Level -1 overview of IT Industry

Module- 1

1.Write a simple program “hello world”?

Ans. #include <stdio.h>

Int main()

{

Printf (“\nHello world ! “);

Return 0;

}

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

Ans.

3. Design a simple HTTP client – server communication in any language

Ans.

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

Ans. Broadband : -

Pros: -

1. High speed : generally offers high download and upload speeds .
2. Reliability : consistent performance for activities like streaming , online ,gaming and video conferencing .

3. Availability: widely available in urban and suburban areas.

Cons:-

1. Cost : can be more expensive compared to other types of connection .
2. Congestion : speeds may decrease during peak usage times due to network congestion.

Fiber optic:-

Pros:-

1. Lightning – fast speeds: offers extremely high download and upload speed , often up to 1,000 Mbps or more.
2. Reliability : less prone to interference and signal loss over long distances.
3. Future – proof : can handle increasing data demands as technology advances.

Cons:-

1. Availability : limited availability , especially in rural areas .
2. Cost : typically more expensive than others types of internet connection.

Satellite:-

Pros:-

- Wide coverage : available in remote and rural areas where other types of connection are not feasible .
- Installation : no need for physical cables or infrastructure.

Cons:-

Latency : higher latency compared to other types of connections, which can affect real-time activities like online gaming.

Weather dependence : performance can be affected by weather conditions.

Data caps : often comes with data caps and higher costs for exceeding those limits

7. identify and classify 5 application you use daily as either system software or application software.

Ans. System software:-

1 operating system (OS): ex. Windows , macOS , Linux

Function : manages hardware resources , provides an interface for users, and allows other software to run .

2 device drivers :ex. Graphics driver, printer driver

Function: allows the operating system and other software to communicate with hardware devices.

Application software:-

1 web browser: ex. Google chrome , Mozilla Firefox , Safari

Function : enables users to access and interact with websites and web application .

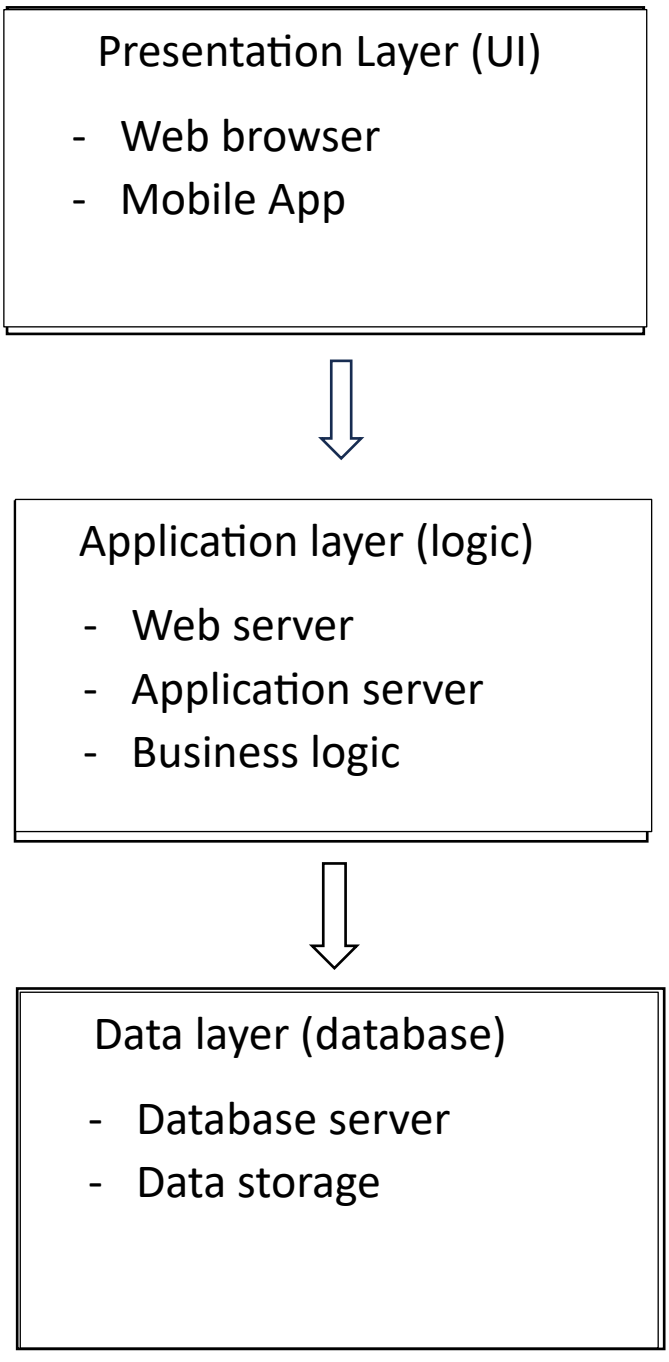
2 office suite: ex . Microsoft office, Google Workshop

Function : provides tools for creating documents , spreadsheet, presentation, and other productivity task.

3 communication tools : WhatsApp , Microsoft Team, Zoom

Function : facilitates messaging , video conferencing and collaboration.

8 . design a basic three – tier software architecture for a web application



9. create a case study on the functionality of the presentation , business logic , and data access layer of a given software system

Ans. Presentation layer (UI)

1 user interface for interacting with application .

2 display product listing , shopping cart and checkout pages.

3 handle user input

Business logic layer (logic)

1 Implements the core logic and rules of the application

2 Processes user action

3 Manages authentication and authorization .

Data access layer

1 manage data storage and retrieval

2 Interacts with the database to fetch and store information

3 Ensures data integrity and consistency.

10. Explore different types of software environments . set up basic environment in a virtual machine.

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

Ans. system Software : manage computer hardware , software resources and provide common services for computer ex . Windows, Linux

Device drivers : operating system and other software to communicate with hardware devices ex. Graphics drivers , printer drivers , network driver.

Application software : user to access and interact with websites and web application ex safari , Mozilla Firefox

Office suite: creating document , Spreadsheet ,and other productivity task .ex Liber office , Microsoft office

Communication tools : messaging and video conference and collaboration .

Media player : plays audio and video files . ex VLC media player , iTunes

Email client : email communication .ex Gmail , Microsoft outlook

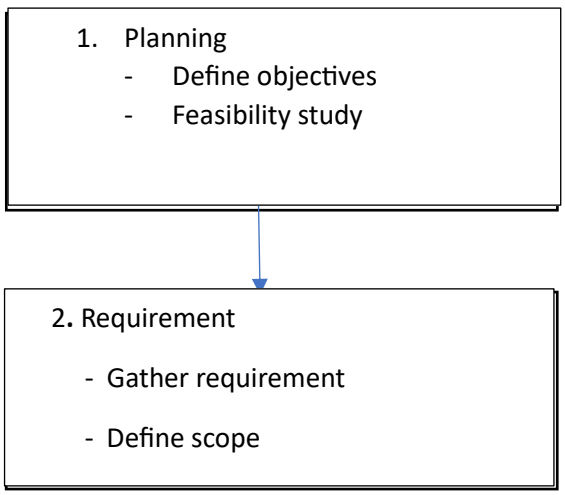
Utility software : Antivirus software ex. McAfee

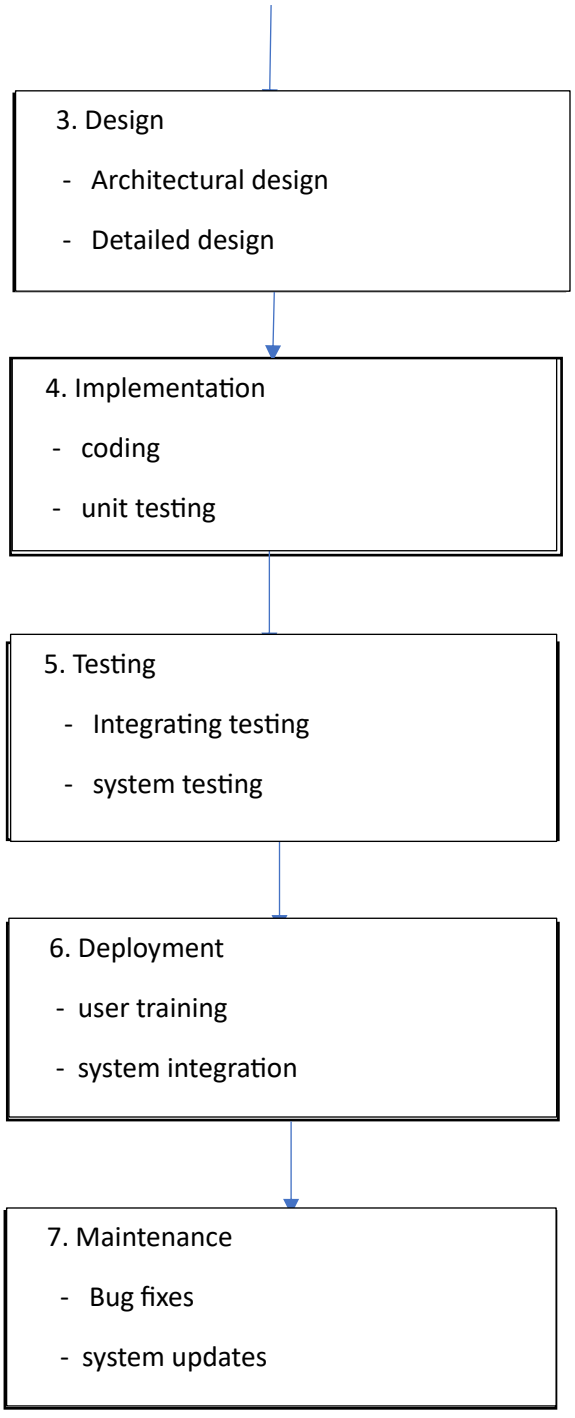
File compression tools : ex WinRAR , 7-Zip , WinZip

Backup software , disk cleanup software , system monitoring tools.

17. create a flowchart representing representing the software development life cycle (SDLC)

Ans.




3. Design
- Architectural design
- Detailed design
4. Implementation
- coding
- unit testing
5. Testing
- Integrating testing
- system testing
6. Deployment
- user training
- system integration
7. Maintenance
- Bug fixes
- system updates