What is a Program?

Que: :Explain in your own words what a program is and how it functions

Ans: A program is a set of instructions written in a programming language that tells a computer whato do

It functions by being executed step-by-step by the computer's processor to perform specific tasks like calculations, data processing, or interacting with users and hardware.

What is Programming?

Que: What are the key steps involved in the programming process?

Ans:

1. Requirement Gathering : you have to get information from client how they want project look alike

2. Analysis: in this process you have to make blueprint for the software

3. Designing:in this process designers design the software according to the blueprint.

4. Implementation :developers developes the software according to blueprint

5. Testing :testers test the software and find bugs and developers solves it.

6. Maintenance

Que: Types of Programming Languages

Ans:1>procedural programming language

2>functional programming language

3>object oriented programming language

4>logic programming language

5>scripting programming language

Que: What are the main differences between high-level and low-level programming languages?

Ans: our computer system understands only low-level programming language,it does not understands high-level programming language directly

System needs compiler or interpreter to understand high-level programming language.it converts high-level language to low-level language that computer can understand

Ans:world wide wab is a collection of web pages that stored in web servers.

World Wide Web&HowInternetWorks

Webpages contains images,pictures,texts,vidoes,etc.

Computers are connected to webservers through internet.

Users can access the content of the site from any part of world using internet.

Webservers works lot like your computer harddrive.

User requests for any webpage the requests arrives to webserver then webserver retrives the information to the webpage.

Que: Describe the roles of the client and server in web communication.

Ans:client makes request to server to provide webpage and server inmmediately provides the webpage to clients screen.

Client only on when they are interested and servers are always on.

Network Layers on Client and Server

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

Ans: It is a communication framework that defines how data is sent, routed, and received over a network like the internet.

1.application layer

2.transport layer

3.internet layer

4.network access layer

Client and Servers

que: Explain Client Server Communication

ans: in client server communication ,client make request when they are interested and server provides the service to the client

Types of Internet Connections

Que: How does broadband differnt from fiber-optic internet?

Ans: fiber-optic is waay faster than broadband.

Broadband uses copper wires and fiber-optic uses light through glass fibers.

Protocols

Que: What are the differences between HTTP and HTTPS protocols?

Ans:HTTP tarnsfers data between browser and server .

HTTPS works like HTTP but it is secure than HTTP.

Application Security

Que: What is the role of encryption in securing applications?

Ans:encryption keeps data safe from hackers.

Maintain privacy and prevent data theft.

Software Applications and Its Types

Que: :What is the difference between system software and application software?

Ans:application software performs specific tasks for user.ex:ms word, web browsers

System software coordinates the activities and function of the hardware and software.ex:operating system

Software Architecture

Que: What is the significance of modularity in software architecture

Ans:

Layers in Software Architecture

Que: Why are layers important in software architecture?

Ans: makes the system organized and easy to understand.

Improve maintenance,easy to process to make software.

Software Environments

Qeu: Explain the importance of a development environment in software production

Ans:helps to find and fix the error,improves productivity and speed of development

Source code

Que:What is the difference between source code and machine code

Ans:ssouce code is the the code which is understood by human.

Matchin code is the code that is understood by computers

Github and Introductions

Que: Why is version control important in software development?

Ans:

Student Account in Github

Que: What are the benefitsof using Github for students?

Ans:you can work with classmates on group projects

You can show your projects publicaally

Types of Software

Que: What are the differences between open-source and proprietary software?

Ans: in open-source software source code is public and free to view.

Property software is a private software. Which is controlled by company.

You can modify open source software but you can not modify property software.

GIT and GITHUB Training

Que: :How does GIT improve collaboration in a software development team?

Ans:git allows multiple developers to work on same project at the same time

It tracks changes ,manages versions and make easy to merge updates.

Application Software

Que: What is the role of application software in businesses?

Ans:it helps to perform specific tasks like accounting,customer management , data analysis, and communication.

Makes work faster,and easier.

Software Development Process

Que: What are the main stages of the software development process?

Ans:these are the main stages of the software development

1.requirnment analysis

2.design

3.development

4.testing

5.production

6.maintanance

Software Requirement

Que: Why is the requirement analysis phase critical in software development?

Ans:this phase defines what the software must do.

It ensures developers clearly understand what user needs.

Avoid misunderstandings,reduces errrors,saves time and cost later.

Software Analysis

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

Ans: It involves studying and understanding the problem, gathering requirements, and defining what the software should do.

System Design

Que: Architecture design- overall structure of the system

data design-how data is stored ,organised and manage

Interface design- how are you user and other system interact with .

Component design- braking system into modules and defining their functions.

Security design-ensuring data and system protection

Software Testing

Que: Why is software testing important?

Ans:software testing is important because by this process you will know all the glich and bugs .
So that you can fix the problems before launching your product.

Maintenance

Que: :What types of software maintenance are there?

Ans: Corrective maintenance-fixing bugs and errors.

Adaptive maintenance-updating software to work in new environment

perfective maintenance-improving performance or adding new features

preventive maintenance-making changes to prevail future problems.

Delopment

Que: What are the key differences between web and desktop applications?

Ans: Web application needs Internet but desktop application works offline.

Web Application does not have to install but desktop application needs to install.

Wave application auto updates but we have to manually update desktop application.

Web Application

Que: What are the advantages of using web applications over desktop applications?

Ans: web applications run without installation you can run it directly on browser

You can access web application on any device with Internet.

Updates puns on the server manual install.

Designing

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

Ans: UI focus is on the look and layout making the app attractive and easy to use

UX focuses on the performance and flow hey is running smoothly and satisfies user needs.

Mobile Application

Que :What are the differences between native and hybrid mobile apps?

Ans: Native apps are built for specific platform like Android /IOS.

Hybrid apps are built with web technologies run multiple platforms

native is faster and smoother.

DFD(Data Flow Diagram)

Que: Whatis thesignificance of DFDs in system analysis?

Ans: Dfd show how data moves through the system

Break complex processes into simpler parts.

Clearly list sources, destinations and data stores

Desktop Application

Que: Whatarethe pros and cons of desktop applications compared to web applications?

Ans:pros=

1.this is faster than web applications

2.you can use it offline

Cons:

1.you have to update it manually

2.you cannot access it from another device

Flow Chart

Que: How do flowcharts help in programming and system design?

Ans:it shows steps and decision path clearly.

It is very simple to understand.

Flowchart act as a blueprint for programming