**MODULE -1**

Q1. Explain in your own words what a program is and how it functions. What is Programming?

Ans. A program is a set of instruction that is define to our machine What to do and

How to do. And It fuction like Follow a set of rules in a systematic way like follow rules

Step by step.

Programming is a term where we can solve computation problems also solve other

Complex problems.

Q2. What are the key steps involved in the programming process?

Ans. There are many key steps involved in programming process

1. Set of instructions is clear that programmer will understand easily that code and write a code easily.
2. Understand requirnment
3. Plan or implement
4. Test or debug

Q3. What are the main differences between high-level and low-level programming languages?

Ans. 1. Low-level programming is machine dependent language but high level programming is user friendly language.

2. low-level is understood binary language(0s and 1) but high level programming is not understood.

3.example of low level- binary language and example of high level language – Php , c, cpp , html , python.

Q4. Describe the roles of the client and server in web communication?

Ans. In Web communication A client is send a request or asking for a web page to server by Http protocols and Server is Send a response back to user this lifecycycle is called client-server communication.

Q5. Explain the function of the TCP/IP model and its layers?

Ans. Layers –

1. Application layer

Function – provides services to end users. Example –HTTP,FTP,SMTP.

1. Transport Layer

Function- Ensures reliable communication between two devices. Example – TCP,UDP.

1. Internet Layer

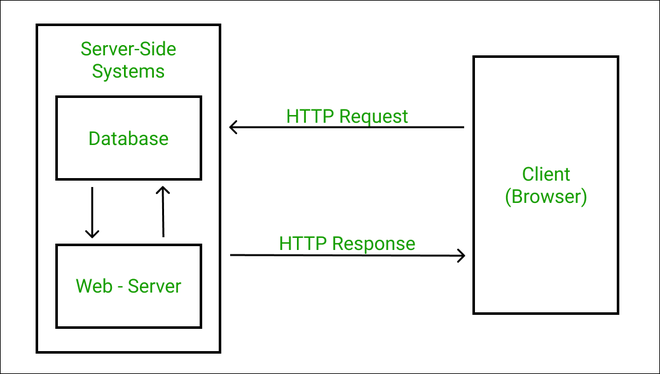
Function – send a data to network via route and provide logical address(IP). Example – IP,ICMP.

1. Network Layer

Function – send a data via internet network aur physical Medium.

Q6. Explain Client Server Communication?

Ans. In Client-Server communication A client is send a request or asking for a web page to server by Http protocols and Server is Send a response back to user this lifecycycle is called client-server communication.



Q7. How does broadband differ from fiber-optic internet?

Ans.

|  |  |
| --- | --- |
| Broadband Fiber optic | |
| General High Speed Internet connection. | It is More Higher than broadband and it is made by fiber optic cables |
| Medium of Broadband is copper wire,Coaxial cable,Wireless signals | Glass/Plastic Fiber cables |
| Speed 10mbps to 500mbps | Speed 100mbps to 10+Gbps |
| Upload speed is slow | Upload and download speed is equal |

Q.8 What are the differences between HTTP and HTTPS protocols?

Ans.

|  |  |
| --- | --- |
| HTTP HTTPS | |
| HTTP refers to Hyper Text Transfer Protocol | HTTP refers to Hyper Text Transfer Protocol Secure |
| It is not secure(data is send in plain text ) | It is Use Encryption to send a data like SSL/TLS |
| Hackers can easily be access | Not easy to access |
| Url http:// | https:// |

Q.9 What is the role of encryption in securing applications?

Ans. Encryption is main role in securing application when we use web application that we can see that in web application there are two type of text normal text and cipher text in normal text(name,password) etc but when this normal text change in cipher text (symbolic and mathamathic algorithm) this cipher text not understable to user that is called encryption and it is best way to secure application.

Q.10 What is the difference between system software and application software?

Ans.

|  |  |
| --- | --- |
| Application Softwear System Softwear | |
| Software designed to help the user perform specific tasks or applications. | Software designed to manage and control computer hardware and provide a platform for running applications. |
| To solve particular user problems or perform user-specific tasks. | To run, manage, and control the computer system as a whole. |
| MS Word, Excel, PowerPoint, Photoshop, Web browsers, Games. | Windows, Linux, macOS, Android, Device Drivers, Utility Programs. |
| Cannot run without system software. | Can run without application software. |

Q.11 What is the significance of modularity in software architecture?

Ans. ** Easier maintenance** – changes in one module don’t affect others.

 **Reusability** – modules can be reused in different projects.

 **Scalability** – new features can be added without disturbing the whole system.

 **Improved testing & debugging** – errors are easier to isolate.

 **Team collaboration** – different teams can work on different modules simultaneously.

Q.11 Why are layers important in software architecture?

Ans .

**1. Presentation Layer**

This is what the **user sees** → screens, buttons, forms, design, etc.  
👉 Example: Login page, product page, chat screen.

**2. Application Layer**

This layer works like a **middleman**.  
It takes the request from the presentation layer and sends it to the business layer, then sends the result back.  
👉 Example: When you click “Login,” it sends your details to check if they are correct.

**3. Business Layer**

This is the **brain of the software**.  
All rules, calculations, and decisions happen here.  
👉 Example: Checking if your password is correct, calculating product price, applying discounts.

**4. Persistence Layer**

This layer’s job is to **talk with the database**.  
It decides what data to **save, update, or read**.  
👉 Example: Saving your order details into the database.

**5. Database Layer**

This is the actual place where the **data is stored**.  
👉 Example: Tables where your account, messages, or orders are kept.

Q.12