ASSIGNMENT 1
ASDM

1)Discuss the prototyping model. What is the effect of designing a prototype on the overall cost of the project?

The prototyping model is a systems development method in which a prototype is built, tested and then reworked as necessary until an acceptable outcome is achieved from which the complete system or product can be developed. This model works best in scenarios where not all of the project requirements are known in detail ahead of time. It is an iterative, trial-and-error process that takes place between the developers and the users.

Types of prototype models

There are a few types of prototype models that can be implemented by development teams based on their needs:

- Rapid throwaway- This method involves exploring ideas by quickly developing a prototype based on preliminary requirements that is then revised through customer feedback. The name rapid throwaway refers to the fact that each prototype is completely discarded and may not be a part of the final product.
- Evolutionary- This approach uses a continuous, working prototype that is refined after each iteration of customer feedback. Because each prototype is not started from scratch, this method saves time and effort.
- Incremental- This technique breaks the concept for the final product into smaller pieces, and prototypes are created for each one. In the end, these prototypes are merged into the final product.
- Extreme- This prototype model is used specifically for web development. All web prototypes are built in an HTML format with a services layer and are then integrated into the final product

Advantages of the prototyping model

Using a prototype model can bring multiple advantages, including:

- Customers get a say in the product early on, increasing customer satisfaction.
- Missing functionality and errors are detected easily.
- Prototypes can be reused in future, more complicated projects.
- It emphasizes team communication and flexible design practices.
- Users have a better understanding of how the product works.
- Quicker customer feedback provides a better idea of customer needs.

Prototyping may have some initial costs of developing, but it reduces the overall budget by helping your product to be free of the errors or glitches that could have occurred if the idea was made from scratch without any prior user testing. Furthermore, prototyping also helps to understand the intrinsic flaws, shortcomings and drawbacks that can be improved during the product development process. If the prototyping process is ignored completely, it might result in the restructuring and redesigning of the entire product after spending all your resources on its development. So, the effect of designing a prototype on the overall cost of a software project is to actually reduce the additional costs of restructuring and reframing it after its full-fledged development- which might cost a fortune.

2)Compare iterative enhancement model and evolutionary process model.

•Enhancement Model:

1. The major requirements are defined, while some functionalities and requested enhancements evolve with the process of the development process.

2. A new technology is being used and is being learnt by the development team, while they are working on the project.

3. If there are some high risk features and goals, which might change in the future.

4. When the resources with needed skill sets are not available and are planned to be used on contract basis for specific iterations.

• Evolutionary Model**:**

1. Early visibility of the prototype gives users an

idea of what the final system looks like

Encourages active participation among users and

producer.

2. Enables a higher output for user.

3. Cost effective

4. Increases system development speed

5. Assists to identify any problems with the efficacy

of earlier design, requirements analysis and

coding activities.

3) 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.

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.

4) **Explain the Scrum Agile methodology**.

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.

Whereas other project management methods emphasize building an entire product in one operation from start to finish, agile scrum methodology focuses on delivering several iterations of a product to provide stakeholders with the highest business value in the least amount of time.

Agile scrum methodology has several benefits. First, it encourages products to be built faster, since each set of goals must be completed within each sprint's time frame. It also requires frequent planning and goal setting, which helps the scrum team focus on the current sprint's objectives and increase productivity.

5) Explain the utility of Kanban CFD reports.

A Cumulative Flow Diagram is a visual metric used in Kanban to analyze the stability of the workflow. Though there are many ways to draw data

from a Kanban solution, the CFD, sometimes referred to as the burn-up chart, is the best way to track progress and estimate process health quickly and effortlessly.

How many times have you been called to your supervisor's office to give an update on their favorite project? You've explained that the data wasn't on hand, and if given a few hours, you may be able to provide an answer. You can save those few hours and use a Cumulative Flow Diagram for just that - it will answer the question for you in an objective and all-inclusive way, as it accumulates all the project tasks and clearly shows tendencies for their completion. Send the CFD directly to your boss, or have it available online for the management, team, and stakeholders to pull information from for themselves, at any time.