**WHAT IS SOFTWARE**

Software is a set of Instruction, data or Programs used to Operate Computers and Execute Specific Tasks.

**Software in another Words**

Software is Responsible for Managing and Controlling the hardware components of a computer system.

**What is Software Engineering**

**It is a Systematic and Disciplined approach to software development that aims to create high-quality, reliable, and Maintainable Software.**

**What is Software Engineering in Simple Words:**

Based on the requirements, software Engineers create a high-level design that outlines the overall architecture and structure of the software system.

Software

CV

CV

CV

CV

**Application Software**

**Driver Software**

**Middleware**

**Programming Software**

**System Software**

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| --- | --- | --- |
| **Application Software** | **System Software** | **MiddleWare Software** |
| The computer program that Performs a Specific Personal, Educational, and Business Function.      TYPES OF APPLICATION SOFTWARE:   * Productivity Software * Web Browsers Software * Graphics & Design Software * Gaming Software * Communication Software * Business Software | The computer program that is designed to run a computer's hardware and application programs  TYPES OF SYSTEM SOFTWARE:   * Operating System * Device Drivers | The software that lies between an operating system and the applications running on it.  TYPES OF MIDDLEWARE SOFTWARE   * Database Management Systems * Web Servers * Middleware for Integration |
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| **Programming Software** |
| **Programming Software is a Program or set of Progress which helps the Software developers by assisting them in creating , debugging and maintaining other Programs.**  **Types of Programming Software:**   * **Visual Studio Code** * **Eclipse** * **PyCharm** * **Node.js etc.....** |

**SDLC**

* **The Software Development Life Cycle means It is a Methodology with defined processes for Creating High-Quality Software.**

**Planning:**

**GOAL: Develop a Plan outlining the Project scope, timeline, resources, and budget.**

**ACTIVITIES: Define Project Goals, Create a Project Schedule, allocate resources, and identify potential risk, Develop a Project Management Plan.**

**Analysis:**

**GOAL: Understand and document the Project’s Objective user requirements, and Constraints.**

**ACTIVITIES: Conduct interviews, Surveys, & Meetings with stakeholders to gather information. Analyze and document functional and non-functional requirements.**

**DESIGN:**

**GOAL: Create a blueprint for the System based on the gathered require**ments**.**

**ACTIVITIES: Design the architecture of the systems, including high-level and Low-level design Specifications. Define data structures, modules, Interfaces, and algorithms.**

**IMPLEMENTATION:**

**GOAL: Transform the design into executable code.**

**ACTIVITIES: Write, Compile, and test the Code according to the design specification. Developers work on creating the software based on the design documents.**

**Testing & Integration:**

**GOAL: Ensure that the software meets the specified requirements and is free of defects.**

**ACTIVITIES: Conduct various levels, including unit testing, Integration testing, System testing, and acceptance testing.**

**Maintenance:**

**GOAL: Address Issue, add new features, and adapt the software to changing requirements.**

**ACTIVITIES: Monitor the Systems Performance, fix bugs, and make updates as needed. Provide ongoing to users and address maintenance requests.**

**What is DFD**

DFD stands for Data Flow Diagram. It is a graphical representation of the flow of data within a system, illustrating how inputs are processed and transformed into outputs

Order Confirmation

Customer

Order Fulfilment Process

**Book Suppliers**

Order Request

Send Bulk Orders Request

Product Availity Information

Payment

Gateway

DFD diagram of Flipkart

**What is Flow Chart?**

A Flow Chart is a Graphical Representation of a Process or Algorithm, typically consisting of Various Symbols, Shapes, arrows to illustrate the steps involved and the Flow of Information or activities within the Process.

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Start

Input

A, B

Sum = A + B

END

Print SUM

FLOWCHART TO MAKE ADDITION OF TWO NUMBERS

**Use Case Diagram**

A USE CASE Diagram is a type of Unified Modeling Language (UML) diagram that represents the Interaction between different actors and a System, showcasing how the System Responds to Various actions or events. It Provides a high-level view of the system’s Functionality and the ways in which external entities interact with it.

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SYSTEM

VISITOR

REGISTERED USER

ADMIN

SERVICE PROVIDER