Assignment - 3

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```
import java.util.Scanner;
Class Student2 {
    int rollNumber;
   String StudentName
int[] marks = new int[3];
void validateMarks() throws InvalidMarksException{
    for(int i = 0; i < marks.length; i++){
      if(marks[i] < 0 || marks[i] > 100){
        throw new InvalidMarksException();
      }
    }
}
double calculateAverage(){
    int sum = 0;
    for(int i = 0; i < marks.length; i++){
        sum += marks.length;
    }
void displayResult(){
    System.out.println("Name:" + StudentName);
    System.out.println("Roll Number:" + rollNumber);
    System.out.println("Marks:");
    for(int m : marks){
      System.out.println(m);
    }
    double avg = calculateAverage();
    System.out.println("Average:" + avg);
    if(avg >= 33){
        System.out.println("Result Status: Pass");
    }
    else{
      System.out.println("Result Status: Fail");
    }
}
}
```

```
class InvalidMarksException extends Exception{
    InvalidMarksException(){
        System.out.println("Marks cannot be negative");
    }
}

class ResultManager{
    int[] marks = new int[3];
    int count = 0;
    Scanner sc = new Scanner(System.in);
    Student2 [] students = new Student2 [100];
    void addStudent(){
        try{
        System.out.println("Enter Student Name");
        String name = sc.nextLine();
        sc.nextline();
        System.out.println("Enter Roll Number");
        int roll = sc.nextInt();
        System.out.println("Enter marks: ");
        for(int i = 0; i<marks.length; i++){
            marks[i] = sc.nextInt();
    }
Student2 obj = new Student2();
    obj.rollNumber = roll;
    obj.StudentName = name;
    obj.marks = marks;
    obj.validateMarks();
    Student[count++] = obj;
    System.out.println("Student added successfully!");
}
catch(InvalidMarksException e){
    System.out.println("Error: Invalid marks Entered");
}
catch(NullPointerException e){
    System.out.println("Marks cannot be empty");
}
```

```
void showStudentDetails(){
    System.out.print("Enter Roll Number to search: ");
    int roll = sc.nextInt();
    boolean found = false;
    for(int i=0; i<count; i++){
        if(students[i].rollNumber == roll){
            students[i].displayResult();
            found = true;
            break;
        }
    }
    if(!found){
        System.out.println("Student not found");
    }
}

void mainMenu(){
    while(true){
        System.out.println("====Student Result Management System====");
        System.out.println(" 1. Add Student");
        System.out.println(" 2. Show Student Details");
        System.out.println(" 3. Exit ");
        System.out.println("Enter your choice");
        int n = sc.nextInt();
        if(n==1){
            addStudent();
        }
        if(n==2){
            showStudentDetails();
        }
        if(n==3){
            System.out.println("Exiting Program. Thank You");
            break;
        }
    }
}
```

```
class Assign{
    public static void main(String[] args){
        ResultManager obj1 = new ResultManager();
            obj1.mainMenu()
    }
}
```