FUNDAMENTALS OF OOP

OOP: It is an approach that provides a way of modularizing programs by creating partitioned memory area for both data and functions that can be used as templates for creating copies of such modules on demand.

Class: A Class is a blueprint for creating objects, providing initial values for variables and implementations of methods.

Method: These are the functions.

Object: OOP allows us to decompose a problem into a number of entities called Objects.

Object = Data + Methods

Features:
Data Abstraction
Data Encapsulation
Inheritance
Polymorphism
Dynamic Binding
Message Communication

Abstraction:

It refers to the act of representing essential feature without including the background details. It tells what it is not how it is.

Encapsulation:

The wrapping up of data and methods into a single unit (called class) is known as encapsulation. Data encapsulation is the most striking feature of a class. The data is not accessible to the outside world and only those methods, which are wrapped in the class, can access it.

Inheritance:

Inheritance is the process by which objects of one class acquire the properties of objects of another class.

In OOP, the concept of inheritance provides the idea of reusability. It means we can add additional features to an existing class without modifying it by deriving a new class from the existing one.

Polymorphism:

It means the ability to take more than one form.

Dynamic Binding:

It means that the code associated with a given procedure call is not known untill the time of the call at runtime.

A procedure call associated with a polymorphic reference depends on the dynamic type of that reference.

Benefits of OOP:

Application of OOP: