

# **MODULE: 1**

## **SE – Overview of IT Industry**

### **1.What is software? What is software engineering?**

**Ans:**

Software Engineering is the process of designing, developing, testing, and maintaining software. It is a systematic and disciplined approach to software development that aims to create high-quality, reliable, and maintainable software.

1. Software engineering includes a variety of techniques, tools, and methodologies, including requirements analysis, design, testing, and maintenance.
2. It is a rapidly evolving field, and new tools and technologies are constantly being developed to improve the software development process.
3. By following the principles of software engineering and using the appropriate tools and methodologies, software developers can create high-quality, reliable, and maintainable software that meets the needs of its users.
4. Software Engineering is mainly used for large projects based on software systems rather than single programs or applications.
5. The main goal of Software Engineering is to develop software applications for improving quality, budget, and time efficiency.
6. Software Engineering ensures that the software that has to be built should be consistent, correct, also on budget, on time, and within the required requirements

## **2. Explain types of software?**

**Ans:**

There are two types of software:-

1. System Software
2. Application Software

### **System Software:-**

System Software is software that directly operates the computer hardware and provides the basic functionality to the users as well as to the other software to operate smoothly. Or in other words, system software basically controls a computer's internal functioning and also controls hardware devices such as monitors, printers, and storage devices, etc. It is like an interface between hardware and user applications, it helps them to communicate with each other because hardware understands machine language(i.e. 1 or 0) whereas user applications are work in human-readable languages like English, Hindi, German, etc. so system software converts the human-readable language into machine language and vice versa.

### **Application Software:-**

Software that performs special functions or provides functions that are much more than the basic operation of the computer is known as application software. Or in other words, application software is designed to perform a specific task for end-users. It is a product or a program that is designed only to fulfill end-users' requirements. It includes word processors, spreadsheet, database management, inventory, payroll programs, etc.

### **3. What is SDLC? Explain each phase of SDLC**

**Ans:**

Software Development Life Cycle (SDLC) is a process used by software development organizations to plan, design, develop, test, deploy, and maintain software applications.

Phase of SDLC are as follows:-

- 1 Planning
- 2 Design
- 3 Implementation
- 4 Testing and integration
- 5 Maintenance

**1 Planning:-** This phase involves gathering information about the software requirements from stakeholders, such as customers, end-users, and business analysts.

**2 Design:-** In this phase, the software design is created, which includes the overall architecture of the software, data structures, and interfaces. It has two steps:

- High-level design (HLD): It gives the architecture of software products.
- Low-level design (LLD): It describes how each and every feature in the product should work and every component.

**3 Implementation:-** The design is then implemented in code, usually in several iterations, and this phase is also called as Development.

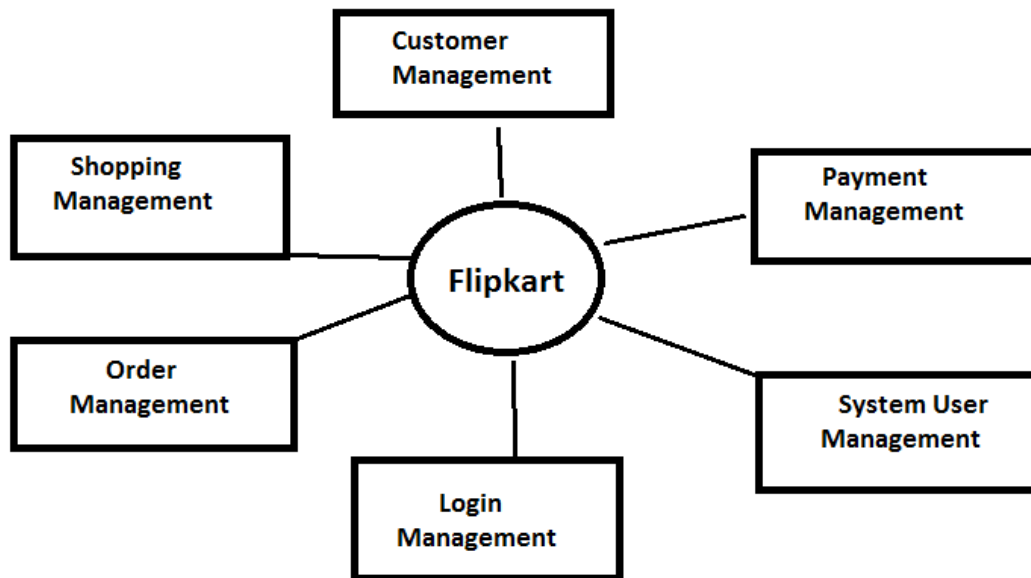
**4 Testing and integration:-** The software is thoroughly tested to ensure that it meets the requirements and works correctly.

**5 Maintenance:-** This phase includes ongoing support, bug fixes, and updates to the software.

4. What is DFD? Create a DFD diagram on Flipkart

Ans

DFD is the abbreviation for Data Flow Diagram. The flow of data of a system or a process is represented by DFD. It also gives insight into the inputs and outputs of each entity and the process itself.

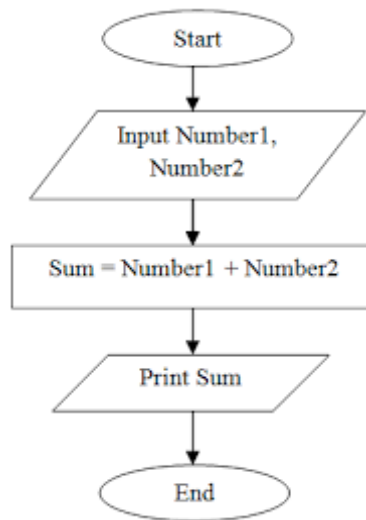


DFD - Flipkart

## 5. What is Flow chart? Create a flowchart to make addition of two numbers

**Ans:**

A flowchart is a diagram that depicts a process, system or computer algorithm. They are widely used in multiple fields to document, study, plan, improve and communicate often complex processes in clear, easy-to-understand diagrams



## 6. What is Use case Diagram? Create a use-case on bill payment on Paytm

**Ans:**

A use case diagram is a graphical depiction of a user's possible interaction with a system. A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other types of diagrams as well. The use cases are represented by either circles or ellipses.

**DFD Paytm**

