

## **MULTI PARADIGMS OF PROGRAMMING LANGUAGE; Python Programming Language.**

Paradigm definition: This refers to a way or style at which something is done or created. Hence, a programming paradigm refers to different ways or styles in which a given program or programming language can be written and organized.

Python as a high level programming interpreted language incorporates its own programming paradigms which consists of:

- Functional programming
- Structured programming
- Object oriented programming
- Procedural programming

Functional programming: Functional programming is a paradigm of building computer programs using declarations and expressions. In functional programming, composing functions becomes the main driving force behind the development. It is a declarative type of programming style that focuses on what to solve rather than how to solve. Also functions are used to the best effect for creating clean and maintainable software or programs.

Structured programming: Structured programming is a paradigm that focuses on making programs easier to comprehend from the reader's point of view. It does this by linearizing the flow of control through a program. In structured programming, execution follows the writing order of the code. It is aimed at improving the clarity, quality and development time of a computer program by making extensive use of the structured control flow constructs of selection and repetition, block structures, and subroutines.

Object oriented programming: Object-oriented programming is a programming paradigm fundamental to many programming languages, including Java and C++. Object-oriented programming is about modeling a system as a collection of objects, where each object represents some particular aspect of the system. Objects contain both functions (and methods) and data. An object provides a public interface to other code that wants to use it but maintains its own private, internal state; other parts of the system don't have to care about what is going on inside the object. In addition, programmers can create relationships between one object and another. For example, objects can inherit characteristics from other objects.

Procedural programming: procedural programming is a programming paradigm built around the idea that programs are sequence of instructions to be executed. They focus heavily on splitting up programs into named sets of instructions called procedures, analogous to functions. A procedure can store local data that is not accessible from outside the procedures scope and can also access and modify global data variables.