Assignment 1

Vansh N Jain
20200135 I
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Division : B.

To study Software Process models & identify their applicability to various categories of projects.

A software process model is an abstraction of the software development process. The models specify the stages & order of a process. It is a representation of the order of activities of the process & the sequence in which they are performed.
A model defines the following:

- The tasks to be performed.
- The input & output of each task.
- The pre & post-conditions for each task.
- The flow & sequence of each task.

Factors in choosing a software process

- Project requirements
- Project size
- Project complexity
- Cost of delay
- Customer involvement
- Familiarity with technology
- Project resources.

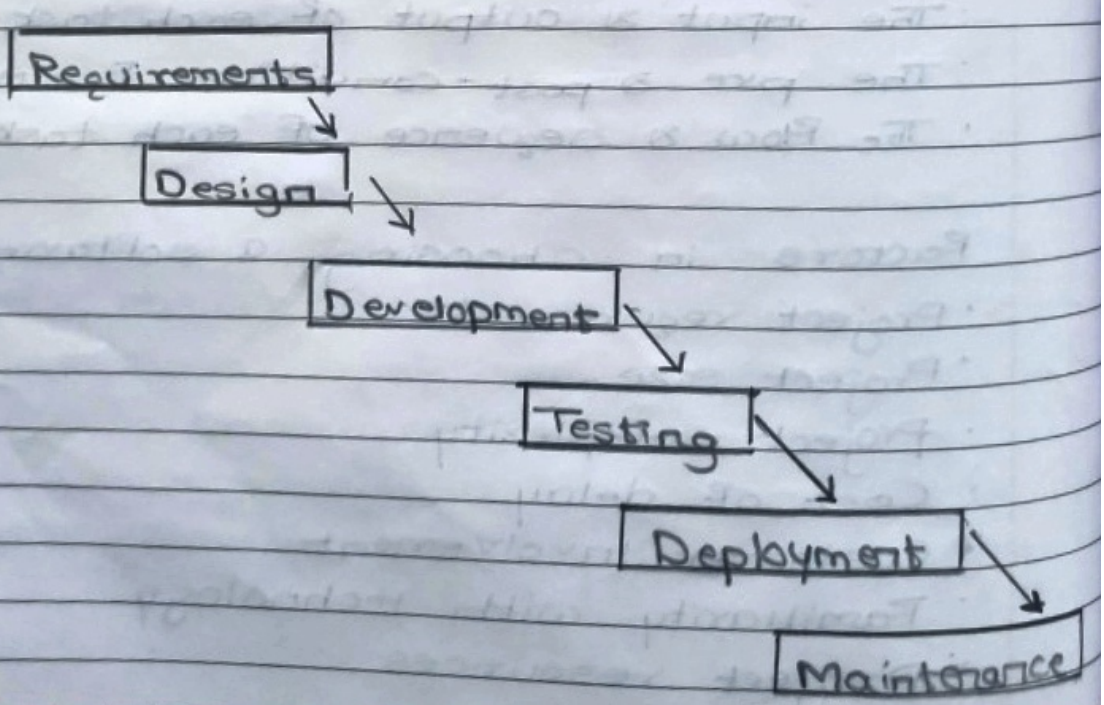
Types of Process models

1) Waterfall model

The waterfall model is a sequential, plan driven process where you must plan & schedule all your activities before starting the project. Each activity in the waterfall model is represented as a separate phase arranged in linear order.

It has the following phase:

1) Requirements
2) Design
3) Implementation
4) Testing
5) Deployment
6) Maintenance



Applicability :

1) Requirements are well documented, clear & fixed
2) Technology is understood & is not dynamic.
3) There are no ambiguous requirements.
4) The project is short.

It is/was used to develop Customer Relationship Management (CRM) systems.

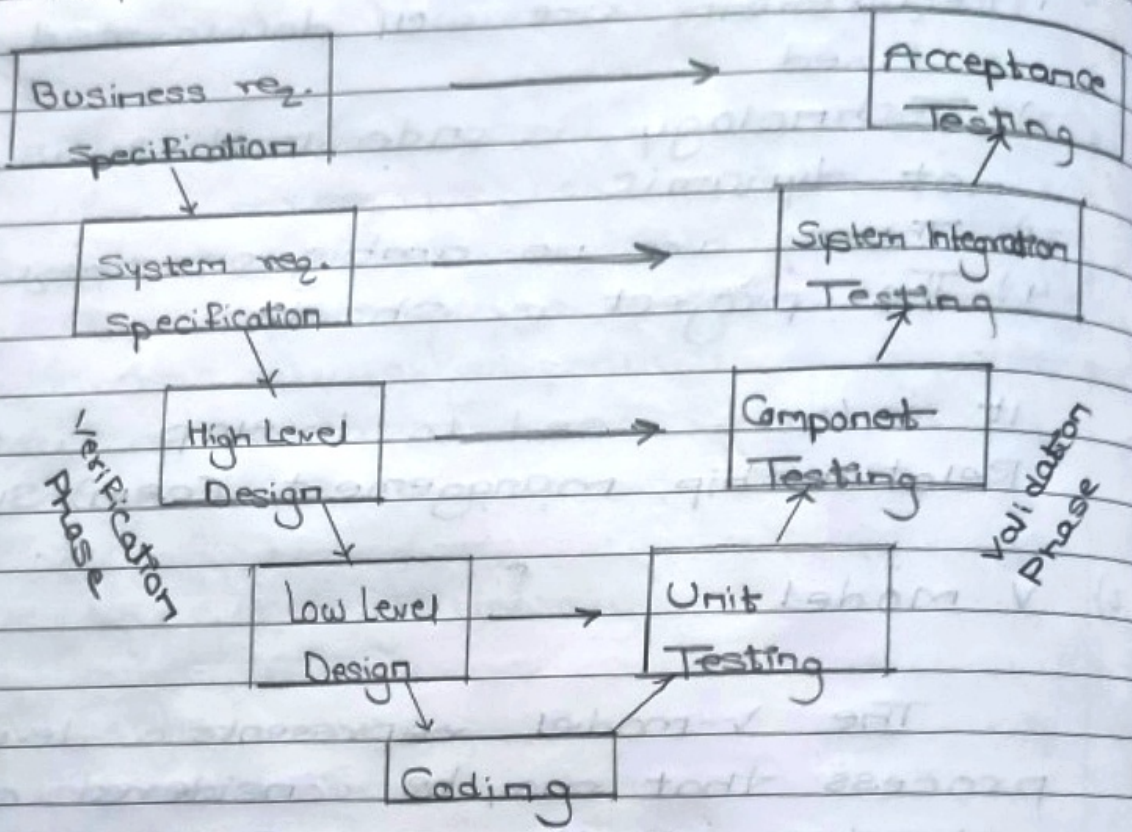
2) V model

The V-model represents a development process that may be considered an extension of the waterfall model & is an example of the more general V-model.

Instead of moving down in linear way, the process steps are bent upwards after the coding phase, to form the typical V-shape. The V-model demonstrates the relationships b/w each phase of the development life cycle & its associated phase of testing. The horizontal & vertical axes represent time or project completeness & level of abstraction.

Developer Life Cycle

Tester's Life Cycle



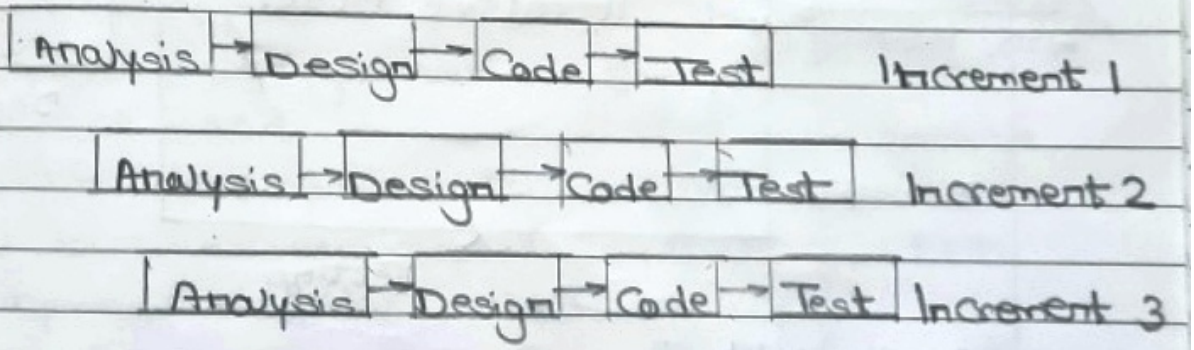
Applicability :

1) Product definition is stable
2) There are no ambiguos or undefined requirements
3) The project is short.

It is used in the medical development field.

3) Incremental Model

The incremental build model is a method of software development where the model is designed, implemented & tested incrementally (a little more added each time) until the product is finished. It involves both development & maintenance. The product is defined as finished when it satisfies all of it's requirement. Each iteration passes through the requirements, design, coding & testing phase. Each subsequent release of the system adds function to the previous release until all designed functionality has been implemented.

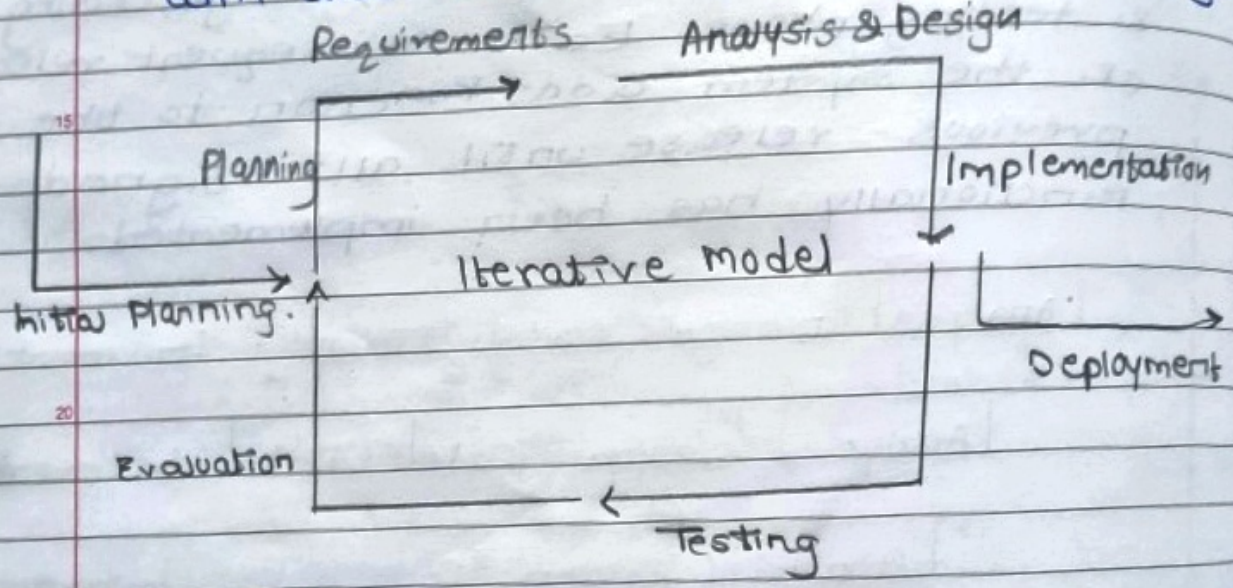


Applicability:

1) The requirements of the complete system are clearly defined & understood.
2) There is a need to get a product to the market early.
3) A new technology is used.

4) Iterative model

An iterative life cycle model does not attempt to start with a full specification of requirements by first focusing on an initial, simplified set user features which then progressively gains more complexity & a broader set of features until the targeted system is complete. when adopting the iterative approach. the philosophy of incremental development will also be used liberally & interchangeably



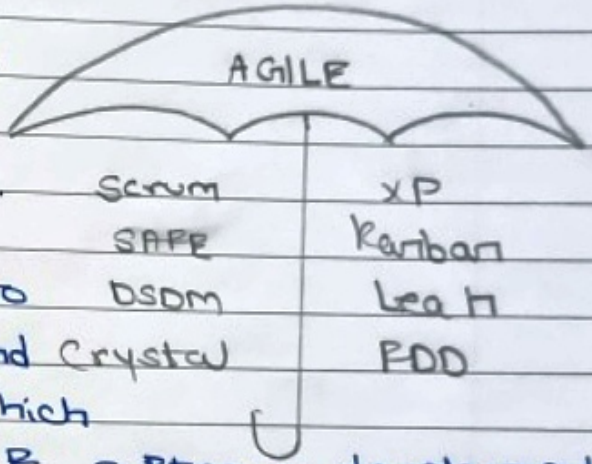
Applicability:

1) The requirements are defined clearly & easy to understand
2) when the software application is large
3) when there is a requirement of changes in future.

3) Agile model

Agile is an umbrella term for a set of methods & practices based on the values & principles expressed in the Agile Manifesto that is a way of thinking that enables team & business to innovate, quickly respond to changing demand, while mitigating risk. Organization can be agile using many of the available Framework available such as Scrum, Kanban Lean, Extreme Programming (XD)

The agile method proposes alternative to traditional project management. They are used in software development to help businesses respond to unpredictability which refer to a group of software development methodologies based on iterative development, where requirement & solution evolve through collaboration b/w self-organizing cross-functional teams



1) System have rapidly new change & are need to be implemented
2) Developer require more freedom of time & option.