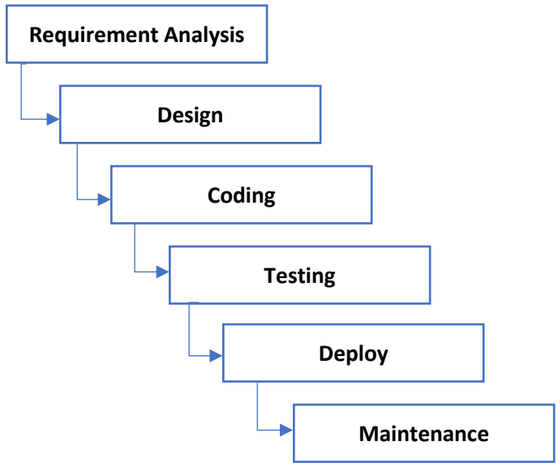
WATER FALL MODEL

- Whole process of software development is divided into separate phases.
- Outcome of one phase acts as the input for the next phase sequentially.



Requirement Analysis – All possible requirements are captured and documented in a requirement specification document.

Design – The requirement specifications are studied, and the system design is prepared. This system design helps in specifying hardware and system requirements and helps in defining the overall system architecture.

Coding – The system is first developed in small programs called units.

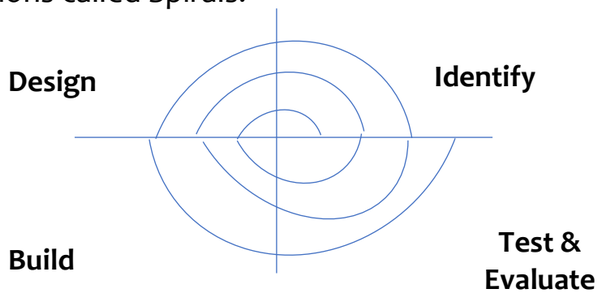
Testing – All the units developed in the coding phase are integrated into a system and the entire system is tested for any faults and failures.

Deploy – Once the functional and non-functional testing is done; the product is deployed in the customer environment or released into the market.

Maintenance – There are some issues which come up in the client environment. To fix those issues, patches are released. Also, to enhance the product some better versions are released. Maintenance is done to deliver these changes in the customer environment.

SPIRAL MODEL

- Combines the idea of iterative development with the systematic, controlled aspects of the waterfall model.
- The spiral model has four phases. A software project repeatedly passes through these phases in iterations called Spirals.



Identify – Gather the business requirements in the baseline spiral. In the subsequent spirals as the product matures, identification of System requirements, Subsystem requirements and unit requirements are all done. At the end of the spiral, the product is deployed in the identified market.

Design – Conceptual design, architectural design, logical design of modules, physical product design is prepared and the final design in the subsequent spirals.

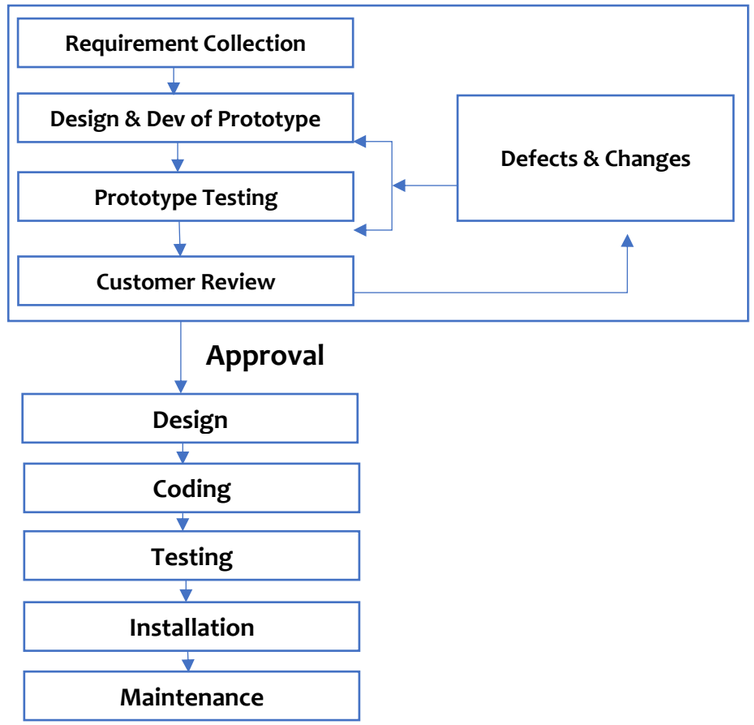
Build – Software product is built at every spiral. Working model of the software called build is produced with a version number. These builds are sent to the customer for feedback.

Test and Evaluate – The builds are tested, and technical feasibility is identified, estimated and management risks, such as schedule slippage and cost overrun are also identified.

After testing the build, at the end of first iteration, the customer evaluates the software and provides feedback.

PROTOTYPE MODEL

- It is a working replica of a product or system that must be engineered. The prototype is just an image / picture of the required product and is used for obtaining customer feedback.
- Can be designed by the developers/web designers/content writers/photoshop experts.



Requirement Collection: Basic product requirements are gathered, especially in terms of user interface.

Design & Development of Prototype: Initial prototype is developed with the requirements that are showcased. The prototype that is designed, gives the same look and feel of the product to the customer.

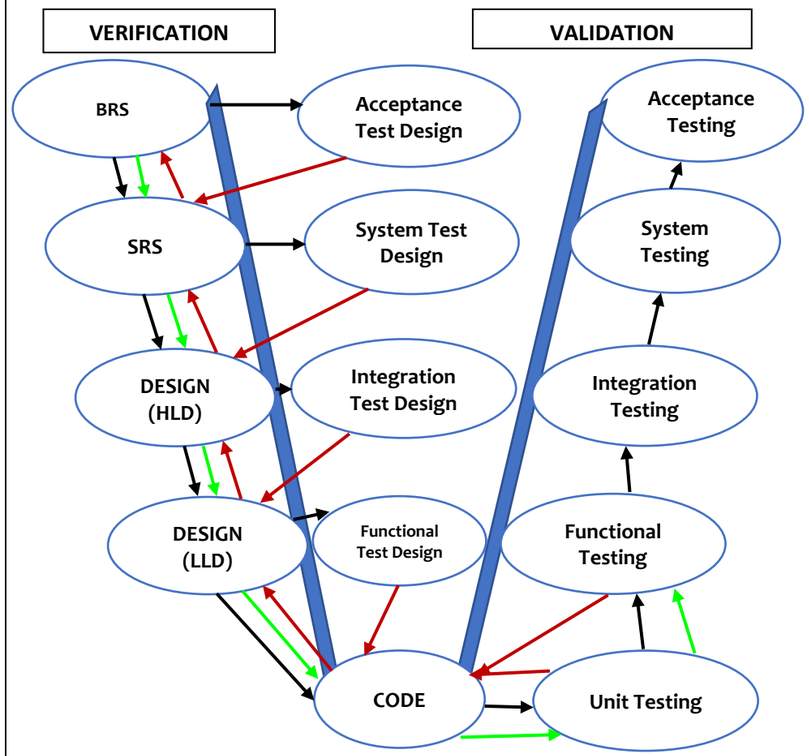
Prototype Testing: Prototype that was developed is then tested against the requirement.

Customer Review: Customer reviews the prototype and provides the feedback.

Defect & Changes: If there are any defects/changes, protype is redesigned, developed and tested.

V MODEL / VERFICATION & VALIDATION (V&V) MODEL

- Testing phase is associated for each corresponding development stage. This means that for every single phase in the development cycle, there is a directly associated testing phase. The next phase starts only after completion of the previous phase.
- Testing phase and development phase is planned in parallel. So, there are Verification phases on one side and Validation phases on the other side. The Coding Phase joins the two sides of the V-Model.



Review Points:

Acceptance Test Design: Wrong Requirements, Missing Requirements, Conflict in Requirements.

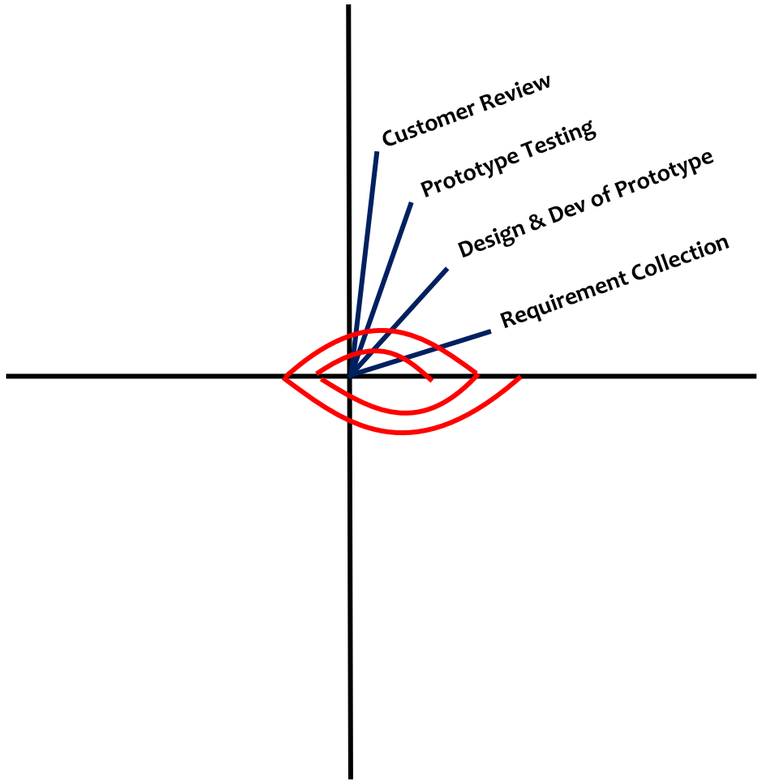
System Test Design: Missing BRS to SRS conversion, Incorrect BRS to SRS conversion.

Integration Test Design: Improper handshake between modules, No handshake between modules.

Functional Test Design: Missing Functionality, Improper interpretation of functionality, Wrong functionality.

HYBRID MODEL – Spiral & Prototype

- It is a combination of two or more models.
- It is also called as Derived Model.



Hybrid of Spiral and Prototype – When we go for it?

- Whenever the developer is new to the domain and the customer is giving requirements in stages/phases.
- Whenever the customer is new to the software and there are dependencies between modules.

HYBRID MODEL – V & PROTOTYPE

Hybrid of V and Prototype – When we go for it?

- Whenever the customer expects high quality product, but they are new to the software.
- Whenever the developers are new to the domain and the project is a complicated one.