HMI ASSIGNMENT 2

Roll No. A-52	Name: JANMEJAY PATIL
Class: BE-A	Batch: A3
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Q. What are the advantages and disadvantages of a Prototyping Model?

ANS:

Prototyping Model

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

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.

Disadvantages of using Prototype Model:

Using a prototype model can have some disadvantages as well:

-   This model is costly.
-   It has poor documentation because of continuously changing customer requirements.
-   There may be too much variation in requirements.
-   Customers sometimes demand the actual product to be delivered soon after seeing an early prototype.
-   There may be sub-optimal solutions because developers are in a hurry to build prototypes.
-   Customers may not be satisfied or interested in the product after seeing the initial prototype.
-   There is certainty in determining the number of iterations.
-   There may be incomplete or inadequate problem analysis.
-   There may increase in the complexity of the system.