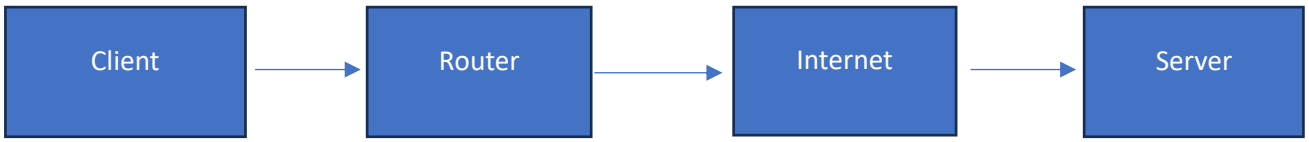
Module-1 overview of IT industry

(1) Write a simple "Hello World" program in two different programming languages of your choice. Compare the structure and syntax.

```
#include <stdio.h>

Int main ()

{

Printf (“Hello World \ n”);

Return 0 ;

}
```

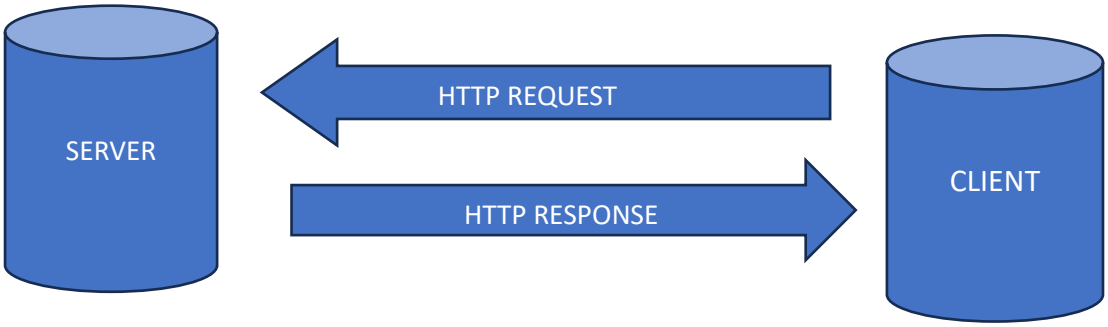
(2) Research and create a diagram of how data is transmitted from a client to a server over the internet.



(3) Design a simple HTTP client-server communication in any language.

HTTP is stand for hyper text transfer protocol.

its use in web browser on world wide for websites and web documents and web servers.



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

broadband: -this cable made by coper with decent speed limits and broadband is affordable connection

cable with normal flexibility.

fiber: -this cable lnown as optic fiber cable with extereme speed any place and more flexibility in usage

and with very high latency.the material is fiber in made it and its expensive and better than broadand cable.

satellite: -satellite connections are fastest connection as any more with high speed,no latency and use

anywhere without any physical connections with high flexibility. But this connection is so

expensive & everyone cannot afford it

(5) Simulate HTTP and FTP requests using command line tools.

HTTP: -hypertext transfer protocol

this protocol used by client and server for data or web communication

FTP: -file transfer protocol

with HTTP we encrypt the file via web browser and transfer server or clients

(6) Identify and explain three common application security vulnerabilities. Suggest possible solutions.

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

Google chrome

Gmail

Google drive

Microsoft edge

Windows

(8) Design a basic three-tier software architecture diagram for a web application

(9) Create a case study on the functionality of the presentation, business logic, and data access layers of a given software system.

(10) Explore different types of software environments (development, testing, production). Set up a basic environment in a virtual machine.

Development: - phase is part of development environment of any website or apk. when we on any apk then front end and back-end developer make code run and do changes for better interface or performance and without bugs and virus with security systems.

testing: - when our developer should be developed or develop any type of apk then to check that apk they

test the apk and find out errors and weak points of that apk and security for changes and make better user

interface and experience

production: - production phase is when apk is make over then time to deploying the production phase will

work in and upload or store that apk data on server.

(11) Write and upload your first source code file to GitHub.

(12) Create a GitHub repository and document how to commit and push code changes.

(13) Create a student account on GitHub and collaborate on a small project with a classmate.

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

System Software: Windows

Application: Chrome, Gamil, Microsoft edge

Utility Software: anti-virus, WinRAR, task manager

(15) Follow a GIT tutorial to practice cloning, branching, and merging repositories.

(16) Write a report on the various types of application software and how they improve productivity

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

PLANNING

ANALYSIS

DESIGNING

DEVELOPMENT

TESTING

DEPLOYMENT

MAINTANANCE

(18) Write a requirement specification for a simple library management system.

(19) Perform a functional analysis for an online shopping system.

(20) Design a basic system architecture for a food delivery app.

(21) Develop test cases for a simple calculator program.

(22) Document a real-world case where a software application required critical maintenance.

(23) Create a DFD for a hospital management system.

(24) Build a simple desktop calculator application using a GUI library.

(25) Draw a flowchart representing the logic of a basic online registration system.