OOPs Concept:

Object-oriented programming aims to implement real-world entities like inheritance, hiding, polymorphism etc. in programming. The main aim of OOP is to bind together the data and the functions that operate on them so that no other part of the code can access this data except that function.

Class: It is a user-defined blueprint or prototype from which objects are created.

Object: It represents real-life entities.

Pillars of OOPs concept:

Abstraction:

Hiding internal details and showing functionality is known as abstraction.

Ex1) phone call, we don't know the internal processing.

2)Website, we don’t know the code.

Encapsulation:

Binding (or wrapping) code and data together into a single unit are known as encapsulation.

Ex.Capsule

Polymorphism:

It means many forms.

If *one task is performed in different ways*, it is known as polymorphism.

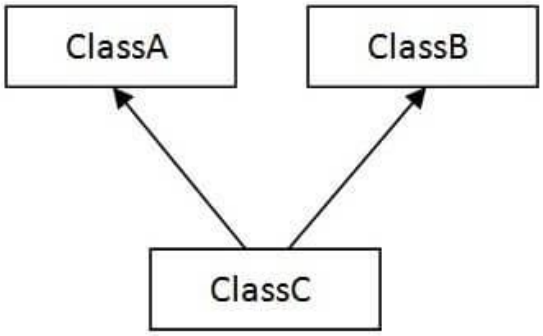
Ex. To draw something, for example, shape, triangle, rectangle, etc.

Inheritance:

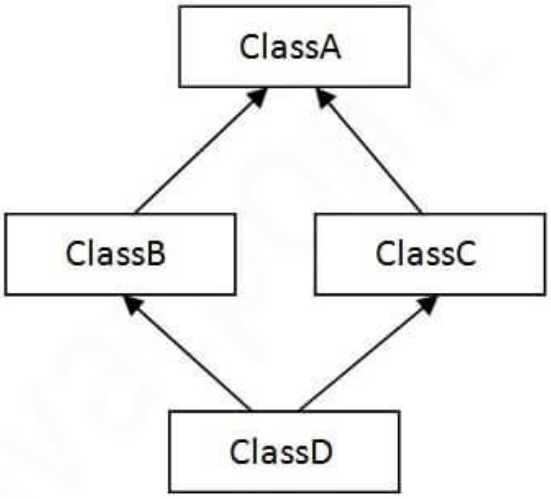
When one object acquires all the properties and behaviors of a parent object, it is known as inheritance.

Types of Inheritance:

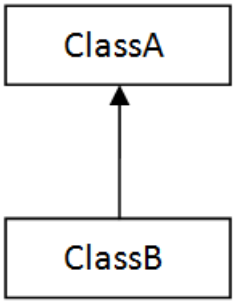
- Single level Inheritance:
  When a class inherits another class, it is known as a *single inheritance*.
- Multilevel Inheritance
  When there is a chain of inheritance, it is known as *multilevel inheritance*.
- Multiple Inheritance:
- Heirarchical Inheritance:
  When two or more classes inherits a single class, it is known as *hierarchical inheritance*.
- Hybrid Inheritance



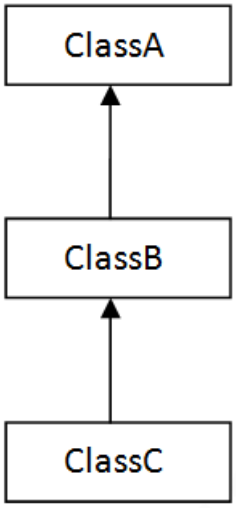
4) Multiple



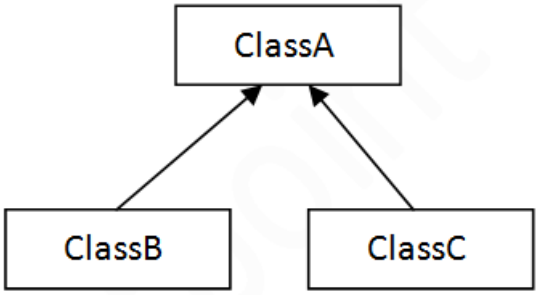
5) Hybrid



1) Single



2) Multilevel



3) Hierarchical