Assignment=1

**Q1> What is software? What is software engineering?**

Ans= 1> what is software?

= **Software** is a collection of **programs and data** that instruct a computer on how to perform specific tasks.

* = definition:- Software encompasses a wide range of instructions, data, or computer programs.
* It provides the necessary guidance for a computer to execute specific functions.
* Unlike hardware, which consists of tangible components, software operates at a higher level of abstraction.

2> What is software engineearing?

**Software engineering** is the branch of computer science that deals with designing, developing, testing, and maintaining software applications.

Software engineers apply engineering principles and knowledge of programming languages to build software solutions for end users.

Software engineers design and create computer systems and applications to solve real-world problems.

Software engineers, also called software developers, create software for computers and applications.

**Q2> Explain types of software.**

**= Software** is a collection of instructions, data, or computer programs that are used to run machines and carry out particular activities.

software is basically a set of instructions or commands that tell a computer what to do. In other words, the software is a computer program that provides a set of instructions to execute a user’s commands and tell the computer what to do. For example like [MS-Word](https://www.geeksforgeeks.org/introduction-to-microsoft-word/), [MS-Excel](https://www.geeksforgeeks.org/introduction-to-ms-excel/), [PowerPoint](https://www.geeksforgeeks.org/introduction-to-microsoft-powerpoint/), etc.

types of software:-

1. System software:- [System software](https://www.geeksforgeeks.org/system-software/)is software that directly operates the [computer hardware](https://www.geeksforgeeks.org/computer-hardware/) and provides the basic functionality to the users as well as to the other software to operate smoothly.
2. Application software:- Software that performs special functions or provides functions that are much more than the basic operation of the computer is known as [application software](https://www.geeksforgeeks.org/what-is-application-software/).
3. Driver software:- A [device driver](https://www.geeksforgeeks.org/device-driver-and-its-purpose/)is a program or software that controls a device and helps that device to perform its functions. Every device like a printer, mouse, [modem](https://www.geeksforgeeks.org/how-to-install-a-modem/), etc. needs a driver to connect with the computer system eternally.

4>Middleware:- Facilitates communication between different applications and services.

Supports standard messaging frameworks like web services, XML, REST, JSON, and SOAP.

5> Development software:- Software development is the process of designing, creating, testing, and maintaining computer programs and applications. [It plays a crucial role in our daily lives, empowering smartphone apps and supporting businesses worldwide](https://www.bing.com/aclick?ld=e8zU6cOnzT0NXUcRqU2-z6HTVUCUz8dO2sFLj0dmeXNvdSMmgUVfdR6u7Vy0ILo4OIB32-SKYbPf-JkQO982aXGW8aoO3cm-6b91UaJLMopxXNCuBsTxxzydpPIg-_h2WAqWodD1ImBxH4jLxBfpGTpbcub4FOIwqC4scC6vYpT-vriqMv&u=aHR0cHMlM2ElMmYlMmZ3d3cuY3Jpby5kbyUyZnNvZnR3YXJlLWRldmVsb3BtZW50LWZlbGxvd3NoaXAtcHJvZ3JhbSUyZiUzZnV0bV9zb3VyY2UlM2RiaW5nJTI2dXRtX21lZGl1bSUzZFBlcmYtTWF4LVNEJTI2dXRtX2NhbXBhaWduJTNkSm9iLVRpdGxlLURldmVsb3BlcnMlMjZ1dG1fdGVybSUzZHd3dy5jcmlvLmRvJTI2dXRtX2NvbnRlbnQlM2RvJTI2bXNjbGtpZCUzZDFkNmNlYTQxYjg2ZTE3M2RhODZjOGMwZDg0NGFmNWVh&rlid=1d6cea41b86e173da86c8c0d844af5ea).

**Q3> What is SDLC? Explain each phase of SDLC**

= The Software Development Life Cycle (SDLC) is a methodology that defines processes for creating high-quality software. It involves several phases:

**Requirement analysis**: Gathering and understanding project requirements.

**Planning**: Determining cost, resources, and risk assessment.

**Software design**: Creating architectural and detailed designs.

**Software development**: Writing code based on the design.

**Testing**: Ensuring quality and code correctness.

**Deployment:** Ready to use.

= Explain each phase of SDLC:



=This diagram explain all phase in software development process.

= start to the process in frist phase on analysis.

= analysis completely done then second phase st. in design & development.

= third phase in software development is quality assurance.

=implementation & deployment is Important in this process.

= Last phase in development in software is maintenance & support

**Q5> What is Flow chart? Create a flowchart to make addition of two numbers**

Flowchart: A Flowchart is a type of diagram that represents a workflow or process. A flowchart can also be defined as a diagrammatic representation of an algorithm.

Algorithm: A set of finite rules or instruction to be followed in calculations or other problem-solving opration.

#include<stdio.h>

Int main()

{

Int n1,n2,ans;

Printf(“enter 2 values”);

Scanf(“%d%d”,&n1,n2);

Ans=n1+n2;

Printf(“%d”,ans);

Return 0;

}

Algoritham:

1)start

2)declare variable n1,n2,ans;

3)display enter 2 values

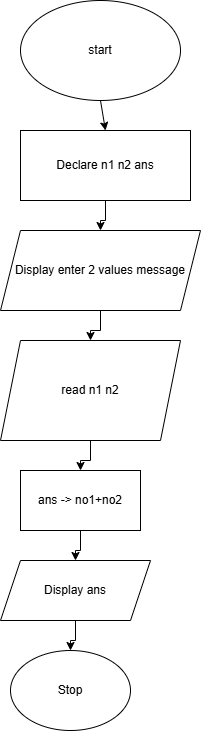
4)read values of n1,n2 from user

5)ans->n1+n2;

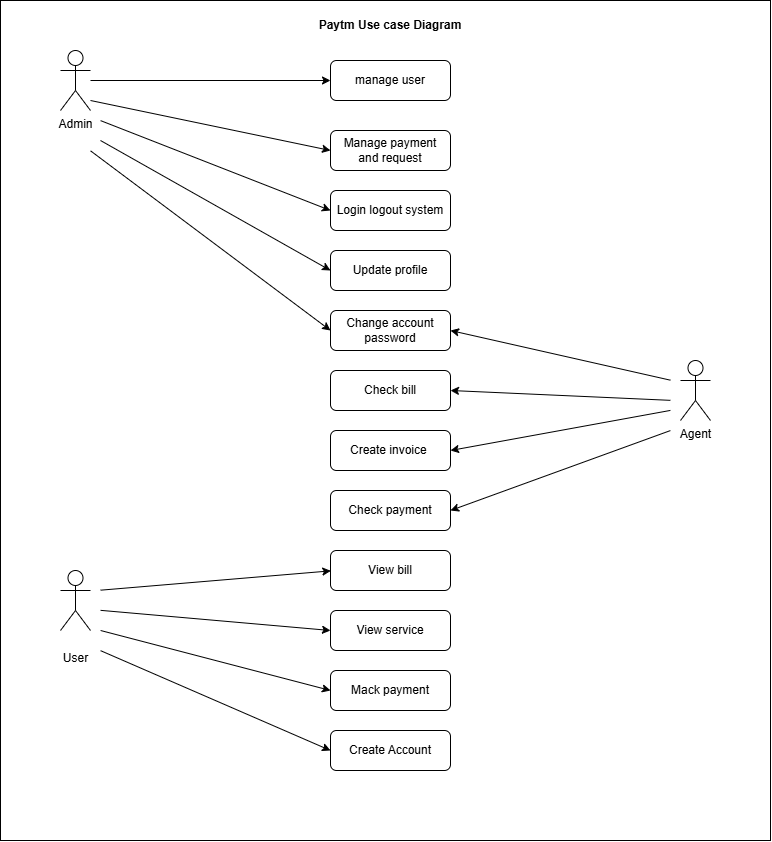
6)display ans

7)stop

**FLOWCHART**



**Q6> What is Use case Diagram? Create a use-case on bill payment on paytm.**



**Q4> What is DFD? Create a DFD diagram on Flipkart**

= A Data Flow Diagram (DFD) is a graphical representation of how data flows through a system or process. It helps us understand how information is processed, stored, and communicated within a system. DFDs don’t include control flow, loops, or decision rules; instead, they focus on data movement.

Types of DFD:- 1) 0 level DFD

2) Frist level DFD

3) Two level DFD

1. **0 level DFD:-**

= Processes are represented by circles or squares with a horizontal line across the top.

= Arrows indicate how data flows between processes.

= External entities (such as users or other systems) are shown as squares.

**= 0 level DFD :-**



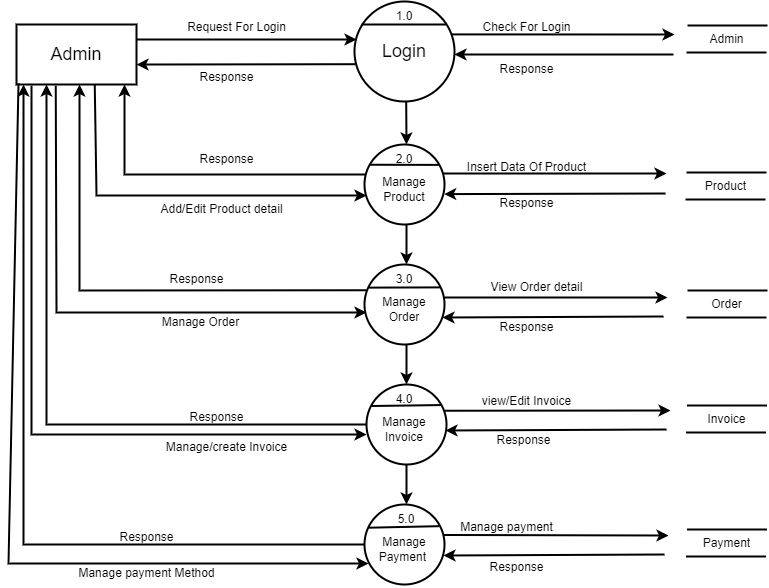
1. **Frist level DFD:-**

= Processes are still represented by circles or squares.

= Arrows indicate how data flows between processes.

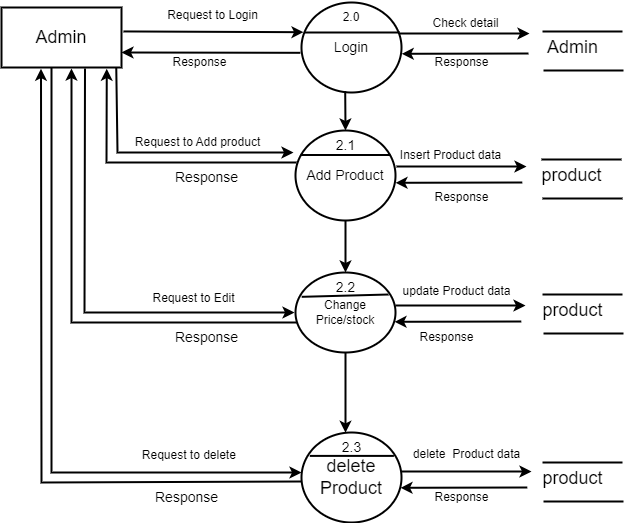
= External entities, data stores, and additional processes are included.

**= Frist level DFD:-**

****

1. **Two level DFD:-**

**=** 2-Level provides an even more detailed view of the system by breaking down the sub-processes identified in the level 1 Data Flow Diagram (DFD) into further sub-processes. Each sub-process is depicted as a separate process on the level 2 DFD. The data flows and data stores associated with each sub-process are also shown.



2-Level Data Flow Diagram (DFD) goes one step deeper into parts of 1-level DFD. It can be used to plan or record the specific/necessary detail about the system’s functioning.

