**MODULE: 1**

**(**SE – Overview of IT Industry**)**

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

**🡪** **Software**

* Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
* Software is responsible for directing all computer-related devices and instructing them regarding what and how the task is to be performed.
* **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?**

**🡪** Three types of software.

* System software.
* Application software.
* Utility software.
* **System Software**
* system software is a software designed to provide a platform to other software. System software control and manage the operations of computer hardware.
* Example of system Software

🡪Operating system ( windows, Linux )

🡪Driver Software.

* **Application Software**
* the software that helps you to do a specific type of works is called application software.
* Example of application software

🡪 Excel

🡪 Microsoft Word

🡪 VS Code

* **Utility Software**
* utility software helps to manage, maintain and control computer resources.
* Example of Utility Software

🡪CAM

🡪 CAD

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

**🡪** The software Development life cycle (SDLC) is a systematic process

used by software engineers and development teams to design,

develop, test, deploy, and maintain software systems.

* There are many stages of SDLC
* **Planning**
* **analysis**
* **Design**
* **Development**
* **Testing**
* **maintenance**
* **Planning**
* The SDLC is the project planning stage where you are gathering business requirements from your client or stakeholders.
* **Analysis**
* In this step, you incorporate more specific data for your new system. This includes the first system prototype drafts, market research, and an evaluation of competitors.
* **Design**
* The design phase is a stage where the software’s architecture, components, and user interfaces are planned and detailed, forming a blueprint for the actual construction of the software.
* **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**
* The software is thoroughly tested to ensure that it meets the requirements and works correctly.
* **Maintenance**
* In the maintenance stage, users may find bugs and errors that were missed in the earlier testing phase. These bugs need to be fixed for better user experience and retention.

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

**🡪**

* Data Flow Diagram (DFD) represents the flow of data within information systems.
* Data Flow Diagrams (DFD) provide a graphical representation of the data flow of a system that can be understood by both technical and non-technical users.
* The models enable software engineers, customers, and users to work together effectively during the analysis and specification of requirements.

🡪**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 a graphical representation of an algorithm. Programmers often use it as a program planning tool to solve a problem.
* Flowcharts are better way of communicating the logic of the system.
* The flowcharts are very useful during program development phase.

**🡪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 diagrams model the behaviour of a system.
* Use cases represent the different ways in which a system can be used by the users.
* A use case diagram gives us a high-level view of the system without going into implementation detail.
* A use case represents a sequence of interactions between the user and the system.
* **Use-case Diagram**