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**S no :- 22**

**Subject :- ASDM**

**Assignment no. :- 01**

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

Prototyping is defined as the process of developing a working replication of a product or system that has to be engineered. It offers a small scale facsimile of the end product and is used for obtaining customer feedback. The Prototyping Model is one of the most popularly used Software Development Life Cycle Models (SDLC models). This model is used when the customers do not know the exact project requirements beforehand. In this model, a prototype of the end product is first developed, tested and refined as per customer feedback repeatedly till a final acceptable prototype is achieved which forms the basis for developing the final product.

**Advantages –** 

* The customers get to see the partial product early in the life cycle. This ensures a greater level of customer satisfaction and comfort.
* New requirements can be easily accommodated as there is scope for refinement.
* Missing functionalities can be easily figured out.
* Errors can be detected much earlier thereby saving a lot of effort and cost, besides enhancing the quality of the software.
* The developed prototype can be reused by the developer for more complicated projects in the future.
* Flexibility in design.

**Disadvantages –** 

* Costly w.r.t time as well as money.
* There may be too much variation in requirements each time the prototype is evaluated by the customer.
* Poor Documentation due to continuously changing customer requirements.
* It is very difficult for developers to accommodate all the changes demanded by the customer.
* There is uncertainty in determining the number of iterations that would be required before the prototype is finally accepted by the customer.
* After seeing an early prototype, the customers sometimes demand the actual product to be delivered soon.
* Developers in a hurry to build prototypes may end up with sub-optimal solutions.
* The customer might lose interest in the product if he/she is not satisfied with the initial prototype.

**Use –**   
The Prototyping Model should be used when the requirements of the product are not clearly understood or are unstable. It can also be used if requirements are changing quickly. This model can be successfully used for developing user interfaces, high technology software-intensive systems, and systems with complex algorithms and interfaces. It is also a very good choice to demonstrate the technical feasibility of the product.

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.

**Q.2 Compare iterative enhancement model and evolutionary process model.**

Iterative Enhancement Model: This model has the similar phases as the waterfall model, but with fewer restrictions. In general the phases occur in the same order as in the waterfall model but these may be conducted in several cycles. A utilizable product is released at the end of the each cycle with each release providing additional functionality.

Evolutionary Development Model: Evolutionary development model bear a resemblance to iterative enhancement model. The similar phases as defined for the waterfall model occur here in a cyclical fashion. This model is different from iterative enhancement model in the sense that this doesn't require a useable product at the end of each cycle. In evolutionary development requirements are implemented by category rather than by priority.

**Q.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.**

As work moves outward on the spiral, the product moves toward a more complete state and the level of abstraction at which work is performed is reduced (i.e., implementation specific work accelerates as we move further from the origin).

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

Agile scrum methodology is a sprint-based project management system with the goal of delivering the highest value to stakeholders.

Scrum is the type of Agile framework. It is a framework within which people can address complex adaptive problem while productivity and creativity of delivering product is at highest possible values. Scrum uses Iterative process.

Silent features of Scrum are:

* Scrum is light-weighted framework
* Scrum emphasizes self-organization
* Scrum is simple to understand
* Scrum framework help the team to work together

**Q.5 Explain the utility of Kanban CFD reports.**

Kanban cfd reports steps as follow :

(1) General project description and study goal. ...

(2) Detailed project description. ...

(3) CFD model description. ...

(4) CFD modeling results and analysis. ...

(5) Conclusions and recommendations. ...

(6) Result files. ...

(7) References.