

# Module 1

## SE – OVERVIEW OF IT INDUSTRY

### (Q-1) What is software? And What is Software Engineering?

→ Software is a set of instructions, data or programs used to operate computers and execute specific tasks.

→ Software is a generic term used to refer applications.  
Example: Ms WORD, POWER POINT, ETC

→ Software engineering is a branch of computer science that deals with design, development, testing, management, and software applications.

→ There are three types of software engineering

- 1) Front-end engineering
- 2) Back-end engineering
- 3) full stack engineering

### (Q-2) Explain types of software?

→ There are two types of software

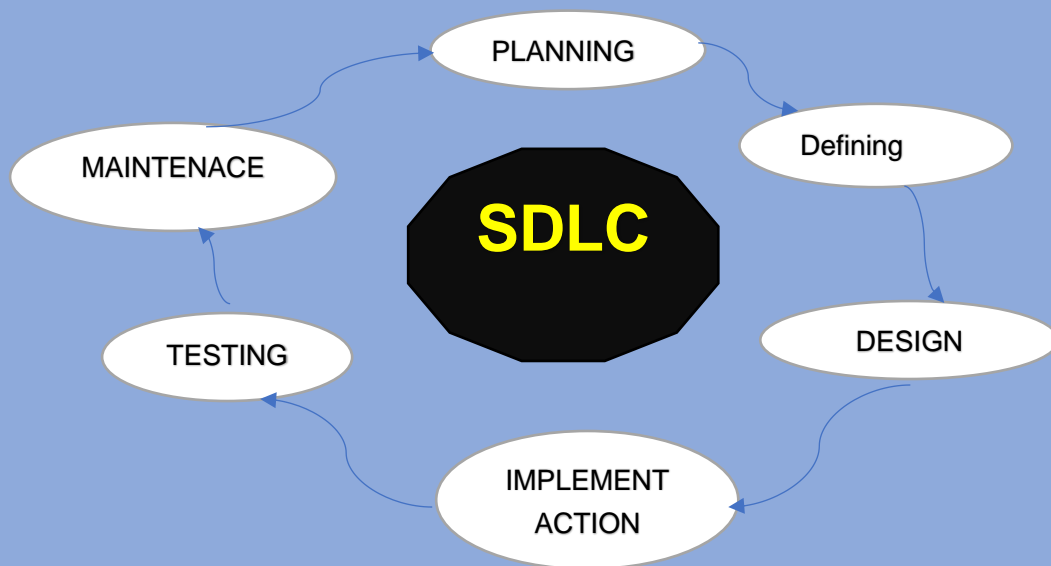
System Software	Application Software
• System software is mainly designed for managing system resources.	Application software is designed to accomplish tasks for specific purposes.
• Programming of system software is complex.	Programming of application software is comparatively easy.
• A computer cannot run without system software.	A computer can easily run without application software.

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(Q-3) What is SDLC? Explain each phase of SDLC?

- The Software Development Life Cycle (SDLC) is a structured process that enables the production of high-quality, low-cost software, in the shortest possible production time.
- The goal of the SDLC is to produce superior software that meets and exceeds all customer expectations and demands.



#### 1. PLANNING:-

- The team creates an overview of the project, determines requirements.
- In this phase, the project scope, objectives, timelines, resources, and potential risks are identified and analysed.
- Planning Key stakeholders collaborate to define the project requirements and create a roadmap for the development process.

#### 2. DEFINING:-

- Defining By keeping tabs on performance, the team identifies any problems or areas where improvements can be made.
- During this phase, the project requirements gathered in the planning phase are further analysed and refined.
- This involves studying the current system (if any), identifying user needs, and documenting functional and non-functional requirements.

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#### 3. DESIGN:-

- This is where your average web developer or front-end developer comes in, who creates designs.
- In this phase, the system architecture and design specifications are created based on the requirements gathered in the analysis phase.
- 3. This includes designing the software components, data models, user interfaces, and system workflows.

#### 4. IMPLEMENT ACTION:-

- Also known as the coding phase, this is where the actual development of the software takes place.
- Developers write code according to the design specifications, following coding standards and best practices.
- Implement action Unit testing is often performed during this phase to ensure individual components work as expected.

#### 5. TESTING:-

- The purpose of this stage is to emphasize the use of automated tests to prevent defects in the software.
- In this phase, the software is rigorously tested to identify and fix any defects or bugs. This includes both functional testing to ensure the software meets the specified requirements.
- 5. as well as non-functional testing to assess performance, security, usability, and other quality attributes.

#### 6. MAINTENANCE:-

- software monitoring stage is important as it involves the imperative of safeguarding data and ensuring optimum performance.
- The final phase involves maintaining and supporting the software after it has been deployed. This includes addressing any issues or bugs that arise.
- Maintenance implementing updates or enhancements, and providing ongoing technical support to users.















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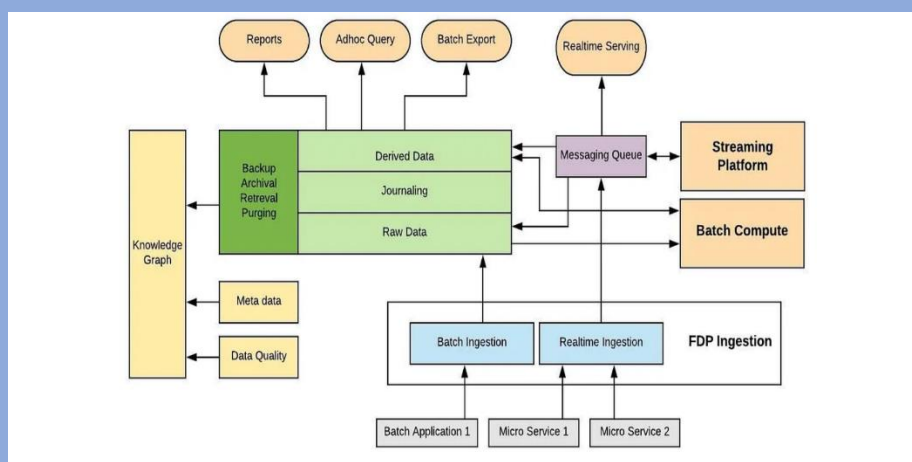
(Q-4) What is DFD? Create a DFD diagram of Flipkart?

- ➔ DFD stands for **Data Flow Diagram**. It's a graphical representation of the flow of data within a system.
  - ➔ illustrating how data moves from one process to another, where it's stored, and how it's transformed along the way.
  - ➔ DFDs are commonly used in software engineering and systems analysis to visualize the structure and behaviour of a system or process.
- What data is system processes.
  - What transformation are performed.
  - What data are stored.
  - What results are produced, Etc.

❖ DFD Use Some Symbols.

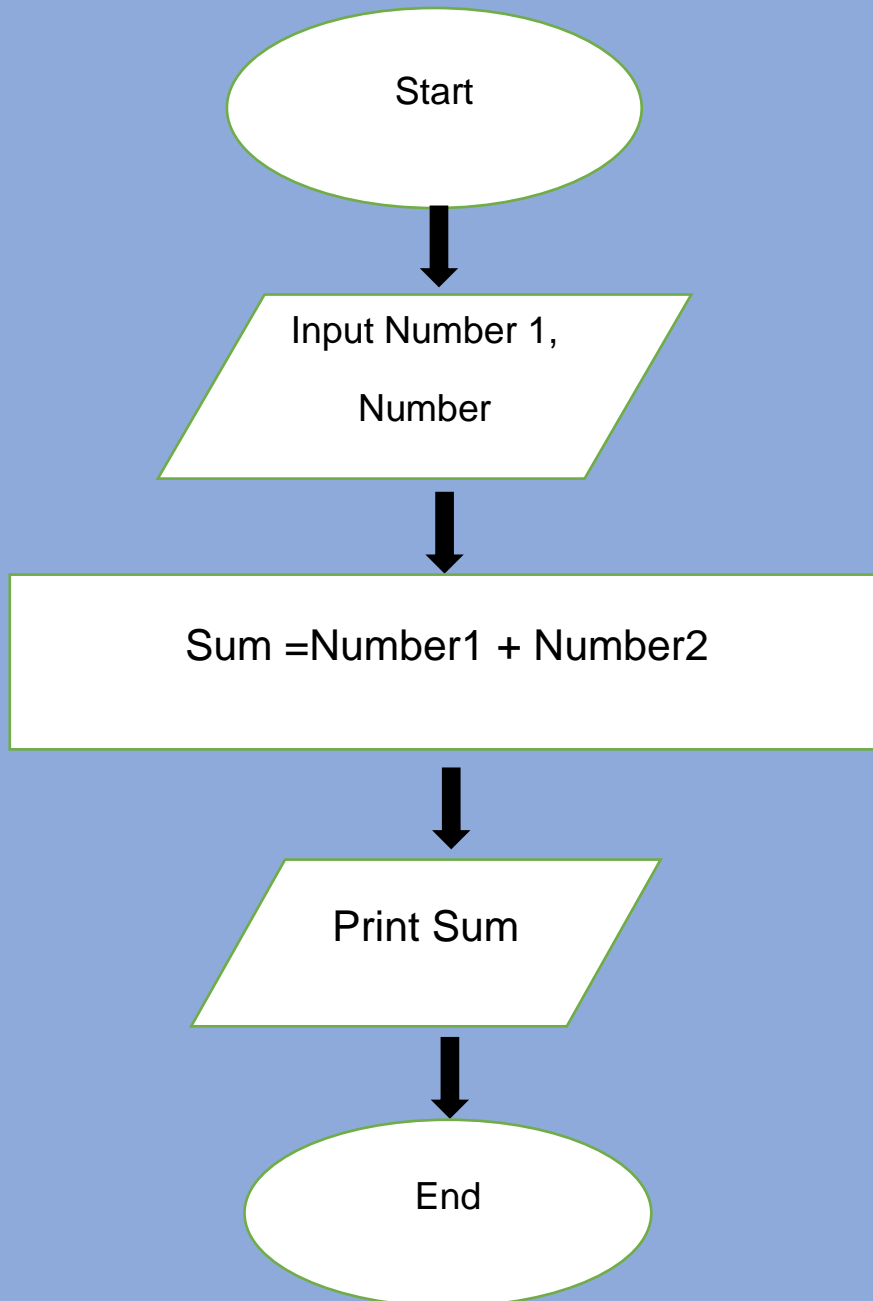
Notation	Yourdon & De Marco	Gene & Sarson	SSADM	Unified
External Entity				
Process				
Data Store				
Data Flow				

❖ Flipkart Diagram



(Q-5) What Is a Flow Chart? Create Addition to make a flowchart?

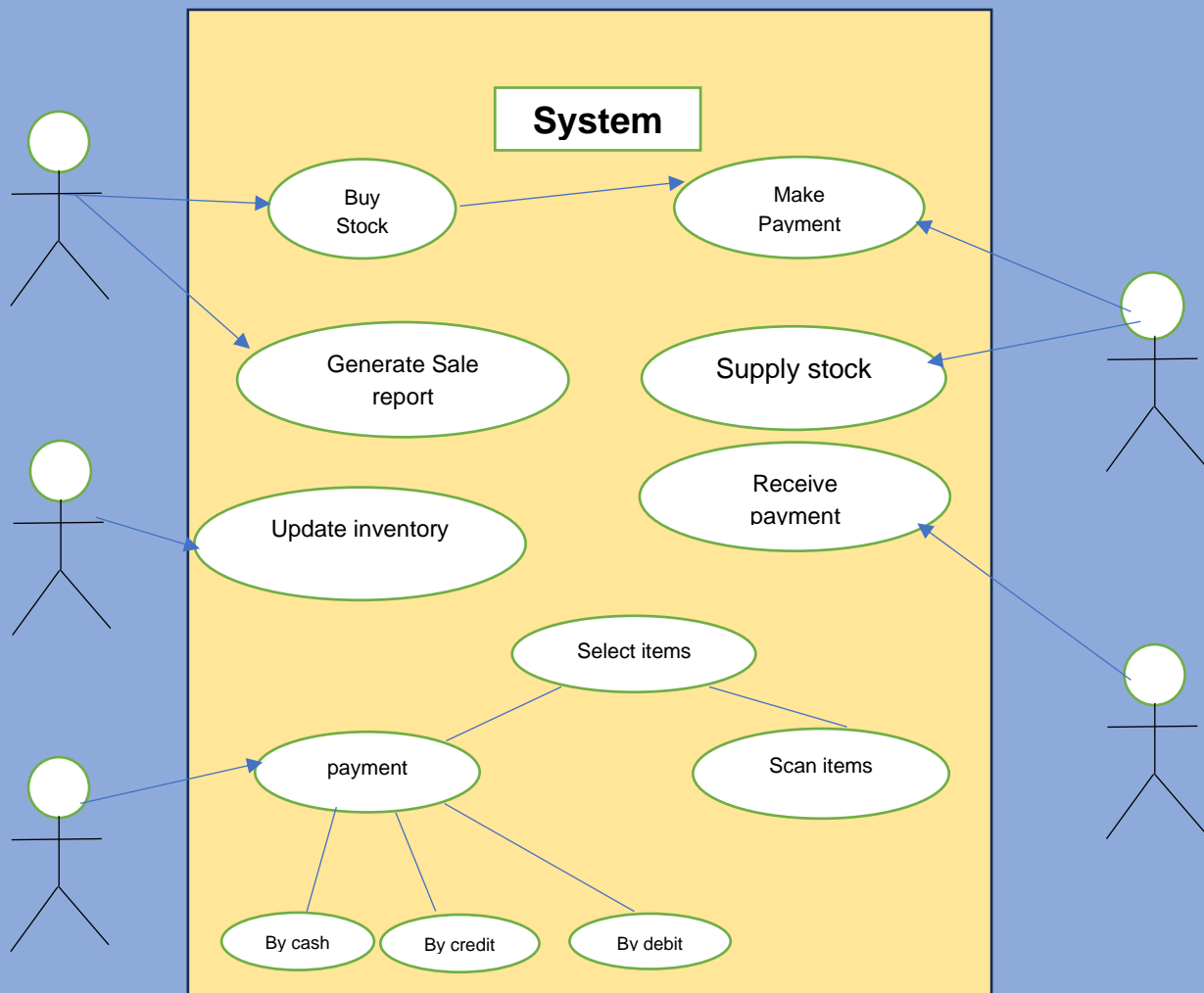
- ➔ A flowchart is a graphical representation of a process or algorithm. It uses different shapes to represent -different steps or actions and arrows to show the flow of the process.
- ➔ Each step is represented by a rectangle with rounded corners, and the arrows indicate the flow of the process. The "Input" steps are represented by parallelograms, and the "Output" step is represented by a parallelogram with its sides reversed.



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(Q-6) What is use case Diagram? Create a use case on payment of Paytm?.

- ➔ Use-case diagrams describe the high-level functions and scope of a system
- ➔ These diagrams also identify the interactions between the system and its actors



- ➔ Use Case Diagram for Payment of Paytm, A use case diagram example developed for a Payment system.
- ➔ Use this design as a use case diagram example for teaching.
- ➔ The design can also be customized as a use case diagram template, with Visual Paradigm's use case diagram tool use case diagram.