Adhish Bahl

2347203

2MCA B

Java CIA Component 2

**Code:**

import java.util.Scanner;

abstract class Person {

    protected String name;

    protected int age;

    protected double height;

    protected String gender;

    public Person(String name, int age, double height, String gender) {

        this.name = name;

        this.age = age;

        this.height = height;

        this.gender = gender;

    }

    public void get() {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Name: ");

        name = scanner.next();

        System.out.print("Age: ");

        age = scanner.nextInt();

        System.out.print("Height: ");

        height = scanner.nextDouble();

        System.out.print("Gender: ");

        gender = scanner.next();

    }

    public abstract void show();

}

class Student extends Person {

    protected static int currStudentId = 101;

    protected int studentId;

    protected String institutionName;

    protected String phNo;

    public Student(String name, int age, double height, String gender, String institutionName, String phNo) {

        super(name, age, height, gender);

        this.studentId = currStudentId;

        currStudentId++;

        this.institutionName = institutionName;

        this.phNo = phNo;

    }

    @Override

    public void get() {

        super.get();

        Scanner scanner = new Scanner(System.in);

        System.out.print("Institution Name: ");

        institutionName = scanner.next();

        System.out.print("Phone Number: ");

        phNo = scanner.next();

    }

    @Override

    public void show() {

        System.out.println("Name: " + name);

        System.out.println("Age: " + age);

        System.out.println("Height: " + height);

        System.out.println("Gender: " + gender);

        System.out.println("Student ID: " + studentId);

        System.out.println("Institution Name: " + institutionName);

        System.out.println("Phone Number: " + phNo);

    }

}

final class GraduateStudent extends Student {

    protected String programName;

    protected int noOfSubjects;

    protected String classTeacher;

    protected double marks;

    protected double attendance;

    public GraduateStudent() {

        super("", 0, 0, "", "", "");

        this.programName = "";

        this.noOfSubjects = 0;

        this.classTeacher = "";

        this.marks = 0;

        this.attendance = 0;

        this.get();

    }

    public GraduateStudent(String name, int age, double height, String gender, String institutionName, String phNo, String programName, int noOfSubjects, String classTeacher, double marks, double attendance) {

        super(name, age, height, gender, institutionName, phNo);

        this.programName = programName;

        this.noOfSubjects = noOfSubjects;

        this.classTeacher = classTeacher;

        this.marks = marks;

        this.attendance = attendance;

    }

    @Override

    public void get() {

        super.get();

        Scanner scanner = new Scanner(System.in);

        System.out.print("Program Name: ");

        programName = scanner.next();

        System.out.print("Number of Subjects: ");

        noOfSubjects = scanner.nextInt();

        System.out.print("Class Teacher Name: ");

        classTeacher = scanner.next();

        System.out.print("Marks: ");

        marks = scanner.nextDouble();

        System.out.print("Attendance: ");

        attendance = scanner.nextDouble();

    }

    @Override

    final public void show() {

        super.show();

        System.out.println("Program Name: " + programName);

        System.out.println("Number of Subjects: " + noOfSubjects);

        System.out.println("Class Teacher Name: " + classTeacher);

        System.out.println("Marks: " + marks);

        System.out.println("Attendance: " + attendance);

    }

    final public static void showStudentID() {

        System.out.println("Current Student ID: " + currStudentId);

    }

}

class Java\_LabTest\_203 {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        Student[] students = new Student[7];

        students[0] = new GraduateStudent("Adhish", 22, 186.0, "Male", "Christ", "9999999999", "MCA", 5, "Teacher1", 68, 85);

        students[1] = new GraduateStudent("Bhomit", 21, 169.0, "Male", "VIT", "8888888888", "MBA", 6, "Teacher2", 75, 56);

        students[2] = new GraduateStudent("Shreya", 22, 159.0, "Female", "PES", "777777777", "MCA", 7, "Teacher3", 80, 65);

        students[3] = new GraduateStudent("Yash", 23, 180.0, "Male", "Christ", "666666666", "MBA", 7, "Teacher4", 60, 90);

        students[4] = new GraduateStudent("Ashna", 20, 150.0, "Female", "VIT", "5555555555", "MCA", 8, "Teacher5", 89, 90);

        students[5] = new GraduateStudent();

        students[6] = new GraduateStudent();

        int choice = 0;

        while(choice != 5) {

            System.out.println("================================================");

            System.out.println("Menu:");

            System.out.println("1. Display All Students");

            System.out.println("2. Display male students who have above 60% of marks in the program MCA.");

            System.out.println("3. Display female students who have above 75% of attendance in the program MCA.");

            System.out.println("4. Display the current Student ID.");

            System.out.println("5. Exit.");

            System.out.print("Enter Choice: ");

            choice = scanner.nextInt();

            System.out.println("--------------------------------------\n");

            switch (choice) {

                case 1: for (Student student : students) {

                            student.show();

                            System.out.println("--------------------------\n");

                        }

                    break;

                case 2: for (Student student : students) {

                            if (student.gender.equals("Male") && ((GraduateStudent) student).marks > 60 && ((GraduateStudent) student).programName.equals("MCA")) {

                                student.show();

                                System.out.println("--------------------------\n");

                            }

                        }

                    break;

                case 3: for (Student student : students) {

                            if (student.gender.equals("Female") && ((GraduateStudent) student).attendance > 75 && ((GraduateStudent) student).programName.equals("MCA")) {

                                student.show();

                                System.out.println("--------------------------\n");

                            }

                        }

                    break;

                case 4: GraduateStudent.showStudentID();

                    break;

                case 5: System.out.println("Exiting...");

                    break;

                default: System.out.println("Invalid Choice. Enter Again");

                    break;

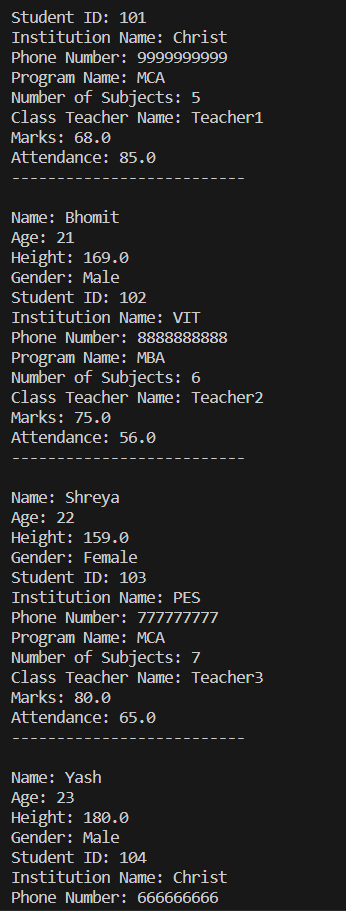
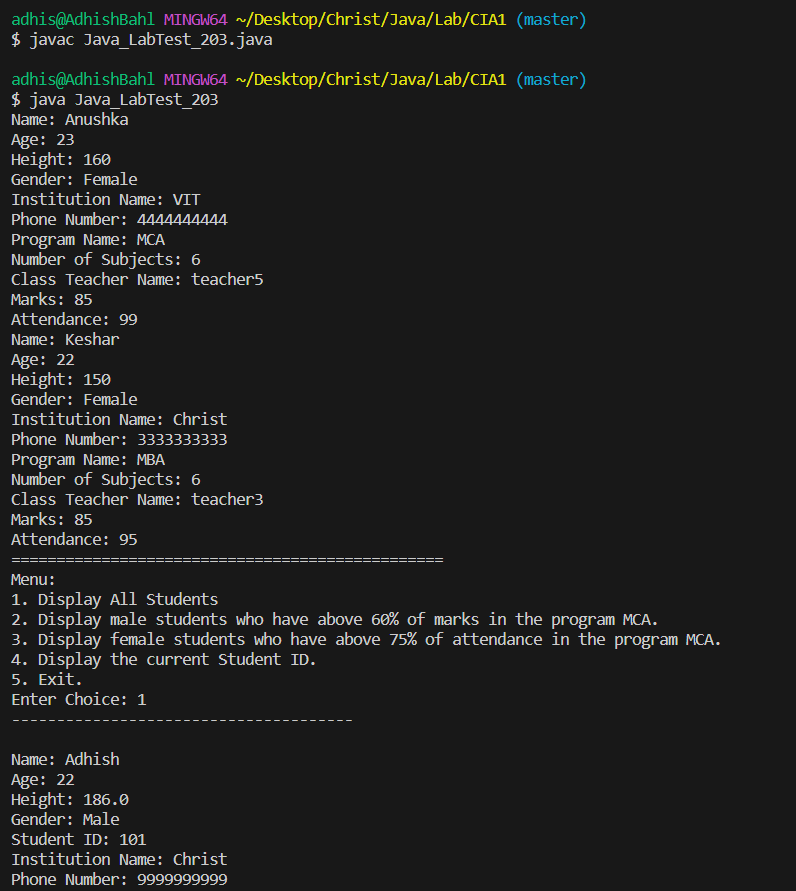
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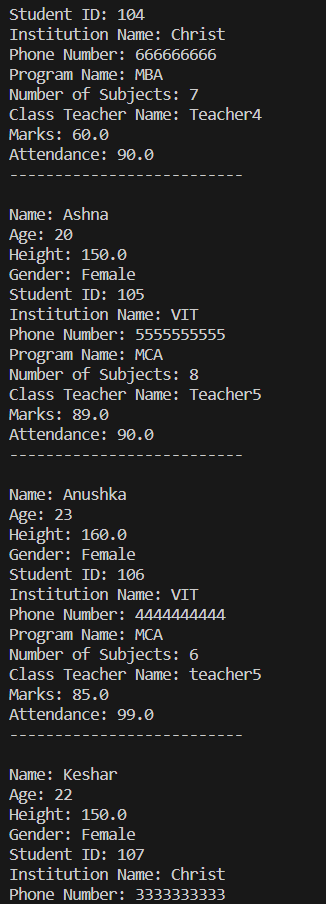
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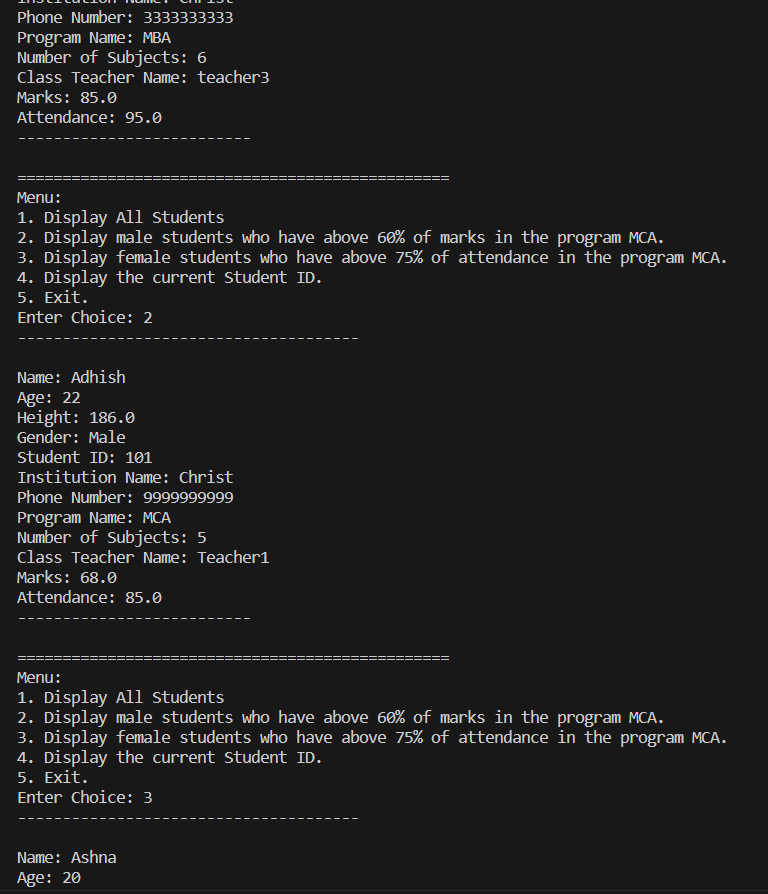
    }

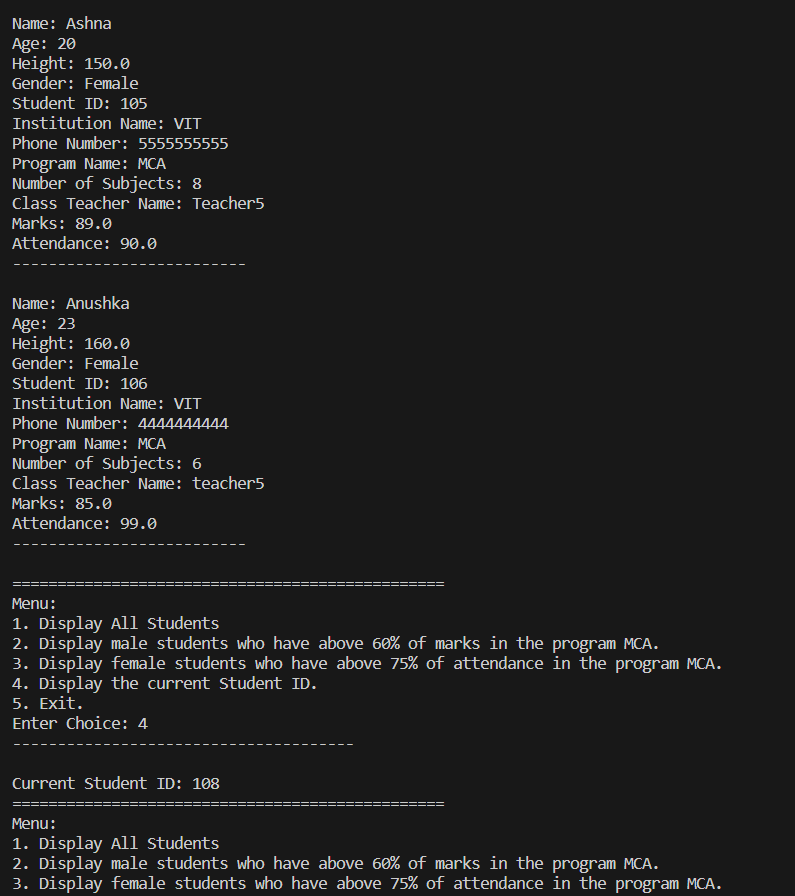
}

**Output:**

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