Assignment 1

Q1.) What is Software & Software Engineering?

A.) Software is a set of instructions or programs that operates the system and executes specific tasks too. Software Engineering is the process of executing the tasks and running the computer with the help of some instructions and programs.

Q2.) Explain types of Software.

A.) The different types of Software are:

1. **System Software:** As the name suggests, this software helps run the whole computer system. The set of instructions for this software already comes pre-installed in the device.

2. **Driver Software:** This software falls under the category of system software. Driver software are used to control devices and peripherals connected to the computer and performs specific tasks.

3. **Application Software:** Application software is a type of software which performs a specific task for a user or in this case specific task for an application.

4. **Programming Software:** This software is a kind of tool that helps programmers, developers to create, write, test and debug other software programs or applications.

5. **Middleware:** This software mediates between two application software or system software or application software to run together.

Q3.) What is SDLC? Explain each phase of SDLC.

A.) The Software Development Life Cycle (SDLC) is a process which enables the companies to create high quality software in minimum time. The SDLC gives a detailed plan in phases on how a company creates and produces a software. The phases of SDLC works as below:

1. **Planning Phase:** The planning phase includes all aspects of project and product management. This includes brainstorming, resource allocation, capacity planning, project scheduling, cost estimation. During this phase, the development team collects data from customers, sales, internal and external experts. This detailed data is analyzed and a rough idea is implemented according to the given data.
2. **Design Phase:** In this phase, coding is done which includes creation of system design. Once a set of instructions is finalized, the actual building of the system software begins.
3. **Testing Phase:** This phase includes the testing of the created product. The testing team evaluates the software to assess whether the product meets the requirement of the client. The assessment includes, unit testing, code quality testing, integration testing, system testing, security testing, performance testing. If a defect is identified, the team immediately resolves the defect. After this, the validation team gives the final report on the product assessment.
4. **Production Phase:** In this phase, the product is released to the public for use. Step by step the product is released to the whole world.
5. **Risk Management Phase:** In this Phase, the overall performance of the software is monitored carefully for any bugs or security lapses or user experience or any kind of problems arising in the system performance.

Q4.) What is DFD? Create DFD for Flipkart.

A.) Data flow diagrams gives a context of any system using symbols like rectangle, square, oval etc. It maps the data flow of a system in various levels from a basic level to a more complex level.

Q5.) What is Flow Chart? Create Flowchart to make addition of two numbers.

A.) It is a picturized representation of a system in a sequential order. It is a very useful tool to understand a complex system in a simple manner and is used to create data plans, systems, and programming algorithms.

Q6.) What is Use case Diagram. Create use-case on bill payment on Paytm.

A.) A Use Case diagram is a summarization of all the details of the system's users and their connection with the system.