

Q) what is SDLC?

⇒ Software Development Life Cycle (SDLC) is a process used by the software industry to design, develop and test high quality software.

b) what is SRS?

⇒ A software requirements specification (SRS) is a description of a software system to be developed. used appropriately, software requirements specifications can help prevent software project failure.

c) write down two advantages about ~~the~~ iterative waterfall model?

⇒ Advantages of Iterative waterfall model:—

Every phase contains feedback path to its previous phase. This is an simple to make changes or any ~~modifications~~ modifications at any phase.

~~Q) what~~

1) what are the demerits of classical waterfall model?

→ waterfall model →

Disadvantages high amounts of risk and uncertainty. Not a good model for a complex and object-oriented projects. Poor model for long and ongoing projects.

2) @ what is prototyping model? Explain

→ The prototyping model is a systems development methodology (SDM) within which a paradigm output (or an early approximation of a final system or product) is constructed, tested, and then reworked. It is done till an appropriate paradigm is achieved to help develop the entire system or product.

3) what is evolutionary model? explain.

→ Evolutionary model is a combination of of iterative and incremental model of software development life cycle. Delivering your system in a big bang release, delivering it in incremental process over time is the action done in this model.

some initial requirements and architecture envisioning need to be done.

(c) what are the Responsibility of Project Manager?

→ In the broadest sense, project managers (PMs) are responsible for planning, organizing, and directing the completion of specific projects for an organization while ensuring these projects are on time, on budget, and within scope.

(3) a) state and explain classical waterfall model?

→ classical waterfall model:-

→ Six phases of classical waterfall model:-

The waterfall model is ~~intuitively~~ intuitively the most obvious way to develop software.

1- Feasibility study:-

The main aim of the feasibility study is to determine whether it would be technically and financially feasible to develop the product.

→ An abstract problem definition:- only the important requirements of the customer are captured and the details of

the requirements are ignored.

→ Formulation of the different strategies for solving the problem? - All the different ways in which the problem can be solved are identified.

→ Evaluation of the different solution strategies? - Different solution strategies are analyzed to examine their benefits and shortcomings.

2- Requirement Analysis and Specification?

The aim of the requirements analysis and specification phase is to understand the exact requirements of the customer and to document them properly.

→ Requirements Gathering and Analysis? -

The goal of the requirements gathering activity is to collect all relevant information from the customer regarding the product to be developed.

→ Requirement Specification? -

The customer requirements identified during the requirements gathering and analysis activity are

organized into a software requirement specification (SRS) document.

3- Design: -

The goal of the design phase is to transform the requirements specified in the SRS document into a structure that is suitable for implementation in some programming language.

4- coding and unit testing: -

The purpose of coding and unit testing phase of software development is to translate the software design into the source code.

5- Integration and system testing: -

During this phase, the different modules are integrated in a planned manner. The plan specifies the order in which modules are combined to realize the full system.

Alpha testing: - is the type of testing which is performed by the developer's.

Beta testing: - is the type of testing which is performed by a real users and friendly set of customers.

6- Maintenance? -

Maintenance involves monitoring and improving system performance, enhancing system services, and upgrading to newer versions.

(b) State and explain iterative waterfall model?

→ Iterative model? -

In this model, you can start with some of the software specifications and develop the first version of the software.

The various phases of Iterative model are as follows? -

1- Requirement gathering & analysis? In this phase, requirements are gathered from customers and checked by an analyst whether requirements will fulfill or not.

2- Design? - In the design phase, team design the software by the different diagrams like Data Flow diagram, activity diagram, class diagram, state transition diagram, etc.

3- Implementation? - In the implementation, requirements are written in the coding language and transformed into computer programmes which are called software.

4- Testing? - After completing the coding phase, software testing starts using different test methods. There are many test methods, but the most common are white box, black box, and grey box test methods.

5- Deployment? - After completing all the phase, software is deployed to its work environment.

6- Review? - In this phase, after the product deployment, review phase is performed to check the behaviour and validity to the developed product.

7- Maintenance? - In the ~~maintenan~~ maintenance phase, after deployment of the software in the working environment there may be some bugs, some errors or new updates are required.

© State and explain spiral model?

→ The spiral model, initially proposed by Boehm, is an evolutionary software process model that couples the iterative feature of prototyping with the controlled and systematic aspects of the linear sequential model.

Objective setting: - Each cycle in the spiral starts with the identification of purpose for that cycle, the various alternatives that are possible for achieving the targets and the constraints that exists.

Risk Assessment and reduction? - The next phase in the cycle is to evaluate these various alternatives based on the goals and constraints.

Development and validation? - The next phase is to develop strategies that resolve uncertainties and risks. This process may include activities such as benchmarking simulation, and prototyping.

Planning:- Finally, the next step is planned. The project is reviewed, and a choice made whether to continue with a further period of the spiral. If it is determined to keep, plans are drawn up for the next step of the project.

The next phase may be an evolutionary development that includes developing a more detailed prototype for solving the risk.

When to use spiral model?

→ when deliverance is required to be frequent.

→ when the project is large.

→ when requirements are unclear and complex.

→ when ~~the~~ changes may require at any time.

→ large and high budget projects

Advantages:-

→ high amount of risk analysis.

→ useful for large and mission-critical ~~type~~ projects.

Disadvantages: -

- can be a costly model to use.
- Risk analysis needed highly particular expertise.
- Doesn't work well for smaller projects.