1. ***What is software testing*?**

* Software testing is a process which is identify the correctness, completeness and quality of the developed computer software.

1. ***What is SDLC*?**

* SDLC (software development life cycle) is a step by step process which is used by software industry to design, develop and test the software and deliver to the customer.

Which contains certain phases:

Requirement

Analysis

Design

Development

Testing

Maintenance

1. ***SDLC phases with basic introduction*?**

**Requirement**: It is the first phase of SDLC in which all the necessary information is collected from the customer to develop the software as per their expectation.

**Analysis**: Once the requirement gathering is done the next step is to define and document the product requirement and get then approved from the customer. This is done through software requirement specification document (SRS).

**Design**: It gives the architecture of the software product to be developed and is done by architect and senior developers. It describes how each and every features in the product should work and how every component should work.

**Implementation**: In this phase developers start build the entire system by writing code using programing language. The system develops in small programs called modules.

**Testing**: Once the software development is completed then it is sent to the testers. The testing team starts testing the functionality of the entire system. In this phase, the software is checked for bugs or error. Whenever a bug is found then the software is resent to the coders to fix it and then overall software is re-tested.

**Maintenance**: Maintenance team look over the software usage & users feedback.

The bug fixing, upgrade & enhancement of the software is looked over by the maintenance team. Repair defects and adopt the solution to the new requirements.

1. ***Write phases of spiral mode.***

Planning: Determining objectives and alternate solutions,

Risk analysis: Identifying and resolving risks.

Engineering: Development of the next level product.

Customer evaluation: Assessment of the results of engineering.

1. ***What is 7 key principles? Explain details***

* Testing shows presence of defects: Software testing reduces the presence of defects. Testing can show that defects are presents, but cannot prove that there are no defects. We test to find faults. We perform testing to find faults.
* Exhaustive testing is impossible: Exhaustive testing is impossible means the software can never test at every test cases. It will produce the correct output in every test cases.
* Early testing: The defect detected in early phases of SDLC will very less expensive. Testing activity should start as early as possible in development lifecycle.
* Defect clustering: A small number module can contain most defects. Defects are not evenly spread in system they are clustered.
* Pesticide paradox: Repeating the same test cases again and again will not find new bugs. It is necessary to review the test cases and add or update test cases to find new bugs.
* Testing is context dependent: Testing approach depends on context of software developed. Different types of software need to perform different types of testing. The testing of the ecommerce site is different from the testing of the android application.
* Absence of errors fallacy: If a built software is bug free, but it does not follow the user requirement then it is unusable. It is not necessary that software is 99% bug free, but it is mandatory to fulfill all the customer requirements.

1. ***Explain phases of waterfall model?***

**Requirement**: In this phase all the necessary information is collected from the customer to develop the software as per their expectation. Validation is needed throughout the software life cycle, not only when the final system is delivered. There are three types of problem can arrives. Lack of clarity, requirement confusion, requirements amalgamation.

**Analysis**: This phase defines the requirements of the system. The architecture defines the components, their interfaces and behaviors the deliverable design document is the architecture.

**Design phase**: In this phase design architecture document is created which contains all logical details like How the software will look, Which language will be used, Data base design, Modular design, etc.

**Implementation phase**: In this phase the team builds the components either from scratch or by composition. When designing of the software is completed then a group of developers should build exactly what has been requested. A number of developers code and implement the modules and then all modules are arranged together to work efficiently.

**Testing**: Once the software development is completed then it is sent to the tester. The testing team starts testing the functionality of entire system. The software is check for bugs or error.

**Maintenance**: Maintenance team look over the software usage and users feedback. There are three types of maintenance - Corrective, Adaptive and Perfective.

1. ***Write agile manifesto principles***

* Individual and interaction
* Working software
* Customer collaboration
* Responding to change

1. ***Explain working methodology of agile model? And also write pros and cons.***

Agile model is combination of iterative and incremental process model with focus of process adoptability and customer satisfaction by rapid delivery of working software product.

Pros:

* *Easy to manage*
* *Gives flexibility to developers*
* *Requirement changes are allowed in any stage of development.*
* *Functionality can be developed rapidly*

Cons:

* *More risk of sustainability, Maintainability, And extensibility,*
* *Less focus on design and documentation depends on customer interaction so, if customer is not clear, team can be driven in wrong direction.*

Draw use cases on Online sopping product using COD

Open application

Search for product

Select product

Select buy option

Select payment option

Close application

Receive confirmation massage

Select order confirmation

Draw use cases on Online bill payment system (Pay TM)

Open PayTM app

Select electric bill option

Select electricity board option

Enter consumer number

Enter bill amount

Close app

Confirm payment

Enter OTP

Select payment option

1. ***What is SRS?***

SRS stands for system requirement specification. SRS is detailed description of software system to be developed with its functional and non functional requirements. SRS documents documents contain all logical details like ow the software look like, which langauge will be used, data base design, modular design etc.SRS is a formal report which acts as a representation of the software.

1. ***What is OOPs?***

OPPs is a object orianted programing system,the main purpose of OOP is to deal with real world entity using programming language.

1. ***Write basic concept of OOPs***

* Class
* Object
* Encapsulation
* Inheritance
* Polymorphism
* Abstraction

1. ***What is object?***

Object is a instances of an class,to create memory for that class.The object is an entity which has state and behavior.

1. ***What is class?***

Class is a collection of data member(variables) and member function(process,methods) with its behaviour.

1. ***What is encapsulation?***

Encapsulation means hiding the data or wrapping up of data into single unit.

1. ***What is Ineritance?***

Properties of parent class extends into child class is called inheritance.

Properties of super class extends into subclass.The main purpose of inheritance is reusability and extensibility.

1. ***What is polymorphism?***

Polymorphism is ability to take one name having many or multiple forms.

There are mainly 2 types:

* Overloading
* Overriding

Draw use case on Online book shoping

Open app

Select search option

Enter book name

Select book

Select quantity

Select payment option

Select continue option

Enter address

Select buy option

Close app

Confirm payment

Enter OTP

Select bank account