

ASSIGNMENT

Module 1 –Overview of IT Industry

Q1.: Write a simple "Hello World" program in two different programming languages of your choice. Compare the structure and syntax.

Ans: -

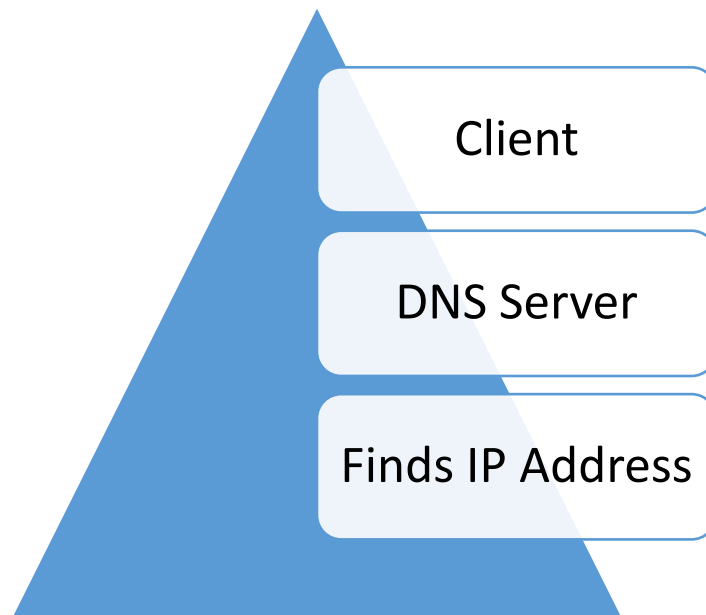
➤ C: - #include <stdio.h>

```
int main () {  
    printf ("Hello, World! \n")  
}
```

➤ Python: - print ("Hello, World!")

Q2. Research and create a diagram of how data is transmitted from a client to a server over the internet.

Ans: -



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

Ans: -

Type	Pros	Cons	speed
Broadband	Common and widely available Always connected	Slower than fiber Speed can drop during peak hours	Medium-high
Fiber	Very fast internet Reliable	Not available everywhere	Medium
Satellite	No cables needed	Weather can affect it Slower and more costly	Low-medium
Mobile network	Fast with 5G	Not always strong signal	High-medium

Q5. Simulate HTTP and FTP requests using command line tools (e.g., curl).

Ans: -

- The HTTP requests: -_
https://www.myntra.com
- The FTP requests:-
Just replace to use values username, file text //ftp.username.com

Q6. Identify and explain three common application security vulnerabilities. Suggest possible solutions.

Ans: -

Weak Passwords:

In this the Applications like Instagram, Facebook, Gmail, etc. are used weak password means use simple passwords like 123456, which are easy to guess.

solution: use strong password like alphanumeric and ad login via OTP verification.

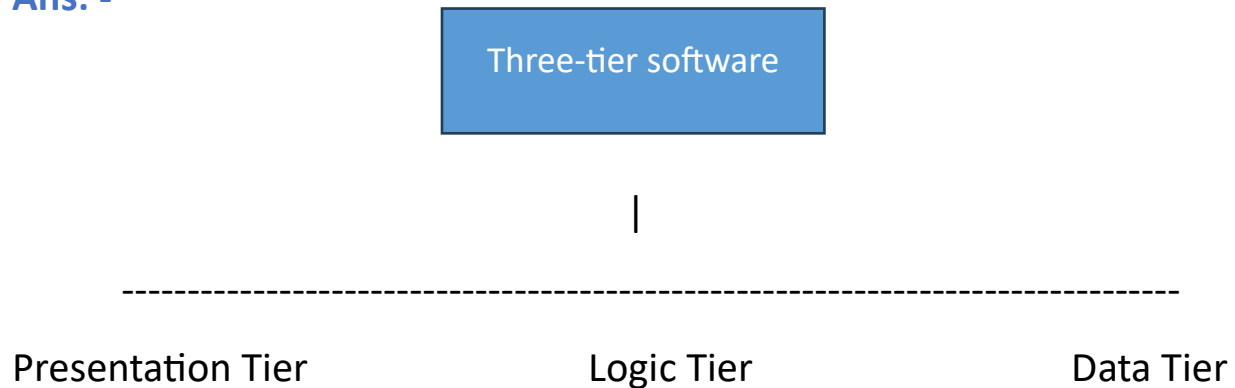
Q7. Identify and classify 5 applications you use daily as either system software or application software.

Ans: -

- There are five type of applications of daily use to either system software & application software
 1. Spotify
 2. Instagram
 3. WhatsApp
 4. Netflix
 5. Microsoft word

Q8. Design a basic three-tier software architecture diagram for a web application.

Ans: -



There are three type of three-tire software to architecture are use in diagram.

Q9. Create a case study on the functionality of the presentation, business logic, and data access layers of a given software system.

Ans: -

Study of Online Bookstore

1. Presentation Layer (UI Layer)

- . Shows books
- . Lets user search, add to cart, buy

Technologies: -

- . HTML, CSS, JavaScript

2. Business Logic Layer

- . Checks stock
- . Calculates price.
- . Handles login, payment.

Technologies: -

- . Python, Java, Node.js

3. Data Access Layer

- . Saves orders.
- . Gets book/user data.
- . Updates inventory

Technologies: -

- . MySQL, MongoDB

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

Ans: - 1. Development Environment

- writing and build code.

Example: - VS Code, Node.js, Local Servers.

2. Testing Environment

- testing the app (bugs, performance)
- Use manual and automated testing.

3. Production Environment

- The live system used by real users.

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

Ans: -

- Create a GitHub Account.

<https://github.com> and sign up.

- Create a New Repository

Click "New"-----Name of repo. ----- Click "Create repository".

Write Code

Example: Create a file hello.c .

Initialize Git

git init

git add.

git commit -m "First commit".

Connect to GitHub Repository

Push Your Code

```
git push -u origin master
```

```
#include<stdio.h>
```

```
int main ()
```

```
{
```

```
    printf ("Hello guys");
```

```
    printf("\n");
```

```
}
```

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

Ans: -

1. System Software

Device Drivers: Hardware communication

2. Application Software

VLC Media Player: Playing videos z

3. Utility Software

Backup Software: Data backup

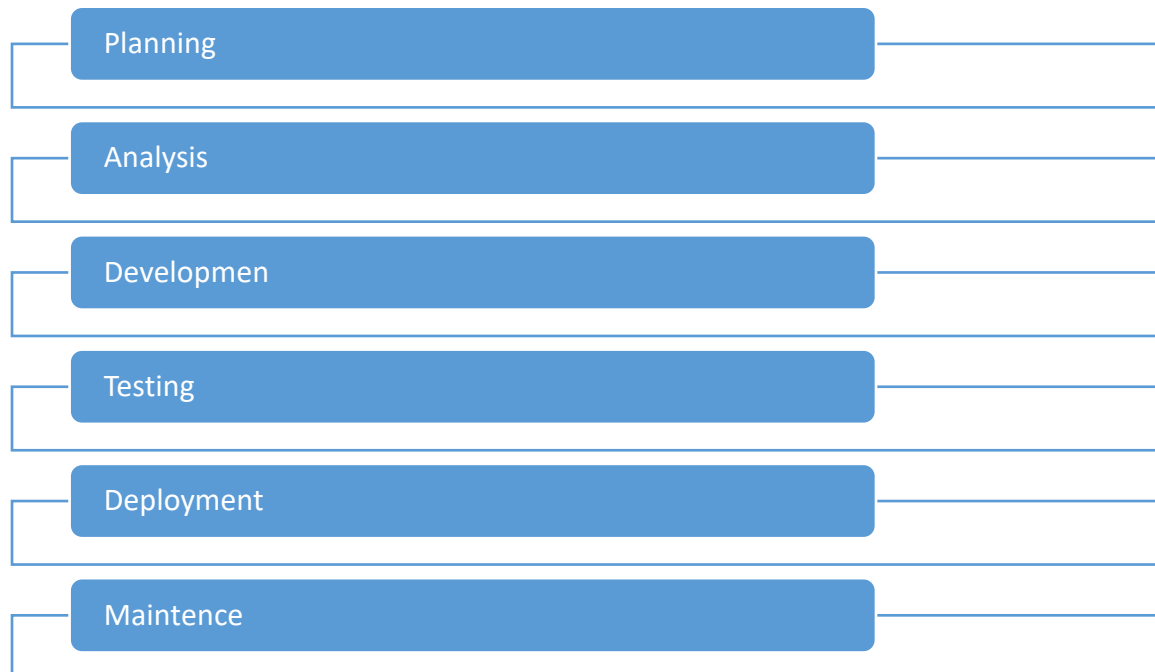
Q.16: Write a report on the various types of application software and how they improve productivity.

Ans: -

- Graphics software
- Multimedia
- Education software
- Manage the data of a software.
- Make it easy to use.
- Make changes to work fast.
- Spreadsheet
- Web browser

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

Ans: -



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

Ans: -

- User registration system.
- Simple search option for book by its title or author.
- Issue & return function.
- Book details management system.

Q19. Perform a functional analysis for an online shopping system.

Ans: -

1. User Functions

- Register/Login
- View Product Details
- Add to Cart / Remove from Cart
- Place Orders
- Make Payments
- Track Orders
- Leave Reviews / Ratings

2. System Functions

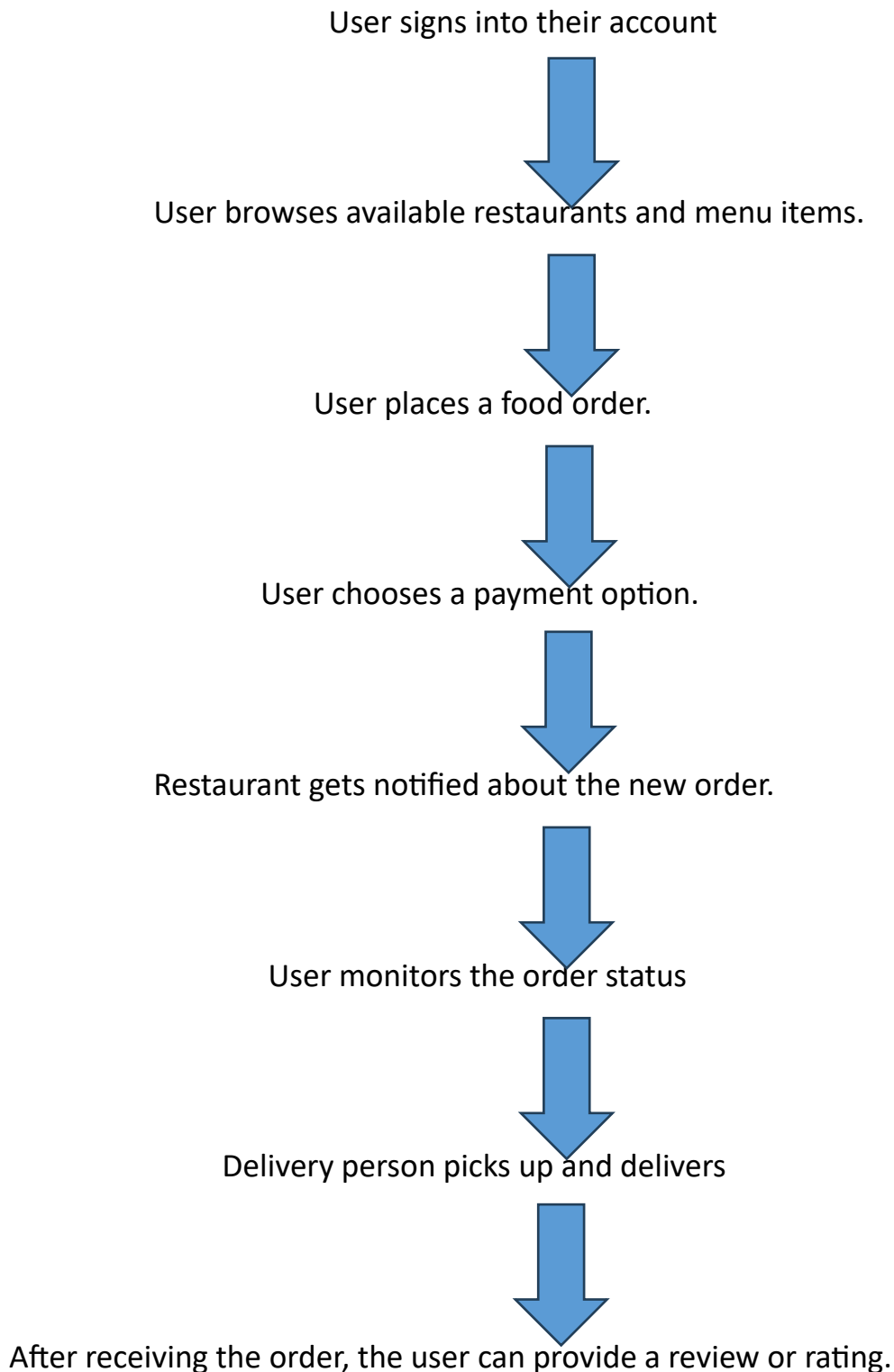
- Shopping Cart Management
- Order Management
- Payment Gateway Integration
- Email Notifications
- Search and Filter Products

3. Functional Flow Example

- User logs in
- Searches for a product
- Adds product to cart.
- Proceeds to checkout

Q20. Design a basic system architecture for a food delivery app.

Ans:-



Q.21: Develop test cases for a simple calculator program.

Ans: -

```
#include<stdio.h>

int main ()
{
    char ch='% ',choice;
    int num1,num2;
    up :
    printf("\nEnter the value of num1 = ");
    scanf("%d",&num1);
    printf("\nEnter the value of num2 = ");
    scanf("%d",&num2);

    printf("\nPress '+' for addition");
    printf("\nPress '-' for subtraction");
    printf("\nPress '*' for multiplication");
    printf("\nPress '/' for division");
    printf ("\nPress '%c' for remainder",ch);
    printf ("\nEnter the choice = ");
    scanf(" %c",&choice);

    switch(choice)
    {
        case '+':
            printf ("\nThe addition of %d and %d is = %d",
num1,num2,num1+num2);
```

```

        break.
        case '-':
            printf ("\nThe subtraction of %d and %d is = %d",
num1, num2,num1-num2);
        break.
        case '*':
            printf ("\nThe multiplication of %d and %d is =
%d", num1, num2,num1*num2);
        break.
        case '/':
            printf ("\nThe division of %d and %d is =
%.2f",num1,num2,(float)num1/num2);
        break.
        case '%':
            printf ("\nThe remainder of %d and %d is =
%d",num1,num2,num1%num2);
        break.
    }
    printf ("\nPress 'Y' to continue or 'N' to exit = ");
    scanf(" %c",&choice);
    if(choice=='y' || choice=='Y')
    {
        goto up;
    }
    return 0;
}

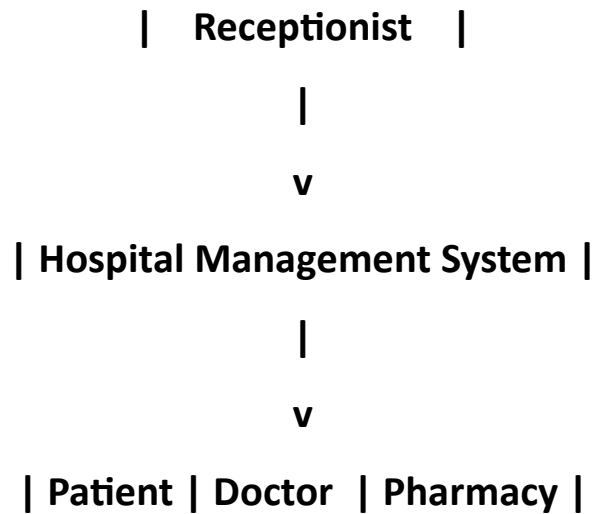
```

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

Ans: - I don't know that

Q.23: Create a DFD for a hospital management system.

Ans: -



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

Ans:- I don't know that.

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

Ans: -

