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ASSIGNMENT (V)

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Java.

Q what is inheritance and describe the types of inheritances.

Sol: Inheritance :-

The method to create a hierarchy b/w classes by inheriting from other classes.

There are 5 types of inheritance.

1. Single inheritance
2. Multi-level inheritance
3. Multiple inheritance
4. Hieraclial inheritance
5. Hybrid inheritance

In this Multiple inheritance does not support in Java to overcome we use interface.

Single inheritance :-

```
class A {
  int a;
  Void display A() {
    System.out.println("a= "+a);
  }
}
class B extends A {
      int b;
      Void display B() {
        System.out.println("b= "+b);
      }
}
Public class Single inheritance Example {
      Public static Void main(String[] args) {
        B obj = new B();
        obj.a = 20;
        obj.b = 30;
        obj.display A();
        obj.display B();
      }
}
```

Output

a=20. b=30

Multilevel inheritance

```
Class A {
    Public Void display A() {
     System.out.println("Inside display A");
}
} class B extends A {
    Public BVoid display B() {
   System.out.println("inside display B");
}
}
   Class C extands B {
     Public Void display BC) {
     System.out.println("Inside display C");
   }
   }
    Public class main {
     Public static Void main (String[] args) {
         C obj = new CC);
         obj : display AC);
         Obj; display BC);
         Obj: display CL);
    }
    }.
```

Output:-

```
This animal eats Food
  The dog barks
This animal eats Food.
  The Cat meows.
```

Multiple inheritance.

```
Class A {
Void method AC) {
System.out.println("method from class A");
}
}.
Interface B {
    Void method BC);
}
  Interface C {
```

```
    Void method c();
}
Class B extends A implements B, C {
        Public Void method B() {
System.out.println("Method From interface B");
}
  Public Void method c() {
  System.out.println("method from interface C");
}
}
  Public class multiple inheritance Example {
      Public static void main (String[] args) {
          D obj = new D();
          Obj": method A();
          Obj: method B();
          Obj: method c();
```

Output:—

Method From class A
Method From interface B
method From interface C.

Hybrid Inheritance:—

```
Class GrandFather {
   Public Void display show G() {
System.out.println("He is grandFather");
}
}
Class Father extends GrandFather {
      Public Void Show F() {
System.out.println("He is Father");
}
}
  class Son extends Father {
    Public Void show S() {
    System.out.println("He is Son");
  }
}.
```

```
Public class Daughter extends Father {
    Public Void showD() {
    System.out.println("she is daughter");
}
Public static void main(String args[]) {
    Son obj = new Son();
    obj.showS();
    obj.showF();
    obj.showG();
    Daughter obj2 = new Daughter();
```