# 1.What is OOPs? Which are main pillars of OOPs?

* Object oriented programming is a type of programming that is based on objects rather than just functions and procedures.
* Individual objects are grouped into classes.
* OOPs implements real world entities like inheritance, polymorphism, hiding etc into programming.
* It also allows binding data and code together.
* There are 4 pillars of OOPs as follows.

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

# 2.What is inheritance and how we can achieve?

* Inheritance is a feature of OOPs which allows classes inherit common properties from other classes.
* For example, if there is a class such as ‘vehicle’, other classes like ‘car’, ’bike’, etc can inherit common properties from the vehicle class.
* This property helps you get rid of redundant code thereby reducing the overall size of the code.
* We can achieve it as follows:

1. We can use inheritance in java by extending classes and implementing interfaces.
2. Java provides two keywords extends and implements to achieve inheritance.
3. A class which is derived from another class is known as a subclass and an interface which is derived from another interface is called subinterface.

# 3.How many types of inheritance explain with diagram?

* There are five types of inheritance as follows.

1. Single inheritance

* Refers to a child and parent class relationship where a class extends the another class. One parent one child.

A

B

2.Multilevel inheritance

* Refers to a mechanism where one can inherit from a derived class, thereby making this derived class the base class for the new class.
* As you can see in below flow diagram C is the subclass or child class of B and B is a child class of A.

A

C

B

3.Multiple inheritance:

* It is a feature of OOP concept where a class can inherit properties of more than one parent class.
* On calling the method, the compiler cannot determine which class method to be called and even on calling which class method gets the priority.

B

A

C

4.Hierarchical inheritance:

* When a class has more than one child classes (subclasses) or in other words more than one child classes have the same parent class then this type of inheritance is known as hierarchical inheritance.

A

C

B

5.Hybrid inheritance:

* A hybrid inheritance is a combination of more than one type of inheritance.

A

D

C

B