# **Software Testing Assignment**

## **Module-1(Fundamental)**

**Q.** What is SDLC?

**A:** SDLC stands for Software Development Life Cycle. It is essential series of steps (phase) that provides a model for the development and life cycle management of an application or software.

**Q.** What is Software Testing?

**A:** Software testing is the process of evaluating a system or its components with the intent to find that rather it satisfies the specified requirements or not. It is executing the system in order to identify any gaps, errors, or missing requirements in contrary to the actual desire or requirements.

**Q.** What is Agile Methodology?

**A:**  The Agile methodology is a project management approach that involves breaking the project into phases and emphasizes continuous collaboration and improvement. Teams follow a cycle of planning, executing, and evaluating.

**Q.** What is SRS?

A: SRS stands for Software Requirement Specification. It is a document that describes what the software will do and how it will be expected to perform. It also describes the functionality the product needs to fulfill.

**Q.** What is oops?

**A:** OOPS stands for Object-oriented programming. It is a programming model that organizes software design around data, or objects, rather than functions and logic. It is a method to design a program using classes and object to simplify software development and maintenance by providing its concepts.

**Q.** Write Basic Concepts of oops.

**A:** There are four fundamental basic concepts of Object-oriented programming – Object, Class, Inheritance, Encapsulation, Polymorphism, and Data abstraction.

**Q.** What is Object?

**A:** An object is an instance of a class. It contains properties and functions which are like real-world entities. Data & Function that operates on data are bundled as a unit called as an object. For example, Car, House, Laptop etc.

**Q.** What is Class?

**A:** A class describes the contents of the object that belongs to it. It is a blueprint of an object. It is abstraction of the object and abstracts the properties & behavior of the object.

**Q.** What is Encapsulation?

**A:** Encapsulation refers to the practice of including everything it needs in an object hidden from other object. The internal state is usually not accessible by other objects. It helps in hiding the internal state of an object and only exposing the necessary functionality.

**Q.** What is Inheritance?

**A:** Inheritance allows one class to inherit the attributes, methods and characteristics of another class. The class whose properties are inherited is known as the parent class while the class that inherits the properties from the parent class is the child class. There are five types of inheritance namely Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance and Hybrid Inheritance.

**Q.** What is Polymorphism?

**A:** Polymorphism performs different things as per the object’s class, which calls it. with Polymorphism, a message is sent to multiple class object, and every object responds appropriately according to the properties of the class. Polymorphism can be achieved through overloading and overriding.

**Q.** Draw Usecase on Online book shopping.

**A:**



**Q.** Draw Usecase on Online bill payment system ( paytm ).

**A:**

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**Q.** Write SDLC phases with basic introduction?

**A:**  SDLC phases are below:

1. Planning & Analysis: The first phase of the SDLC is the project planning stage where you are gathering business requirements from your client.
2. Define Requirements: This phase is critical for converting the information gathered during the planning and analysis phase into clear requirements for the development team. This process guides the development of several important documents such as a software requirement specification (SRS), a Use Case document, and a Requirement Traceability Matrix document.
3. Design: In this phase, original plan and vision are elaborated into a software design document (SDD) that includes the system design, programming language, templates, platform to use, and application security measures. In most cases, the design phase will include the development of a prototype model. It gives the opportunity to visualize what the product will look like and make changes without having to go through the hassle of rewriting code.
4. Development: It’s where the team members divide the project into software modules and turn the software requirement into code that makes the product. This phase can take quite a lot of time and specialized development tools. You can keep track of progress in this stage. At times, Testing team runs simultaneously parallel with the development team to ensure there are no critical bugs creating a product.
5. Testing: Before getting the software product out the door to the production environment, it’s important to have your quality assurance team perform validation testing to make sure it is functioning properly and does what it meant to do. The types of testing to do in this phase are mainly Performance Testing, Functional Testing, Security Testing, Unit-Testing, Usability Testing and Acceptance Testing. Testing could be Manual or Automated.
6. Deployment: In Deployment phase, your final product is delivered to your intended user. In other words, you can release a beta version of the actual product to specific users in order to check the feasibility and working of the product before its actual release to the open market.
7. Maintenance: The maintenance phase is the final stage of the SDLC. During this phase, user may find bugs and errors that were missed in the earlier testing phase. These bugs need to be fixed for better user experience.

**Q.** Explain Phases of the Waterfall Model?

**A:** The waterfall model consists of the following six phases:

1. Requirement Gathering: This is the first phase of waterfall model, where the client has to provide the requirements for the software system. One or more technical people will have meetings with the client to define the requirements and understand what they want the system to do. The output of this process will be one or more documents stating all the requirements in a lot of details. It forms the basis for everything that will be done in the following phases of the project. It is not possible to come back to the requirements and change them at a later stage, therefore this step is very important.
2. Design: Once the requirements are understood, the design phase begins. This involves creating a detailed design document that outlines the software architecture, user interface, and system components.
3. Coding & Development: It includes implementation of coding the software based on the design specifications. This phase also includes unit testing to ensure that each component of the software is working as expected.
4. Testing: In the testing phase, the software is tested as a whole to ensure that it meets the requirements and is free from defects.
5. Deployment: Once the software has been tested and approved, it is deployed to the production environment.
6. Maintenance: The final phase of the Waterfall Model is maintenance, which involves fixing any issues that arise after the software has been deployed and ensuring that it continues to meet the requirements over time.

**Q.** Write Phases of Spiral Model.

**A:** The spiral model consists of following phases:

1. Planning: The first phase of the Spiral Model is the planning phase, where the scope of the project is determined and a plan is created for the next iteration of the spiral.
2. Risk Analysis: In the risk analysis phase, the risks associated with the project are identified and evaluated.
3. Engineering: Here, the software is developed base on the requirements gathered in the previous iteration.
4. Evaluation: In this phase, the software is evaluated to determine if it meets the client’s requirements and if it is of high quality.
5. Planning: The next iteration of the spiral begins with a new planning phase, based on the results of the evaluation.

**Q.** Write Agile Manifesto Principles.

**A:** There are four agile manifesto principles:

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation (detailed documentation).
3. Customer Collaboration over contract negotiation.
4. Responding to change over following a plan.

**Q.** Explain working methodology of agile model and also write pros and cons.

**A:** As it focuses on product placement, the agile model allows a department to deliver products to clients as quickly as possible. While products and development processes may not be as optimal as possible due to lessened planning stages, the agile model allows improvement to progress through reactionary feedback.

The pros and cons of agile model are as follows:

PROS:

1. Timely delivery.
2. Adaptability.
3. Ease of collaboration.
4. Increased performance improvement.
5. Transparency.
6. Continuous improvement.
7. Less documentation work.

CONS:

1. Transfer difficulties.
2. Variable goals.
3. Lack of documentation.
4. Goals focus shifting.
5. Less predictability.
6. Adjustment to meet the deadline.
7. Dependency on customer review & idea.

**Q.** Draw usecase on online shopping product using COD.

**A:**



**Q.** Draw usecase on online shopping product using payment gateway.

**A:**

