Unit Test Plans are executed to eliminate bugs at code or unit level.
- **Integration testing:** After completion of unit testing Integration testing is performed. In integration testing, the modules are integrated and the system is tested. Integration testing is performed on the Architecture design phase. This test verifies the communication of modules among themselves.
- **System Testing:** System testing test the complete application with its functionality, inter dependency, and communication.It tests the functional and non-functional requirements of the developed application.
- **User Acceptance Testing (UAT):** UAT is performed in a user environment that resembles the production environment. UAT verifies that the delivered system meets user's requirement and system is ready for use in real world.

Advantages

- Simple and easy to use
- Testing activities like planning, test designing happens well before coding. This saves a lot of time. Hence Higher chance of success over waterfall model.
- Proactive defect tracking i.e., defect is found at early stages
- Avoids Downward flow of defects.
- Works well for small projects where requirements are easily understood

Disadvantages

- Very rigid and least flexible
- Software is developed during the implementation phase, so no early prototypes of the software are produced
- If any changes happen in midway, then the test documents along with requirement documents has to be updated


Test Strategy Review
Project Definition Phase
Acceptance Test Plan
Acceptance Test Phase
Customer Sign-Off
Test Plan Review
Analysis Phase
System Test Plan
System Test Phase
Test Audit
Requirement Familiarization
HL Design Phase
Integration Test Plan
Integration Test Phase
Test Audit
Test Scenario Review
LL Design Phase
UTP
Code and Unit Test Phase
Test Case Review

Project that can be applied with V model

- V-Model is used for small projects where project requirements are clear. Simple and easy to understand and use. This model focuses on verification and validation activities early in the life cycle thereby enhancing the probability of building an error-free and good quality product
- The V shaped model should be used for small to medium sized projects where requirements are clearly defined and fixed
- The V-shaped model should be chosen when ample technical resources are available with needed technical expertise.
- High confidence of customer is required for choosing V-shaped model approach. Since no, prototypes are produced, there is very high risk involved in meeting customer expectations

Thank You