Assignment - 3

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```
import java.util.*;

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

class Student {
  int rollNumber;
  String studentName;
  int[] marks;

  Student (int rollNumber, String StudentName,
  int[] marks ) {
    this.rollNumber = roll Number;
    this.studentName = studentName;
    this.marks = marks;
  }
  void validateMarks () throws
 InvalidMarksException {
     for (int m: marks) {
       if (m<0 || m>100) {
         throw new
 InvalidMarks
```

```
InvalidMarksException("Marks must be
between 0 to 100");
        }
    }
}

double calculateAverage(){
    int sum = 0;
    for(int m: marks) sum += m;
    return sum/3.0;
    }

void displayResult(){
    System.out.println("Roll Number" + rollNumber);
    System.out.println("Name: " + StudentName)
    System.out.println("Marks: " + Array.toString(mark
    double avg = calculateAverage();
    System.out.println("Average:" + avg);

    boolean pass = true;
    for(int m: marks){
        if(m<35) pass = false;
    }
    System.out.println("Result" + (pass? "pass" fa
}

public class Main {

    Student[] students = new Student[100];
    int count = 0;
    Scanner sc = new Scanner(System.in);
```

```
void addStudent () {
 try {
    System.out.println ("Enter Roll Number : "),
    int roll = sc.nextInt();
    sc.nextLine ();

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

    int[] marks = new int[3];
    System.out.println ("Enter 3 subject marks : ");
    for (int i=0; i<3; i++) {
    marks[i] = sc.nextInt ();
   }
   Student s = new Student (roll, name, marks);
   S.validateMarks ();

   Students [count++] = S;
   System.out.println ("Student Added Successfully ");

 } catch (InvalidMarksException e) {
      System.out.println("Error : " + e.getMessage ());
 } catch (InputMismatchException e ){
      System.out.println ("Invalid input type");
      sc.nextLine ();
      }
 }

  void showStudentDetails() {
      System.out.print ("Enter Roll Number : "),
      int roll = sc.nextInt ();
```

```
for (int i=0 ; i<count ; i++){
    if (student[i].rollNumber == roll){
        student[i].displayResult();
        return;
    }
}
System.out.println("Student not found");
}

void mainMenu(){
    while(true){
        System.out.println("1. Add Student");
        system.out.println("2. Show student Details");
        System.out.println("3. Exit");
        System.out.println("Enter choice : ");

        int ch;
        try{
            ch = sc.nextInt();
        } catch (InputMismatchException e){
            System.out.println("Invalid choice!");
            sc.nextLine();
            continue;
        }
        if (ch==1) addStudent();
        else if (ch==2) showStudentDetails();
        else if (ch==3) break;
        else System.out.println("Invalid choice");
    }
    System.out.println("Closing the program...");
    sc.close();
}
```

```
public static void main (String [] args) {
    Main m = new Main ();
    m . mainMenu ();
  }
}
```