Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

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Course: Object Oriented Programming using Java **Roll No.: D118**

Experiment no: 7

AIM: To implement Inheritance

Problem Statement 1: WAP to demonstrate the role of Constructors in inheritance in the following class diagram.

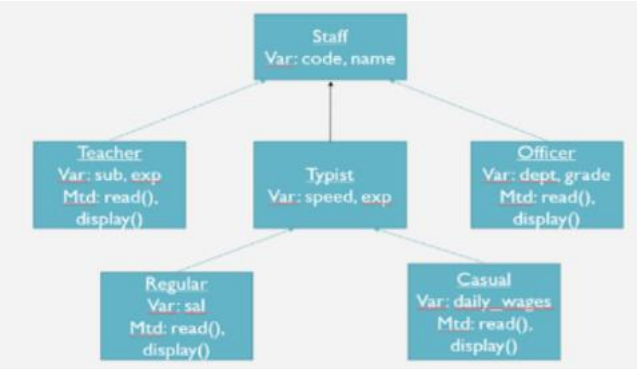
CODE:

```
import java.lang.*;
class A {
   A() {
      super();

   }
}
class B extends A {
   B() {
      super();
      System.out.println("In the Constructor of Class B");
   }

   B(int a, int b) {
      this();
      System.out.println("Addition of " + a + " + " + b + " = " + (a + b));
   }
}
class C extends B {
   C() {
      super(10, 20);

   C(int a) {
      this(); // this() method is used to call the overloaded constructor of the same class
      System.out.println("Value of a = " + a);
   }
}

public class ConstructorInInheritance {
   public static void main(String args[]) {
      C obj = new C(20);
   }
}
```

OUTPUT:

```
C:\Vaishnavi java code>javac ConstructorInInheritance.java

C:\Vaishnavi java code>java ConstructorInInheritance
In the Constructor of Class A
In the Constructor of Class B
Addition of 10 + 20 = 30
In the Constructor of Class C
Value of a = 20
```

PROBLEM STATEMENT 2: Display data of the specialized classes given in the following class diagram



CODE:

```
import java.util.Scanner;
class Staff {
   String code;
   String name;

   Staff(String c, String n) {
      code = c;
      name = n;
   }
}

class Teacher extends Staff {
   String sub;
   int exp;

   Teacher() {
      super("DJ:707", "Prof. Sudhir");
   }

   public void read() {
      Scanner sc = new Scanner(System.in);
```

```
        System.out.println("Enter Teacher Subject and Experience:");
        sub = sc.next();
        exp = sc.nextInt();
    }

    public void display() {
        System.out.println("**Teacher Information**");
        System.out.println("Code: " + code);
        System.out.println("Name: " + name);
        System.out.println("Teacher Subject: " + sub);
        System.out.println("Teacher Experience: " + exp);
    }
}

class Typist extends Staff {
    int speed;
    int exp;

    Typist(int speed, int exp, String code, String name) {
        super(code, name);
        this.speed = speed;
        this.exp = exp;
    }
}

class Regular extends Typist {
    int sal;
    Scanner sc = new Scanner(System.in);

    Regular(int speed, int exp, String code, String name) {
        super(speed, exp, code, name);
    }

    public void read() {
        System.out.println("Enter salary of Regular Typist:");
        sal = sc.nextInt();
    }

    public void display() {
        System.out.println("**Regular Typist Information**");
        System.out.println("Code: " + code);
        System.out.println("Name: " + name);
        System.out.println("Typing Speed: " + speed);
        System.out.println("Experience: " + exp);
        System.out.println("Salary: " + sal);
    }
}

class Casual extends Typist {
```

```
    int sal;
    Scanner sc = new Scanner(System.in);

    Casual(int speed, int exp, String code, String name) {
        super(speed, exp, code, name);
    }

    public void read() {
        System.out.println("Enter salary of Casual Typist:");
        sal = sc.nextInt();
    }

    public void display() {
        System.out.println("**Casual Typist Information**");
        System.out.println("Code: " + code);
        System.out.println("Name: " + name);
        System.out.println("Typing Speed: " + speed);
        System.out.println("Experience: " + exp);
        System.out.println("Salary: " + sal);
    }
}

class Officer extends Staff {
    String dept;
    String grade;
    Scanner sc = new Scanner(System.in);

    Officer() {
        super("DJ:808", "Dr. Nilesh");
    }

    public void read() {
        System.out.println("Enter Officer Dept: ");
        dept = sc.next();
        System.out.println("Enter Officer Grade: ");
        grade = sc.next();
    }

    public void display() {
        System.out.println("**Officer Information**");
        System.out.println("Code: " + code);
        System.out.println("Name: " + name);
        System.out.println("Officer Department: " + dept);
        System.out.println("Officer Grade: " + grade);
    }
}

class Administration {
    public static void main(String args[]) {
```

```
        Teacher t = new Teacher();
        t.read();
        t.display();
        Officer o = new Officer();
        o.read();
        o.display();
        Regular r = new Regular(30, 10, "DJ:505", "Mr. Subhash");
        r.read();
        r.display();
        Casual c = new Casual(25, 5, "DJ:404", "Mr. Rahul");
        c.read();
        c.display();
    }
}
```

OUTPUT:

```
C:\Vaishnavi java code>java Administration
Enter Teacher Subject and Experience:
java
15
**Teacher Information**
Code: DJ:707
Name: Prof. Sudhir
Teacher Subject: java
Teacher Experience: 15
Enter Officer Dept:
Admin
Enter Officer Grade:
CLass-1
**Officer Information**
Code: DJ:808
Name: Dr. Nilesh
Officer Department: Admin
Officer Grade: CLass-1
Enter salary of Regular Typist:
25000
**Regular Typist Information**
Code: DJ:505
Name: Mr. Subhash
Typing Speed: 30
Experience: 10
Salary: 25000
Enter salary of Casual Typist:
15000
**Casual Typist Information**
Code: DJ:404
Name: Mr. Rahul
Typing Speed: 25
Experience: 5
Salary: 15000
```