Name - Ameya Barapatre
Roll No - 06
SE - DS

SARASWATI Education Society's
SARASWATI College of Engineering

PAGE NO. :
DATE :

Experiment No - 8

10/10 SR

Aim → To write a program on inheritance.

Resource Required : Pentium IV , JDK , Printer

Theory →

In Java it is an important pillar of oop. It has a mechanism in java by which only one class is allowed to inherit the features (fields and methods) of another class.

In Java, it means creating new classes based on existing ones. A class that inherits from another class can reuse the methods and fields of the class.

How to use inheritance?

The extends keyword is used for inheritance in java. Using the extends keywords indicates you are derived from an existing class. In other words "extends" refers to increased functionality.

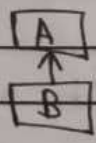
Syntax →

```
class Derived class extends Baseclass
{
    // method and fields
}
```

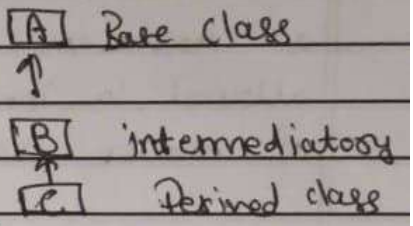
Java inheritance Type→

- Single inheritance
- Multilevel inheritance
- Hierarchial inheritance
- Multiple inheritance
- Hybrid inheritance

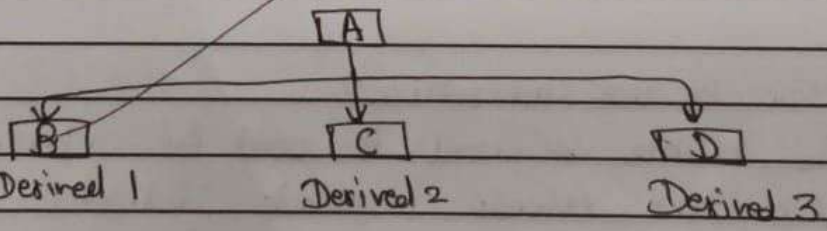
1) Single inheritance.



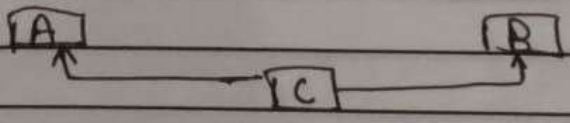
2) Multilevel inheritance.



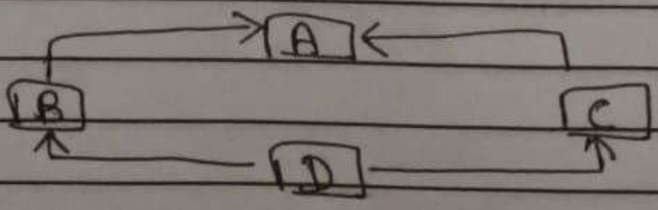
3) Heirarchial inheritance.



4) Multiple inheritance



5) Hybrid inheritance



Need of "inheritance in Java →

Code reusability → The code written in the superclass is common to all subclass.

Method overriding → It is achievable only by ~~which~~ inheritance. It is one of the ways by which java allows a subclass to provide specific implementation of method defined in superclass.

Abstraction → The concept where we do not have to provide all details is achieved.

Class → Class is a set of objects which shares a common characteristic behaviour and common properties / attributes.

Superclass → The class whose features are inherited is known as a superclass.

Subclass → The class that inherits the other class is known as a subclass.

→ Conclusion → Inheritance in Java is a powerful feature that enable the support.

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