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OOPS – Object Oriented Programming Language

Oops is a programming paradigm based on object and class. Which is used for improving code reusability, security, reduce space complexity and to work with real world problems.

1) Abstraction
2) Encapsulation
3) Polymorphism
4) Inheritance

Class:

Class is a user defined data type and blueprint of the object

Object:

Object is an instance of class, has attributes and methods.

Abstraction:

Abstraction is the concept of hiding the inner functionality and showing only the necessary details for the users.

Example:

ATM machine which only shows the essential details hiding the inner details like how our money debited from our account etc....

Encapsulation:

Encapsulation means collecting all the required data and methods into a single unit to improve data security.

Example:

Bank Account System which binds account details into a single unit and restricts some access by giving access modifiers.

Polymorphism:

Polymorphism refers to the code which acts differently in different time of execution based on the number of parameters.

Example:

Tax calculating system which needs to be calculated on different basis of customers and industry norms.

Inheritance:

Inheritance is used to reusability of code. Which means data and method in a class can be inherited from other classes.

A child class (derived class) inherit properties and behavior of parent class (base class).

Example:

Employee management system, every employee has many common attributes that are in a single class (base class) and based on their role they have some other attributes that are in other class (derived class).