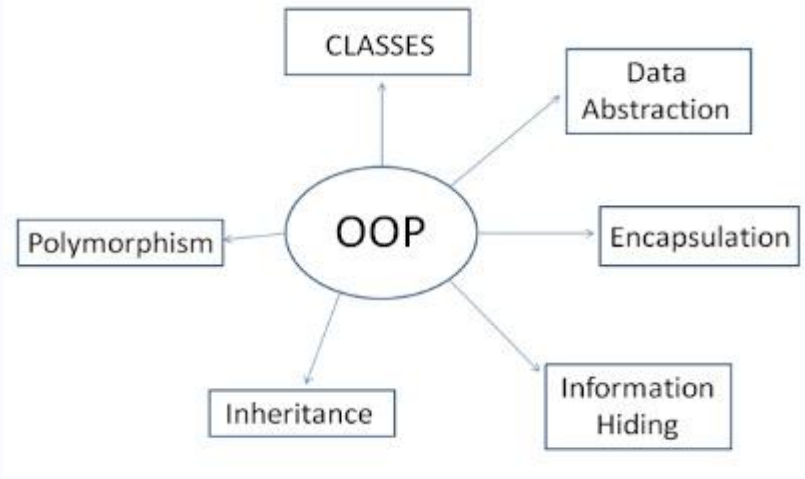
Features of Object Oriented Programming (OOP)



FEATURES OF OOP:

1. Object
2. Class
3. Data Hiding and Encapsulation
4. Dynamic Binding
5. Message Passing
6. Inheritance
7. Polymorphism

Brief Explanation of Points:

OBJECT: Object is a collection of number of entities. Objects take up space in the memory. Objects are instances of classes. When a program is executed, the objects interact by sending messages to one another. Each object contain data and code to manipulate the data. Objects can interact without having known details of each other's data or code.

CLASS: Class is a collection of objects of similar type. Objects are variables of the type class. Once a class has been defined, we can create any number of objects belonging to that class. Eg: grapes bananas and orange are the member of class fruit.

Example:

Fruit orange;
In the above statement object mango is created which belong to the class fruit.

NOTE: Classes are user define data types.

DATA ABSTRACTION AND ENCAPSULATION:
Combining data and functions into a single unit called **class** and the process is known as **Encapsulation**. Data encapsulation is important feature of a class. Class contains both data and functions. Data is not accessible from the outside world and only those function which are present in the class can access the data. The insulation of the data from direct access by the program is called data hiding or information hiding. Hiding the complexity of proram is called **Abstraction** and only essential features are represented. In short we can say that internal working is hidden.

DYNAMIC BINDING: Refers to linking of function call with function definition is called binding and when it is take place at run time called dynamic binding.

MESSAGE PASSING: The process by which one object can interact with other object is called message passing.

INHERITANCE: it is the process by which object of one class aquire the properties or features of objects of another class. The concept of inheritance provide the idea of reusability means we can add additional features to an existing class without Modifying it. This is possible by driving a new class from the existing one. The new class will have the combined features of both the classes.

Example: **Robine** is a part of the class flying bird which is again a part of the class bird.

POLYMORPHISM: A Greek term means ability to take more than one form. An operation may exhibit different behaviors in different instances. The behavior depends upon the types of data used in the operation.
Example:

- Operator Overloading
- Function Overloading