

Assignment-3

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B.Tech CSE A&M U

Section-B

```
import java.util.*;
```

```
class InvalidMarksException extends Exception {
    public InvalidMarksException (String msg) {
        super(msg);
    }
}
```

```
class Student {
```

```
    long rollNumber; // Change to long
```

```
    String studentName;
```

```
    int marks[] = new int[3];
```

```
    Student (long r, String n, int m[]) {
```

```
        rollNumber = r;
```

```
        studentName = n;
```

```
        marks = m;
```

```
    }
```

```
    void validateMarks() throws InvalidMarksException {
```

```
        for (int i=0; i<3; i++) {
```

```
            if (marks[i] < 0 || marks[i] > 100)
```

```
                throw new
```

```
                InvalidMarksException ("Invalid marks" + marks[i]);
```

```
        }
```

```
    }
```

Teacher's Sign

double CalculateAverage() {
 return (marks[0] + marks[1] + marks[2] / 3.0);
}

void displayResult() {
 System.out.println("Roll:" + rollNumber);
 System.out.println("Name:" + studentName);
 System.out.println("Marks:" + marks[0] + " " + marks[1] +
 " " + marks[2]);
 double avg = CalculateAverage();
 System.out.println("Average" + avg);
 System.out.println("Result:" + avg >= 40 ? "Pass":
 "Fail");
}

public class ResultManager {
 Student students[] = new Student[50];
 int count = 0;
 Scanner sc = new Scanner(System.in);

void addStudent() {

try {

System.out.print("Roll NO");
 long r = sc.nextLong();
 sc.nextLine();

System.out.print("Name:");
 String n = sc.nextLine();

```

int m[] = new int[3];
for (int i = 0; i < 3; i++) {
    System.out.println("Maver" + (i+1) + ":");
    m[i] = sc.nextInt();
}

```

4

```

Student s = new Student(r, n, m);
s.validateMarks();
students[count++] = s;
System.out.println("Student Added");

```

```

} catch (InvalidMarksException e) {

```

```

    System.out.println(e.getMessage());

```

```

} catch (InputMismatchException e) {

```

```

    System.out.println("Invalid input!");
    sc.nextLine();

```

```

} finally {

```

```

    System.out.println("Add Student Completed\n");
}

```

4

```

void showStudentDetails(SC sc) {

```

```

    try {

```

```

        System.out.print("Enter Roll No: ");

```

```

        long r = sc.nextLong();

```

```

        for (int i = 0; i < count; i++) {

```

```

            if (students[i].rollNumber == r) {

```

```

                students[i].displayResults();

```

```

            }

```

```

        }

```

4

```
System.out.println (" Student not found");
```

```
} catch (Exception e) {
```

```
    System.out.println ("Error!");
```

```
} finally {
```

```
    System.out.println ("Search Completed.");
```

```
}
```

```
public static void main() {
```

```
    int ch = 0;
```

```
    try {
```

```
        do {
```

```
            System.out.println ("1. Add Student | 2. Show Student | 3. Exit");
```

```
            System.out.println ("Enter choice: ");
```

```
            ch = ch.nextInt();
```

```
            if (ch == 1) addStudent();
```

```
            else if (ch == 2) showStudentDetails();
```

```
            else if (ch == 3) System.out.println ("Exit");
```

```
        } while (ch != 3);
```

```
    } finally {
```

```
        sc.close();
```

```
        System.out.println ("Program closed.");
```

```
    }
```

```
}
```

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

```
    new ResultManager().mainMenu();
```

```
}
```