

JAVA ASSIGNMENT 1 (LAB)

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COURSE-BCA(AI& DS)

CODE:-

```
1  import java.util.*;
2
3  // Parent class for demonstration
4  class Person {
5      protected String name;
6  }
7
8  // Student class inherits from Person
9  class Student extends Person {
10     private int rollNo;
11     private String course;
12     private double marks;
13     private char grade;
14
15     // Empty constructor
16     public Student() {}
17
18     // Constructor with parameters
19     public Student(int rollNo, String name, String course, double marks) {
20         this.rollNo = rollNo;
21         this.name = name;
22         this.course = course;
23         this.marks = marks;
24         evaluateGrade();
25     }
26
27     // Input method
28     public void readData(Scanner sc) {
29         System.out.print("Enter Roll No: ");
30         rollNo = sc.nextInt();
31         sc.nextLine(); // consume newline
32
33         System.out.print("Enter Full Name: ");
34         name = sc.nextLine();
35
36         System.out.print("Enter Course Name: ");
```

```

36     System.out.print("Enter Course Name: ");
37     course = sc.nextLine();
38
39     while (true) {
40         System.out.print("Enter Marks (0-100): ");
41         marks = sc.nextDouble();
42         if (marks >= 0 && marks <= 100) break;
43         System.out.println(" Invalid! Please enter between 0 and 100.");
44     }
45
46     evaluateGrade();
47 }
48
49 // Grade calculation logic
50 private void evaluateGrade() {
51     if (marks >= 90) grade = 'A';
52     else if (marks >= 70) grade = 'B';
53     else if (marks >= 50) grade = 'C';
54     else grade = 'D';
55 }
56
57 // Display details
58 public void display() {
59     System.out.println("\n");
60     System.out.println("Roll Number : " + rollNo);
61     System.out.println("Name       : " + name);
62     System.out.println("Course    : " + course);
63     System.out.println("Marks     : " + marks);
64     System.out.println("Grade     : " + grade);
65 }
66 }
67
68 // Main driver class
69 public class StudentPortal {

```

```

68 // Main driver class
69 public class StudentPortal {
    Run | Debug
70     public static void main(String[] args) {
71         Scanner sc = new Scanner(System.in);
72         ArrayList<Student> records = new ArrayList<>();
73         int choice;
74
75         do {
76             System.out.println("\nStudent Record System");
77             System.out.println("1. Register Student");
78             System.out.println("2. View All Students");
79             System.out.println("3. Quit");
80             System.out.print("Enter choice: ");
81             choice = sc.nextInt();
82
83             switch (choice) {
84                 case 1:
85                     Student s = new Student();
86                     s.readData(sc); //input function call kra
87                     records.add(s); // array m add kr dia
88                     System.out.println(" Student added successfully!");
89                     break;
90
91                 case 2:
92                     if (records.isEmpty()) {
93                         System.out.println(" No student data available.");
94                     } else {
95                         System.out.println("\n Student Records");
96                         for (Student stu : records) {
97                             stu.display();
98                         }
99                     }
100                    break;
101
102                    case 3:
103                        System.out.println("Exiting code");
104                        break;
105
106                    default:
107                        System.out.println("Please select a valid option.");
108                    }
109                } while (choice != 3);
110
111            sc.close();
112        }
113    }

```

OUTPUT:-

```
java labassignment1 }
```

1. Add Student
 2. Display Students
 3. Exit
- Enter your choice: