Module-Overview of it industry

Assignment-1

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

Ans:

Ex 1:C language

```
#include<stdio.h>
int main()
{
printf("hello world");
return 0;
}
```

Ex 2:paython

```
print("hello,world")
```

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

Ans:

- ◆ Client
- ◆ server
- ◆ internet

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

Ans:

◆ Client

◆ Server

◆ User request website serch

◆ Https.Google.com

◆ Google srver

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

Ans:

type	speed	use
Mobile network 4G, 5G	High medium	Hotspot,online-work,etc.
USB cable	Low,high	Charge: mobile,laptop etc.
fiber	Medium ,high	Home,office

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

Ans:

The HTTP requests command line are as the following:

- http://Amazone.com

The FTP requests command line are as the following:

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

Ans:

vulnerabilitie	Key solutions
Sql injection	Parameterized queries,input validation
Authentication	Mfa,secure password,HTTPS

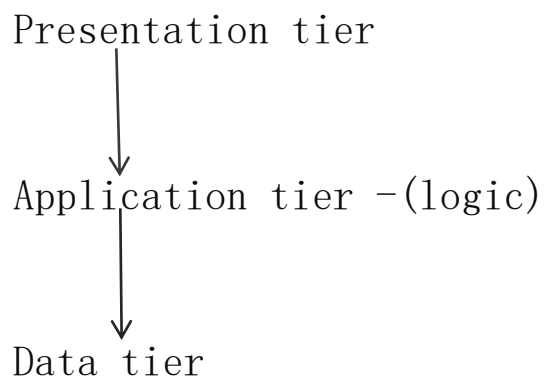7) Identify and classify 5 applications you use daily as either system software or application software.

Ans:

- Window
- Google chrome
- VS code
- Microsoft word
- Vlc media player

- Excel

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

 Ans:

Presentation tier

↓

Application tier -(logic)

↓

Data tier

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

Ans:

- Presentation layer:interacts with the user ex:Android, Ios
- Business logic layer:Contains core business rules and logic .processes user input and control workflo. placed-->preparing-->out of delivery-->delivered
- Data access layer:handles all database interactions data creat,read,update,delete operation ex:My SQL.

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

Ans:

Environment	Purpose	Key users
Development	Write,test code	developers
testing	Code,bug	Tester,QA
production	----	----

11)Write and upload your first source code file to Github.

Ans:

1. Go to https://githb.com and log in.
2. Click the+icon--->new repository.
3. Enter a repository name.
4. Choose:public and private.
5. Click create repository.

The source code was write the following:

```
#include<stdio.h>
    Int main(){
             Return 0; }
```

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

Ans:

- There is the frist one github repository was done and write to before question.
- And the how to commit and push code changes I don't know

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

Ans:

- This work already worked in a lacture.

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

Ans:

- System software :Windows,Ios,Android

- Application software :Microsoft word Google chrome,Vlc media player

- Utility software :Windows restore, Task manager

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

Ans:

I learn only account created and uplode the file and update the changes.the cloning,branching and merging I don't know to use that.

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

Ans:

● <u>Types of Application software:</u>
-Microsoft word
-Google
-Microsoft Excel
-My sql
● <u>Improve productivity advantage:</u>
-Document creation and editing
-Collaboration and sharing
-Complex data calculation
-Data security and integrity

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

Ans:

Planning

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Analysis

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Implementation/Development

↓

Testing

↓

Deployment

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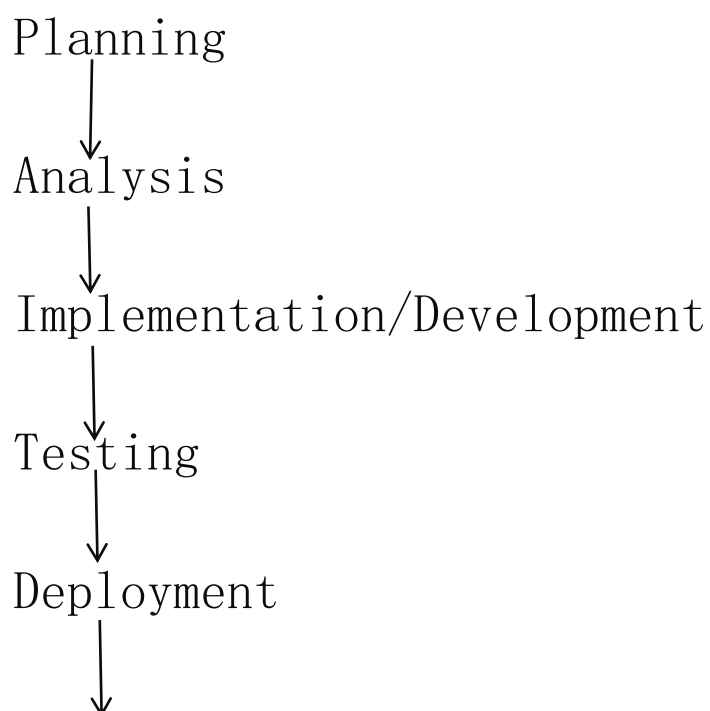
Maintenance

18)Write a requirement specification for a simple library management system.

Ans:

- Library management system in add,update delete and search for books.
- Register and manage library members.
- Track book loans and returns.
- simple reports on borrowing Activities.

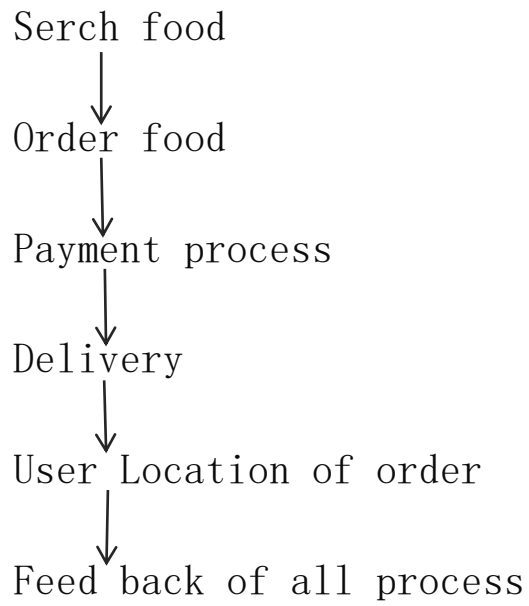19)Perform a functional analysis for an online shopping system.

Ans:

- User login/log out.
- Product management/serch
- Checkout process
- Order management
- Payment process
- Account management
- Customer support

20)Design a basic system architecture for a food delivery app.

Ans:

User login

↓

Serch food

↓

Order food

↓

Payment process

↓

Delivery

↓

User Location of order

↓

Feed back of all process

21)Develop test cases for a simple calculator program.

Ans:

```c
#include<stdio.h>
int main()
{
    int num1,num2,ans;
    printf("\nEnter the value in num1=");
    scanf("%d",&num1);
```

```c
    printf("\nEnter the value in num2=");
    scanf("%d",&num2);
    ans=num1+num2;
    printf("\nThe addition of %d and %d is =%d",num1,num2,ans);

    printf("\nEnter the value in num1=");
    scanf("%d",&num1);
    printf("\nEnter the value in num2=");
    scanf("%d",&num2);
    ans=num1-num2;
    printf("\nthe subtraction of %d and %d is =%d",num1,num2,ans);

    printf("\nEnter the value in num1=");
    scanf("%d",&num1);
    printf("\nEnter the value in num2=");
    scanf("%d",&num2);
    ans=num1*num2;
    printf("\nthe multiplication of %d and %d is =%d",num1,num2,ans);

    printf("\nEnter the value in num1=");
    scanf("%d",&num1);
    printf("\nEnter the value in num2=");
    scanf("%d",&num2);
    ans=num1/num2;
    printf("\nthe division of %d and %d is =%d",num1,num2,ans);

    printf("\nEnter the value in num1=");
    scanf("%d",&num1);
    printf("\nEnter the value in num2=");
    scanf("%d",&num2);
    printf("\nthe remainder of %d and %d is =%d",num1,num2,num1%num2);

    return 0;
}
```

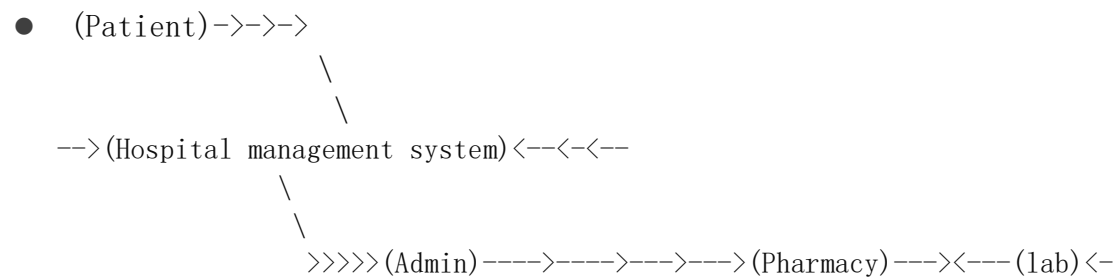22)Document a real-world case where a software application required critical maintenance.

Ans:
Maintenance Actions taken:
1)Rolback deployment
2) Infrastructure isolation
3) Incremental restoration

4) Post mortem analysis

23)Create a DFD for a hospital management system.

Ans:

● (Patient)->->->
                    \
                      \
   -->(Hospital management system)<--<-<--
                    \
                    \
                     >>>>>(Admin)---->---->--->---->(Pharmacy)--->>><---(lab)<-

24)Build a simple desktop calculator application using a GUI library.

Ans:

Simple desktop calculator application using python and the Tkinter GUI library-include with standard python installation

-GUI with buttons for digits and operations.
-basic arithmetic operation +,-,*,/
-clear and equal buttons.

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

Ans:

Start

↓

User information

↓

File the from

↓

Submit

↓

End