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Subject: **JAVA OOPS**

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:

COLLEGE CLASS:

```
package LabPracticals.Practical3;

public class College {
    String name,branch;
    Double cgpa;
    College(String name,String branch,Double cgpa){
        this.name=name;
        this.branch=branch;
        this.cgpa=cgpa;
    }
    void display(){
        System.out.println("\n\n\n");
        System.out.println("!______***** College Student *****______!");
        System.out.println("NAME: "+name);
        System.out.println("COLLEGE PASSED WITH: "+branch);
        System.out.println("CGPA: "+cgpa);
        System.out.println("\n\n\n");
    }
}
class placement extends College{
    String company;
    int letter,Salary;
    placement(String name,String branch,Double cgpa,String
industry_name,int annual_package,int joining_letter_number){
        super(name, branch, cgpa);
        company=industry_name;
        Salary=annual_package;
        letter=joining_letter_number;
    }
    void display(){
        System.out.println("\n\n\n");
        System.out.println("!______***** Placement Student *****______!");
        System.out.println("NAME: "+name);
        System.out.println("COLLEGE PASSED WITH: "+branch);
        System.out.println("CGPA: "+cgpa);
        System.out.println("COMPANY PLACED IN: "+company);
        System.out.println("LETTER NUMBER: "+letter);
```

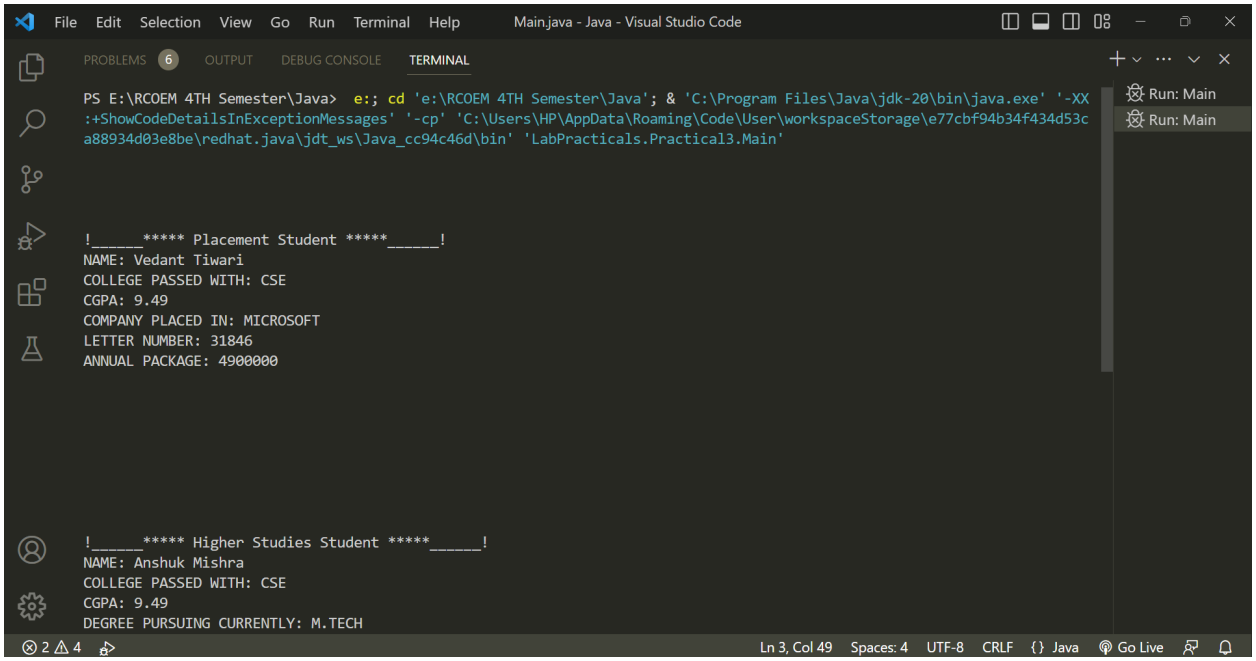
```
        System.out.println("ANNUAL PACKAGE: "+Salary);
        System.out.println("\n\n\n");
    }
}
class Studies extends College{
    String Degree,College,exam;
    int Score,Admission_Letter_Number;
    Studies(String name,String branch,Double cgpa,String Degree_Name,
String College_Name,int Admission_Letter_Number, String exam_Name, int
Score){
        super(name, branch, cgpa);
        Degree=Degree_Name;
        College=College_Name;
        exam=exam_Name;
        this.Score=Score;
        this.Admission_Letter_Number=Admission_Letter_Number;
    }
    void display(){
        System.out.println("\n\n\n");
        System.out.println("!______***** Higher Studies Student
*****______!");
        System.out.println("NAME: "+name);
        System.out.println("COLLEGE PASSED WITH: "+branch);
        System.out.println("CGPA: "+cgpa);
        System.out.println("DEGREE PURSUING CURRENTLY: "+Degree);
        System.out.println("COLLEGE NAME: "+College);
        System.out.println("APPEARED FOR EXAM: "+exam);
        System.out.println("SCORE OF EXAM: "+Score);
        System.out.println("ADDMISSION LETTER NUMBER:
"+Admission_Letter_Number);
        System.out.println("\n\n\n");
    }
}
class Entrepreneurship extends College{
    String Company_Name,Sector;
    int Employees;
    double turnover;
    Entrepreneurship(String name,String branch,Double cgpa,String
Company_Name,String Sector,int Employees,double turnover){
        super(name, branch, cgpa);
```

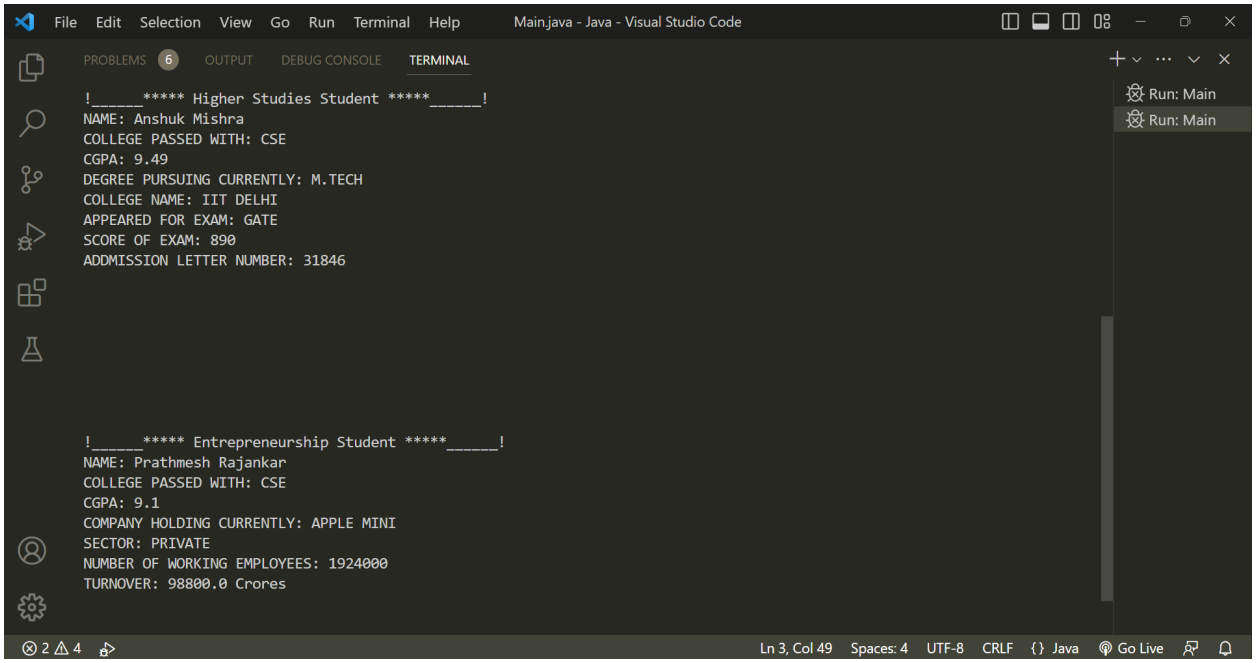
```
        this.Company_Name=Company_Name;
        this.Sector=Sector;
        this.Employees=Employees;
        this.turnover=turnover;
    }
    void display(){
        System.out.println("\n\n\n");
        System.out.println("!______***** Entrepreneurship Student
*****______!");
        System.out.println("NAME: "+name);
        System.out.println("COLLEGE PASSED WITH: "+branch);
        System.out.println("CGPA: "+cgpa);
        System.out.println("COMPANY HOLDING CURRENTLY: "+Company_Name);
        System.out.println("SECTOR: "+Sector);
        System.out.println("NUMBER OF WORKING EMPLOYEES: "+Employees);
        System.out.println("TURNOVER: "+turnover+" Crores");
        System.out.println("\n\n\n");
    }

}
```

MAIN CLASS:

```
package LabPracticals.Practical3;
public class Main {
    public static void main(String[] args) {
        College c[]=new College[3];
        c[0]=new placement("Vedant
Tiwari","CSE",9.49,"MICROSOFT",4900000,31846);
        c[0].display();
        c[1]=new Studies("Anshuk Mishra","CSE",9.49,"M.TECH","IIT
DELHI",31846,"GATE",890);
        c[1].display();
        c[2]=new Entrepreneurship("Prathmesh Rajankar", "CSE", 9.1, "APPLE
MINI", "PRIVATE", 1924000, 98800);
        c[2].display();
    }
}
```

OUTPUT:





RESULT:

Successful execution of practical 3 College management system.