OOPS-Features

FEATURES OF OOP:
1. Object
2. Class
3. Data Hiding and Encapsulation
4. Dynamic Binding
5. Message Passing
6. Inheritance
7. Polymorphism
8. Exception Handling

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 know details of each others 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 bannans 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.

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 defination 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.

Inheritance can be classified to 5 types.

- Single Inheritance: When a single derived class is created from a single base class then the inheritance is called as single inheritance.
- Hierarchical Inheritance: When more than one derived class are created from a single base class, then that inheritance is called as hierarchical inheritance.
- Multi Level Inheritance: When a derived class is created from another derived class, then that inheritance is called as multi level inheritance.
- Hybrid Inheritance: Any combination of single, hierarchical and multi level inheritances is called as hybrid inheritance.
- Multiple Inheritance: when a derived class is created from more than one base class then that inheritance is called as multiple inheritance. It is acheived using interfaces.

POLYMORPHISM: A greek term means ability to take more than one form. An operation may exhibite different behaviours in different instances. The behaviour depends upon the types of data used in the operation.
Example:
Operator Overloading
Function Overloading

Exception Handling: It is a feature of OOP, to handle unresolved exceptions or errors produced at runtime.