CHRIST
(DEEMED TO BE UNIVERSITY)
DELHI-NCR, INDIA

Java Programming

MCA-272

Lab Practical – 02

BY

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SUBMITTED TO

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Program 1 : --

1) Write a program to calculate the Division of a student, apply constructor overloading and method over overloading depending on the number of subject. (<50% Fail, 50 -60 % Pass, 60- 74% First Division, Above Distinction)

```java
// 1) Write a program to calculate the Division of a student, apply constructor overloading and method over overloading
// depending on the number of subject. (<50% Fail, 50 -60 % Pass, 60- 74% First Division, Above Distinction)

package Assignment;

class Student {
    private String name;
    private int[] marks;

    // Constructor for a single subject
    public Student(String name, int mark) {
        this.name = name;
        this.marks = new int[] { mark };
    }

    // Constructor for multiple subjects
    public Student(String name, int[] marks) {
        this.name = name;
        this.marks = marks;
    }

    public String calculateDivision() {
        int totalMarks = 0;
        for (int mark : marks) {
            totalMarks += mark;
        }
        double percentage = (double) totalMarks / marks.length;

        if (percentage < 50) {
            return "Fail";
        } else if (percentage < 60) {
            return "Pass";
        } else if (percentage < 75) {
            return "First Division";
        } else {
            return "Distinction";
        }
    }

    public String getName() {
```

```
        return name;
    }
}

// Example usage
public class StudentDivision {
    public static void main(String[] args) {
        Student student2 = new Student("Himanshu", new int[] { 70, 80, 90 });
        System.out.println(student2.getName() + " has " +
student2.calculateDivision() + ".");

        Student student1 = new Student("Anugraha", new int[] { 45, 55, 60 });
        System.out.println(student1.getName() + " has " +
student1.calculateDivision() + ".");

        Student student3 = new Student("Abhi", new int[] { 10, 40, 30 });
        System.out.println(student3.getName() + " has " +
student3.calculateDivision() + ".");
    }
}
```

OUTPUT : --

```
PS D:\2MCA\JAVA>  & 'C:\Program Files\Ecl
workspaceStorage\3ef78b49fe59a0dea0f4cc61
Himanshu has Distinction.
Anugraha has Pass.
Abhi has Fail.
PS D:\2MCA\JAVA>
```

Program 2 : --

2) Write a program to calculate the room rent of a restaurant depending on the number of stays.

```
package Assignment;

class Library {
    private String bookTitle;

    public Library(String bookTitle) {
        this.bookTitle = bookTitle;
    }

    public int calculateFine(int daysLate) {
        if (daysLate <= 15) {
            return 0; // No fine
        } else {
            return (daysLate - 15) * 2; // Rs 2 fine per day after 15 days
        }
    }

    public String getBookTitle() {
        return bookTitle;
    }
}

// Example usage
public class LibraryFine {
    public static void main(String[] args) {
        Library book1 = new Library("Python Programming");
        int fine1 = book1.calculateFine(10);
        System.out.println("Fine for '" + book1.getBookTitle() + "' returned 10 days
late: Rs " + fine1);

        Library book2 = new Library("Data Structures");
        int fine2 = book2.calculateFine(20);
        System.out.println("Fine for '" + book2.getBookTitle() + "' returned 20 days
late: Rs " + fine2);
    }
}
```

OUTPUT : --

```
PS D:\2MCA\JAVA>  & 'C:\Program Files\Eclipse Adoptium\jre-11.0.20.101-hotspo
workspaceStorage\3ef78b49fe59a0dea0f4cc6180955c7d\redhat.java\jdt_ws\JAVA_1e7
Fine for 'Python Programming' returned 10 days late: Rs 0
Fine for 'Data Structures' returned 20 days late: Rs 10
PS D:\2MCA\JAVA>
```

Program 3 : --

3) Write a program to calculate the fine of a library book if applicable, (less than or equal to 15 days - no find , more than 15 days, per day Rs 2 Fine.)

```java
package Assignment;

class Restaurant {
    private String roomType;

    public Restaurant(String roomType) {
        this.roomType = roomType;
    }

    public double calculateRent(int stays) {
        switch (roomType) {
            case "Standard":
                return stays * 1000; // Rent per stay in Standard room
            case "Deluxe":
                return stays * 1500; // Rent per stay in Deluxe room
            case "Suite":
                return stays * 2000; // Rent per stay in Suite room
            default:
                return 0;
        }
    }
}

// Example usage
public class RoomRent {
    public static void main(String[] args) {
        Restaurant room1 = new Restaurant("Standard");
        System.out.println("Total rent for 3 stays in Standard room: Rs " +
room1.calculateRent(3));

        Restaurant room2 = new Restaurant("Suite");
```

```
        System.out.println("Total rent for 2 stays in Suite room: Rs " +
room2.calculateRent(2));
    }
}
```

OUTPUT : --

```
PS D:\2MCA\JAVA>  & 'C:\Program Files\Eclipse Adoptium\jre-11
workspaceStorage\3ef78b49fe59a0dea0f4cc6180955c7d\redhat.java
Total rent for 3 stays in Standard room: Rs 3000.0
Total rent for 2 stays in Suite room: Rs 4000.0
PS D:\2MCA\JAVA>
```