MODULE:1

SE-Overview of IT Industry

Q1. What is software? What is software engineering?

Ans: Software is a set of instructions, data or programs used to operate computers and execute specific tasks. While software engineering is the process of developing, testing and deploying computer applications to solve real-world problems by adhering to a set of engineering principles and best practices.

Q2. Explain types of software.

Ans: Among the various categories of software, the most common types includes following:

- **Application software :** It is the most common types of software, application software is a computer software package that a user, or in some cases, for another application. An application can be self-contained, or it can be a group of programs that run the applications include office suites, graphics software, databases and database management programs, web browsers, word processors, software development tools, image editors and communication platforms.

- **System software:** These software programs are designed to run a computer's application programs and hardware. System software coordinates the activities and functions of the hardware and software. In addition, it controls the operations of computer hardware and provides an environment or platform for all other types of software to work in. The OS is the best example of system software to work in. The OS is the best example of system software, it manages all other computer programs. Other examples of system software includes the firmware, computer language translators and system utilities.

- **Driver software:** Also known as device drivers, this software is often considered a type system software. Device drivers control the devices and peripherals connected to a computer, enabling them to perform their specific tasks. Every device that is connected to a computer needs at least one device driver to function. Examples includes software that comes with any nonstandard hardware, including special game controllers, as well

as the software that enables standard hardware, such as USB storage device, keyboards, headphones and printers.

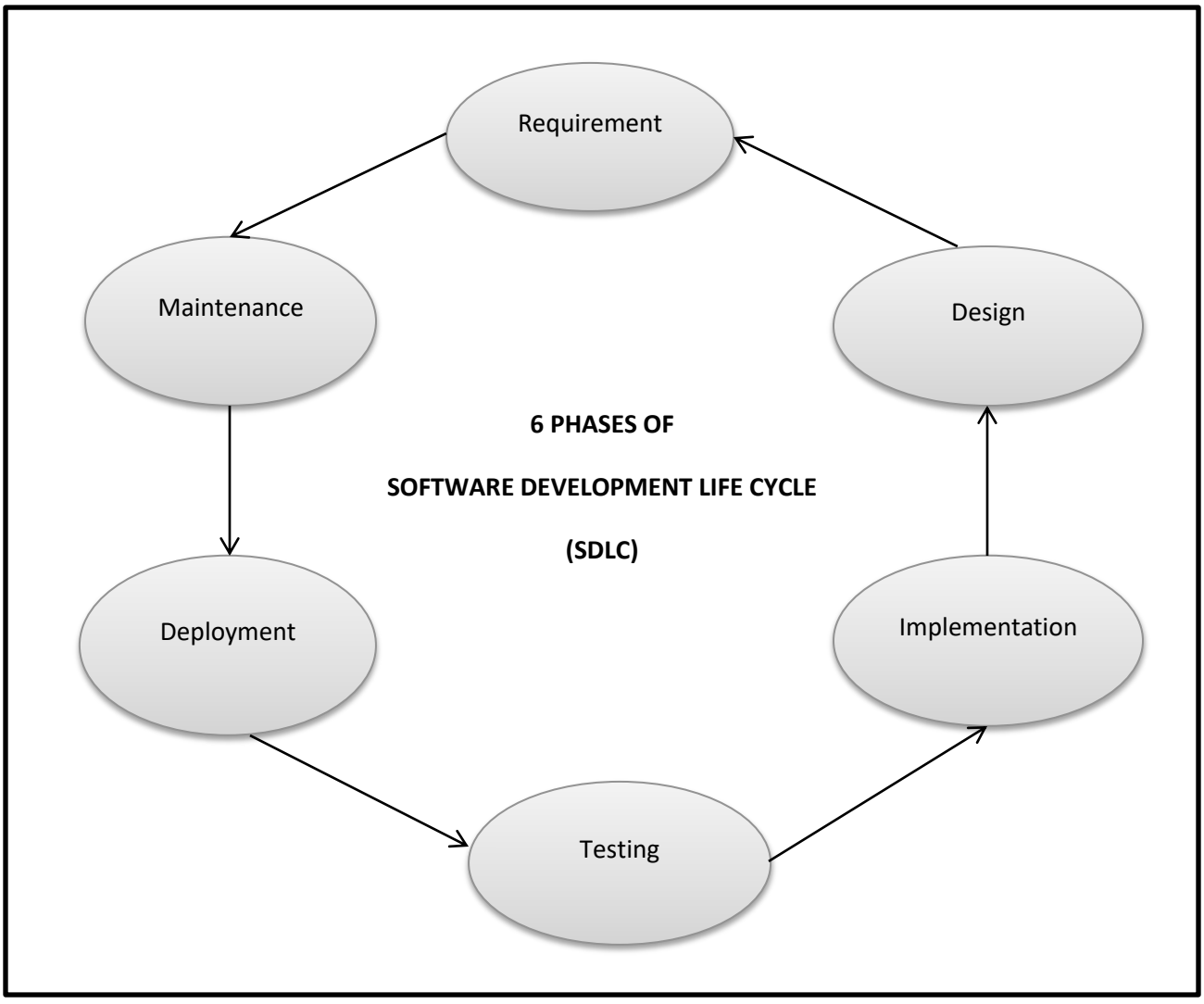
- **Middleware:** The term middleware describes software that middleware describes software or between two different kinds of applications software. For example, middleware enables Microsoft Windows to talk to Excel and Word. It is also used to send a remote work request from an application in a computer that has one kind of OS, to an application in a computer with a different OS. It also enables newer applications to work with legacy ones.

- **Programming software:** Computer programmers use programming software to write code. Programming software and programming tools enable developers to develop , write, test and debug other software programs. Examples : assemblers, compilers, debuggers and interpreters.

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

Ans: The software development lifecycle (SDLC) is the cost-effective and time-efficient process that development teams use to design and build high-quality software. The goal of SDLC is to minimize projects risks through forward planning so that software meets customers expectations during production and beyond.

The SDFC life cycle includes following phases:



1. **Requirements gathering and analysis :** This phase involves gathering information about 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 or coding:** The design is then implemented in code, usually in several iterations, and this phase is also called as development.
    - This is the longest phase in SDLC model.
    - This phase consists of front end+ middleware + back-end
    - **In front-end:** Development of coding is done even SEO settings are done.
    - **In Middleware:** They connect both the front end and back end.
    - **In the back-end:** A database is created.

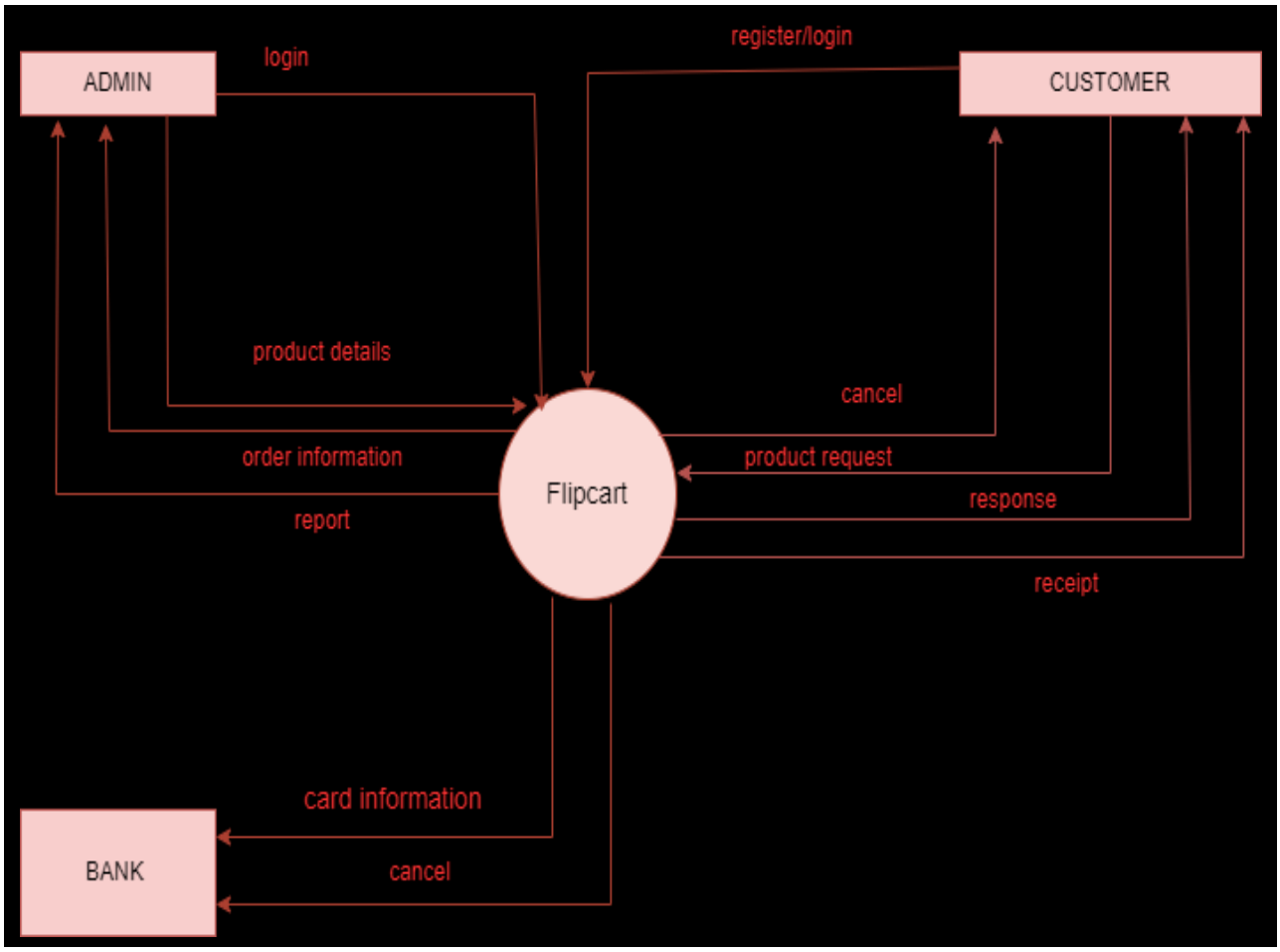
4. **Testing :** The software is thoroughly tested to ensure that it meets the requirements and works correctly.

5. **Deployment:** After successful testing, the software is deployed to a production environment and made available to end-users.

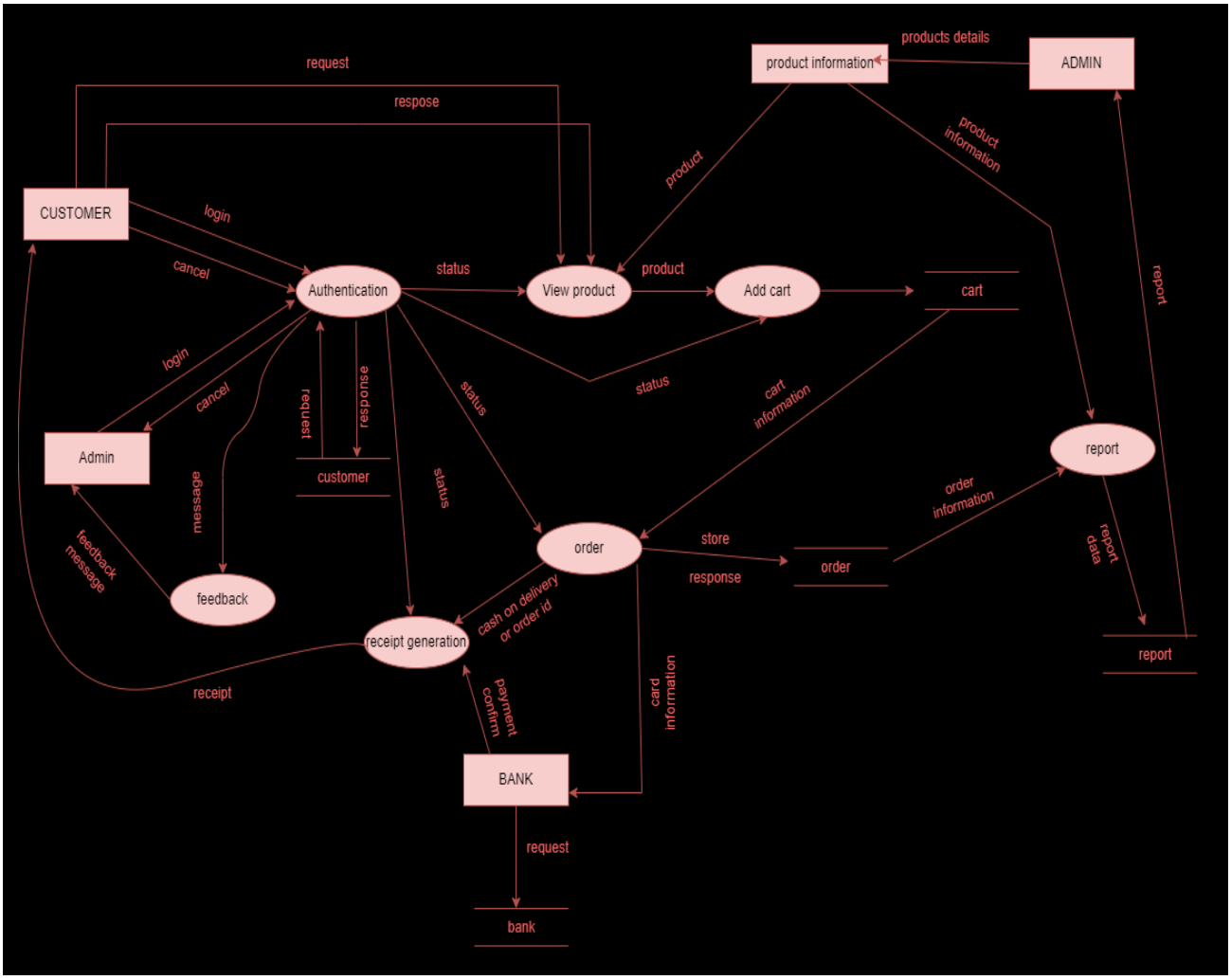
6. **Maintenance:** This phase includes ongoing support, bug fixes, and updates to the software.

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

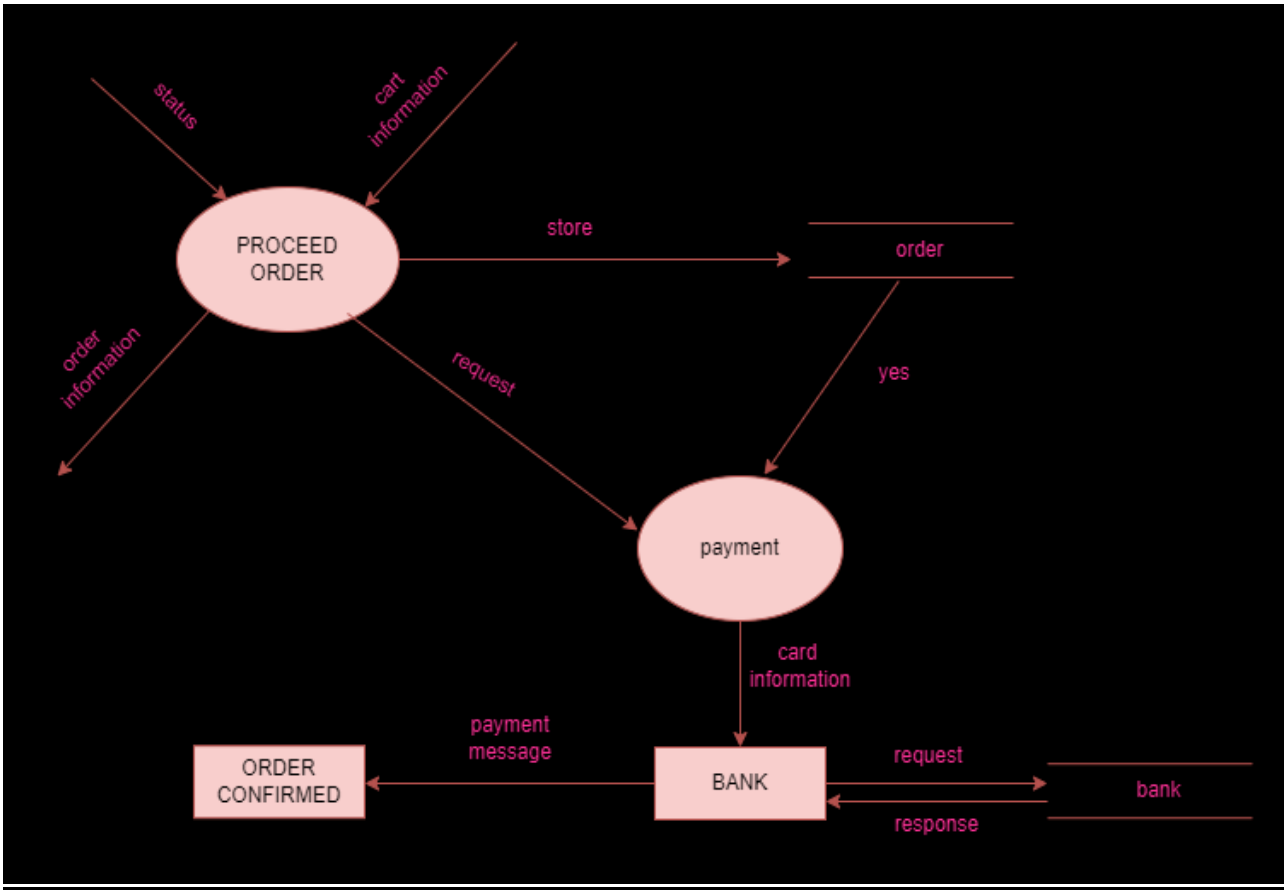
Ans: A data flow diagram (DFD) is a graphical or visual representation using a standardized set of symbols and notations to describe a business's operation through data movement. They are often elements of formal methodology such as structured systems analysis and design method (SSADM).



DFD level – 0 diagram



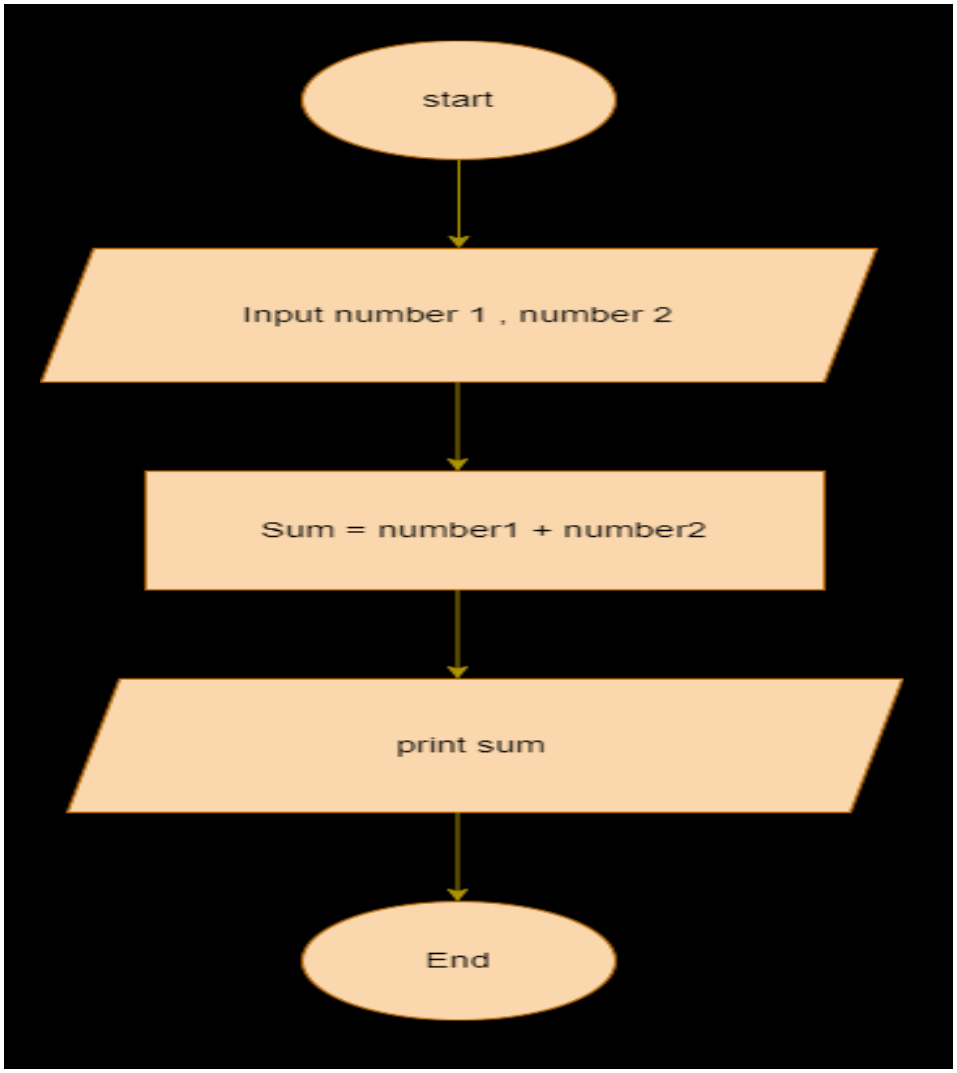
DFD level-1 diagram



DFD level -2 diagram

Q5. What is Flow chart ? Create a flowchart to make addition of two numbers.

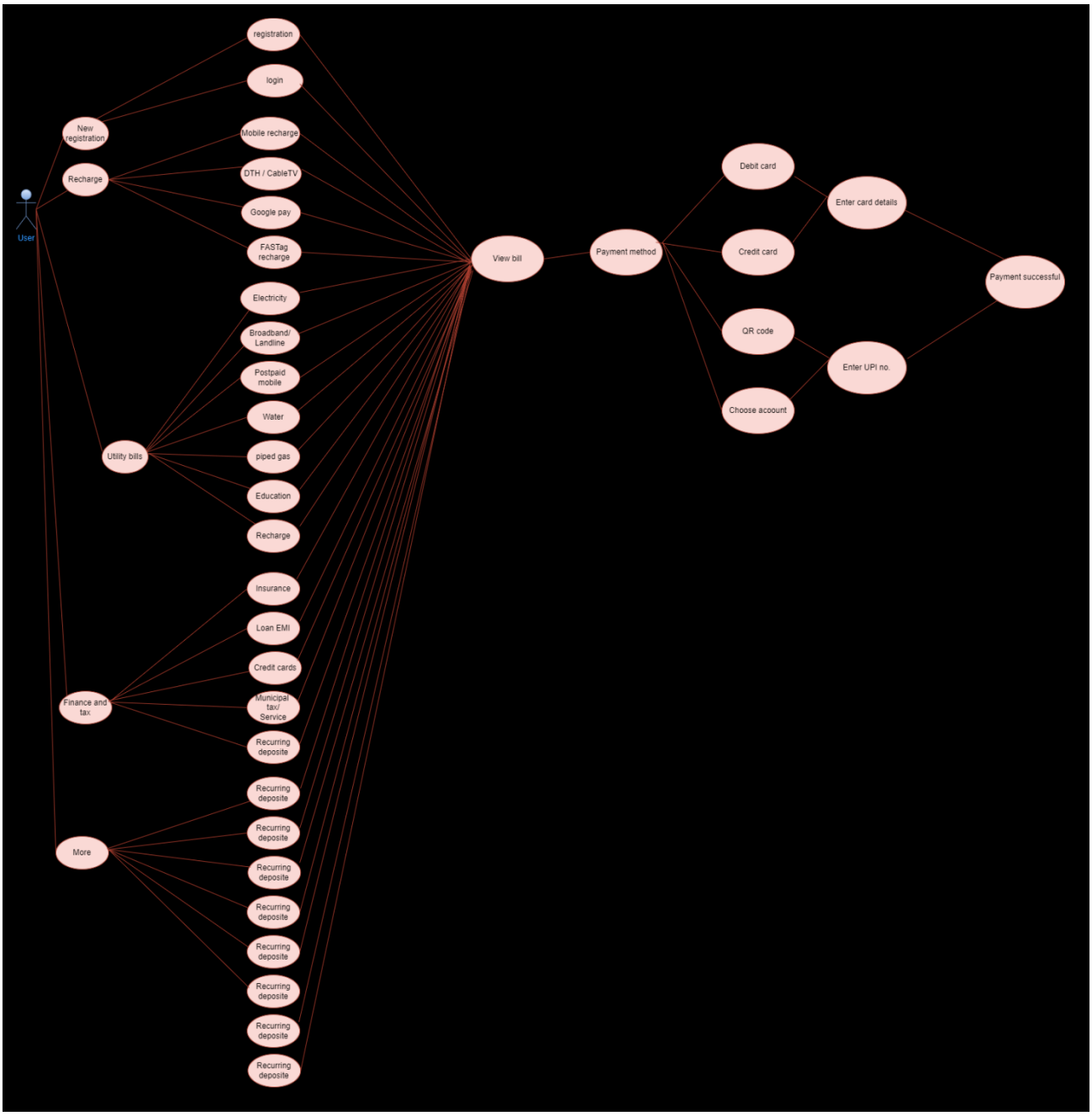
Ans: A flowchart is a diagram that depicts a process, system or computer algorithm. They are widely used in multiple fields to document, study, plan, improve and communicate often complex process in clear, easy-to-understand diagrams.



Flow chart diagram

Q6. What is Use Case Diagram? Creat a use-case on bill payment on paytm.

Ans: A usecase diagram is a vital tool in system design, it provides a visual representation of how users intercat with a system. It serves as a blueprint for understanding the functional requirements of a system from a user's perspective, aiding in the communication between stackholders and guiding the development process.



TASK

Q. Give an activity diagram of Instagram.