

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY SPECIALIZING IN
ENTERPRISE APPLICATIONS DEVELOPMENT
SLIIT METROPOLITAN CAMPUS
BOC MERCHANT TOWER, No #28, ST MICHAEL'S ROAD,
COLOMBO 03, SRI LANKA

Enterprise Software Analysis & Design

SE5060: EXERCISE 8

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ANSWER

Github - <https://github.com/pradeep-sanjaya/ead-esad-exercise8>

Classes

TestChainOfResponsibility.java

```
package com.sliit;

import java.util.Scanner;

public class TestChainOfResponsibility {
    public static void main(String[] args) {
        BestGradeHandler bestGradeHandler = new BestGradeHandler();
        MeritGradeHandler meritGradeHandler = new MeritGradeHandler();
        AverageGradeHandler averageGradeHandler = new AverageGradeHandler();
        FailGradeHandler failGradeHandler = new FailGradeHandler();

        bestGradeHandler.setSuccessor(meritGradeHandler);
        meritGradeHandler.setSuccessor(averageGradeHandler);
        averageGradeHandler.setSuccessor(failGradeHandler);

        Scanner scanner = new Scanner(System.in);
        while (true) {
            System.out.print("\nEnter marks for grade = ");
            int marks = scanner.nextInt();
            bestGradeHandler.processRequest(new GradeRequest(marks));
        }
    }
}
```

GradeRequest.java

```
package com.sliit;

public class GradeRequest {

    private int marks;

    public GradeRequest(int marks) {
        this.marks = marks;
    }

    public int getMarks() {
        return marks;
    }
}
```

```

    public void setMarks(int marks) {
        this.marks = marks;
    }
}

```

GradeHandler.java

```

package com.sliit;

public abstract class GradeHandler {

    protected GradeHandler successor;

    public GradeHandler getSuccessor() {
        return successor;
    }

    public void setSuccessor(GradeHandler successor) {
        this.successor = successor;
    }

    public abstract void processRequest(GradeRequest gradeRequest);
}

```

BestGradeHandler.java

```

package com.sliit;

public class BestGradeHandler extends GradeHandler {
    @Override
    public void processRequest(GradeRequest gradeRequest) {
        if (gradeRequest.getMarks() >= 80 &&
            gradeRequest.getMarks() <= 100) {
            System.out.println("Your_grade_is_A_for_marks_" +
                               gradeRequest.getMarks());
        }

        if (getSuccessor() != null) {
            getSuccessor().processRequest(gradeRequest);
        }
    }
}

```

MeritGradeHandler.java

```

package com.sliit;

public class MeritGradeHandler extends GradeHandler {
    @Override
    public void processRequest(GradeRequest gradeRequest) {

```

```

        if (gradeRequest.getMarks() >= 60 &&
            gradeRequest.getMarks() < 80) {
            System.out.println("Your_grade_is_B_for_marks_" +
                               gradeRequest.getMarks());
        }

        if (getSuccessor() != null) {
            getSuccessor().processRequest(gradeRequest);
        }
    }
}

```

AverageGradeHandler.java

```

package com.sliit;

public class AverageGradeHandler extends GradeHandler {
    @Override
    public void processRequest(GradeRequest gradeRequest) {
        if (gradeRequest.getMarks() >= 40 &&
            gradeRequest.getMarks() < 60) {
            System.out.println("Your_grade_is_C_for_marks_" +
                               gradeRequest.getMarks());
        }

        if (getSuccessor() != null) {
            getSuccessor().processRequest(gradeRequest);
        }
    }
}

```

FailGradeHandler.java

```

package com.sliit;

public class FailGradeHandler extends GradeHandler {
    @Override
    public void processRequest(GradeRequest gradeRequest) {
        if (gradeRequest.getMarks() < 40) {
            System.out.println("You_fail_the_module_for_marks_" +
                               gradeRequest.getMarks());
        }
    }
}

```

Screenshots

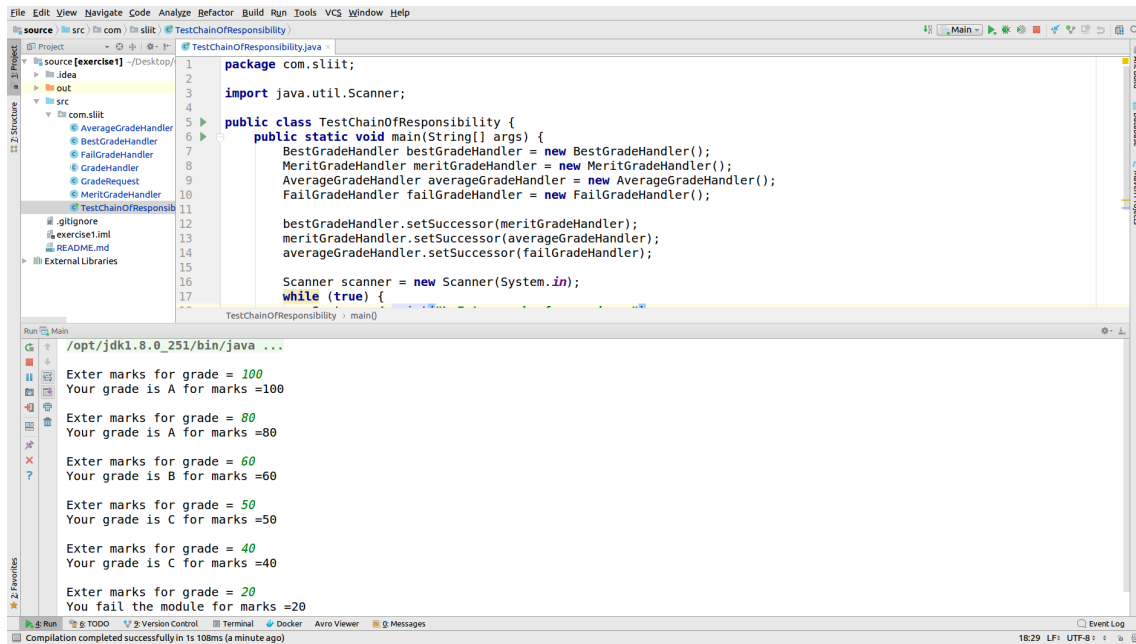


Figure 0.1: Solution

REFERENCES

- [1] Samarathunge, U. (2020) Lecture - 03 GOF Design Patterns Part I
- [2] Samarathunge, U. (2020) Lecture - 03 GOF Design Patterns Part II-v2
- [3] Samarathunge, U. (2020) Lecture - 03 GOF Design Patterns Part II With Answers