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

Language C:-

#include<stdio.h>

int main()

{

printf(“Hello World\n”);

return 0;

}

Language Python:-

Print(“Hello World”)

|  |  |
| --- | --- |
| C Language | Python |
|  |  |
| Compiled | Interpreted |
| Main () function needed | No main () function needed. |
| Manual newline \n needed | Automatically goes to new line |
| Linking Section needed | No linking section needed |
| {} need to define code blocks | No {} needed, uses indentation instead |

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

Server

Network

Send Request

Send

Send

Send

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

Broadband:-

|  |  |
| --- | --- |
| Pros | Cons |
|  |  |
| Broadly Available. | Slow speed due to more user. |
| Cheaper than fiber. | Not as fast as fiber. |
| Used for calling, streaming videos, etc.. | Speed depends on distance. |

Fiber:-

|  |  |
| --- | --- |
| Pros | Cons |
|  |  |
| Fast for gaming, working. | Costing is high. |
| Stable connection. | Supports mostly in cities. |
| Can be used in smart home devices. |  |

Satellite:-

|  |  |
| --- | --- |
| Pros | Cons |
|  |  |
| Works almost everywhere. | Have delay and also be slow. |
| No need for cables or Mobile phones. | Can not be used during bad weather. |
|  | Expensive as well as not so fast internet. |

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

|  |  |
| --- | --- |
| Applications | Classification |
| Google Chrome | Application Software |
| WhatsApp | Application Software |
| Spotify | Application Software |
| Windows 11 | System Software |
| Microsoft Word | Application Software |

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

Presentation Layer

(Browser, Application)

Data Layer

(Database Server)

Application Layer

(Server, Backend)

1. Create a Github repository and document how to commit and push code changes.

# Clone

git clone https://github.com/your-username/my-first-repo.git

cd my-first-repo

# Add files

App.js, index.js

# Upload

git add .

git commit -m "Added App.js"

git push origin main

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

|  |  |
| --- | --- |
| Software Name | Categories |
|  |  |
| Windows 11 | System Software |
| Android OS | System Software |
| Google Chrome | Application Software |
| Spotify | Application Software |
| VS Code | Application Software |
| Anti-Virus | Utility Software |
| WinRAR | Utility Software |

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

Analysis

Designing

Implementation

Testing

Deployment

Maintenance

1. Develop test cases for a simple calculator program.

#include <stdio.h>

int main() {

double num1, num2, result;

char operator;

printf("Enter first number: ");

scanf("%lf", &num1);

printf("Enter operator (+, -, \*, /): ");

scanf(" %c", &operator);

printf("Enter second number: ");

scanf("%lf", &num2);

switch(operator) {

case '+':

result = num1 + num2;

printf("Result: %.2lf\n", result);

break;

case '-':

result = num1 - num2;

printf("Result: %.2lf\n", result);

break;

case '\*':

result = num1 \* num2;

printf("Result: %.2lf\n", result);

break;

case '/':

if (num2 != 0) {

result = num1 / num2;

printf("Result: %.2lf\n", result);

} else {

printf("Error: Division by zero\n");

}

break;

default:

printf("Error: Invalid operator\n");

}

return 0;

}

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

Yes

No

Create Account

Valid Input?

Enter Information