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

**Ans.**

#include<stdio.h>

int main()

{

printf("hello wold");

return 0;

}

print(“hello word”)

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

**Ans.**

Server

Data request on local network

**Q3. Design a simple HTTP client-server communication in any language.**

**Q4. Research and create a diagram of how data is transmitted from a client to a server over the internet.**

**Ans.**

1. Broadband:-

Advantages:-

* Broadband is always on and it is always ready.

Disadvantages:-

* But broadband disadvantage is this is slower than fiber,this not fast compare fiber.this is one of disadvantage.

2.fiber optic internet:-

Advantages:-

* Fiber optic internet is very fast. This is of of the big advantage and Fiber optic internet is stsble connection.

Disadvantages:-

* But fiber optic internet big disadvantage is this connection not available everyplace(but fiber optic internet is mostly found in cities and developed areas.)

3.Satellite internet:-

Advantages:-

* Satelliite internet advantage is that not use cables,this is wireless and that use satellite dish use.

Disadvantages:

* Satellite internet disadvantage is this expensive compper other broadband and fiber. And this internet connection in limited data given for use.

4.Mobile internet:-

Advantages:-

* Moblile internet is portable. This is good option for travel.
* moblile internet in give 5G internet thet perform like fiber.

Disadvantages:-

* Moblile internet disadvantage is expensive for hevy use and in this internet give limited data.

5.Dial-Up internet:-

Advantages:-

* Dial\_UP internet is very cheap, this is very costty compared other types .

Disadvantages:-

* But Dial\_up internet disadvantage is this is very slow spped.

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

**Ans.**

1. HTTP:-
   * mean hypertext transfar prorocol.
   * HTTP purpose is this lode web pages.
   * HTTP use is view websites and use web services.
2. FTP:-

* FTP full form is file transfer protocol.
* FTP purpose is transfer files.
* FTP use is uploading and download files to servers.

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

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

**Ans.**

1. Google chrome :-

* Google Chrome is Application software.
* Google Chrome is use for browsing websites.

1. WhatApp :-

* Whatapp is application software.
* This is use for messag and media sharing porpuse.

1. Microsoft Windows:-

* This is system software.
* This is manages hadware and run other software.

1. Photos App:-

* This is application sotware.
* This is use for view and editing images.

1. Antitvirun software:-

* This is system sotware.
* This is protrcts and maintains system security.

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

**Ans.**

three tier architecture:-

client

database

server

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

**Ans.**

1. Presentation Layer (Client-Side or Frontend):-

* The presentation layer is responsible for presenting the user interface and handling user interactions.
* HTML, CSS, JavaScript, and frontend libraries like React, Angular.

2. Business Logic Layer (Backend or Application Server):-

* The business logic layer is responsible for processing requests from the layer business rules,interacting with the data access layer.

3.Data Access Layer (Database or Data Storage):-

* The data access layer is responsible for managing the storage, retrieval, and manipulation of data.

**Q10. Explore different types of software environments (development, testing, production). Set up a basic environment in a virtual machine.**

**Ans.**

1. Development Environment:-

* Development Environment purpose is write and build the code.
* This is use by developer.

1. Testing:-

* Testing Environment is use find bugs and issues
* This use for web ans application testers.

1. Production:-

* Production Environment is real usage by customer,this environment is usage by customer.
* This is use by meanly users and admins.

**Q11. Write and upload your first source code file to Github.**

**Ans.**

* print("Hello, World!")
* Upload to github
* git add hello\_world.py

**Q12. Create a Github repository and document how to commit and push code changes.**

**Ans.**

* print("Hello, World!")
* Upload to github
* git add hello\_world.py
* git commit -m "First commit"
* git push

**Q13. Create a student account on Github and collaborate on a small project with a classmate.**

**Ans.**

* =>Create a Student Account on GitHub.
* Create a New Repository for the Project.
* Click on the Settings tab in the repository.
* Collaborators section on the left sidebar.
* Under Manage access,Invite Your Classmate to Collaborate.
* find your classment and Collaborate on the Project.

**Q14. Create a list of software you use regularly and classify them into the following categories: system, application, and utility software.**

**Ans.**

1. Google chrome:-

* This is application software.
* Chrome is use browse websites.

1. Microsoft word:-

* Microsoft word is application software.
* This is use for create and edit documents.

1. Windows:-

* Windows is system software.
* This is use for controls hardware and run application.

1. Linux Ubuntu:-

* Linux Ubuntu is system software.
* This is use for another opreting system ,this work like windows.

1. Zip:-

* Zip is utility software.
* This is use for compress and extract zip files.

**Q15. Follow a GIT tutorial to practice cloning, branching, and merging repositories.**

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

**Ans.**

Application software can be classified into several categories based on their functions. The main categories include 1)Productivity Software, 2)Media Software, 3)Business Software, 4)Educational Software.

How they improve production:-

1. Saves time:-

* Application software is finishes work fast.
* Example like ms word,excel.

1. reduces error:-

* applicarhion software is find mistakes in writing and calculation and solev this error.
* Example like exacel formulas.

1. Remote access:-

* Application software is access work from anywhere.
* Example like google drive.

1. Communication:-

* Application softwer is quick updates and easy meeting join and communication and discation in meeting.
* Example tool like zoom.

**Q17. Create a flowchart representing the Software Development Life Cycle (SDLC).**

**Ans.**

Planning

Analysis

Desing

Implementation

Maintenance

Deployment

Testing

**Q18. Write a requirement specification for a simple library management system.**

**Ans.**

A library management system is software application. That help manage day to day book activities in library.like managing books, members and book transactions.

* Library management system make for day to day book issuing,returing and book record keeping fast and easily.
* In this system in two user 1.adim and 2. Member.
* In this system in meanly function like book management, member management, issue and return system and login system.

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

**Ans.**

A function analysis for an online shopping system thet allow all the function use for online shopping.

* online shopping in meanly to user roles:- 1. Customer and 2. Admin

main functional requirements:-

1. user login and registration:-

* user can registration and login in onlin sopping system.
* User for login email and password use.

1. Product browsing and search:-

* User can login and before user can search product ,view categories.
* User can search product name, brand name.

1. Product details page:-

* In this page use/ seller give product description like, name, brand , images, product distribution, price etc..

1. Shopping cart:-

* User final products select and this product and quantity add in shopping cart.
* In shopping cart user can add or remove product in cart and view all product his collect in cart.

1. Order placement:-

* User can fill your address and select your payment method ilke, cod, online payment.
* And user confirm and place the order.

1. Order tracking:-

* User can place orde and user track your order.

1. Admin function:

* Admin can add, update and delete products.
* Admin can manage user accounts.
* admin can view user order and manage this order.

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

**Ans.**

A food delivery app system architecture in many different parts work like user, resturants, delivery agents and server.

1. Frontend:-

* Frontend uaser side for customer to browse food, place order and track order.
* Frontend restaurant side for restaurant saff or owner accept and prepare order.
* Frontend delivery side for delivery persons to receive order details and search customer location.

1. Backend:-

* Backend in web server handles all requests from apps.
* Backend in application logic process user placement, payment and delivery tracking.
* Database server stor data like user, restaurants, menu items, order, payments and order status.

1. Admin:-

A dashboard for the restaurant owners and app administrators to manage orders, menus, users, and delivery statuses.

**Q21. Develop test cases for a simple calculator program.**

**Ans.**

1. Addition

Input: 2 + 2

Output: 4

2. Subtraction

Input: 5- 2

Output: 3

3. Multiplication

Input: 5 \* 4

Output: 20

4. Division

Input: 10/ 2

Output: 5

5. Division by Zero

Input: 10 / 0

Output: ERROR

**Q22. Document a real-world case where a software application required critical maintenance.**

**Ans.**

**Q23. Create a DFD for a hospital management system.**

Patient

Hospital

Admin

Doctor

Admin for checkout

Medical

**Q24. Build a simple desktop calculator application using a GUI library.**

**Q25. Draw a flowchart representing the logic of a basic online registration system.**

Enter details

Create Aaccount

Valid

Details?

s