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Assignment –3

**PROBLEM STATEMENT:**

Derive a subclass called Student from the superclass Computer\_Engg. The clasastudent inherits all the member variables(Name,Roll\_Number,GR\_Number,hobbies,etc) and methods (getGR(), getName(), among others) from its superclass Computer\_Engg, also further defines a variable called area\_of\_interest,marks & two public methods getmarks() and getarea\_of\_interest().

**OBJECTIVE: -**

To understand concepts of inheritance by writing a program for creating superclass Computer\_Engg and subclass Student applying

## THEORY:-

**Inheritance in Java** is a mechanism in which one object acquires all the properties and behaviours of a parent object. It is an important part of OOPS (Object Oriented programming system).The idea behind inheritance in Java is that you can create new classes that are built upon existing classes. When you inherit from an existing class, you can reuse methods and fields of the parent class. Moreover, you can add new methods and fields in your current class also. Inheritance represents the **IS-A relationship** which is also known as a *parent-child* relationship.

**ALGORITHM:-**

1. Create Parent Class Computer\_Engg.
2. Declare variables Name,Roll\_Number,GR\_Number,hobbies using appropriate data type.
3. Write the functions getGR() and getName() in parent class
4. Derive the Student class from parent class using extends keyword.
5. Declare variables area\_of\_interest, marks using appropriate data type in student class.
6. Write the any tow public functions like getMarks(), getArea\_of\_intrest() in student class
7. Display all student information using the functions and variables used in parent as well child class.

**Code-**

import java.util.Scanner;

class Comp\_Stud{

static public String name;

public String hob;

public int roll;

public int gr;

void get(int n){

roll=n;

}

void get1(String s){

name=s;

}

void display(){

System.out.println("Name of student is="+name);

System.out.println("The Roll no. of Student="+roll);

}

}

class Student extends Comp\_Stud{

String interest;

public int marks;

void get\_area\_of\_interest(String s1){

interest=s1;

}

void getMarks(int n1){

marks=n1;

}

void getGr(int g){

gr=g;

}

void display(){

super.display();

System.out.println("Entered gr no is ="+gr);

System.out.println("The marks entered are="+marks);

System.out.println("The hobbies od student is="+interest);

}

}

public class Main

{

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Enter the Name of Student");

String s2=sc.next();

System.out.println("Enter the roll no of student");

int a=sc.nextInt();

System.out.println("Enter the hobbies of student");

String f=sc.next();

System.out.println("Enter the marks of student");

int m=sc.nextInt();

System.out.println("Enter the gr no. of student");

int h=sc.nextInt();

Comp\_Stud obj=new Comp\_Stud();

Student obj1=new Student();

obj1.get(a);

obj1.get1(s2);

obj1.get\_area\_of\_interest(f);

obj1.getGr(h);

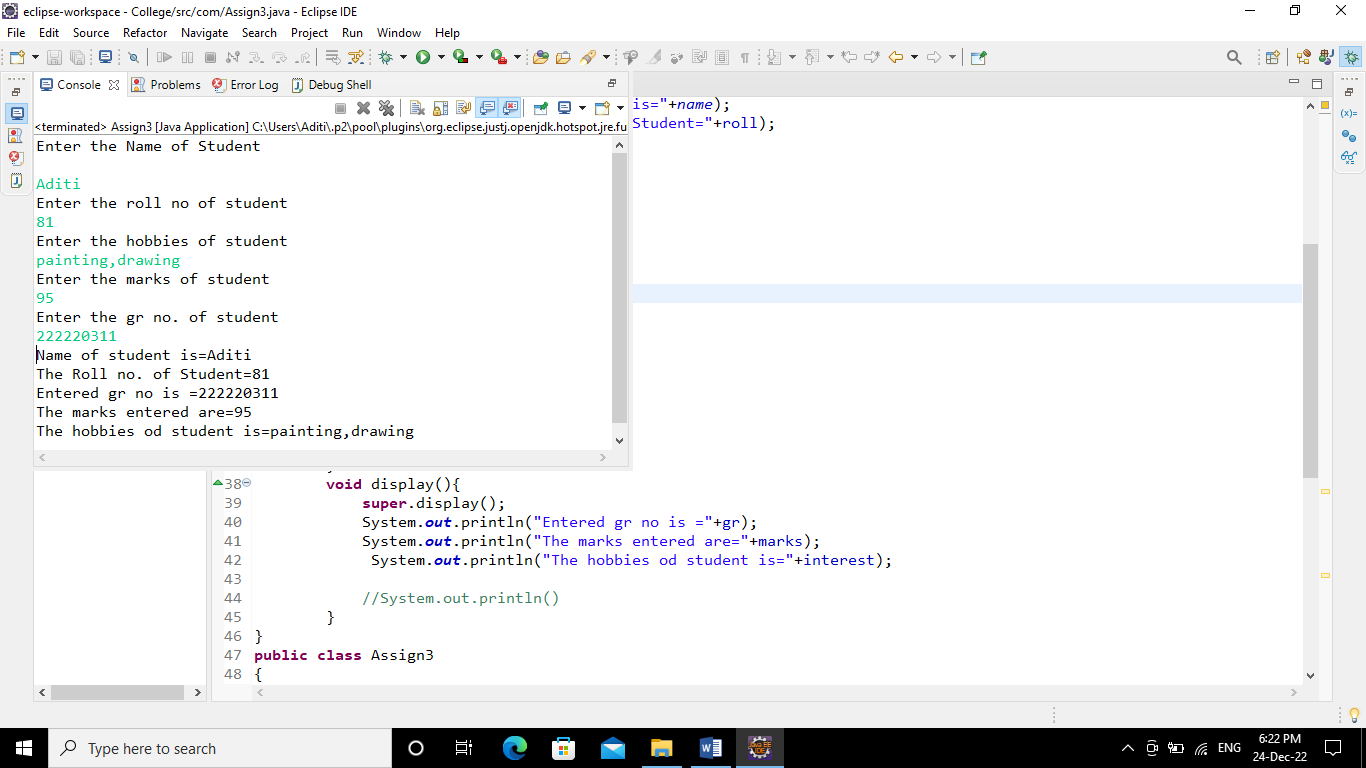
obj1.getMarks(m);

obj1.display();

}

}

**Output-**

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**Conclusion**- Able to understand and apply the object oriented concept of inheritance.