

MODULE: 1

SE – Overview of IT Industry

1. What is software? Explain types of software.

- **Software** is a computer program that provides a set of instructions to execute a user's commands and tell the computer what to do. For example like MS-Word etc.
- **Types of Software:-** It is a collection of data that is given to the computer to complete a particular task.
- ~ System Software:- system software basically controls a computer's internal functioning and also controls hardware devices such as monitors, printers, and storage devices, etc. Types of System Software Operating System, Language Processor, Device Driver
- ~ Application Software:- It 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, database management, etc. Types of Application Software General Purpose Software, Customized Software, Utility Software

2. What is software engineering?

- **Software engineering** is a discipline that involves the application of engineering principles to the design, development, testing, deployment, and maintenance of software systems. It aims to produce high-quality software in a systematic, efficient, and scalable manner by following structured methodologies and best practices. Software engineers use a variety of tools, techniques, and frameworks to manage complex software development projects.

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

- **Software Development Life Cycle(SDLC)**, is a project management model that describes the process of creating and maintaining software.
- **SDLC includes the following phases:**
 - a) Requirements gathering and analysis:- This phase involves gathering information about the software requirements from stakeholders, such as customers, end-users, and business analysts.
 - b) 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.
 - c) Implementation or coding:- The design is then implemented in code, usually in several iterations, and this phase is also called as Development.
 - ~ In front-end; In Middleware; In the back-end

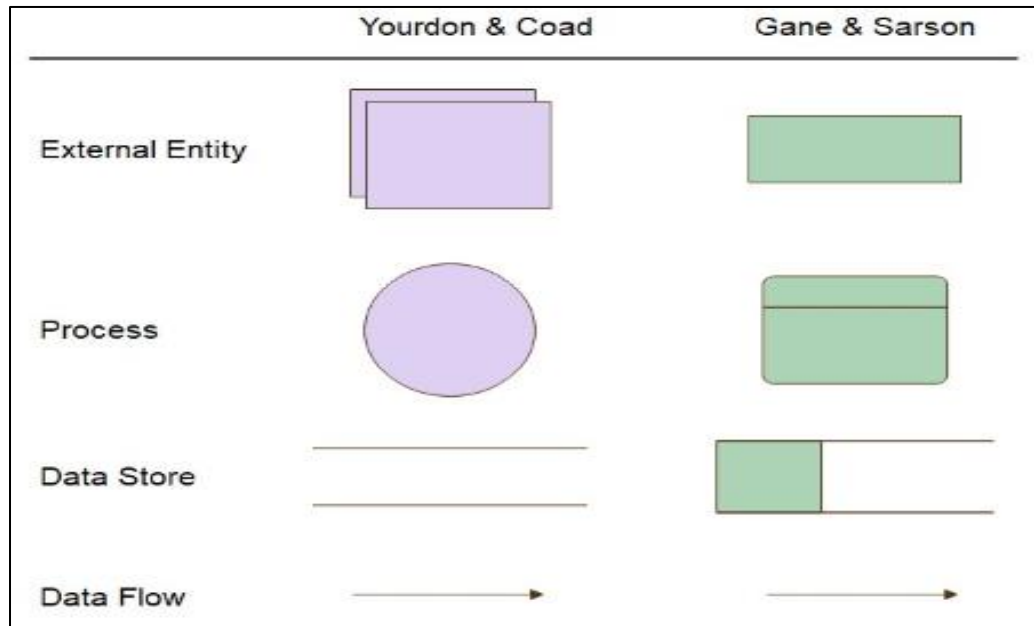


- d) Testing:- The software is thoroughly tested to ensure that it meets the requirements and works correctly.
- e) Deployment:- After successful testing, The software is deployed to a production environment and made available to end-users.
- f) Maintenance:- This phase includes ongoing support, bug fixes, and updates to the software.

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

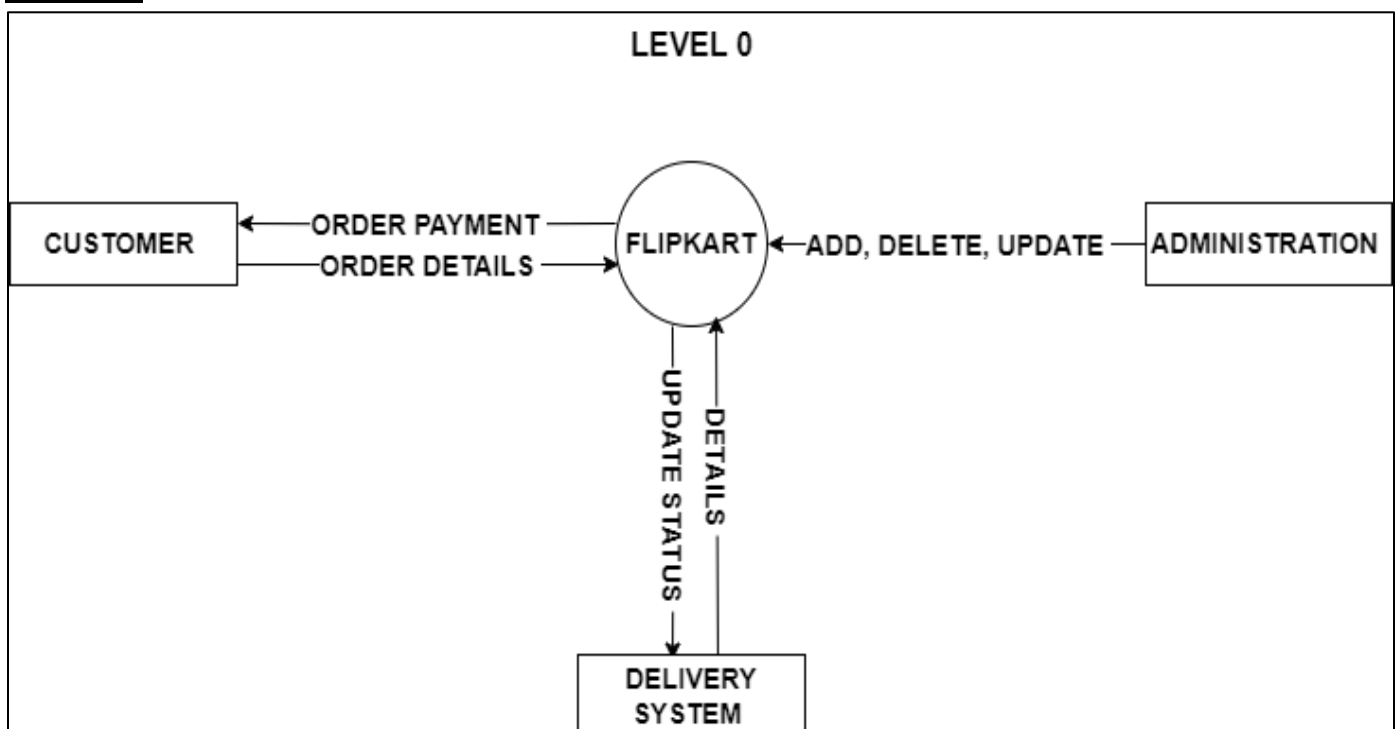
- A **Data Flow Diagram (DFD)** is a graphical representation of the flow of data through a system, illustrating how inputs are transformed into outputs. It shows the interaction between processes, data stores, and external entities in a system.

- **DFD Symbols:-**

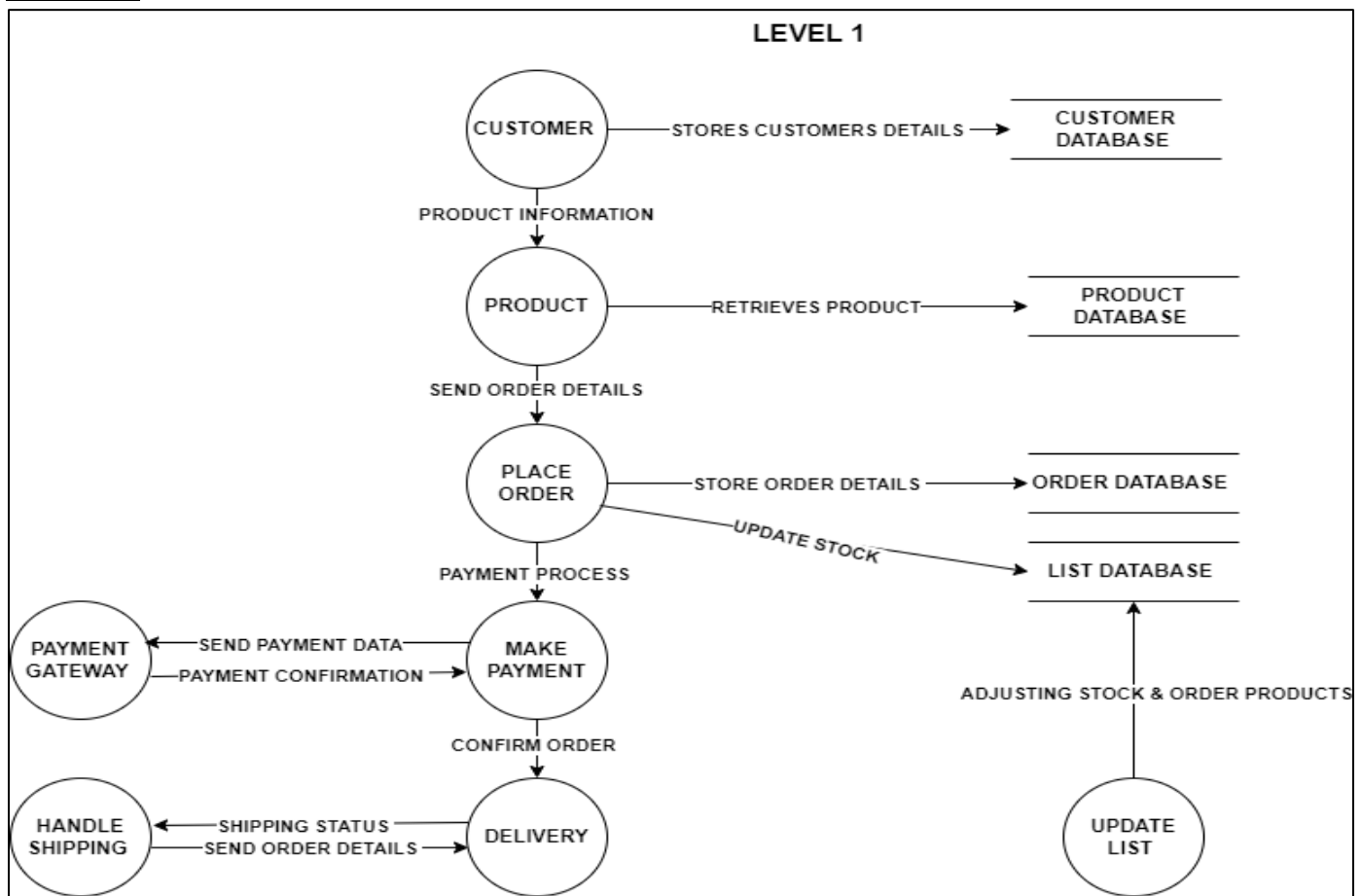


- **DFD diagram on Flipkart:-**

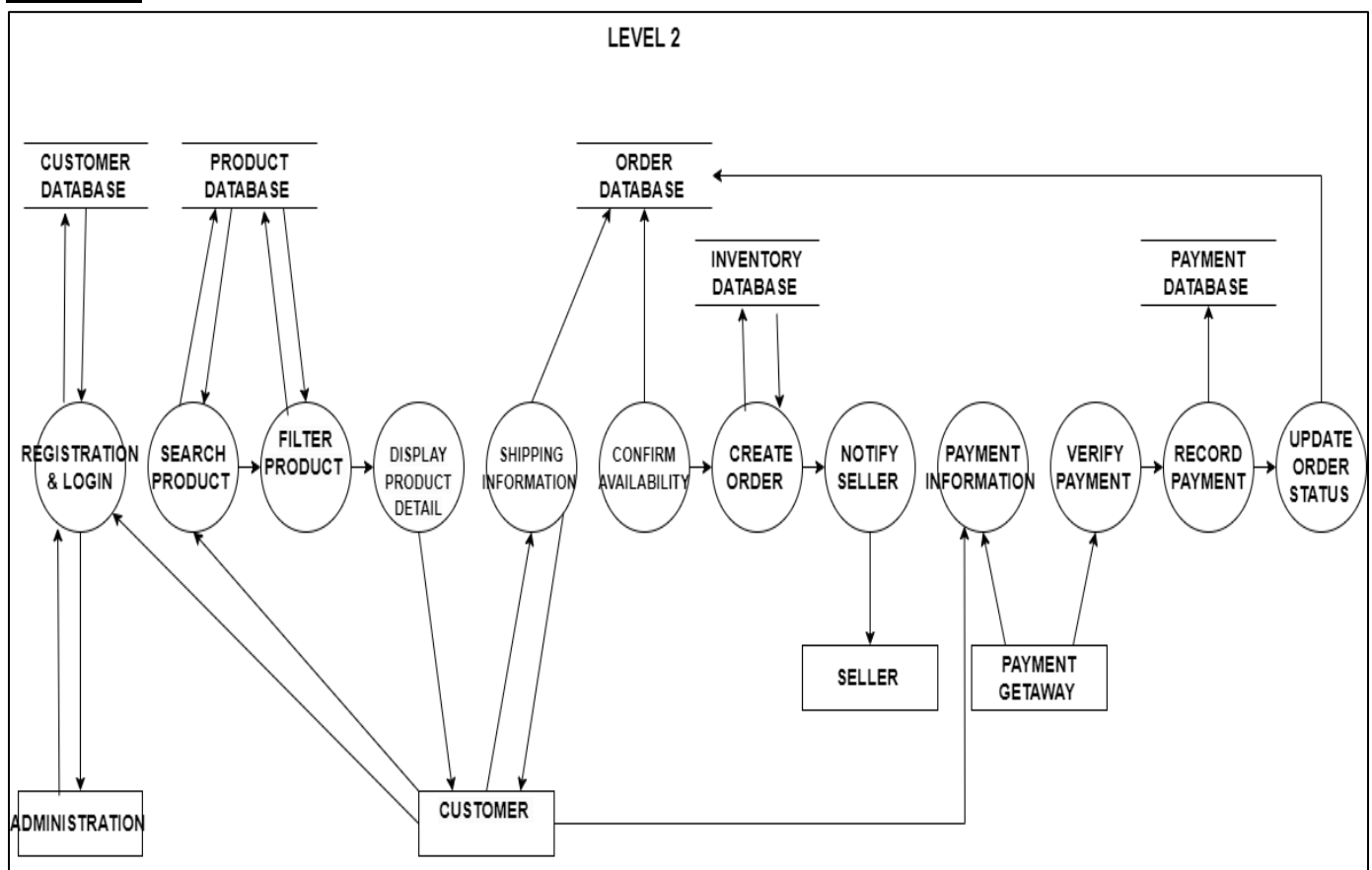
~ LEVEL 0:-



~ LEVEL 1:-








~ LEVEL 2:-



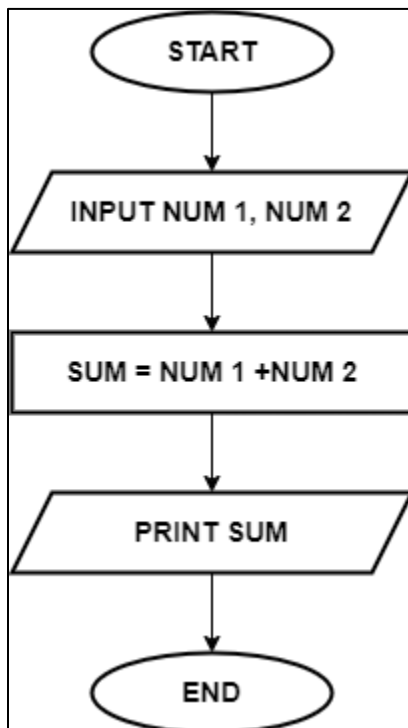
5. What is Flow chart? Create a flowchart to make addition of two numbers.

- A **flowchart** is a type of diagram that represents a workflow or process. A flowchart can also be defined as a diagrammatic representation of an algorithm, a step-by-step approach to solving a task.

- **Flowchart Symbols:-**

Symbol	Name
	Start/end
	Arrows
	Input/Output
	Process
	Decision

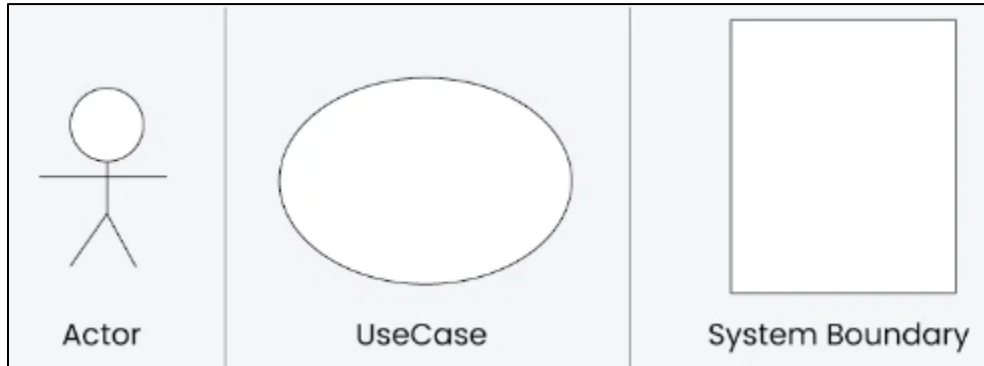
- **Flowchart to make addition of two numbers**



6. What is Use case Diagram? Create a use-case on bill payment on pay tm.

- A **Use Case Diagram** is a type of Unified Modeling Language (UML) diagram that represents the interaction between users or external systems and a system under consideration to accomplish specific goals. It provides a high-level view of the system's functionality by illustrating the various ways users can interact with it.

- **Use Case Diagram Symbols:-**



- **Use-case on bill payment on paytm:-**

