

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

Ans:

C Code:

```
#include<stdio.h>
#include<conio.h>
void main(){
    printf("Hello World");
}
```

Python Code:

```
print("Hello World");
```

2. Explain in your own words what a program is and how it functions.

Ans:

Program Is A Set Of Instruction To Perform Specific Task.

3. What is Programming?

Ans:

Programming It Means To Write Code And Do Something;

4. What are the key steps involved in the programming process?

Ans:

Get Defination
Requirement Gathering
Design
Implemantation

5. Types of Programming Languages

Ans:

There Are Two Types Of Programming Languages:

1. Procedural Programming Language
2. Functional Programming Language
3. Object-Oriented Programming Language
4. Scripting programming Language
5. Logic Programming

6. What are the main differences between high-level and low-level programming languages?

Ans:

1. High-Level:-in this human understandable form of writing,reading.
2. Low-Level:-in this in computer readable for only in (0 and 1's)

7. World Wide Web & How Internet Works

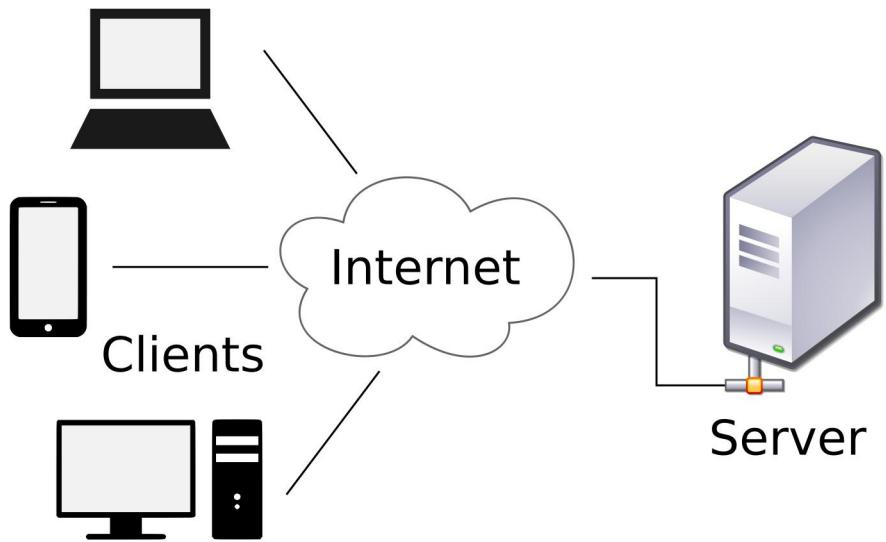
Ans:

World Wide Web is a collection of websites

A server which stores websites and give response as per user requirement, User Can request in internet for something and server returns as per the user's request

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

Ans:



9. Describe the roles of the client and server in web communication

Ans:

Client can request to server for something
Server respond to as per client's request

10. Network Layers on Client and Server

Ans:

Network Layer Client Side: Routing Using IP Address
Network Layer Server Side: reads IP address

11. Design a simple HTTP client-server communication in any language.

Ans:

12. Explain the function of the TCP/IP model and its layers.

Ans:

TCP/IP: Transmission Control Protocol Reliable Data Transfer

13. Client and Servers

Ans:

14. Explain Client Server Communication

Ans:

Client Sends Request To server And Get Response From Server As Per The Request

15. Types of Internet Connections

Ans:

Wired Internet

Wireless Internet

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

Ans:

Broadband Internet: Fast,

Fiber Optic Internet: Highly reliable and stable

Satellite: Available almost everywhere

17.How does broadband differ from fiber-optic internet?

Ans:

Broad band Speed is 10Mbps to 200Mbps
Fiber Speed is 100Mbps to 10Gbps

18.Protocols

Ans:

Potocols It Means Set Of Rules

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

Ans:

HTTP:Hyper Text Transfer Protocol
FTP:File Transfer Protocol

20.What are the differences between HTTP and HTTPS protocols?

Ans:

HTTP:Hyper Text Transfer Protocol Is Not Secure
HTTPS:Hyper Text Transfer Protocol Is Secure

21.Application Security

Ans:

Application Security It Means Securing Application From Cyber Attacks

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

Ans:

Check The Cradantials
Check Login ID And Password Are Authentiacte Or Not

23.What is the role of encryption in securing applications?

Ans:

Encryption It Means Encrypting data it means change original text into some other format
Techniques of encryption is ceaser cipher

24.Software Applications and Its Types

Ans:

System Software
Application Software
General Purpose Application Software
Custom Software

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

Ans:

Visual Studio Code
Whatsapp
Instagram
Snapchat
Microsoft Word
Microsoft Excel

26.What is the difference between system software and application software?

Ans:

System Software It Means Default Downloaded In Our System
Application Software It Means We Can Download it from either play store or app store

27. Software Architecture**Ans:**

Software Architecture is Blue print of building software

28. Design a basic three-tier software architecture diagram for a web application.**Ans:****29. What is the significance of modularity in software architecture?****Ans:**

1. Presentation Layer:-What We View On Screen
2. Application Layer:-Handles Main Programs
3. Business Layer:-Actual Logic Of Application
4. Persistence Layer:-Data Access Layer
5. Database Layer:-System Stores All Data

30. Layers in Software Architecture**Ans:**

6. Presentation Layer
7. Application Layer
8. Business Layer
9. Persistence Layer
10. Database Layer

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

Presentation Layer: Displays Data

Business Layer: Logic of application

Database Layer: Stores Data

32. Why are layers important in software architecture?**Ans:**

Layers Are Important in Software Architecture to divide all things in separate parts.

33. Software Environments**Ans:**

Staging Environment

Production Environment

This Environment shows Where Our Software is Running Now

34. Explore different types of software environments (development, testing, production).

Set up a basic environment in a virtual machine.

Ans:**35. Explain the importance of a development environment in software production.****Ans:**

In Deployment Environment all things get make sure that code is running properly, test the software.

36. Source Code**Ans:**

Code Of Software

37. Write and upload your first source code file to Github.

Ans:

The screenshot shows a GitHub repository interface. On the left, there's a sidebar with 'Files' and a tree view of files: Assessments, Assignments, Practice, Task (which contains 08-12(Basics Program Of C) which further contains 29-11), topstech, Git_Command.doc, first.c, and tes2. The main area shows a file named 'p3.c' with the following content:

```
1 // 3. Write a program to make a square and cube of number.
2 #include<stdio.h>
3 #include<conio.h>
4 void main(){
5     float a,b;
6     printf("Enter Number For Square: ");
7     scanf("%f",&a);
8     printf("Enter Number For Cube: ");
9     scanf("%f",&b);
10    float sq=a*a;
11    float cube=b*b*b;
12    printf("Square Of %f,a," is:%f",sq);
13    printf("Cube Of %f,b," is:%f",cube);
14 }
```

At the top right, it says 'popatnandan2136 Task Of 08-12' and '10e3cb0 · 2 days ago'. There are also 'History' and other repository management buttons.

38. What is the difference between source code and machine code?

Ans:

Source Code Is Written By Programmer

Machine Code Is Written By Computer For Example .class File in java

39. Github and Introductions

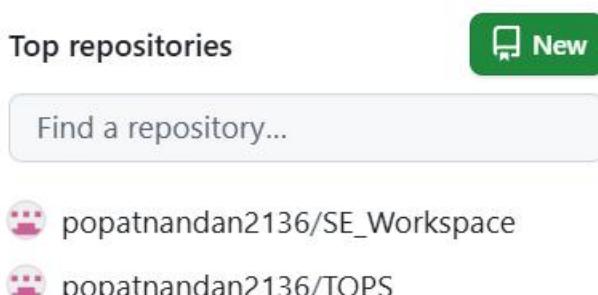
Ans:

Github Is Used For Storing, Sharing and managing code between multiple programmers who working on same Project

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

Ans:

Done Created



41. Why is version control important in software development?

Ans:

Version Control Is Important Because Provide New User Experience

42. Student Account in Github

Ans:

Done

43. Create a student account on Github and collaborate on a small project with a classmate.

Ans:

Done

44.What are the benefits of using Github for students?

Ans:

Easy To Share Code And in Group Project Easy To Work as Group

45.Types of Software

Ans:

System Software

Application Software

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

Ans:

System Software:Windows,Android OS,Mac OS,IOS

Application Software:Visual Studio Code,Whatsapp,Instagram

47.What are the differences between open-source and proprietary software?

Ans:

Open Source Software are available free for use

Proprietary Software are which created by any company for their company use

48.GIT and GITHUB Training

Ans:

Done

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

Ans:

Done

50.How does GIT improve collaboration in a software development team?

Ans:

GIT improve collaboration in a software development team By Allowing Team To Share Code With Whole Team

51.Application Software

Ans:

Visual Studio Code

Whatsapp

Instagram

Snapchat

Microsoft Word

Microsoft Excel

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

Ans:

Word:-by providing effactive templates

53.: What is the role of application software in businesses?

Ans:

To make buisness easier

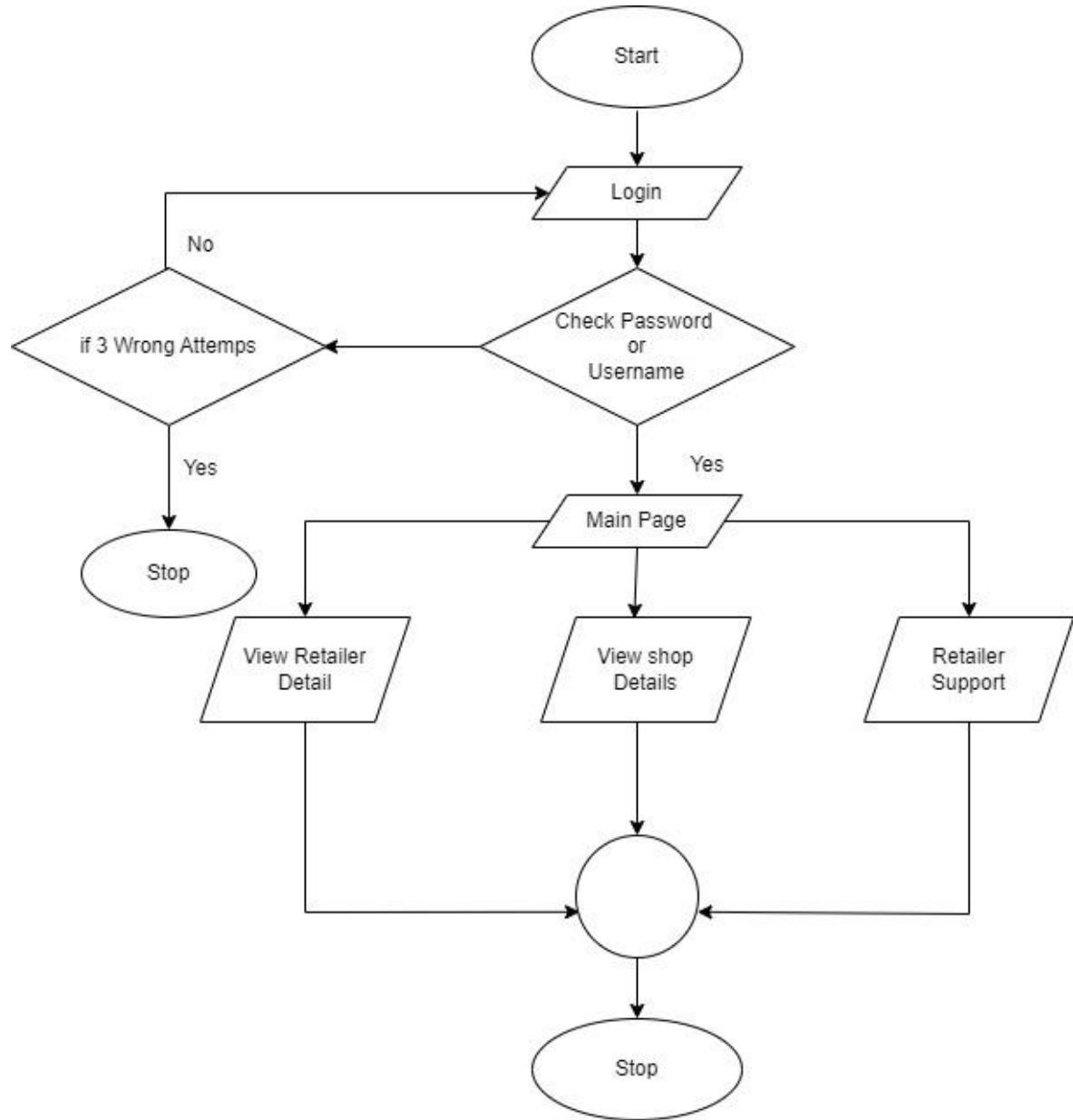
54. Software Development Process

Ans:

1. Prasentaion
2. Application
3. Buisness
4. Persistence
5. Database

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

Ans:



56. What are the main stages of the software development process?

Ans:

1. Requirement Analysis
2. System Design
3. Implementation (Coding)
4. Testing
5. Deployment

6. Maintenance

57. Software Requirement

Ans:

In Software Requirement what are features we have to get in Our App

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

Ans:

Librarian:

Add new book as available

View available books

Student:

Get Book

View Book List

59. Why is the requirement analysis phase critical in software development?

Ans:

Because We Have Must Know That What We Have To Add In Our Software In Future

60. Software Analysis

Ans:

In This We Have To Analysis Software What are Specification Added.

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

Ans:

User Type:

1. Customer/Buyer

2. Admin

User Management

Payment Handling

61.: What is the role of software analysis in the development process?

Ans:

Understand User Requirements

Define Functional and Non-Functional Requirements

Reduce Development Errors

62. System Design

Ans:

Designing System

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

Ans:

Mobile/App

Application Layer:

Authentication

Database Layer:

Users

Restaurant

External Services:

Payment Gateway

64.What are the key elements of system design?

Ans:

1. Data Design
2. Interface Design
3. Module Design
4. Security Design
5. Performance Design

65.Software Testing

Ans:

Test The Software In All Ways And Then Deploy It

66.Develop test cases for a simple calculator program.

Ans:

Calculator Test Case:

Check All Buttons Working Properly Or Not

Then Check All Operations

67.Why is software testing important?

Ans:

Software Testing Is Important Because To Check Software Is Running Properly Or Not

68.Maintenance

Ans:

After Deployment Get Updates In Application That Cost Called As Maintenance

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

Ans:

Server Cost Is Called As Maintenance

1. Corrective Maintenance
2. Adaptive Maintenance
3. Perfective Maintenance

70.What types of software maintenance are there?

Ans:

4. Corrective Maintenance
5. Adaptive Maintenance
6. Perfective Maintenance

71.Development

Ans:

Deploying Product

72.What are the key differences between web and desktop applications?

Ans:

Web It Means Live On Browser Directly

Web App Means We Can Install It In Our Desktop Or PC Web App With .exe Format

73.Web Application

Ans:

Web Application Example is Social Media Apps In Desktop Or PC

74.What are the advantages of using web applications over desktop applications?

Ans:

Web app run in browser

75.Designing

Ans:

Designing It Means That We Can Design

76.: What role does UI/UX design play in application development?

Ans:

Predifne Design Idea It Mans How Application or Website is Look Like After Proper Development

77.Mobile Application

Ans:

Instagram

Whatsapp

Snapchat

78.What are the differences between native and hybrid mobile apps?

Ans:

Native Apps:- Created Only For Specific OS For Example Android Or IOS

Hybrid Apps:- Are Created For All OS In One Technology

79.DFD (Data Flow Diagram)

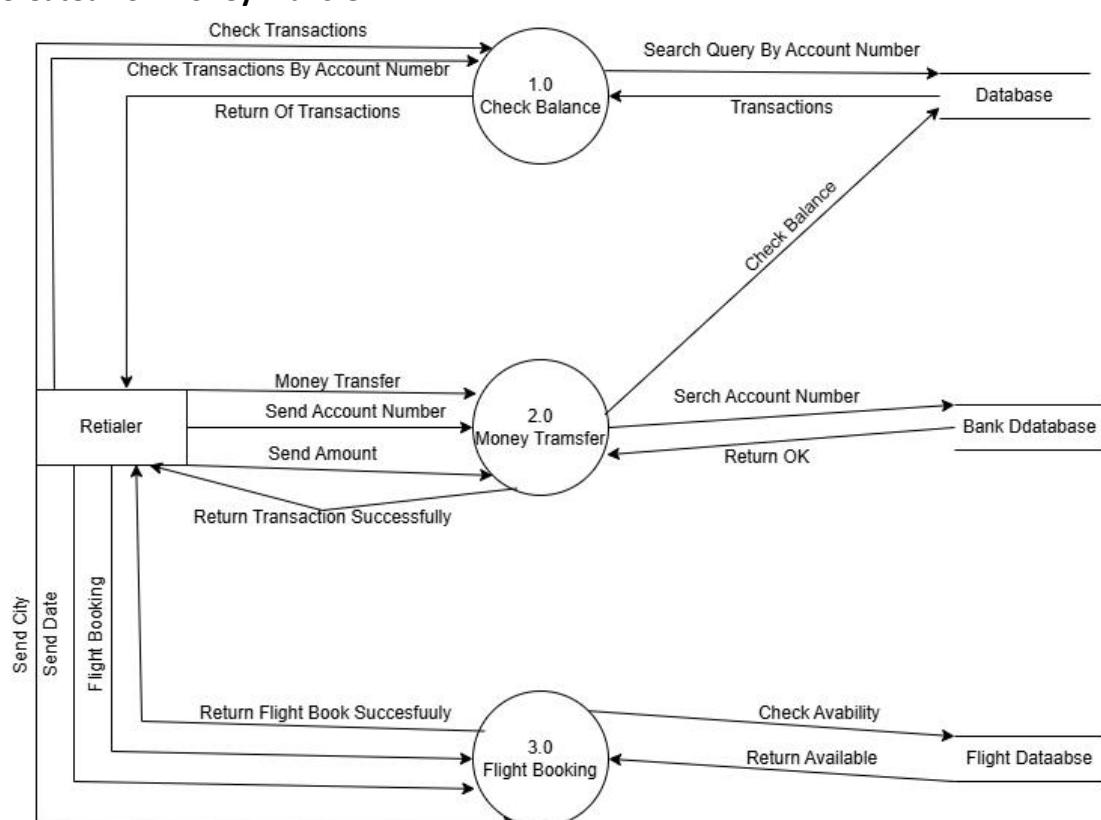
Ans:

DFD (Data Flow Diagram) Shows The Flow Of Diagram

80.Create a DFD for a hospital managementsystem.

Ans:

Created For Money Transfer



81.What is the significance of DFDs in system analysis?

Ans:

It Shows The Flow Of a System Of System Will Work

82.Desktop Application

Ans:

1. Microsoft Word
2. Excel
3. Visual Studio Code
4. Any ERP System
5. VLC Media Player

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

Ans:

84.What are the pros and cons of desktop applications compared to web applications?

Ans:

Desktop Application We Can Easily run in our Desktop Or PC
And Is Difficult To Update It And It Occupy Memory Locally In Our Storage

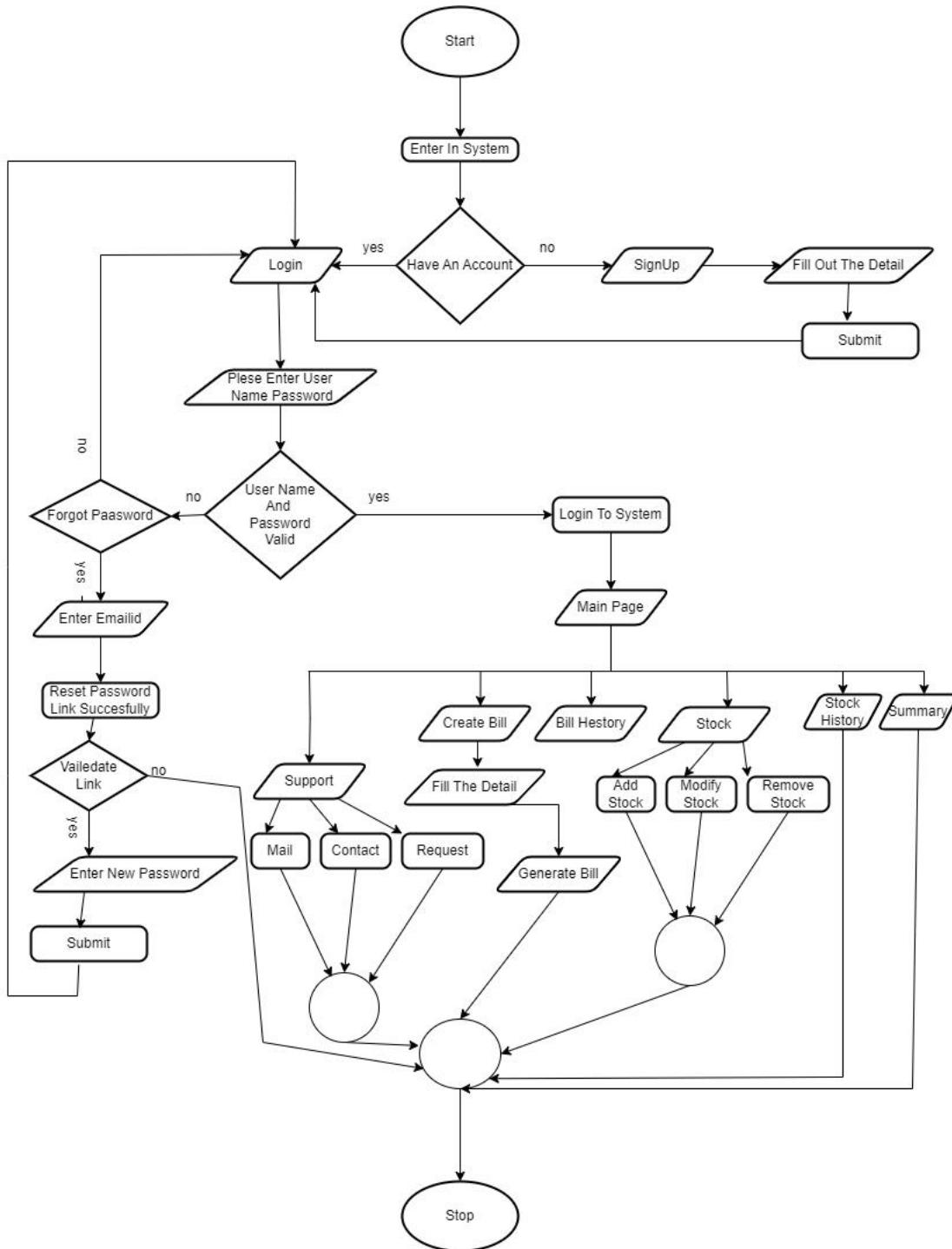
85.Flow Chart

Ans:

Shows Flow Of System

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

Ans:



87. How do flowcharts help in programming and system design?

Ans:

It Help By Providing Conditions How Conditions Are Work