**TOPS** **Technologies Pvt.Ltd**

**Software testing Assignment**

**Module – 1 (Fundamental)**

* **What is SDLC**

**Ans:** SDLC is a structure imposed on the development of a software product that defines the process, we are under taking for planning, implementation, testing, documentation, deployment, and ongoing maintenance and support.

* **What is agile methodology?**

**Ans:** Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

* **What is SRS**

**Ans:** A software requirements specification (SRS) is a complete description of the behaviour of the system to be developed.

* **What is oops**

**Ans:** Object-oriented programming an Identifying object and assigning responsibilities to these objects.

* **Write Basic Concepts of oops**

**Ans:** now, there are four basic concepts ofoops Encapsulation, Inheritance, Polymorphism, and date Abstraction

* **What is object**

**Ans:** inObject-oriented programming, when you define a class, you define a blueprint for an object.

* **What is encapsulation**

**Ans:** Encapsulation is the practice of including in an object everything it needs hidden from other objects. The internal state is usually not accessible by other objects.

* **What is inheritance**

**Ans:** Inheritance means that one class inherits the characteristics of another class. This is also called a “is a” relationship.

* **What is polymorphism**

**Ans:** Polymorphism means “having many forms”. than it allows different objects to respond to the same message in different ways, the response specific to the type of the object.

* **What is RDBMS**

**Ans:** The software used to store, manage, query, and retrieve data in a relational database is called a relational management system (RDBMS). The RDBMS provide an interface between users and applications and the database, as well as administrative functions for managing data storage, access, and performance.

Stands for Relational Database Management System. RDBMS is the basis for SQL, and for all modern database systems like MS SQL Server, IBM DB2, Oracle, MySQL, and Microsoft Access are based on RDBMS. It is called Relational Data Base Management System (RDBMS) because it is based on relational model introduced by E.F. Codd.

* **What is SQL**

**Ans:** Basically, SQL is **Structured Query Language,** which is a computer language for storing, manipulating and retrieving the data stored in relational database.

* **Write SQL Commands**

**Ans:** • **DDL** – Data Definition Language

• **DML** – Data Manipulation Language

• **DCL** – Data Control Language

• **DQL** – Data Query Language

1. **DDL** changes the structure of the table like creating a table, deleting a table, altering a table, etc.
2. All the command of **DDL** are auto-committed that means it permanently save all the changes in the database.
3. **DML** commands are used to modify the database. It is responsible for all form of changes in the database.
4. The command of **DML** is not auto-committed that means it can't permanently save all the changes in the database. They can be rollback.
5. **DCL** commands are used to grant and take back authority from any database user.
6. **DQL** is used to fetch the data from the database, it uses only one command (Select)

* **Draw Use case on Online book shopping**

**Ans:**



* **Draw Use case on online bill payment system (Paytm)**

**Ans:**



* **Write SDLC phases with basic introduction**

**Ans:** • **Requirement Gathering: -** The first step in requirements gathering is to assign roles in your project, Once you’ve identified your project stakeholders, meet with them to get an idea of what also create your [requirements management plan](https://asana.com/resources/requirements-management) based on the information you have, Once you formalize your project requirements, you will need approval from stakeholders to ensure you are meeting user needs. The last part of the process is [monitoring the progress of your project](http://asana.com/resources/how-project-status-reports).

• **Analysis Phase: -** The analysis phase defines the requirements of the system, also defines the problem that the customer is trying to solve and deliverable result at the end of this phase is a requirement document.

• **Design Phase: -** Design phase is defines the platform, production facility and structure configurations and dimensions in satisfactory detail to allow start of the detailed design.

• **Implementation Phase: -** In the implementation phase, the team builds the components either from scratch or by composition. The implementation phase deals with issues of quality, performance, baselines, libraries, and debugging.

• **Testing Phase: -** Testing is a core part of thedevelopmental phase and without testing, releasing software is like putting a machine in an environment, which was never known to it. Why testing is required: Testing is required to avoid risks in execution time. Testing is required to measure the efficiency of it before its deployment in the practical field.

• **Maintenance Phase: -** One reason can be the bugs, errors, in the system. We are findingafter the system deployed to the customer environment. With the time also systems can have errors. We can fix them. That comes any softwaremaintenance. After users starts to use the system. Business process can be change. That means the way they used to do the business.

* **Explain Phases of the waterfall model**

**Ans:** It is a type of waterfall model where the project is divided into small phases and delivered at intervals by different teams. Different Teams work in parallel for each small phase and integrates at the end of the project. As the name suggests, Waterfall Model is the basis of this. all the phases or small subsystems follow the traditional waterfall model of development.

* **Write phases of spiral model**

**Ans:** Spiral Model is very widely used in the software industry as it is in synch with the natural development process of any product i.e., learning with maturity and also involves minimum risk for the customer as well as the development firms. Following are the typical uses of Spiral model.

* **Write agile manifesto principles**

**Ans:** • **Individuals and interactions: -** in agile development, self-organization and motivation are important, as are interactions like co-location and pair programming.

• **Working software: -** Demo working software is considered the best means of communication with the customer to understand their requirement, instead of just depending on documentation.

• **Customer collaboration: -** As the requirements cannot be gathered completely in the beginning of the project due to various factors, continuous customer interaction is very important to get proper product requirements.

• **Responding to change: -** agile development is focused on quick responses to change and continuous development.

• **Customer Satisfaction: -** Highest priority is given to satisfy the requirements of customers through early and continuous delivery of valuable software.

**• Motivation: -** Projects should be built around motivated individuals. Provide an environment to support individual team members and trust them so as to make them feel responsible to get the job done.

**• Face-to-face Conversation: -** Face-to-face conversation is the most efficient and effective method of conveying information to and within a development team.

* **What is join?**

**Ans:** A join is an SQL operation performed to establish a connection between two or more database tables based on matching columns, thereby creating a relationship between the tables. Most complex queries in an SQL database management system involve join commands.

* **Write type of joins.**

**Ans: •** INNER JOIN: - we only select the data which is common in both the tables. (ie, part 3 here) In order to make it more precise, all the records from both the tables matching up the condition mentioned with the join are picked in this join.

**•** LEFT JOIN: - we select all the data from the left table and from the right table only select the data set which matches up with the condition mentioned with the join (here area 1+3)

**•** RIGHT JOIN: - we select all the data from the right table and from the left table only select the data set which matches up with the condition mentioned with the join (here 3+2)

**•** FULL JOIN: - all the records form both the tables are merged and selected irrespective of the condition mentioned with the join having met or not. (here 1+2+3)

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

**Ans: •** Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

**•** Agile Methods break the product into small incremental builds.

• These builds are provided in iterations.

• Each iteration typically lasts from about one to three weeks.

• Every iteration involves cross functional teams working simultaneously on various areas like planning, requirements analysis, design, coding, unit testing, and acceptance testing.

• At the end of the iteration a working product is displayed to the customer and important stakeholders. What is Agile?

* **Agile model pros.**

• Is a very realistic approach to software development

• Promotes teamwork and cross training.

• Functionality can be developed rapidly and demonstrated.

• Good model for environments that change steadily.

• Minimal rules, documentation easily employed.

• Easy to manage

• Gives flexibility to developers

* **Agile model cons.**

• Not suitable for handling complex dependencies.

• More risk of sustainability, maintainability and extensibility.

• An overall plan, an agile leader and agile PM practice is a must without which it will not work.

• Strict delivery management dictates the scope, functionality to be delivered, and adjustments to meet the deadlines.

• Depends heavily on customer interaction, so if customer is not clear, team can be driven in the wrong direction.

• There is very high individual dependency, since there is minimum documentation generated.

• Transfer of technology to new team members may be quite challenging due to lack of documents

* **Draw use case on Online shopping product using COD.**

Ans:



* **Draw use case on Online shopping product using payment gateway.**

Ans:

