**PRACTICAL 3**

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**Aim:** Write a program to implement Inheritance, method overriding and runtime polymorphism.  
Consider the following scenario:- A college stores the student information as Name, Gender, Department Name, CGPA.  
College also stores the placement details as industry name, annual package and joining letter number.  
If the student is going for higher studies then the details are stored as  
Degree Name, College Name, Admission Letter Number, Competitive exam details (Name, Score).  
If student is going for Entrepreneurship then information stored is Company Name, Sector, Number of employees working in the company and annual turnover.  
  
Create an efficient way to store and display details of all students in an array. (Hint: Use Dynamic Method Dispatch for creating Student array)

Code:

Student.java

public class Student {

  protected String name,gender,dept;

  protected double cgpa;

  Student(String *name1*, String *gender1*, String *dept1*, double *cgpa1*){

    name = name1;

    gender = gender1;

    dept = dept1;

    cgpa = cgpa1;

  }

  void display(){

    System.out.println("\n----------------\nName:"+name+"\nGender: "+gender+"\nDept. : "+dept+"\nCGPA : "+cgpa+"\n");

  }

}

HigherStudies.java

public class HigherStudies extends Student {

  String degname,collname,exname;

  double addmno,exscore;

  HigherStudies(String *name1*, String *gender1*, String *dept1*, double *cgpa1*,String *degname1*,String *collname1*,String *exname1*,double *admno1*,double *exscore1*) {

    super(name1, gender1, dept1, cgpa1);

    degname = degname1;

    collname = collname1;

    exname = exname1;

    addmno = admno1;

    exscore = exscore1;

  }

  void display(){

    super.display();

    System.out.println("\n---------------\nDegree name: "+degname+"\nCollege Name: "+collname+"\nAdmission no: "+addmno+"\nExam name: "+exname+"\nExam Score: "+exscore);

  }

}

Placement.java

public class Placement extends Student {

  protected String indname;

  protected double annp;

  protected int jlno;

  Placement(String *name1*, String *gender1*, String *dept1*, double *cgpa1*,String *indname1*,double *annp1*,int *jlno1*){

    super(name1, gender1, dept1, cgpa1);

    indname = indname1;

    annp = annp1;

    jlno = jlno1;

  }

  void display(){

    super.display();

    System.out.println("-----------\nIndustry Name: "+indname+"\nAnnual Package: "+annp+"\nJoining letter number : "+jlno);

  }

}

Enterprenuership.java

public class Enterprenuership extends Student {

  String compname,sector;

  double noemp,annturn;

  Enterprenuership(String *name1*, String *gender1*, String *dept1*, double *cgpa1*,String *compname1*,String *sector1*,double *noemp1*,double *annturn1*) {

    super(name1, gender1, dept1, cgpa1);

    compname = compname1;

    sector = sector1;

    noemp = noemp1;

    annturn = annturn1;

  }

  void display(){

    super.display();

    System.out.println("\n------------\nCompany Name: "+compname+"\nSector : "+sector+"\nNo of employees: "+noemp+"\nAnnual Turnover: "+annturn);

  }

}

Main.java

public class Main {

  public static void main(String[] *args*) {

    Student s[] = new Student[5];

    s[0] = new HigherStudies("Shreyash", "Male", "CSE",9.72, "Btech", "RCOEM", "JEE", 1201, 100);

    s[1] = new Enterprenuership("Sahil", "Male", "CSE", 9.6, "Infosys", "Buisiness", 1000, 100000);

    s[2] = new Placement( "sujyot", "Male", "CSE", 9.7,"Tech", 100000, 12365);

    s[0].display();

    System.out.println("--------------------- Higher Studies ---------------------");

    s[1].display();

    System.out.println("--------------------- Enterprenuership ---------------------");

    s[2].display();

    System.out.println("--------------------- Placement ---------------------");

  }

}

**OUTPUT:**

