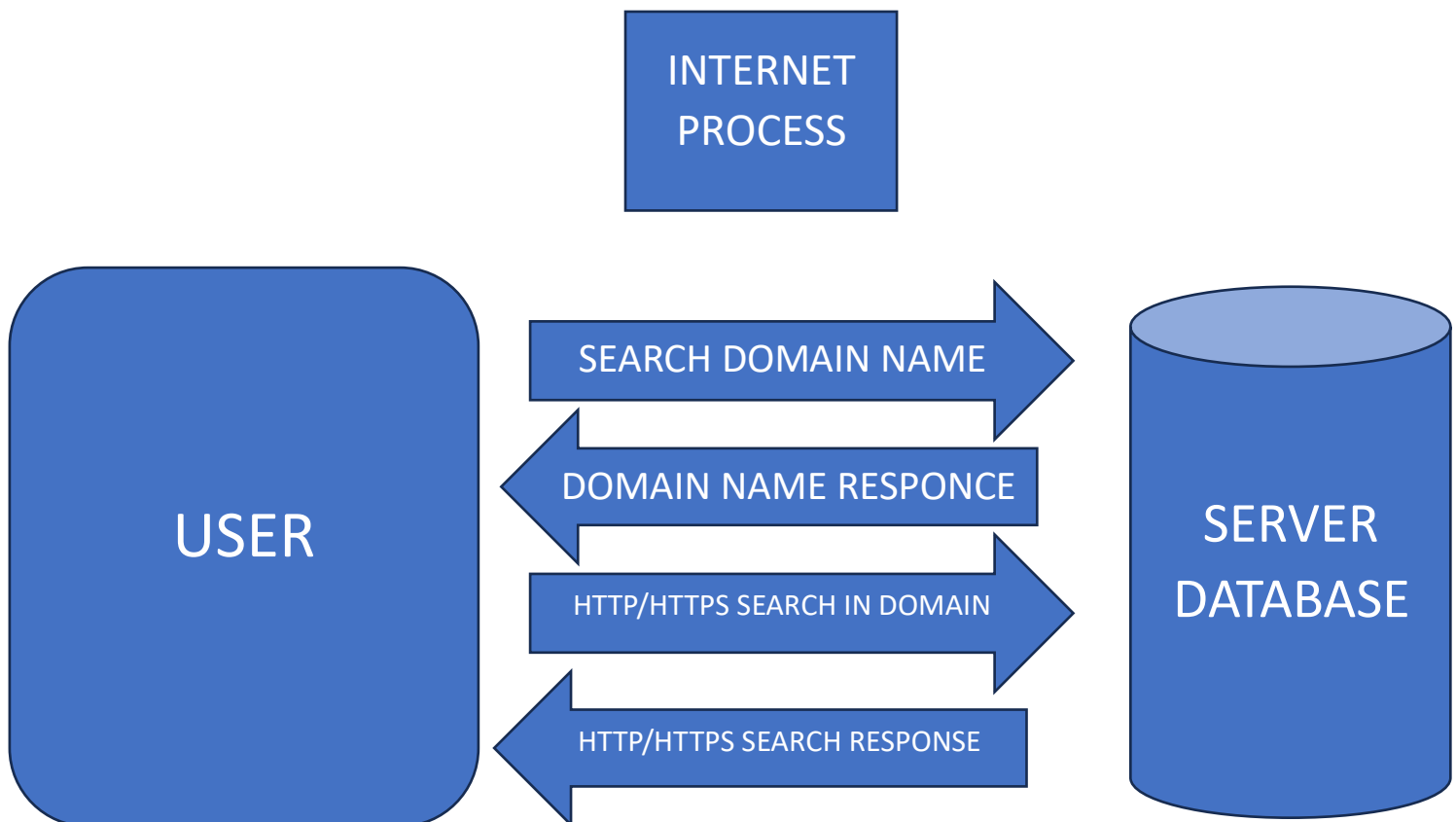# MODULE – 1
Overview of IT Industry

QUESTION). Research and create a diagram of how data is transmitted from a client to a server over the internet.

INTERNET PROCESS

USER

SEARCH DOMAIN NAME

DOMAIN NAME RESPONCE

HTTP/HTTPS SEARCH IN DOMAIN

HTTP/HTTPS SEARCH RESPONSE

SERVER DATABASE

EXPLAINING:

➢ The user, such as a web browser or an application, starts the communication by sending a request to the server. , ex..search domain name like google.com.

➢ The server receives requests from the USER and processes them..

➢ The client sends HTTP/HTTPS requests (e.g., requesting a webpage) to a web server.

➢ The server receives client requests via protocols like HTTP.

➢ Once the server responds, the client processes the data (HTML, CSS, images, etc.). The client requests specific resources or services from the server, like a webpage, data, or a file. The server stores and manages the resources (like webpages, data, or files) that clients request. It retrieves information from databases or generates responses dynamically.

➢ After receiving a response from the server, the client displays the requested content to the user. Web browsers render the webpage for users to view and interact with.

QUESTION).Research different types of internet connections (e.g., broadband, fiber, satellite) and list their pros and cons.

1. Broadband (DSL/Cable)

◈ **DSL (Digital Subscriber Line)**

Advantages :

- o Widely available (uses existing telephone lines)
- o Affordable for most households

Disadvantages :

- o Slower speeds than fiber or cable
- o Speed depends on distance from provider

◈ **Cable**

Advantages :

- o Faster than DSL
- o Suitable for streaming and gaming

Disadvantages :

- o Speeds can drop during peak times (shared bandwidth)
- o Slightly more expensive than DSL

2. Fiber Optic

Advantages :

- o Extremely fast (up to 1 Gbps and more)
- o Highly reliable and low latency
- o Not affected by electrical interference

Disadvantages :

- o Limited availability (mostly urban areas)
- o More expensive to install and maintain

3. Satellite

Advantages :

- o Available in remote and rural areas
- o Doesn't require physical infrastructure on-site

Disadvantages :

- o High latency (signal travels to space and back)
- o Weather can affect performance
- o More expensive with data caps

4. Dial-Up

Advantages :

- o Very low cost
- o Accessible anywhere with a landline

Disadvantages :

- o Very slow (max ~56 kbps)
- o Ties up phone line
- o Not suitable for modern internet needs

5. Mobile (4G/5G LTE)

Advantages :

- o Portable and wireless
- o Fast speeds with 4G/5G (suitable for HD streaming)
- o Good coverage in populated areas

Disadvantages :

- o Data caps and throttling
- o Signal strength varies by location
- o Can be expensive without a good plan

6. Fixed Wireless

Advantages :

- o Good for rural areas
- o Faster than satellite and dial-up

Disadvantages :

- o Needs a line-of-sight to the tower
- o Susceptible to interference and weather

QUESTION). Identify and classify 5 applications you use daily as either system software or application software.

Application or software	Type	Classification
Windows OS / macOS	Operating System	System Software
Google Chrome	Web Browser	Application Software
Microsoft Word	Word Processor	Application Software
Android	Operating System	System Software
Samsung music	Music App	Application Software

QUESTION). Create a list of software you use regularly and classify them into the following categories: system, application, and utility software.

1. System Software :

Software Name	Function
Windows 11 / macOS	Operating System
Linux (Ubuntu)	Open-source OS
Device Drivers	Hardware managmesnt system
Android	Operating System

2. Application Software :

Software Name	Function
Google Chrome	Web browsing
Microsoft Word	Document creation
Zoom / Teams	Video communication
Samsung music	Music app
VLC	Media player
Adobe scan	Document scanner

3. Utility Software :

Software Name	Function
Windows Defender	Virus and threat protection
CCleaner	System cleanup
7-Zip / WinRAR	File compression/decompression
Backup Tools	Data backup and restore
Disk Management	Manages partitions and storage

QUESTION). Create a flowchart representing the Software Development Life Cycle (SDLC).

SDLC :

PLANNING

ANALYSIS

DESIGN

IMPLEMEN TATION

TESTING

DEPLOY MENT

MAINTENANCE
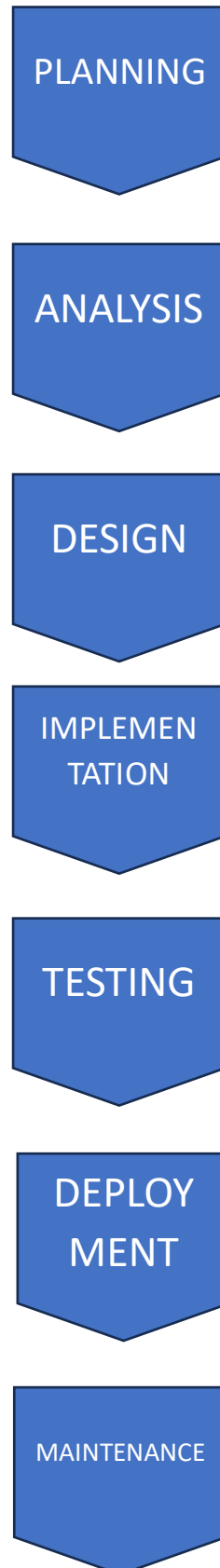
QUESTION). Create a DFD for a hospital management system.

DFD for a hospital management system :

```
START ──────────▶ HOSPITAL STAFF ──────────▶ ◆ LOGIN ◆
                                                │      │
                                          IF YES │      │ IF NO THEN GO BACK
                                                ▼
                                          ADD PATIENT
                                          ADD DOCTOR
                                          ADD ROOM
                                                │
                                                ▼
                                      DATA STORAGE OF INFORMATION ◀── REPORTS
                                                │
                                                ▼
                                          GENERATE BILL ──────▶ PATIENT BILL
                                                                DOCTOR BILL
                                                                ROOM BILL
                                                                REPORT BILL
                                                                     │
                                                                     ▼
                                                                ◆ PAY BILL ◆
                                                                  │      │
                                                            IF YES │      │ IF NO THEN GO BACK
                                                                  ▼
                                                        DISCHARGE PATIENT
                                                                  │
                                                                  ▼
                                                                STOP
```
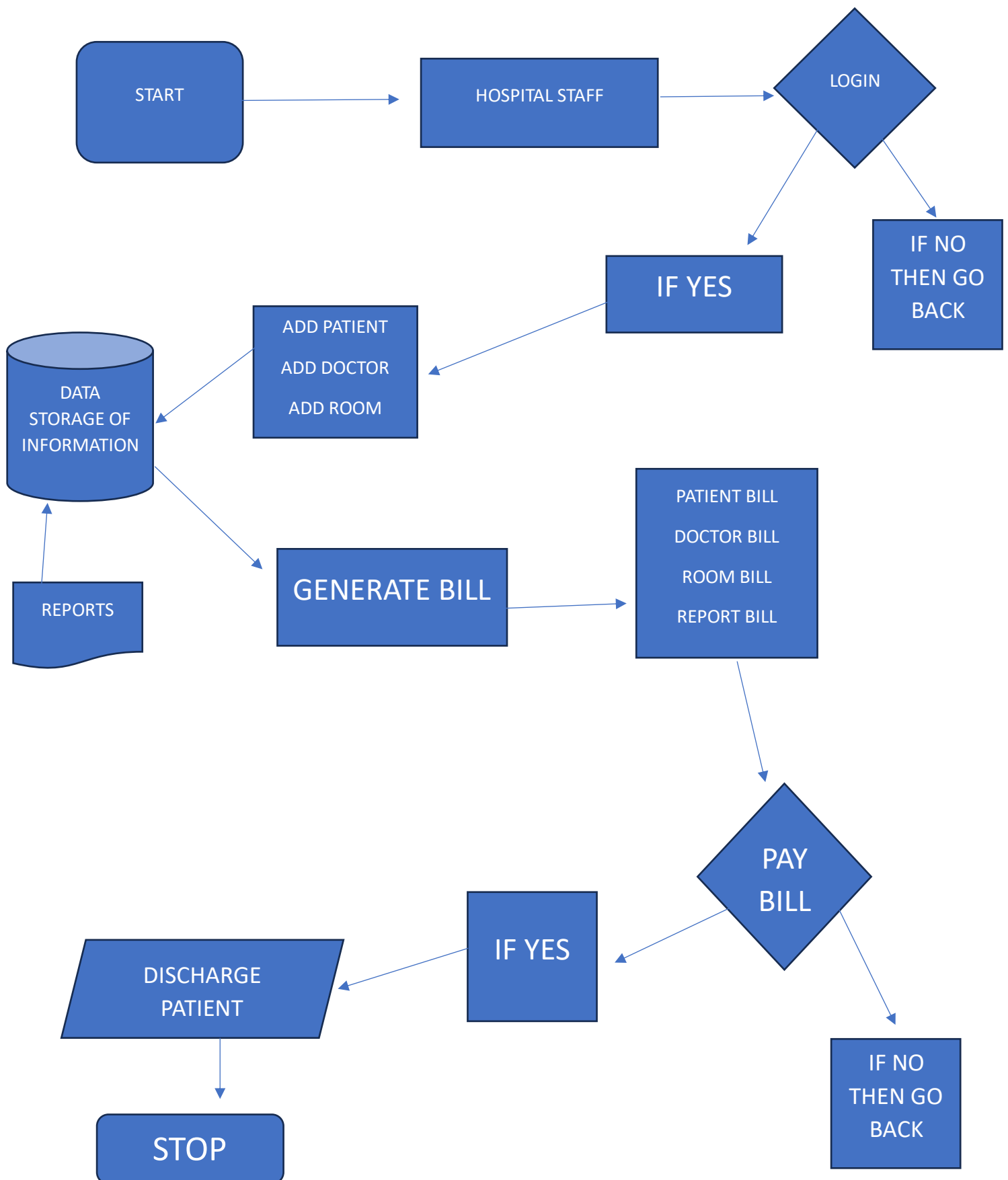
QUESTION). Draw a flowchart representing the logic of a basic online registration system

flowchart representing the logic of a basic online registration system :

```
                    ┌──────────────┐
                    │    Start     │
                    └──────────────┘
                           │
                    ┌──────────────┐
                    │   DISPLAY    │
                    │REGISTRATIONFORM│
                    └──────────────┘
                           │
                    ┌──────────────┐
                    │  USER FILLS  │
                    │    FORM      │
                    └──────────────┘
                           │
                    ┌──────────────┐
                    │   VALIDATE   │
                    │ INPUT FIELDS │
                    └──────────────┘
                           │
                           ▲
        ┌──────────────┐      ┌──────────────┐
        │IF INVALID GO │      │IF VALID THEN │
        │BACK TO FORM  │      │  CONTINUE    │
        └──────────────┘      └──────────────┘
```

IF VALID THEN CONTINUE

SAVE USER DATA TO DATABASE

SEND CONFIRMATION MAIL

SHOW SUCCESS MESSAGE

END