**Module: - 1**

**Q1.** **What is software? What is software engineering?**

🡪 Software is the **“**collection of computer programs, procedures, rules, associated document and concerned data with the operation of the data processing system**”**

* **Software engineering**

Software engineering is the process of designing, developing,

Testing, maintaining software.

That aims to create high-quality, reliable, and maintainable software.

**Q2. Explain types of software?**

🡪Software is manly dived in to three types.

* System software.
* Application software.
* Utility software.

🡪**System Software**

* It is responsible for controlling, integrating the hardware components of a system so the software and the users can work with them.
* Example of system Software.

🡪Operating system

🡪Driver Software.

🡪**Application Software**

* It is used to accomplish some specific task.
* It should be collection of small programs.
* Example of application software

🡪 Third party application

🡪 Microsoft Word

🡪 Excel etc

🡪**Utility Software**

* Utility software is a program or tools that performs specific task.
* Example of Utility Software

🡪CAM(computer Aided manufacturing )

🡪 CAD (computer Aided designing)

**Q3**. **What is SDLC? Explain each phase of SDLC?**

**🡪** SDLC is a framework that describes the activities performed at each stage of a software development project.

* SDLC is dived in too many stages

🡪**planning**

**🡪 analysis**

🡪 **Design**

**🡪** **Development**

🡪 **Testing**

🡪 **maintenance**

* **Planning**

The first phase of the SDLC is the project planning stage where you are gathering business requirements from your client or stakeholders.

* **Analysis**

The analysis phase also gathers business requirements and identifies any potential risks. This step in SDLC also includes a feasibility study, which defines all fortes and weak points of the project to assess the overall project viability.

* **Design**

The design phase will include the development of a prototype model. Creating a pre-production version of the product can give the team the opportunity to visualize what the product will look like and make changes without having to go through the hassle of rewriting code.

* **Development**

The actual development phase is where the development team members divide the project into software modules and turn the software requirement into code that makes the product.

* **Testing**

After the development of the product, testing of the software is necessary to ensure its smooth execution. Although, minimal testing is conducted at every stage of SDLC. Therefore, at this stage, all the probable flaws are tracked, fixed, and retested.

* **Maintenance**

Software maintenance is a part of the Software Development Life Cycle. Its primary goal is to modify and update software application after delivery to correct errors and to improve performance. Software is a model of the real world. When the real-world changes, the software require alteration wherever possible.

**Q4. What is DFD? Create a DFD diagram on Flipkart**

🡪DFD is also called as bubble chart or data flow graph.

DFDs are very useful in understanding the system and can be effectively used during analysis.

🡪 It shows the flow of data through a system visually.

🡪The DFD is a hierarchical graphical model of a system that shows the different processing

🡪activities or functions that the system performs and the data interchange among these functions.

🡪**DFD diagram**

Customer

Payment Gateway

Registration

Payment process

Product search

Order Placement

**Q5. What is Flow chart? Create a flowchart to make addition of two numbers?**

🡪Flowchart is Graphical or Pictorial Representation of problem

* Flowcharts are better way of communicating the logic of the system.
* Using Flowchart, it is easy to analyse Problem.
* The flowcharts are very useful during program development phase.
* Flowchart represents problem solution using different standard Symbol

**🡪Flow chart of two No addition**

Start

Num1, Num2

Num1> Num2

Num1 is Big

Num2 is Big

End

**Q6. What is Use case Diagram? Create a** **use-case on bill payment on Paytm.**

* Use case Provides software behaviour.
* Use cases represent the different ways in which a system can be used by the users
* The purpose of use case is to define the logical behaviour of the system without knowing the internal structure of it
* A use case represents a sequence of interactions between the user and the system.

🡪 **Use-case Diagram**