Qua.1 -> What is software? What is software engineering?

Ans. Software is set of instruction provided to the system for execution. Software Engineering is a systematic approach to designing, developing, testing and maintaining software using engineering procedure oriented programming.

Qua.2 -> Explain types of software.

Ans. There are two main types of software in software engineering,

1. **System Software:-**
   System Software is type of software were manages computer hardware and provides a platform for other software to run.

➔ e.g.,
Operating systems, device drivers and language processors etc.

2. **Application Software:-**
   Application software is perform specific tasks for users or other applications.

➔ e.g.,
Web browsers, business software, games, mail etc.

Qua.3 -> What is SDLC? Explain each phase of SDLC.

Ans. Software development life cycle is a step-by-step approach to develop any product or software with high quality within intended time line & budget.

There are six types of SDLC,

1. **Planning :-** (Requirement Gathering {what})

   Define project scope, goals, objectives and timeline. Identify potential risks and creating a plan.

   - Creating a detailed project timeline with milestone and deadline
   - Establishing communication channels and protocols among team members.

2. **Analysis :-** (How)

   Analysis is the process of gathering information and defining project requirements.

- Conduct surveys, analyse existing systems and research industry trends
- Identify the critical requirements and prioritize them based on business value

3. **Designing :-** (DFD, ER Diagram, Flow chart, Use case)

Designing is create software architecture, user interface and detailed specifications for each component. Choose the tools for development.

- Defining the overall structure and high level components of the software
- Designing the visual layout and user interactions for the software

4. **Implementation / Coding / Building :-** (h/w, s/w, resources)

Implementation in SDLC is the process of turning design into working software or functional software.

- **Code :** Developers write code based on design specifications and coding standards
- **Building :** Code is compiled and linked to create executable software code.
- Software is customized to function in the specific technology

5. **Testing :-** (QA)

Testing in SDLC is a critical phase to identify and fix defects, ensuring software quality, match user expectations and is user friendly.

- Verify all functional and non-functional requirement

6. **Maintenance :-**

Maintenance in SDLC is the ongoing process of updating and supporting software after deployment.

- Fixing bugs and errors
- Modifying the software to changes in the technology
- New features or improving performance

Qua.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 process is represented by DFD.

- DFD Have four components:

1. Process
2. Data Store
3. Data Flow

4. External Entity

➔ e.g.,

❖ Level – 0 DFD :-

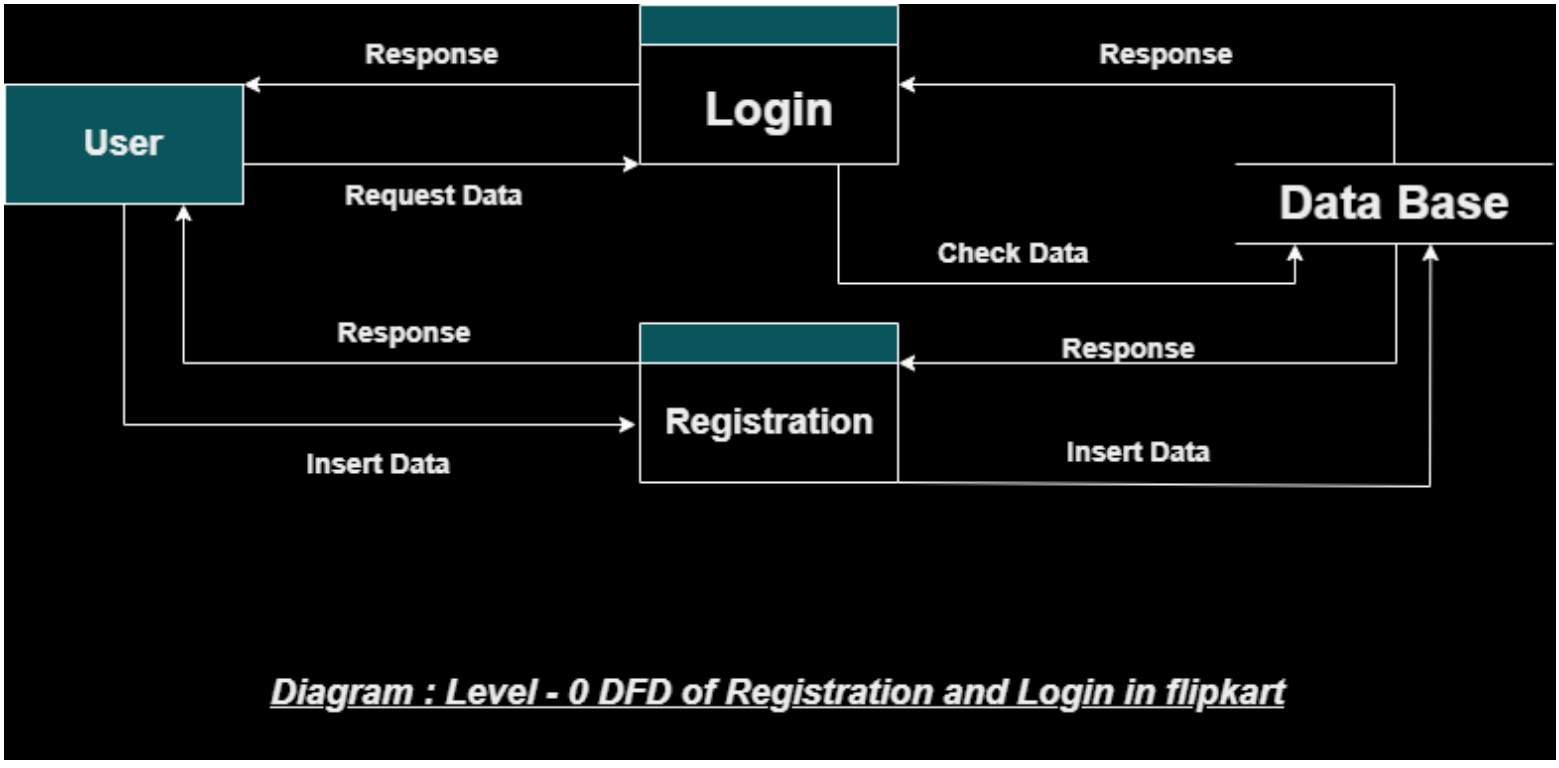

Diagram : Level - 0 DFD of Registration and Login in flipkart

❖ Level – 1 DFD :-

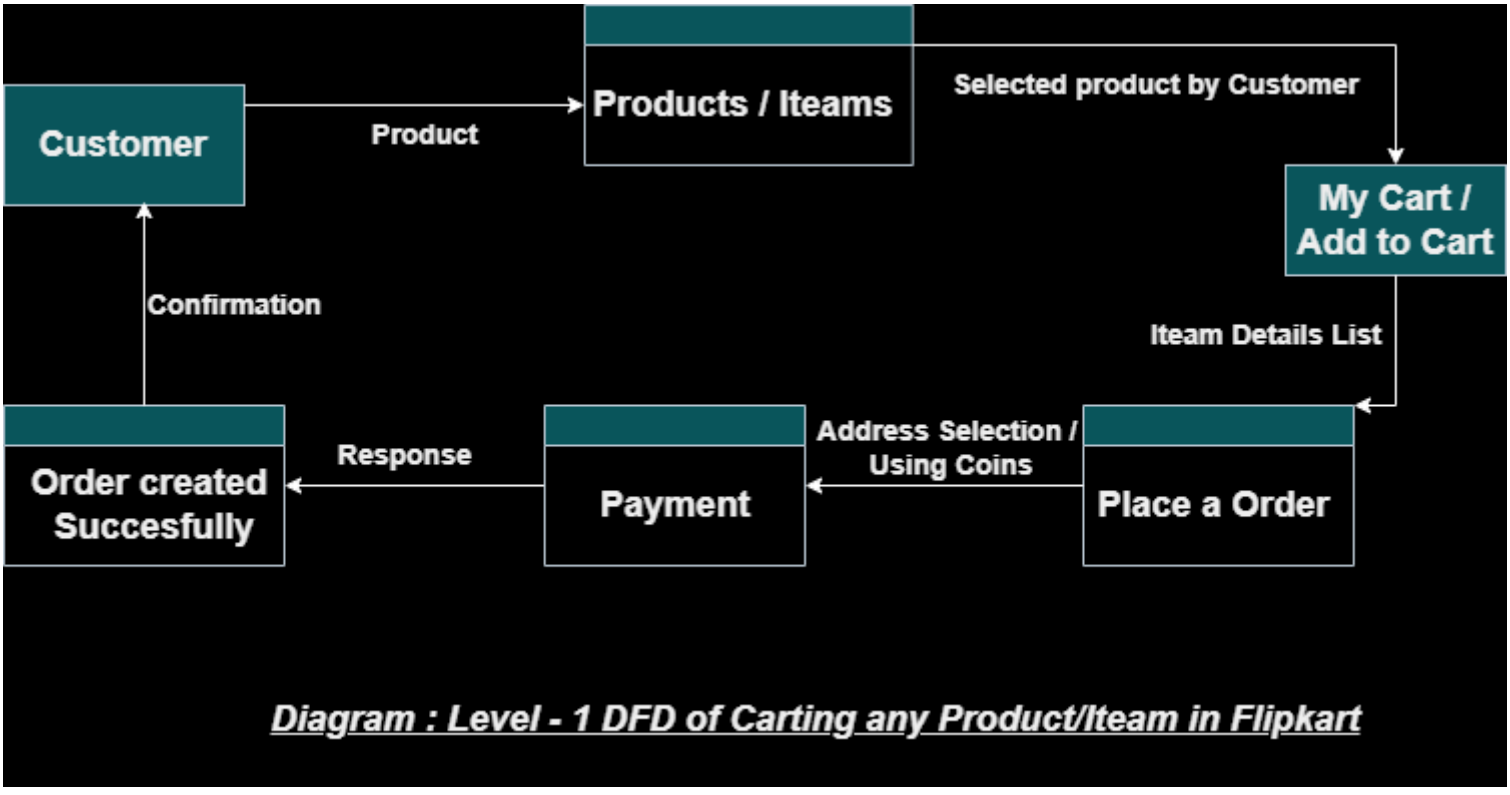

Diagram : Level - 1 DFD of Carting any Product/Iteam in Flipkart

❖ Level – 2 DFD :-

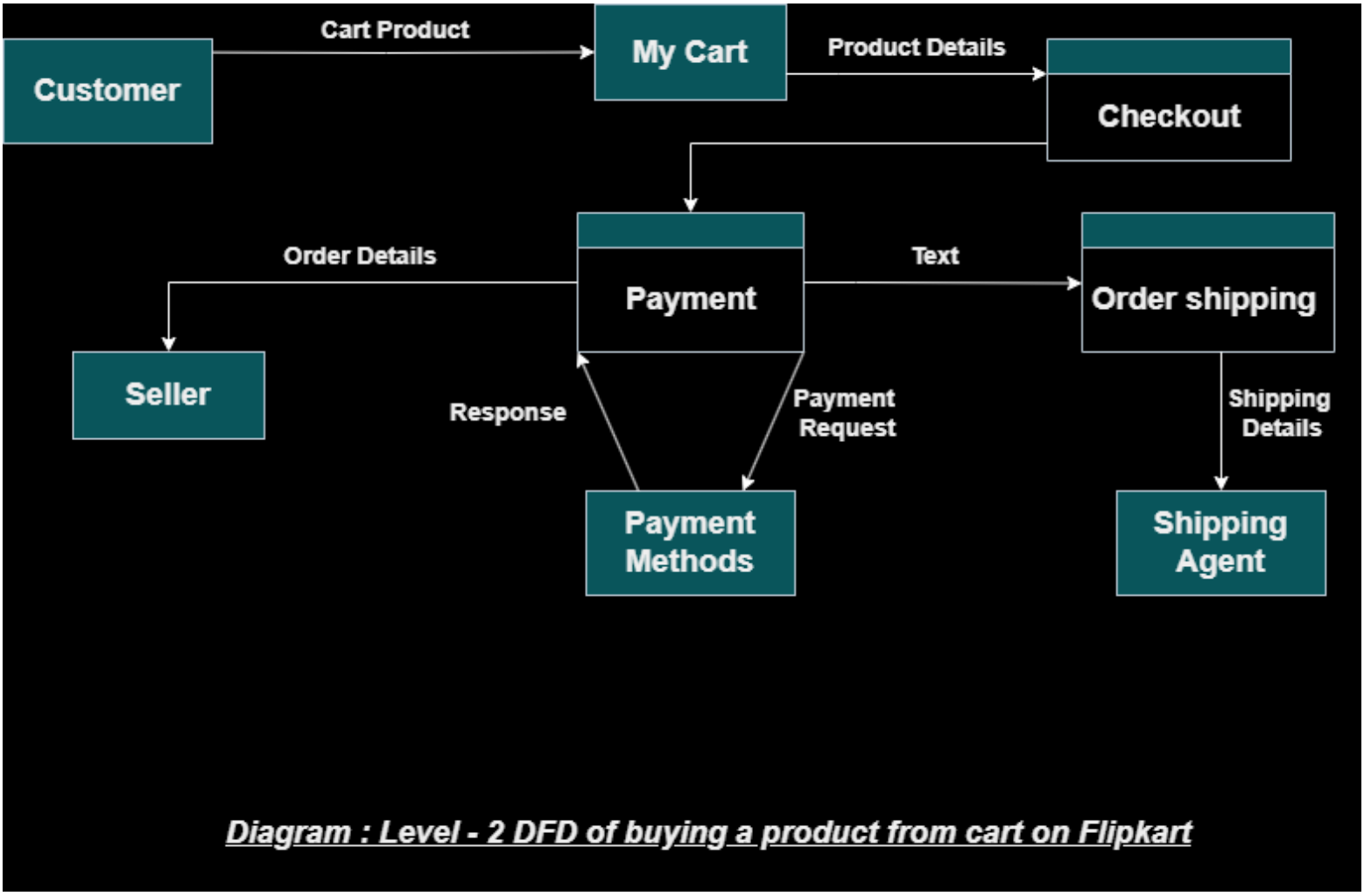

Diagram : Level - 2 DFD of buying a product from cart on Flipkart

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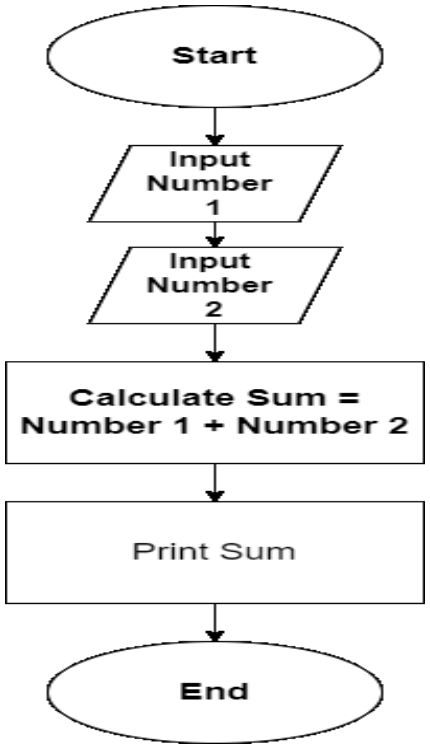
Qua.5 -> What is Flow chart? Create a flowchart to make addition of two numbers.

Ans. Flow chart is a visual representation of a process or work flow. It uses different shapes to represent steps, start/end, Arrows, Input/Output, Process, Decision and actions connected by arrows to show of the process or flow.

➔ e.g.,



Use Cases:

Step No.1 :- Start: The beginning of the flowchart.

Step No.2 :- Get the Input Number 1 from the user.

Step No.3 :- Get the Input Number 2 from the user.

Step No.4 :- Calculate Sum: Add the two input numbers and store the result in a variable called "Sum."

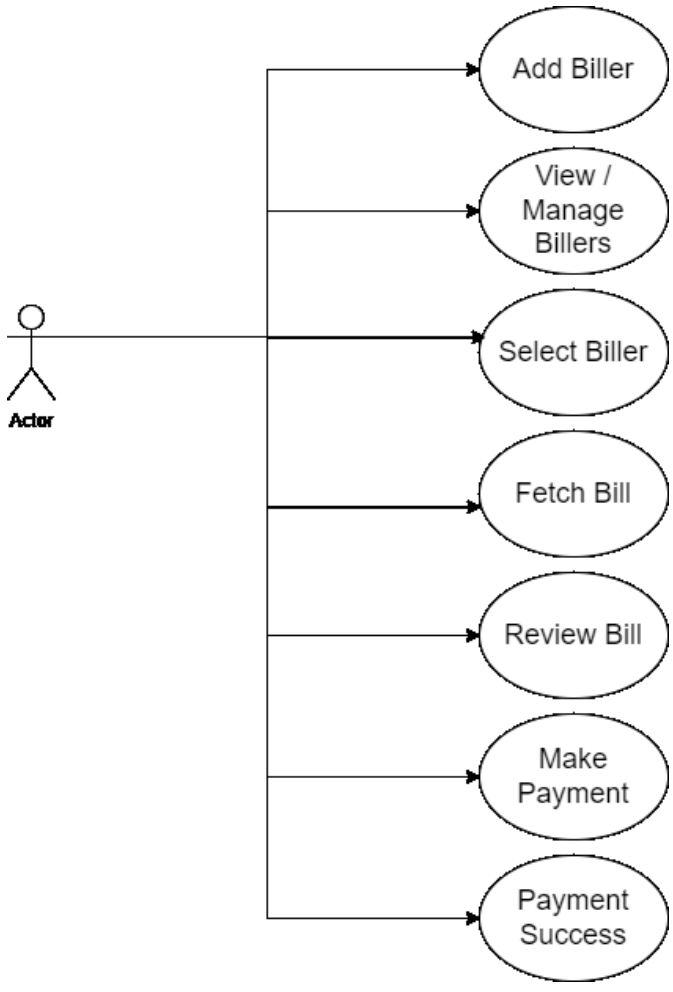
Step No.5 :- Display show the calculated sum to the user.

Step No.6 :- Stop: The end of the flowchart.

Qua.6 -> What is Use case Diagram? Create a use-case on bill payment on paytm.

Ans. A use case diagram is a visual representation of how users (actors) interact with a system to achieve specific goals.

➔ e.g.,



Use Cases:

Step No.1 :- Add Biller: User adds a new biller (e.g., electricity, water, gas) to their account.

Step No.2 :- View/Manage Billers: User views their list of saved billers and can edit or delete them.

Step No.3 :- Select Biller: User chooses the biller for whom they want to pay a bill.

Step No.4 :- Fetch Bill: Paytm retrieves the latest bill amount for the selected biller.

Step No.5 :- Review Bill: User reviews the bill details before proceeding to payment.

Step No.6 :- Make Payment: User selects a payment method (e.g., Paytm wallet, UPI, debit card) and completes the payment.

Step No.7 :- Payment Success: Paytm confirms successful payment and generates a receipt.
