

1)What is SDLC

Software Development Life Cycle (SDLC) is a process followed for a software project, within a software organization. It consists of a **detailed plan describing how to develop, maintain, replace and alter or enhance specific software**. The life cycle defines a methodology for improving the quality of software and the overall development process. it is a structured approach used to develop high-quality software. Planning ->defining->designing->building->Testing-> deployment

2)What is Waterfall.

Each phase depends on the outcome of the previous phase, and all phases run sequentially. advantages include a clear and well-defined process, and a detailed documentation process. Its disadvantages include a lack of flexibility, and the inability to accommodate changing requirements.

3)Different Models under SDLC

Sdlc models: waterfall/ agile/ spiral /v-model

Waterfall Model:

Sequential software development approach with phases including requirements gathering, design, implementation, testing, and maintenance. Works for projects with defined requirements, stable tech, and clear scope.

Agile Model:

Flexible, iterative approach to software development emphasizing collaboration, customer satisfaction, and rapid delivery. Divides project into small, incremental phases (sprints), allowing changes based on customer feedback.

Spiral Model:

Risk-driven software development process model combining iterative nature of Agile with step-by-step approach of Waterfall. Emphasizes risk analysis and management, and development divided into a series of iterations with planning, risk analysis, and prototyping.

V-Model:

The V-Model is a software development model that is based on the Waterfall model. Its use in software development involves testing at each stage of the development process to ensure that the software meets all requirements.

4)Different Models under Agile.

SCRUM is an agile development process focused primarily on ways to manage tasks in team-based development conditions.

There are three roles in it, and their responsibilities are:

- **Scrum Master:** The scrum can set up the master team, arrange the meeting and remove obstacles for the process
- **Product owner:** The product owner makes the product backlog, prioritizes the delay and is responsible for the distribution of functionality on each repetition.

- **Scrum Team:** The team manages its work and organizes the work to complete the sprint or cycle.

eXtreme Programming(XP)

This type of methodology is used when customers are constantly changing demands or requirements, or when they are not sure about the system's performance.

5)What is UML

Unified Modeling Language (UML) is a general purpose modeling language. The main aim of UML is to define a standard way to **visualize** the way a system has been designed. It is quite similar to blueprints used in other fields of engineering.

6)What is the Architecture Diagram for a Project.

An **architecture diagram** is a diagram that depicts a system that people use to abstract the software system's overall outline and build constraints, relations, and boundaries between components. It provides a complete view of the physical deployment of the evolution roadmap of the software system.

7)What is Deployment Phase in SDLC

The deployment phase is the final phase of the software development life cycle (SDLC) and puts the product into production. After the project team tests the product and the product passes each testing phase, the product is ready to go live.

8)Types under Agile.

Kanban-----This type of methodology fulfills all of the Agile model's 12 different principles. It's an incremental process wherein transparency in software development is the primary aspect.

SCRUM----The set of development principles that this methodology type possesses is more complex, making it a highly prescriptive framework.

Extreme Programming----Extreme Programming (XP) focuses on customer satisfaction through constant development. This methodology emphasizes feedback, communication, and teamwork. Similar to SCRUM, short development cycles or sprints are also present in this framework.

Crystal----Also known as 'lightweight methodology,' crystal has less documentation and project review overhead.

9)What do you mean by Sprint in Agile Scrum.

A sprint is a short, time-boxed period when a scrum team works to complete a set amount of work. Sprints are at the very heart of scrum and agile methodologies, and getting sprints right will help your agile team ship better software with fewer headaches.

10)ER diagram ?

ER diagram represented by means of an ER diagram. Any object, for example, entities, attributes of an entity, relationship sets, and attributes of relationship sets, can be represented with the help of an ER diagram.

11) Difference between Waterfall and Agile Methodology.

The main difference is that Waterfall is a linear system of working that requires the team to complete each project phase before moving on to the next one while Agile encourages the team to work simultaneously on different phases of the project.