Assignment

Module:

Overview of IT Industry

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Q. What is Software? What is Software Engineering?

Ans. **Software:**

- Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
- It is the opposite of hardware, which describes the physical aspects of computer.
- Software is a generic term used to refer to applications, scripts and programs that run on a device.
- It can be thought of as the variable part of a computer, while hardware is the invariable part.
- The two main categories of software are application software and system software.
- Other types of software include programming software, which provides the programming tools software developers need; middleware, which sits between system software and applications; and driver software, which operates computer devices and peripherals.

Software Engineering:

- It is a branch of engineering that deals with the development of software products.
- Software Engineering is mainly used for large projects based on software systems rather than single programs or applications.
- The main goal of software Engineering is to develop software application for improving the quality, budget and time efficiency.
- Software Engineering ensures that the software that has to build should be consistent, correct, also on budget, on time and within the required requirements.
- There are four main attributes of Software Engineering:
  1. Efficiency
  2. Reliability
  3. Robustness
  4. Maintainability

Q. Explain Types of Software

Ans. **Types of Software:**

1. Application Software
2. System Software
3. Driver Software
4. Middleware
5. Programming Software

1. Application Software

- The most common type of software, application software is a computer software package that performs a specific function for 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 application for the user.
- Examples of Modern Applications include office suites, graphics software, databases and database management programs, web browsers, word processors, software development tools, image editors and communication platforms.
- Example: Microsoft Office, Paint, PowerPoint etc.

2. 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.
- It controls the operations of the computer hardware and provides an environment or platform for all the other types of software to work in.
- The OS is the best example of system software; it manages all the other computer programs.
- Other examples of system software include the firmware, computer language translators and system utilities.
- Example: Notepad, Calculator etc.

3. Driver Software

- Also known as device drivers, this software is often considered a type of 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 include software that comes with any nonstandard hardware, including special game controllers, as well as the software that enables standard hardware, such as USB storage devices, keyboards, headphones and printers
- Example: Audio Driver, Video Driver etc.

4. Middleware

- The term middleware describes software that mediates between application and system software or between two different kinds of application 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.
- Example: database middleware, application server middleware

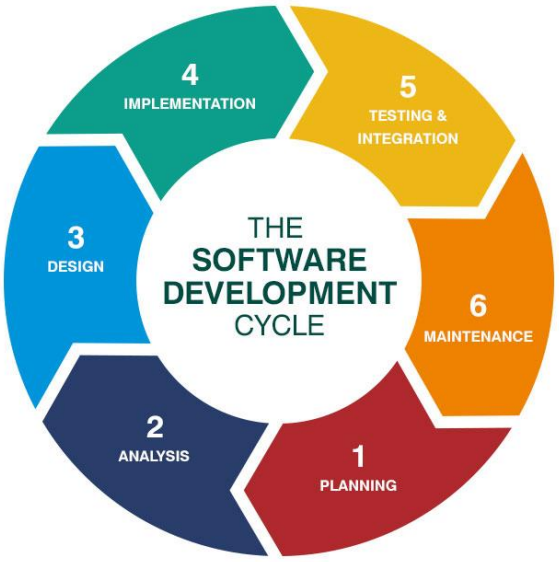
5. Programming Software

- 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 of programming software include assemblers, compilers, debuggers and interpreters.
- Examples: Turbo C, Eclipse, Sublime etc.

Q. What is SDLC? Explain each phase of SDLC

Ans. **SDLC:**

The Software Development Life Cycle (SDLC) refers to a methodology with clearly defined processes for creating high-quality software.



SDLC Methodology:

The Software Development Life Cycle (SDLC) refers to a methodology with clearly defined processes for creating high-quality software. in detail, the SDLC methodology focuses on the following phases of software development:

1. Requirement Gathering
2. Analysis
3. Designing
4. Implementation
5. Testing
6. Maintenance

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

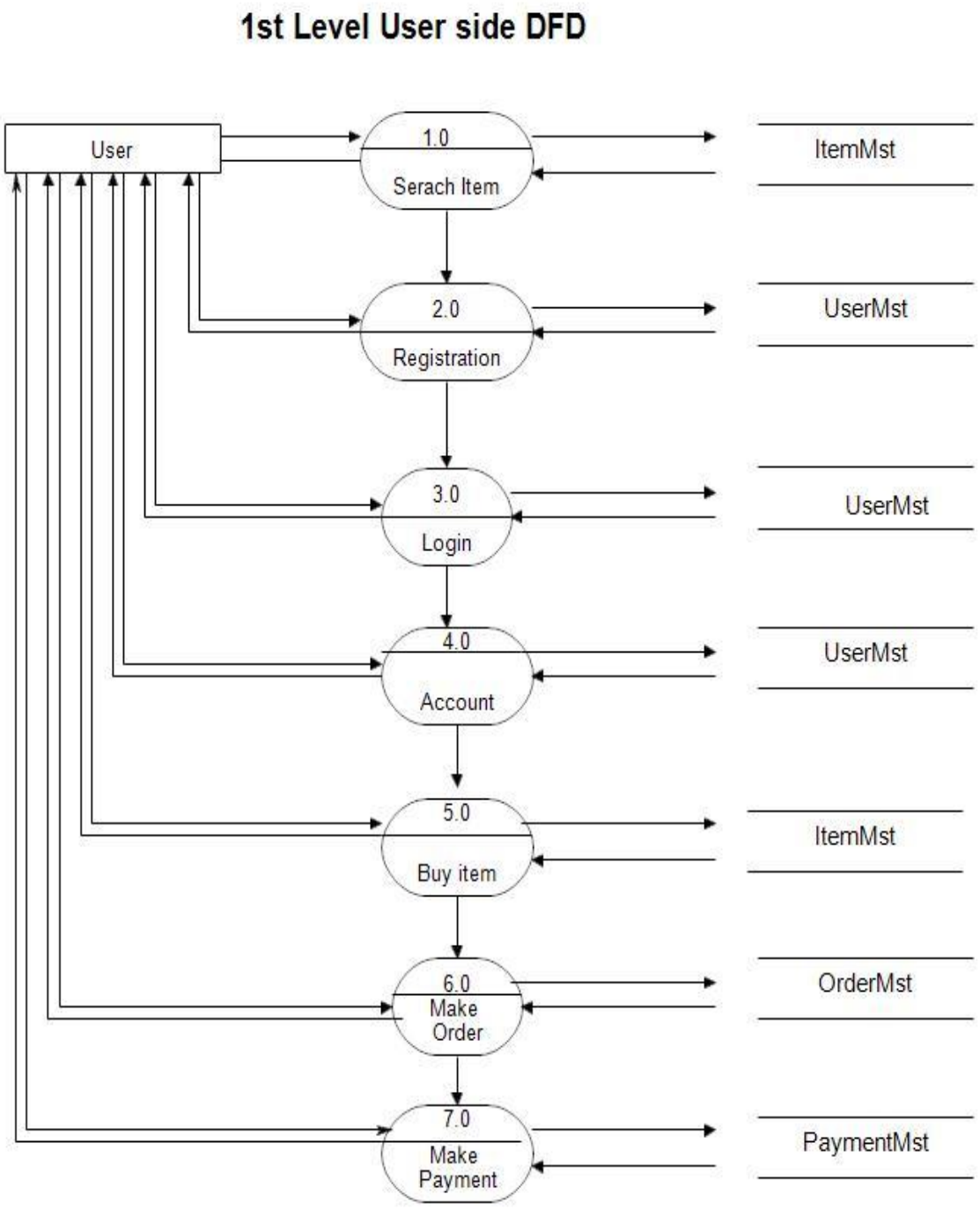
Ans. **DFD:**

- DFD stands for “Data Flow Diagram”, It is also known as a “Bubble Chart”.
- Through which we can represent the flow of data graphically on an information system.
- By using DFD we can easily understand the overall functionality of the system because the diagram represents the incoming data flow, outgoing data flow and stores data in a graphical form.
- It describes how data is processed in a system in terms of input and output.

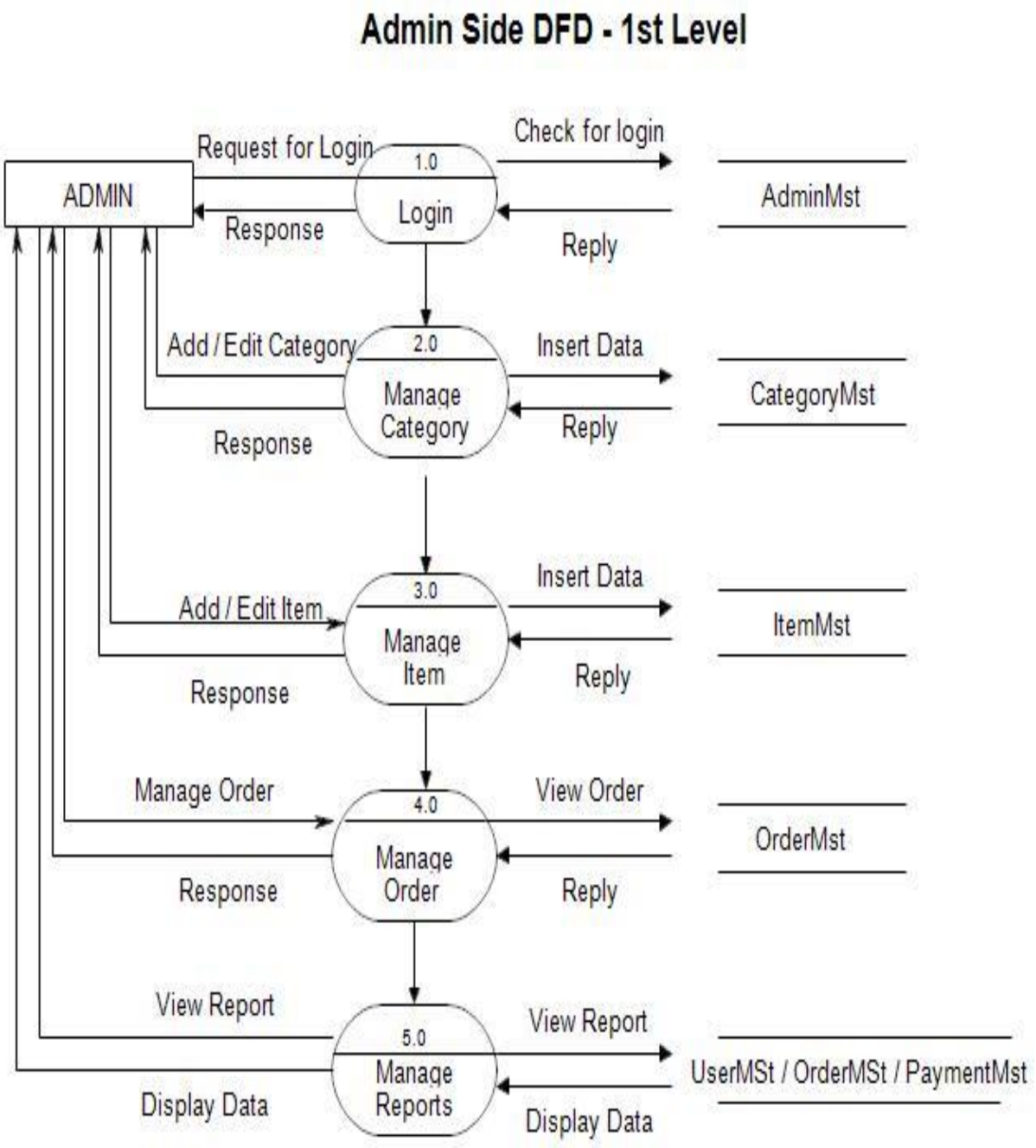
DFD diagram on Flipkart:

Level-0

Level-1


1st Level User side DFD
User
1.0
Serach Item
2.0
Registration
3.0
Login
4.0
Account
5.0
Buy item
6.0
Make
Order
7.0
Make
Payment
ItemMst
UserMst
UserMst
UserMst
ItemMst
OrderMst
PaymentMst

Level-2

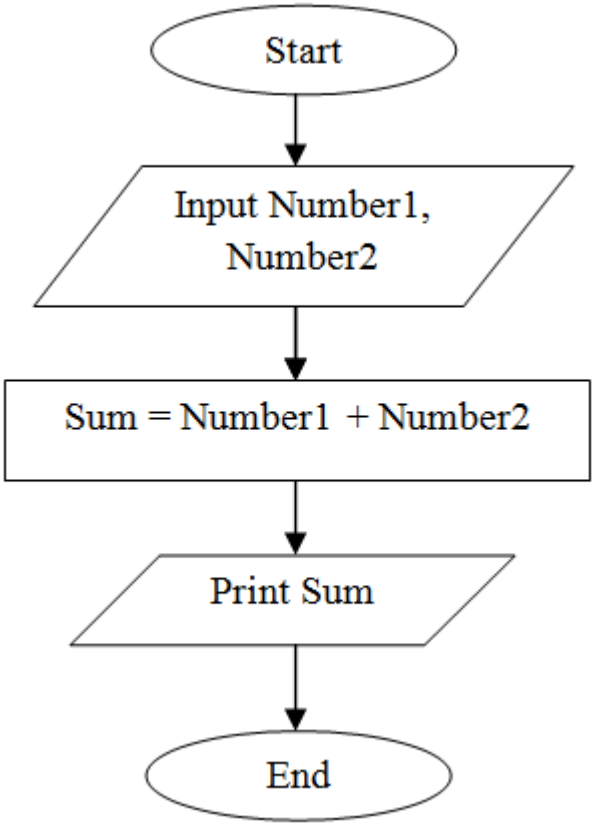

Admin Side DFD - 1st Level
ADMIN
Request for Login
Response
1.0
Login
Check for login
Reply
AdminMst
Add / Edit Category
Response
2.0
Manage Category
Insert Data
Reply
CategoryMst
Add / Edit Item
Response
3.0
Manage Item
Insert Data
Reply
ItemMst
Manage Order
Response
4.0
Manage Order
View Order
Reply
OrderMst
View Report
Display Data
5.0
Manage Reports
View Report
Display Data
UserMSt / OrderMSt / PaymentMst

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

Ans. **Flowchart:**

- 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.
- The flowchart shows the steps as boxes of various kinds, and their order by connecting the boxes with arrows.
- This diagrammatic representation illustrates a solution model to a given problem.

Flowchart of addition of two numbers:



Q. What is Use case Diagram? Create a use-case on bill payment on Paytm.

Ans. **Use-case Diagram:**

- A use case diagram is a graphical depiction of a user's possible interactions with a system.
- A use case diagram shows various use cases and different types of users the system has and will often be accompanied by other types of diagrams as well.
- The use cases are represented by either circles or ellipses.
- The actors are often shown as stick figures.

Use-Case Diagram on bill payment on Paytm