MODULE 1 (SDLC)

What is Software?

The software can be best defined as a set of instructions, technically referred to as programs, that perform operations and specific tasks based on the commands of the user. Every single task that a user intends to perform is regulated by software. Made of binary language (ones and zeroes), there is a variety of software for different tasks.

What is Software Engineering?

Software engineering is the branch of computer science that deals with the **design, development, testing, and maintenance of software applications**. Software engineers apply engineering principles and knowledge of programming languages to build software solutions for end users.

Explain types of software.

There are five types of software

1. **Application Software:**

   - ✓ Also called as application program
   - ✓ Designed to handle specific task for users
   - ✓ Directs the computer to execute commands given by the user and processes data for user
   - ✓ Include word processors, spreadsheets etc.

2. **System Software:**

   - ✓ System software is a program designed to run a computer's hardware and applications and manage its resources, such as its memory, processors, and devices. It also provides a platform for running application software, and system

software is typically bundled with a computer's operating system.

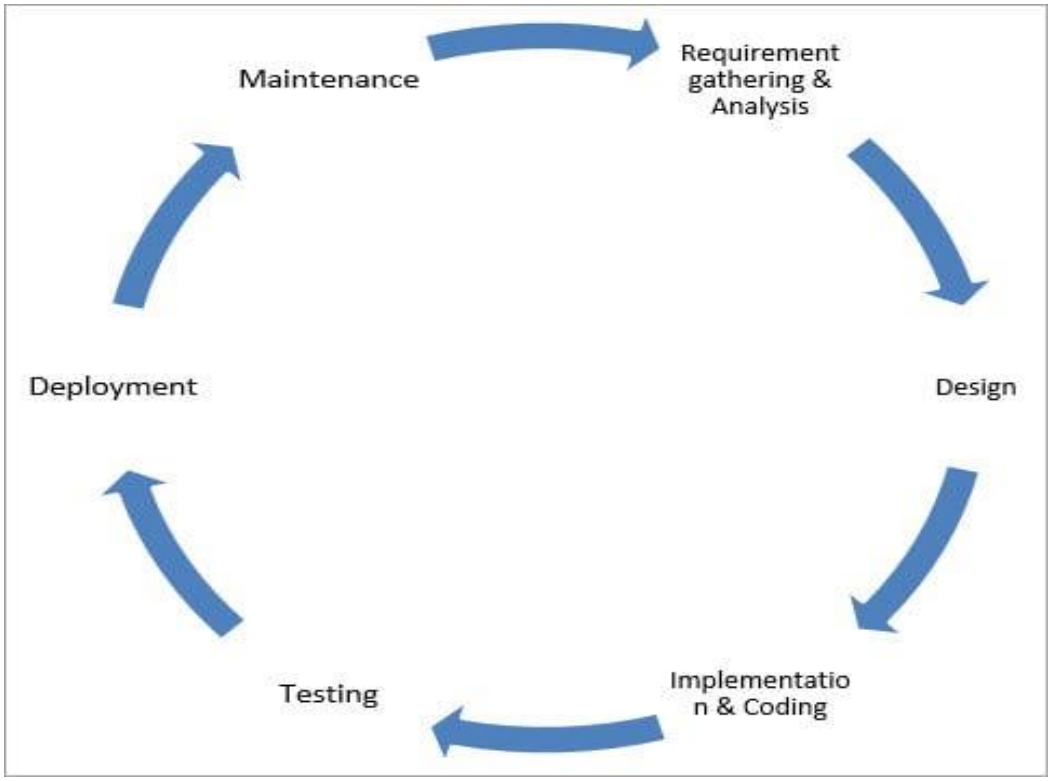
- ✓ There are different systems software types, including Windows, Linux, MacOS X, BSD, etc. Each type of system software has its own set of unique characteristics.

- ✓ For example, Windows XP is designed for Microsoft products, while Ubuntu is designed for GNU/Linux applications.

What is SDLC? Explain each phase of SDLC

SDLC is a process followed for a software project, within a software organization. It consists of a detailed plan describing how to develop, maintain, replace and alter or enhance specific software. The life cycle defines a methodology for improving the quality of software and the overall development process.

The following figure is a graphical representation of the various stages of a typical SDLC.



Phases of SDLC :

1. Requirement Gathering and Analysis

During this phase, all the relevant information is collected from the customer to develop a product as per their expectation. Any ambiguities must be resolved in this phase only.

2. Design

In this phase, the requirement gathered in the SRS document is used as an input and software architecture that is used for implementing system development is derived.

3. Implementation or Coding

Implementation/Coding starts once the developer gets the Design document. The Software design is translated into source code. All the components of the software are implemented in this phase.

4. Testing

Testing starts once the coding is complete and the modules are released for testing. In this phase, the developed software is tested thoroughly and any defects found are assigned to developers to get them fixed.

5. Deployment

Once the product is tested, it is deployed in the production environment or first UAT (User Acceptance testing) is done depending on the customer expectation.

6. Maintenance

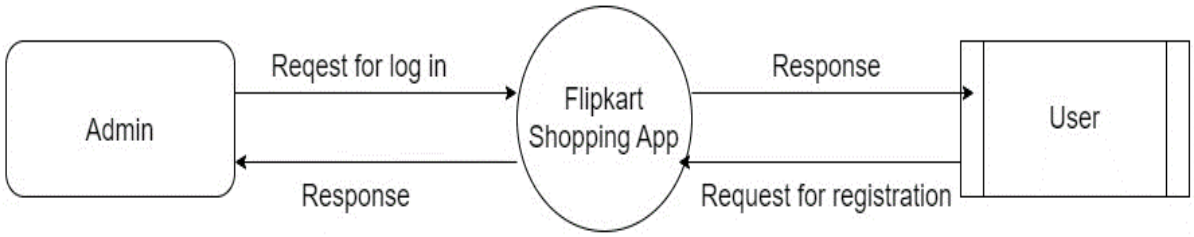
After the deployment of a product on the production environment, maintenance of the product i.e. if any issue comes up and needs to be

fixed or any enhancement is to be done is taken care by the developers.

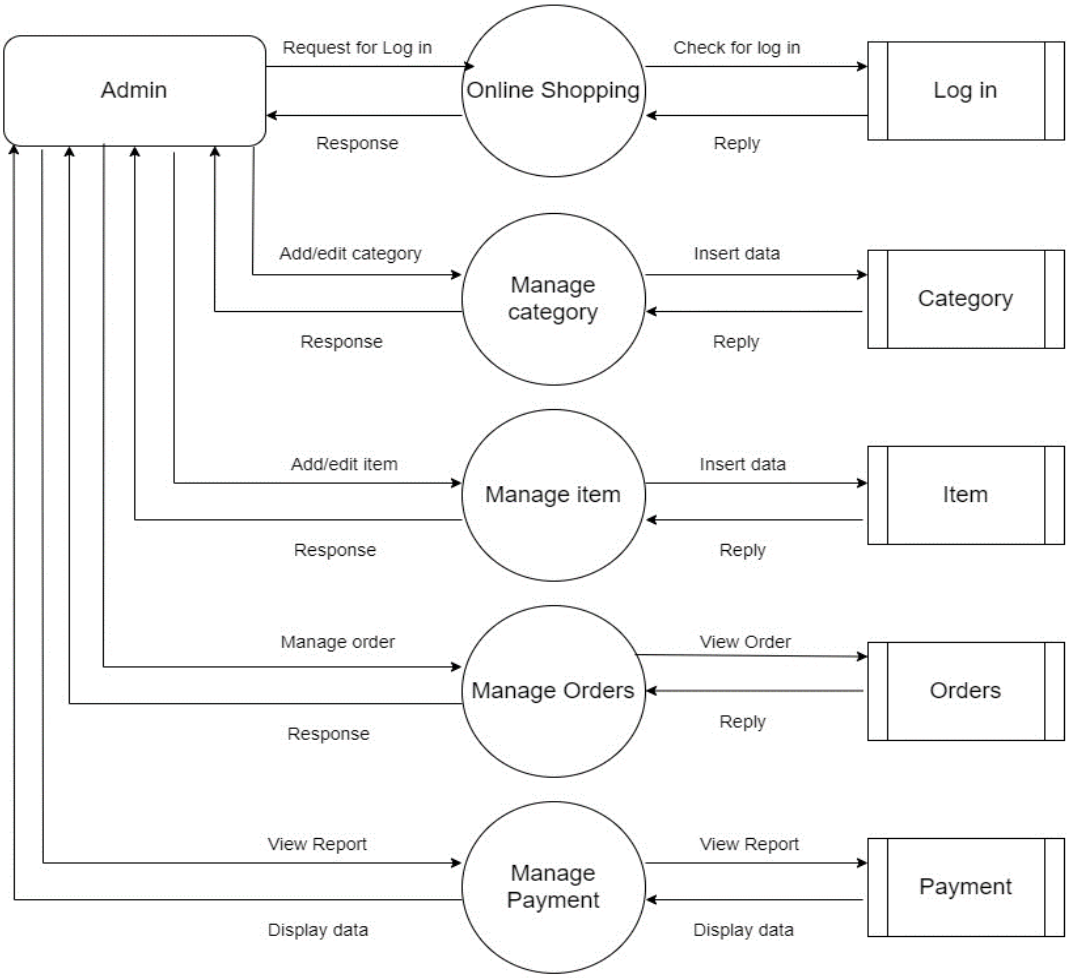
What is DFD? Create a DFD diagram on Flipkart.

Data flow diagrams are used to graphically represent the flow of data in a business information system. DFD describes the processes that are involved in a system to transfer data from the input to the file storage and reports generation.

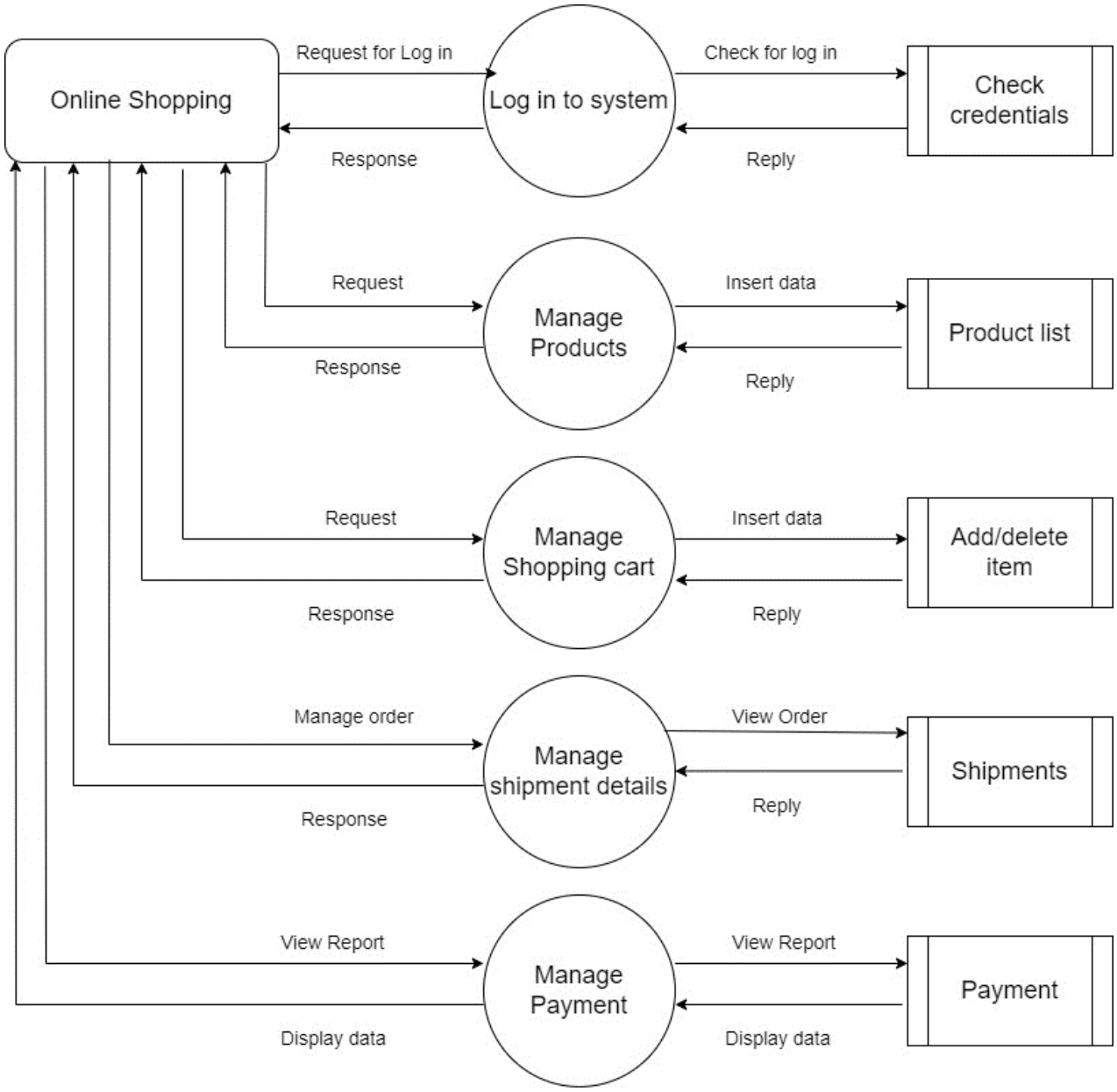
Data flow diagrams can be divided into logical and physical. The logical data flow diagram describes flow of data through a system to perform certain functionality of a business. The physical data flow diagram describes the implementation of the logical data flow.



Level 0 DFD


Admin
Request for Log in
Response
Online Shopping
Check for log in
Reply
Log in
Add/edit category
Response
Manage category
Insert data
Reply
Category
Add/edit item
Response
Manage item
Insert data
Reply
Item
Manage order
Response
Manage Orders
View Order
Reply
Orders
View Report
Display data
Manage Payment
View Report
Display data
Payment

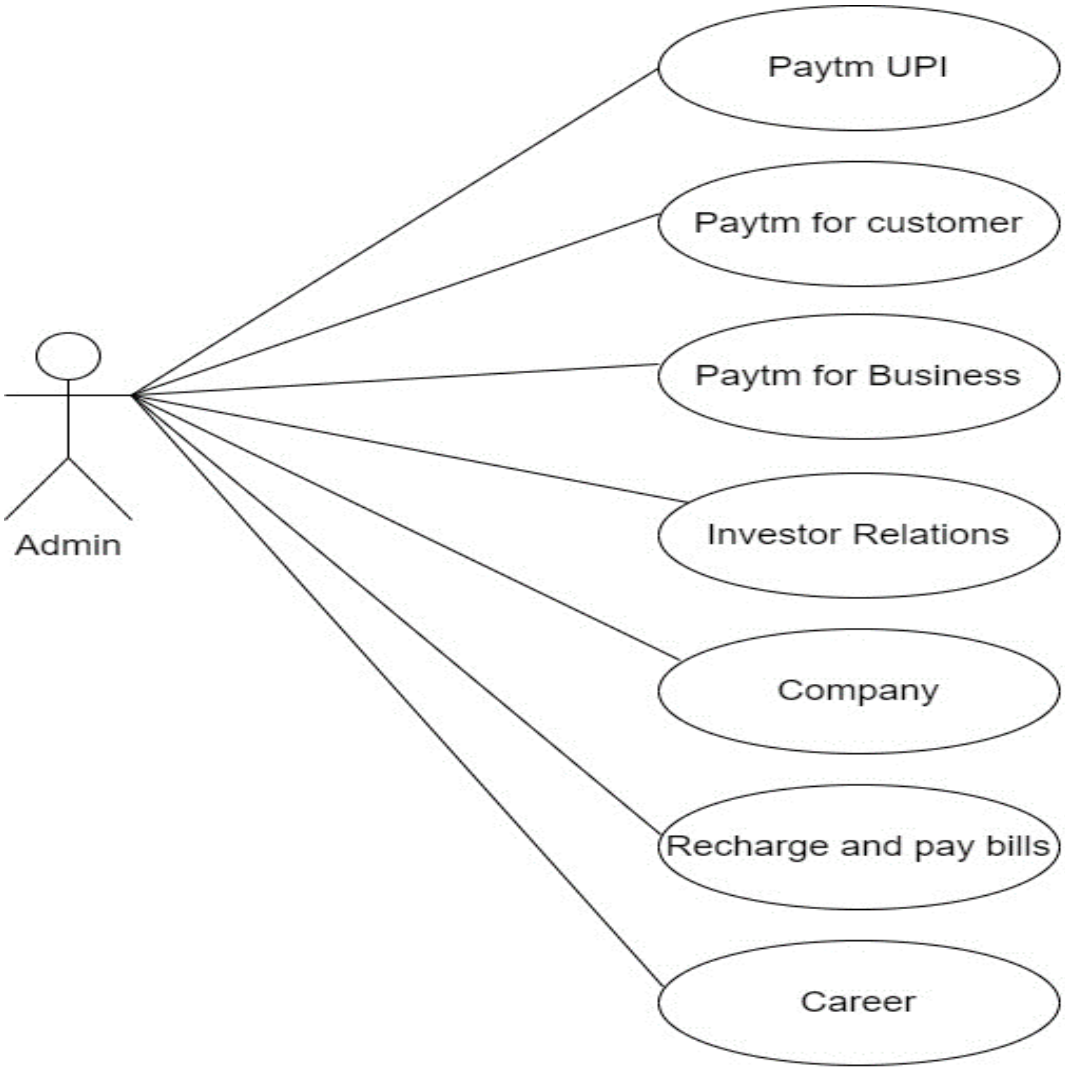
Level 1 DFD


Online Shopping
Request for Log in
Response
Log in to system
Check for log in
Reply
Check credentials
Request
Response
Manage Products
Insert data
Reply
Product list
Request
Response
Manage Shopping cart
Insert data
Reply
Add/delete item
Manage order
Response
Manage shipment details
View Order
Reply
Shipments
View Report
Display data
Manage Payment
View Report
Display data
Payment

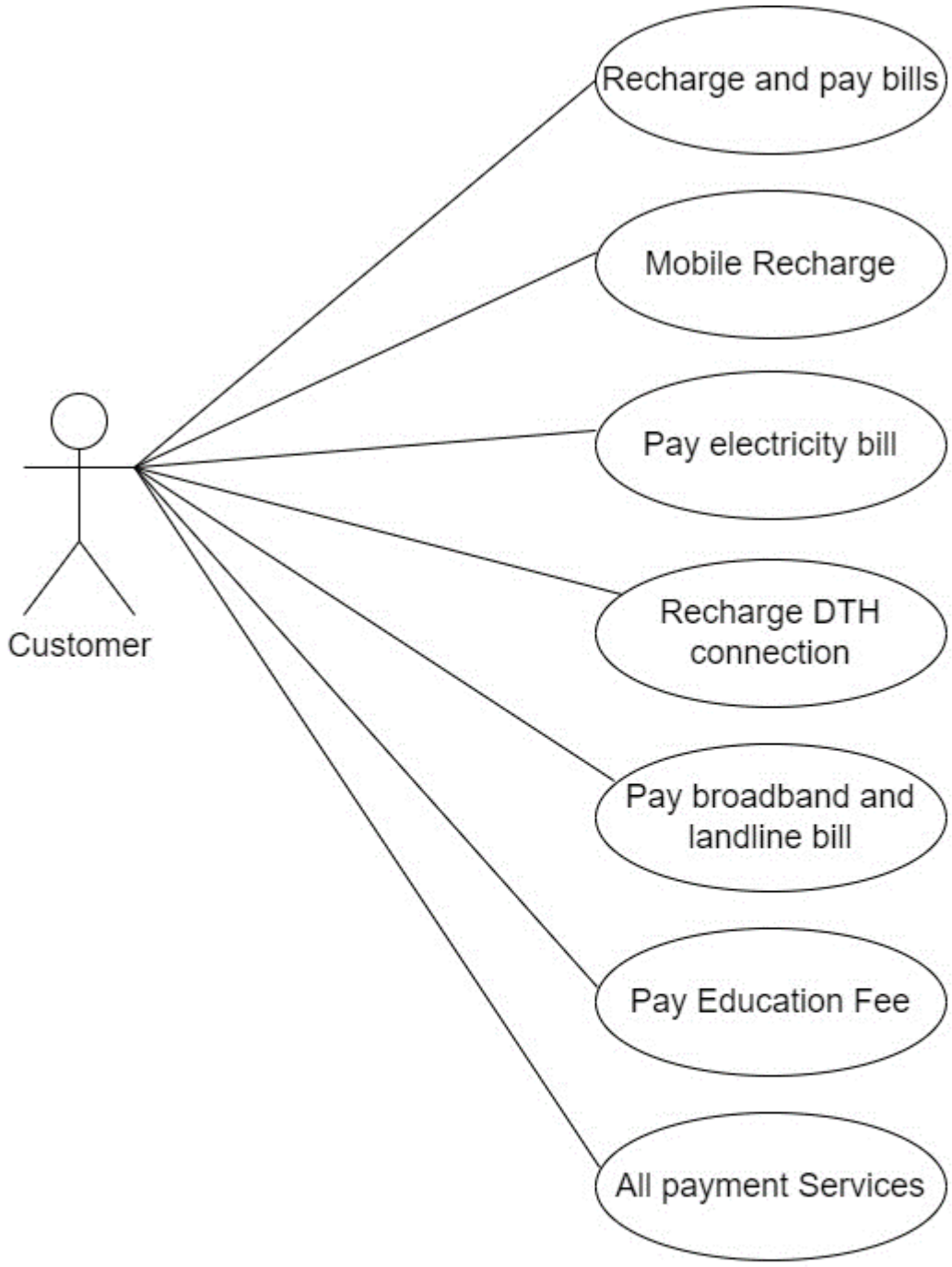
Level 2 DFD

What is Use case Diagram? Create a use-case diagram on bill payment on paytm.

A use case diagram is a way to summarize details of a system and the users within that system. It is generally shown as a graphic depiction of interactions among different elements in a system. Use case diagrams will specify the events in a system and how those events flow, however, use case diagram does not describe how those events are implemented.



Online Bill Payment on Paytm



Online Bill Payment on Paytm