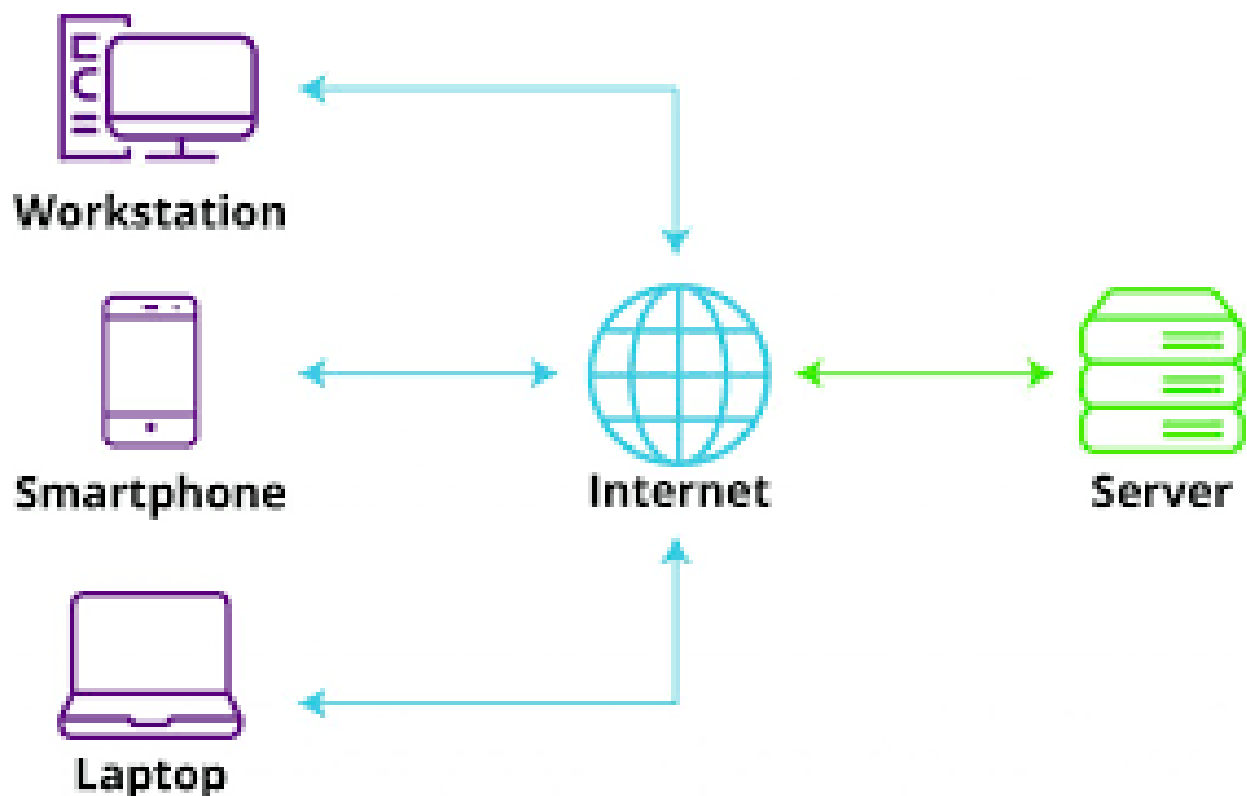1. Write a simple "Hello World" program in two different programming languages of your choice. Compare the structure and syntax.

   Ans:- File Attached.

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

3. Research different types of internet connections (e.g., broadband, fibre, satellite) and list their pros and cons.
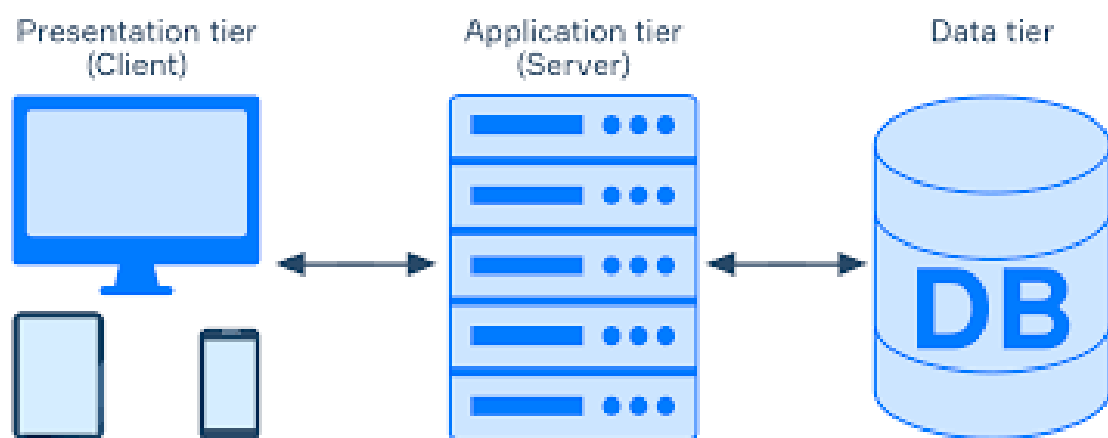
Types of internets	Pros.	cons.
Broadband (Cable and DSL)	Widely	Speed fluctuation
	Relatively fast speeds	Shared bandwidth
	Cost-effective	Speed depends on server Distance
Fibre optic	Fast speed	Installation cost high
	High bandwidth	Limited availability
	Reliable connection	Difficult to Repair
Satellite Internet	Access in remote locations	Weather can affect connection
	Wide coverage Area	High cost compared to other

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

Parameter	System Software	Application Software
Functionality	Designed to run computer's hardware and application software & resource allocation, memory management in Hardware.	Designed to perform specific task tailored to meet user needs such as productivity, creativity, entertainment, etc.

Examples	Windows, MacOS, Chrome OS, iOS, Android, etc.	Chrome, Safari, Firefox, Spotify, Slack, Skype, Microsoft office, Excel, PowerPoint, Zoom, Apple Music, etc

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

Presentation tier (Client)   Application tier (Server)   Data tier

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

Presentation: - The layer at which users interact with the application and the final data will be visible to the users at this interface. It acts as an interface between the user and the application.

Business Logic: - It acts as an intermediate between the presentation layer & Data Access layer.

Data Access Layers: - The layer at which data is Managed.

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

Performance Testing Environment.

System integration Testing (SIT)

User Acceptance Testing (UAT)

Quality Assurance (QA)

Security Testing

Chaos Testing

Alpha Testing

Beta Testing.

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

   Ans:- Created and Upload done.

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

   Ans:- Done

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

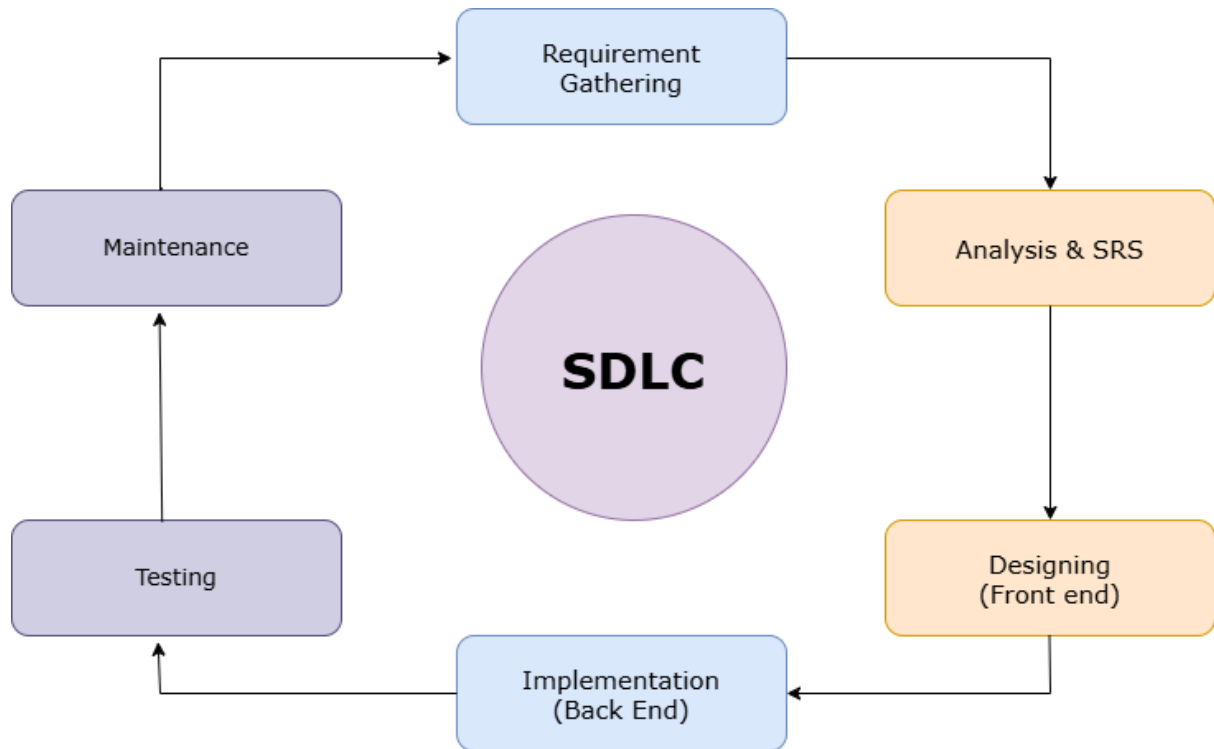| System	Application	Utility
OS	Multimedia app	Antivirus
Window	education app	file management system
Linux	Presentation App	Disk Management tools
Database	Web browser	Compression tools
Device Drivers	Project Management	Disk cleanup tool
Firmware	Graphic software	Backup utility
Android	Enterprise Software	Disk Defragmenter

11.   Write a report on the various types of application software and how they improve Productivity.

Word Processing Software. ...

Spreadsheet Software. ...

Presentation Software. ...

Multimedia Software. ...

Web Browsers. ...

Educational Software. ...

Graphics Software. ...

Freeware.

Application Software Have a Special Function for easy to work & improve productivity.

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

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

Store Information about Each Book. (Title, Author, Genre, Publication Date)

Track Availability (Copies Qnty, Current Status).

Categorize book into Categories for easy Classification.

Allow the librarian to add or remove Members.

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

User Registration & Login

Product catalogue & Search

Shopping cart & Payment checkout

Order Management & Tracking.

Seles Analytics and Reporting

Security and compliance

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

Customer Application: - Its main features Are below

Menu view, Restaurant list, Payments, Tracking, Review & Rating, Promo codes & Discount, view order History, Notification, User Profile.

Restaurant Application: - Its main features are Below

Order Management, Menu Update, Order confirmation/Rejection, Tracking, profile Management, Customer Feedback & Support.
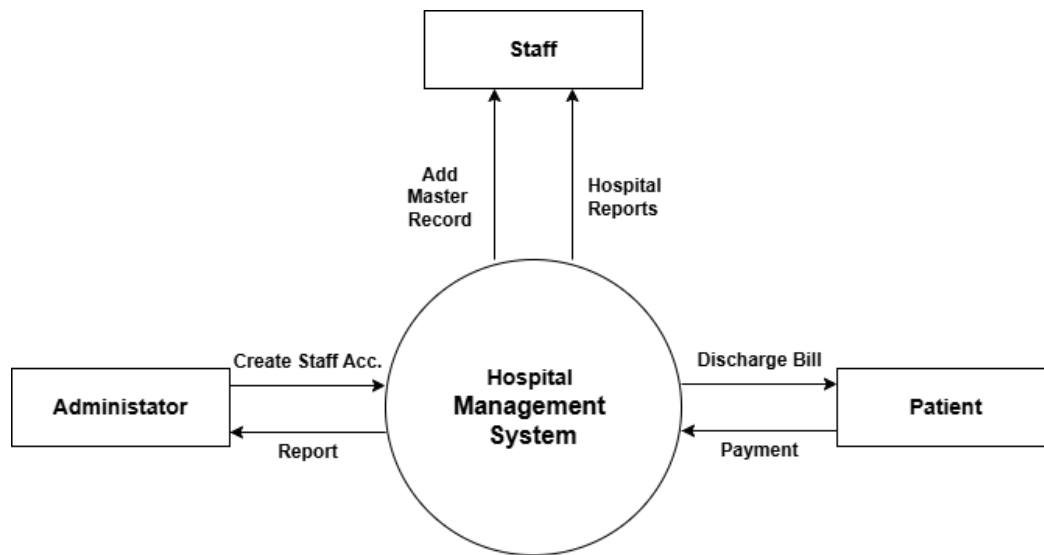
Rider Application: - Its main features are Below

Order acceptance/ Rejection, Order Details, Navigation, Notification, Customer Feedback, order History.

Administration: - its main features are Below

User Management, Restaurant management, Rider Management, Content Management, Analytic & Reporting.

16.	Create a DFD for a hospital management system.

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