

Mo Tu We Th Fr Sa Su

Memo No. _____

Date: / /

```
import java.util.*;  
class InvalidMarksException extends Exception {  
    InvalidMarksException (String msg) { super (msg); }  
}
```

```
class Student {  
    int roll;  
    String name;  
    int [] marks;
```

```
Student (int roll, String name, int [] marks) {  
    this.roll = roll;  
    this.name = name;  
    this.marks = marks;
```

}

```
void validateMarks () throws InvalidMarksException {  
    for (int m : marks)  
        if (m < 0 || m > 100)
```

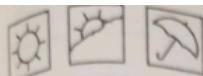
throw new InvalidMarksException ("Marks must be 0-100");

}

```
double avg () {
```

```
    int sum = 0;
```

```
    for (int m : marks) sum += m;
```



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return sum/3.0;

void display () {

System.out.println("Name: " + name);

System.out.println("Roll: " + roll);

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

System.out.println("Subject" + (i + 1) + ":" + marks[i]);

double a = avg();

System.out.println("Average: " + a);

System.out.println(a >= 40 ? "PASS": "FAIL");

}

}

class ResultManager {

Scanner in = new Scanner(System.in);

Student[] list = new Student[100];

int count = 0;

void addStudent() {

try {

System.out.print("Roll: ");

int r = in.nextInt(); in.nextLine();

```
System.out.println("Name:");  
String n = in.nextLine();
```

```
int[] m = new int[3];  
for(int i = 0; i < 3; i++) {  
    System.out.print("Marks" + (i+1) + ":");  
    m[i] = in.nextInt();  
}
```

}

```
Student s = new Student(r, n, m);  
s.validateMarks();
```

```
list[count++] = s;
```

```
System.out.println("Added successfully!\n");
```

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

```
System.out.println("Error: " + e.getMessage());
```

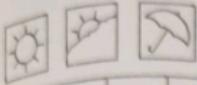
}

}

```
void showStudent() {
```

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

```
int r = in.nextInt();
```



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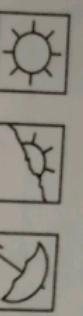
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```
for (int i = 0; i < count; i++) {
    if (list[i].roll == r) {
        list[i].display();
        return;
    }
}
```

```
System.out.println("Student Not Found!");
```

```
void menu() {
    int ch;
    do {
        System.out.println("\n1. Add Student\n2. Show
                           Student\n3. Exit");
        System.out.print("choice:");
        ch = in.nextInt();
        switch (ch) {
            case 1 -> addStudent();
            case 2 -> showStudent();
            case 3 -> system.out.println("Exited!");
            default -> System.out.println("Invalid!");
        }
    }
}
```



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} while (ch != 3);

}

```
public static void main (string [ ] args) {  
    new ResultManager (). menu ();
```

}

}