Module -1 (SDLC)

Q-1 What is software?

Ans :

- Software is a set of instructions, data or programs used to operate computers and execute specific tasks.
- Software is a set of computer programs and associated documentation and data.
- It is the opposite of hardware, which describes the physical aspects of a computer.
- Software is a generic term used to refer to application, scripts and programs that run on a device.
- SDLC is a process used by the software industry to design, develop and test high quality software.
- The two main categories of software are application software and system software.
- Application is software that fulfills a specific need or performs tasks.
- System software is designed to run a computer's hardware and provides a platform for application to run on top of.
- In the 1980s, software began to be sold on floppy disks, and later on CD and DVD.
- Today, most software can be found on vendor websites or application service provider websites.

Q-2 What are the types of Application?

Ans :

- Application is a piece of software that bundles together certain features in a way that is accessible to a user.
- Application, often shortened to 'app', is a program, or set of programs, that allows end-user to perform particular functions.
- Application software is a type of computer program that performs a specific personal, educational, and business function.

1. Web development
    - Web development is the field of writing computer applications to create interactive websites, usually using Hypertext Markup Language (HTML) and a web browser.
    - A web developer is a computer programmer who creates and maintains a website or other web applications.
2. Game development
    - Game developers use programming languages to turn their ideas and designs into fully functional video games.
    - Python is a programming language that can be used for game development.
3. Machine learning and Artificial intelligence
    - Machine learning and artificial intelligence are the two most important technologies that have changed the world by making it smarter.
    - These technologies are the best methods to analyze the large amounts of data available in the machine.
4. Data science and Data visualization
    - Data science is a way to make sense of the data we collect.
    - It uses powerful techniques like machine learning to process data into usable forms.
5. Desktop GUI
    - Python is a programming language that is most suitable for writing applications/scripts which need to run on a desktop GUI (Graphical User Interface).
    - It offers a graphical user interface like windows, buttons, etc. In addition, the language offers many ready-to-use functions and modules for drawing lines, graphics, and data visualization.
6. Web scraping application
    - Web scraping is the process of extracting data from any website.
    - Web scraping is a subset of data gathering, and it is an important part of many data analysis applications.
7. Business application
    - Business Applications is designed to run on computers, allowing programmers to create software applications.

- Python is a programming language primarily used in the field of software development.

8. Audio and Video application
    - Python is used to create multimedia applications. Some of the applications that are made using Python are cPlay and TimPlayer.
    - Gstreamer, Pyglet, and QT Phonon are some of the few multimedia libraries.
9. CAD application
    - CAD (Computer-Aided Design) is the process of designing products and structures using computers.
    - CAD applications have become an integral part of the design process, allowing designers to change a 3D model in real time and explore different design options.
10. Embedded application
    - Embedded applications have become ubiquitous in our lives, with embedded systems found in everything from smartphones to complex industrial machinery.
    - This helps us to perform higher-level applications on smaller devices that can compute Python.

Q-3 What is programing?

Ans :

- You can think of programming as a collaboration between humans and computers, in which humans create instructions for a computer to follow (code) in a language of computers can understand.
- Put simply, programming is giving a set of instructions to a computer to execute.
- If you have ever cooked using a recipe before, you can think of yourself as the computer and the recipe's author as a programmer.
- The recipe author provides you with a set of instructions which you read and then follow.
- At its most basic, programming tells a computer what to do. First, a programmer writes code—a set of letters, numbers, and other characters. Next, a compiler converts each line of code into a language a computer can understand. Then, the computer scans the code and executes it, thereby

performing a task or series of tasks. Tasks might include displaying an image on a webpage or changing the font of a section of text.

- For an example, The programming behind a mobile app can make it possible for you to order food, book a rideshare service, track your fitness, access media, and more with ease.
- Programming is, quite literally, all around us. From the take-out we order, to the movies we stream, code enables everyday actions in our lives.
- Tech companies are no longer recognizable as just software companies- instead, they bring food to our door, help us get a taxi, influence outcomes in presidential elections, or act as a personal trainer.
- For many years, only a few people have known how to code. However, that's starting to change.
- The number of people learning to code is increasing year by year, with estimates around 31.1 million software developers worldwide, which doesn't even account for the many other careers that relate to programming.

Q-4 What is Python?

Ans :

- Python is an interpreted, object-oriented, high-level programming language with dynamic semantics.
- Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development.
- Python supports modules and packages, which encourages program modularity and code reuse.
- The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms, and can be freely distributed.
- It is notable for being a very high-level language with a simple, easy-to-learn syntax.
- Python is a highly versatile open-source programming language.
- It was created in the late eighties (1988) and is the successor to the widely used, general-purpose programming language called BCPL which stands for basic combined programming language.
- It is also known as an insterpreter, as it converts the language you write on the computer into the computer language.

- It is a programming language so simple, powerful, and easy to learn. It’s a scripting language for general-purpose programming, and you don’t have to know any of the other aspects of programming to get started.