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ASDM Assignment No-1

Q1. Discuss the prototyping model. What is the effect of Designing a prototype on the overall cost of the project?

➢

On the road to bringing a new product to market, without having an iota of doubt whether the product will be successful or not– one of the major steps is to <u>build a prototype of your product</u>.

It is a very essential method in design thinking– for making your ideas come to life, and before spending your entire resources on its development, you actually know whether the product is worthy or will even work for your target audience.

A person who wants their design process to be collaborative, productive and eventually successful, needs to build a product prototype.

Developing a prototype will not only help to give a grasp of how the website or app will look like, but also help to learn about the features to expect and match all the set of specifications prior to the full-scale development process being launched.

Q2. Compare iterative enhancement model and evolutionary process model.

> **Iterative Enhancement model**: This model contains the following phases

- Requirement analysis and specification

- Design

- Implementation and unit testing

 - Integration and System Testing

- Operation and Maintenance

These phases are same as the waterfall model, but these may be conduct in several cycles in Iterative enhancement model. A useable product is released at the end of each cycle, with each release providing additional functionality.

This model does deliver an operational quality product at each release. The complete product is divided into releases and the developer delivers the product release by release. A typical product will usually have many releases.

With this model, first release may be available within few weeks or months whereas the customer generally waits months or years to receive a product using other model.

Advantages:

1. Divides project into smaller parts

2. Creates working model early and provides valuable feedback

3. Feedback from one phase provides design information for the next phase

4. Very useful when more staffing is unavailable

Disadvantages:

1. User community needs to be actively involved in the project. This demands on time of the staff and add project delay

2. Communication and coordination skills take a centre stage

3. Informal requests for improvement for each phase may lead to confusion
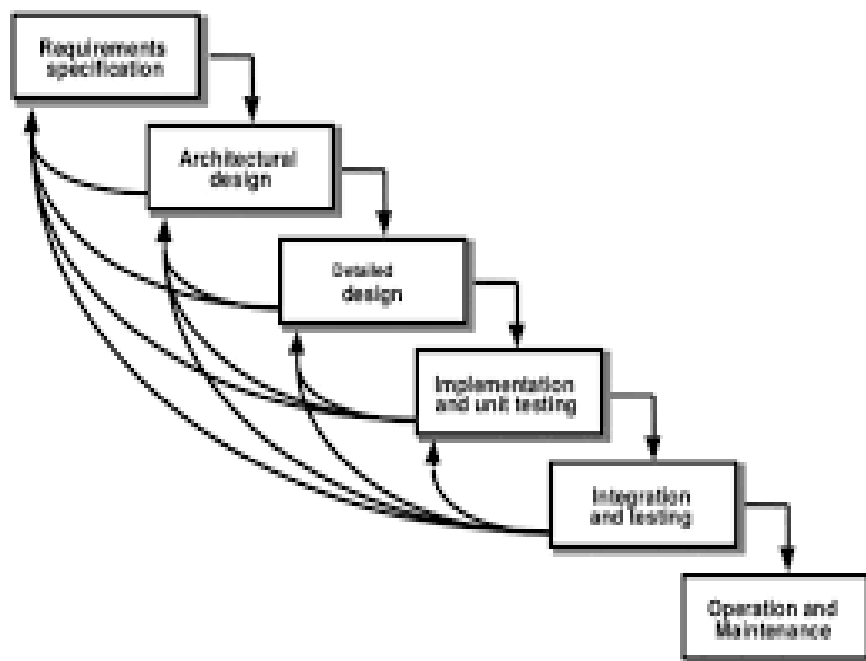
> **Evolutionary Process Model:** Evolutionary process model (e.g. Prototyping model) resembles Iterative enhancement model, but this differs from iterative enhancement model in the sense that this does not release product at the end of each cycle.

This model is useful for projects using new technology that is not well understood. This is also used for complex projects where all functionality must be delivered at one time, but the requirements are unstable or not well understood at the beginning.

Advantages:

- Risk analysis is better.
- It supports changing environment.

- Initial operating time is less.
- Better suited for large mission-critical projects.
- During the life cycle software is produced early which facilitates customer evaluation and feedback.

Disadvantages:

- Management complexity is more.
- Not suitable for smaller projects.
- Can be costly to use.
- Highly skilled resources are required for risk analysis.
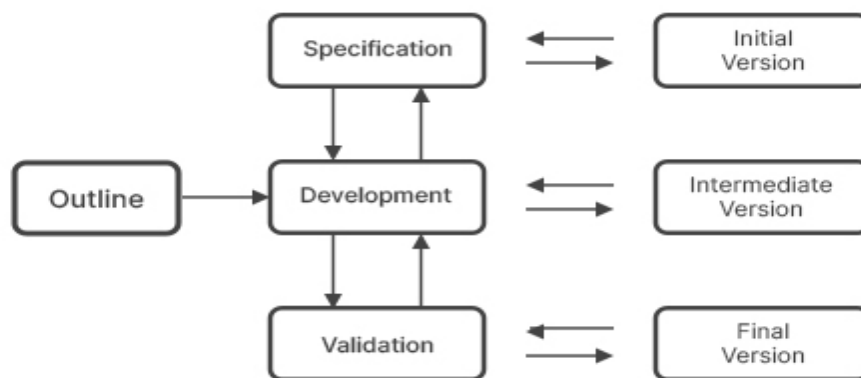
Evolutionary Development Of Software Development

Q3. As we move outward along with process flow path of the spiral model, what can we say about software that is being developed or maintained.

➢

The product advances to a more complete state as work spirals outward, and the **level of abstraction at which work is conducted decreases**
(i.e., implementation specific work accelerates as we move further from the origin).

One of the most significant models for the **Software Development Life** Cycle that supports **risk handling** is the **spiral model**   In diagrammatic form, it resembles a **spiral with several loops**.
The spiral's precise number of loops is unclear and varies from project to project. A phase of the software development process is referred to as each **spiral loop.**

The project manager might alter the precise number of phases required to build the product depending on the project's risks. The project manager plays a crucial role in the spiral model of product development since they dynamically set the number of phases.

The **waterfall model's** methodical, managed elements are combined with the idea of iterative development in the **spiral model.** Iterative and sequential linear development models, or the waterfall model, are combined to create the spiral model, which places a strong emphasis on risk analysis.

Q4. Explain the Scrum Agile methodology.

➢ Agile scrum methodology is the combination of the agile philosophy and the scrum framework. Agile means "incremental, allowing teams to develop projects in small increments.
Scrum is one of the many types of agile methodology, known for breaking projects down into sizable chunks called "sprints." Agile scrum methodology is good for businesses that need to finish specific projects quickly.
    Agile scrum methodology is a [project management system](#) that relies on incremental development. Each iteration consists of two- to four-week sprints, where the goal of each sprint is to build the most important features first and come out with a potentially deliverable product.
    More features are built into the product in subsequent sprints and are adjusted based on stakeholder and customer feedback between sprints.

- Agile: Agile is a process that allows a team to more efficiently manage a project by breaking it down into several stages, each of which allows for consistent collaboration with stakeholders to promote steady improvements at every stage.
- Scrum: In short, scrum is a framework for effective collaborations among teams working on complex products. Scrum is a type of agile technology that consists of meetings, roles, and tools to help teams working on complex projects collaborate and better structure and manage their workload. Although it is most often used by software development teams, scrum can be beneficial to any team working toward a common goal.

Q5. Explain the utility of Kanban CFD reports.

➢   The cumulative flow diagram (also known as CFD) is one of the most advanced Kanban and Agile analytics charts. It provides a concise visualization of the three most <u>important metrics of your Agile-flow</u>.

         Its main purpose is to show you how stable your flow is and help you understand where you need to focus on making your process more predictable. It gives you quantitative and qualitative insight into past and existing problems and can visualize massive amounts of data.

         The horizontal axis of the CFD represents the time frame for which the chart is visualizing data. The vertical axis shows the cumulative number of cards in the workflow   at various points in time.

         The differently colured bands that divide sections of the upward flow are the different stages of your workflow as they appear on the Kanban board itself. The bands always go up or sideways in accordance with the number of assignments that go through your process.

         The top line of each band on the cumulative flow chart represents the entry point of tasks in the respective stage of your Kanban board, while the bottom one shows when it leaves it. If a line becomes flat, nothing arrives in the corresponding stage, or nothing is leaving it.

         Using a CFD, you can get an idea of how long your tasks' approximate cycle time is.