ASSIGNMENT-1

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.*

Ans:

- *C language*

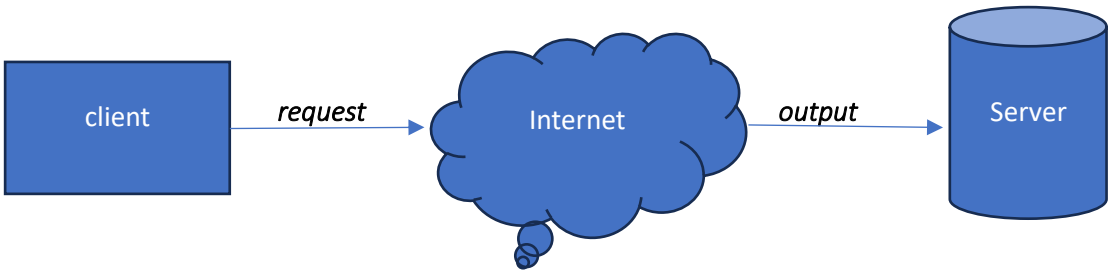
```
#include<stdio.h>
    int main ()
     {
        printf ("hello world!!!");
        return 0;
     }
```

- *PHP*

```
<?php
    echo "Hello, World!";
 ?>
```

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 connections (e.g., broadband, Fiber, satellite) and list their pros and cons.*

Ans: There are different types of internet connection given below:

➔ *Mobile*

Pros: -Easy to set up

No need for cables or fixed lines

Cons: - Speed and stability vary by location

Data caps and higher cost in many cases

➔ *Cable*

Cable is used to transmit data

Pros: -

Faster

Easy to use

Cons: -

Affected by cable TV

Depend on work load

➔ *Satellite*

Pros: - when other networks are not available then use this

Cons: - network depends on weather

Costly

➔ *Broadband over power line*

Pros: - portable

Convenient

Cons: - data limit

speed depends on weather

5.Simulate HTTP and FTP requests using command line tools (e.g., curl)

Ans: command line tools are used to transfer data to a various protocol

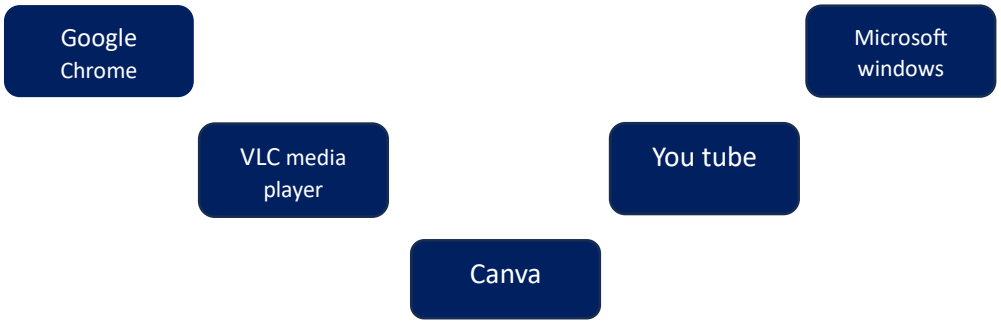
Useful for downloading files

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

Ans:

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

Ans:



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

Ans:

1. *Presentation layer (client layer)*
2. *Application layer (Logic layer/Backend)*
3. *Data layer (Database layer)*

- *In any three-tire software application, there was a three layer which is given above*

Diagram:

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

Ans:

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

Ans:

Software Environments

there are following software environments step by step.

- *Development*

  Development is the first step to build a software, in which developer can first design a software how it's look.

- *Testing*

After develop the software tester test their qualities or functionalities, and test the software is work properly or not.

- *Staging*

  Staging means there are final checking before launch.

- *Product*

  Launch for user to use.

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

Ans:

- ***print ("Hello, World!")***
- ***Upload to GitHub***
- ***git add hello_world.py***

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

Ans:

print ("Hello, World!")

- *Upload to GitHub*
- *git add hello_world.py*
- *git commit -m "First commit"*
- *git push*

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

Ans:

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

Ans:

- *System Software*

System software generally runs your computer; It's managing all the hardware and software process.

For example:

Window 10 is helping the computer to run and allow to use applications.

- *Application software*

Google Chrome: which is used to browse the internet.

Spotify: used to listen music and refresh mind.

WhatsApp: this is a social media application used to learn new things for knowledge.

Zoom: for video meetings and online classes.

Visual studio code: used for writing programs.

Notepad or MSWord: used to writing a texts or documents.

- *Utility Software*

It is help to take care of computer.

Google Drive: this is a backup software.

OneDrive: OneDrive is also backup software, and make copy of important file, so we can't lose them.

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

Ans:

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

Ans:

There are many types of application software.

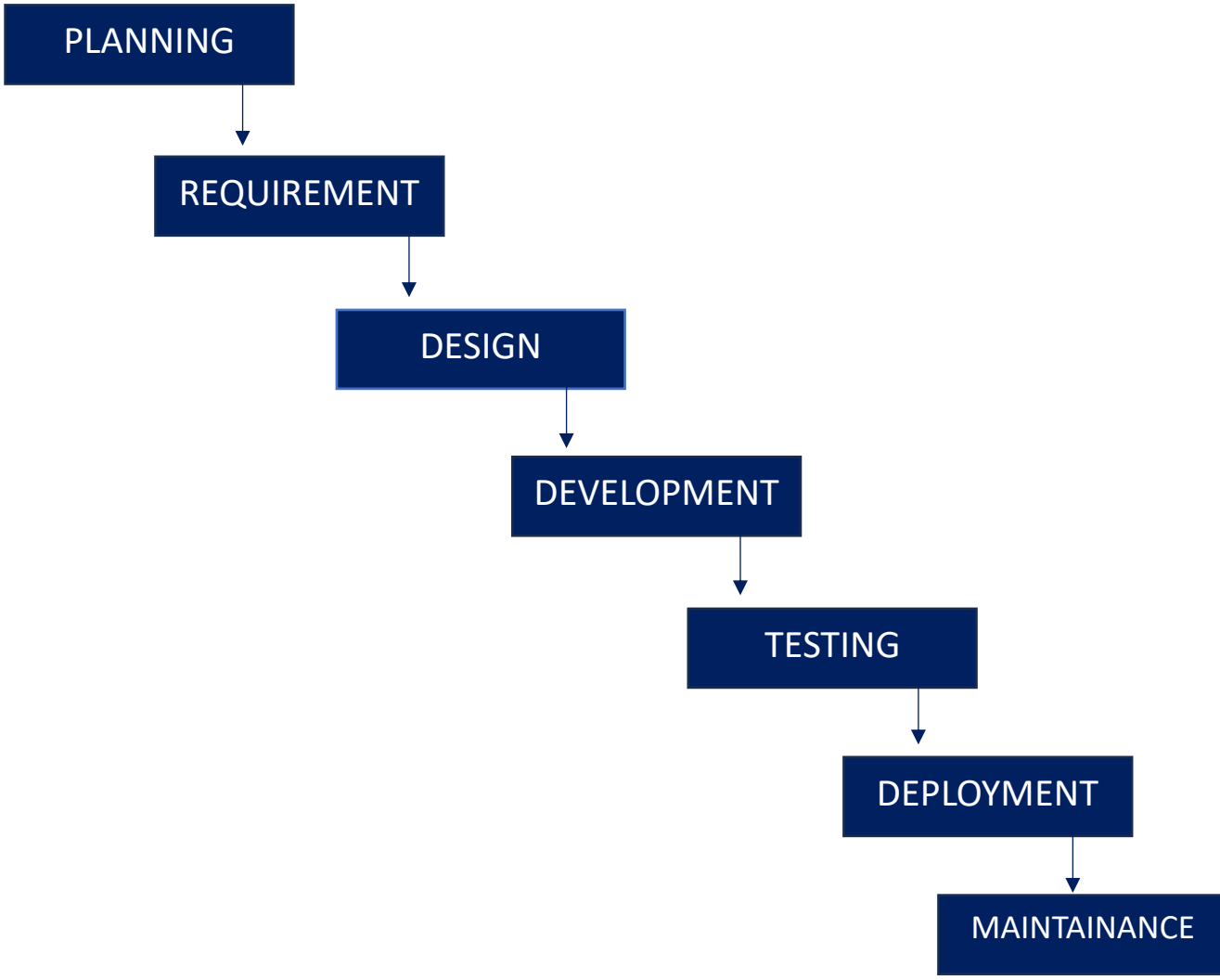
- *Productivity software:*

It is used to do your work easy or faster and you get your output successfully; with this software you can do your task very easily.

- ***Microsoft Word:*** *used to writing Documents and word is give you a clean and neat work with it can also saw a grammar Mistakes.*
- ***Microsoft Excel:*** *Which is used to create a marksheet or marketing or calculation etc….*
- ***Microsoft Power point:*** *it's help to making a slide and used for present your things for school and work.*

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

Ans:



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

Ans:

Simply library management system helps to librarian to manage all books.

REQUIREMENY SPECIFICATION:

➔ *There are two types of system user side and admin side*

FEATURES FOR SYSTEM:

- *BOOKS MANAGEMENT:*
    1. *Add Books to the list*
    2. *Edit books name*
    3. *If any book is booked by someone so remove from list or show (in use).*

- *Manages User:*
    1. *It is also handled by admin*
    2. *New members added*
    3. *Updates users*
    4. *Remove users who don't use*

- *Returning Books:*
    1. *Upadtes a book list*
    2. *Timing of books returning*

- *Search:*
    1. *User search for books*
    2. *Author's name*
    3. *Books name*

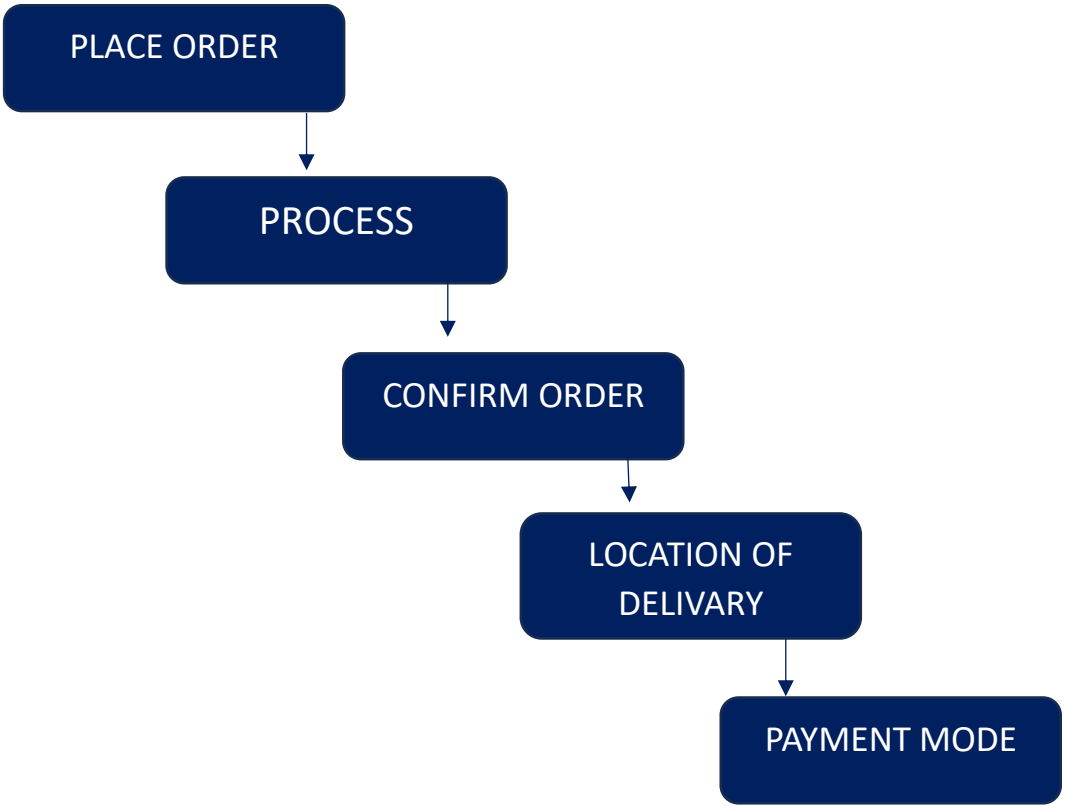
19. Perform a functional analysis for an online shopping system.

Ans:

ONLINE SHOPPING SYSTEM:

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

Ans:



21. Develop test cases for a simple calculator program.

Ans:

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

Ans:

24. Create a DFD for a hospital management system.

Ans:

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

Ans:

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

Ans: