Object Oriented Analysis and Design using Java

Assignment-2 UE19CS353

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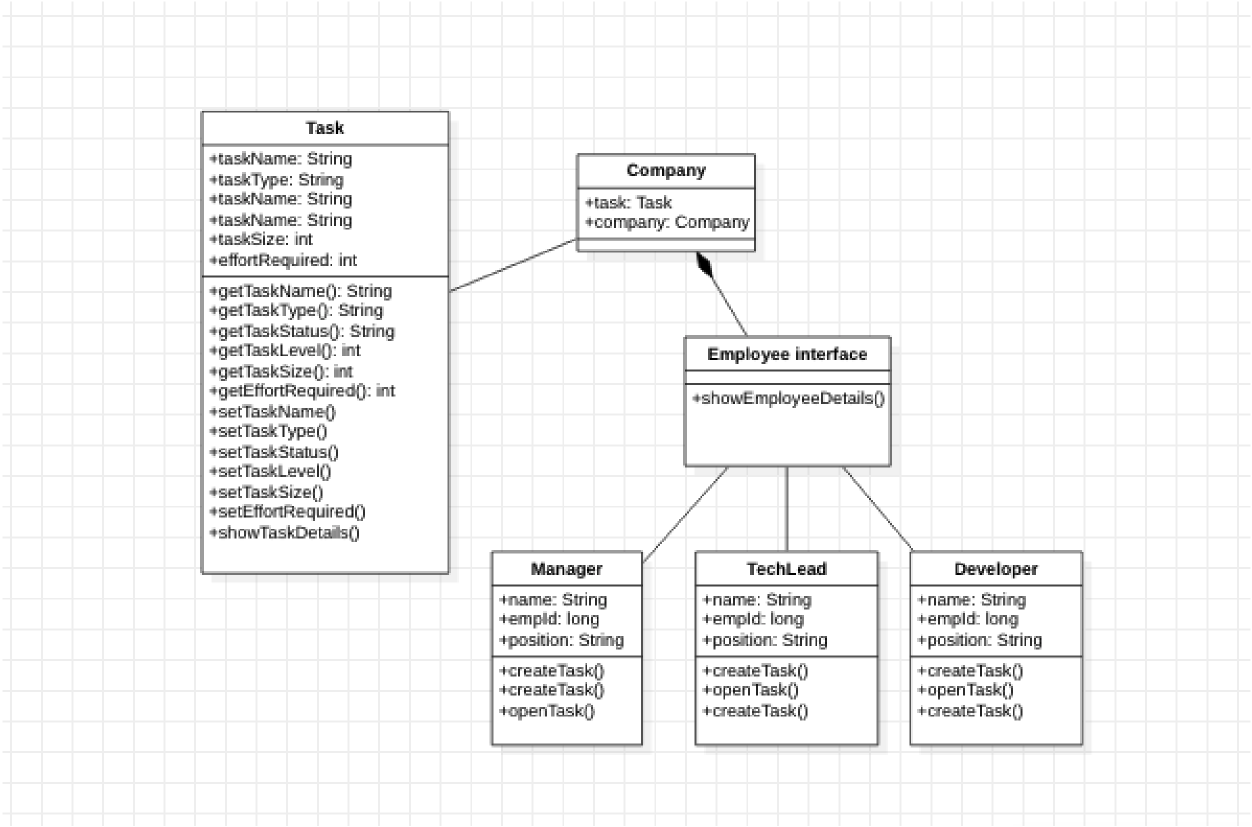
Section A

Class Diagram



Code:

Employee.java

```
package myInterface;

public interface Employee {

    public void showEmployeeDetails();

}
```

Task.Java

```
import myInterface.Employee;

import javax.lang.model.util.ElementScanner14;

class Task {

    private String taskName;

    private String taskType;

    private String taskStatus;

    private int taskLevel;

    private int taskSize;

    private int effortRequired;

public Task(String taskName, String taskType, String taskStatus, int taskLevel, int taskSize, int effortRequired) {

        this.taskName = taskName;

        this.taskType = taskType;

        this.taskStatus = taskStatus;

        this.taskLevel = taskLevel;
    this.taskSize = taskSize;

    this.effortRequired = effortRequired;

}

public String getTaskName() {

    return taskName;

}

public void setTaskName(String taskName) {

    this.taskName = taskName;

}

public String getTaskType() {

    return taskType;

}

public void setTaskType(String taskType) {

    this.taskType = taskType;

}

public String getTaskStatus() {

    return taskStatus;

}

public void setTaskStatus(String taskStatus) {

    this.taskStatus = taskStatus;
```

```
}
public int getTaskLevel() {
    return taskLevel;
}
public void setTaskLevel(int taskLevel) {
    this.taskLevel = taskLevel;
}
public int getTaskSize() {
    return taskSize;
}
public void setTaskSize(int taskSize) {
    this.taskSize = taskSize;
}
public int getEffortRequired() {
    return effortRequired;
}
public void setEffortRequired(int effortRequired) {
    this.effortRequired = effortRequired;
}
public void showTaskDetails() {
        System.out.println("Task Name: " + taskName);
        System.out.println("Task Type: " + taskType);
        System.out.println("Task Status: " + taskStatus);
        System.out.println("Task Level: " + taskLevel);
        System.out.println("Task Size: " + taskSize);
        System.out.println("Effort Required: " + effortRequired);
    }
}
```

Manager.java

```
import myInterface.Employee;
class Manager implements Employee {
    private String name;
    private long empId;
    private String position;
    public Manager(long empId, String name, String position) {
        this.empId = empId;
        this.name = name;
        this.position = position;
    }
    @Override
    public void showEmployeeDetails() {
        System.out.println(empId + " " + name + " " + position);
    }
    public void createTask(Task task) {
        System.out.println("Manager created the task");
    }
    public void openTask(Task task) {
        System.out.println("Manager opened the task");
    }
    public void executeTask(Task task) {
        System.out.println("Manager executed the task");
    }
}
```

TechLead.java

```
import myInterface.Employee;
class TechLead implements Employee {
    private String name;
    private long empId;
    private String position;
    public TechLead(long empId, String name, String position) {
        this.empId = empId;
        this.name = name;
        this.position = position;
    }
    @Override
    public void showEmployeeDetails() {
        System.out.println(empId + " " + name + " " + position);
    }
    public void createTask(Task task) {
        System.out.println("TechLead created the task");
    }
    public void openTask(Task task) {
        System.out.println("TechLead opened the task");
    }
    public void executeTask(Task task) {
        System.out.println("TechLead executed the task");
    }
}
```

Developer.java

```
}

import myInterface.Employee;
class Developer implements Employee {
    private String name;
    private long empId;
    private String position;
    public Developer(long empId, String name, String position) {
        this.empId = empId;
        this.name = name;
        this.position = position;
    }
    @Override
    public void showEmployeeDetails() {
        System.out.println(empId + " " + name + " " + position);
    }
    public void createTask(Task task) {
        System.out.println("Developer created the task");
    }
    public void openTask(Task task) {
        System.out.println("Developer opened the task");
    }
    public void executeTask(Task task) {
        System.out.println("Developer executed the task");
    }
}
```

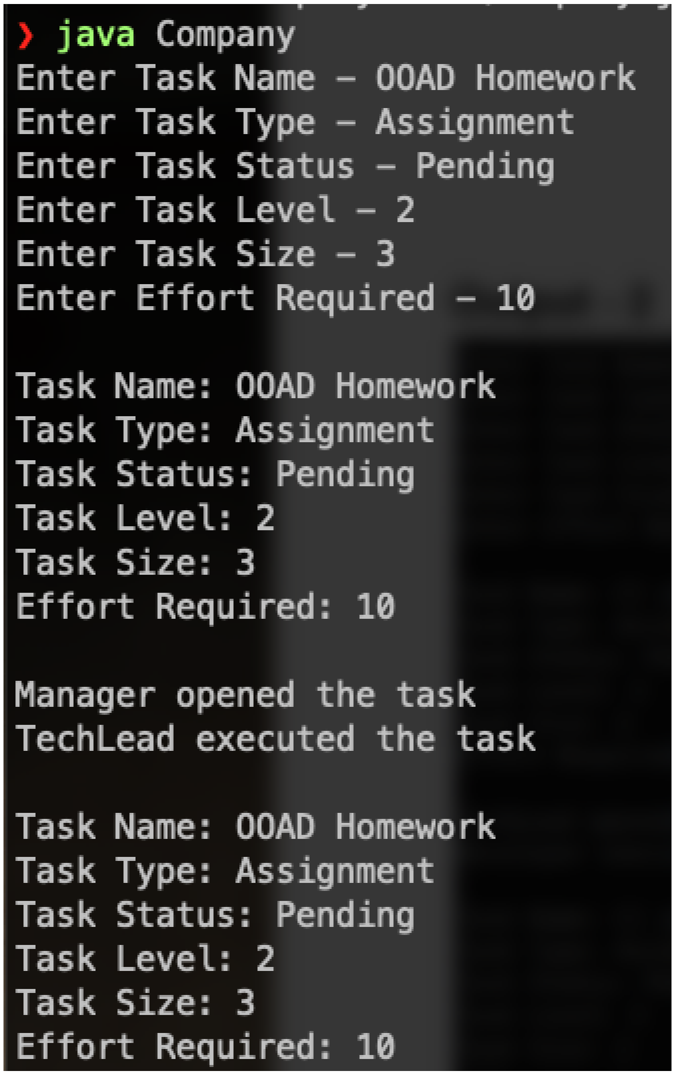
Company.java

```
import java.util.*;
class Company {
    private Manager manager;
    private TechLead techLead;
    private Developer developer;

    public Company(Manager manager, TechLead techLead, Developer developer) {
        this.manager = manager;
        this.techLead = techLead;
        this.developer = developer;
    }

    public void executeTask(Task task) {
        System.out.println();
        if(task.getTaskLevel()==1)
        {

            techLead.openTask(task);
            developer.executeTask(task);
        }
        else if(task.getTaskLevel()==2)
        {
            manager.openTask(task);
            techLead.executeTask(task);
        }
        else{
            manager.openTask(task);
            manager.executeTask(task);
        }
        System.out.println();
        task.showTaskDetails();
    }

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

```
Scanner sc=new Scanner(System.in);
String taskName,taskType,taskStatus;
int taskLevel,taskSize,effortRequired;
System.out.print("Enter Task Name - ");
taskName = sc.nextLine();
System.out.print("Enter Task Type - ");
taskType = sc.nextLine();
System.out.print("Enter Task Status - ");
taskStatus = sc.nextLine();
System.out.print("Enter Task Level - ");
taskLevel = sc.nextInt();
System.out.print("Enter Task Size - ");
taskSize = sc.nextInt();
System.out.print("Enter Effort Required - ");
effortRequired = sc.nextInt();
System.out.println();
Manager manager = new Manager(1, "Narendiran", "Manager");
TechLead techLead = new TechLead(2, "Robert", "TechLead");
Developer developer = new Developer(3, "Aniket", "Developer");
Company company = new Company(manager, techLead, developer);
```

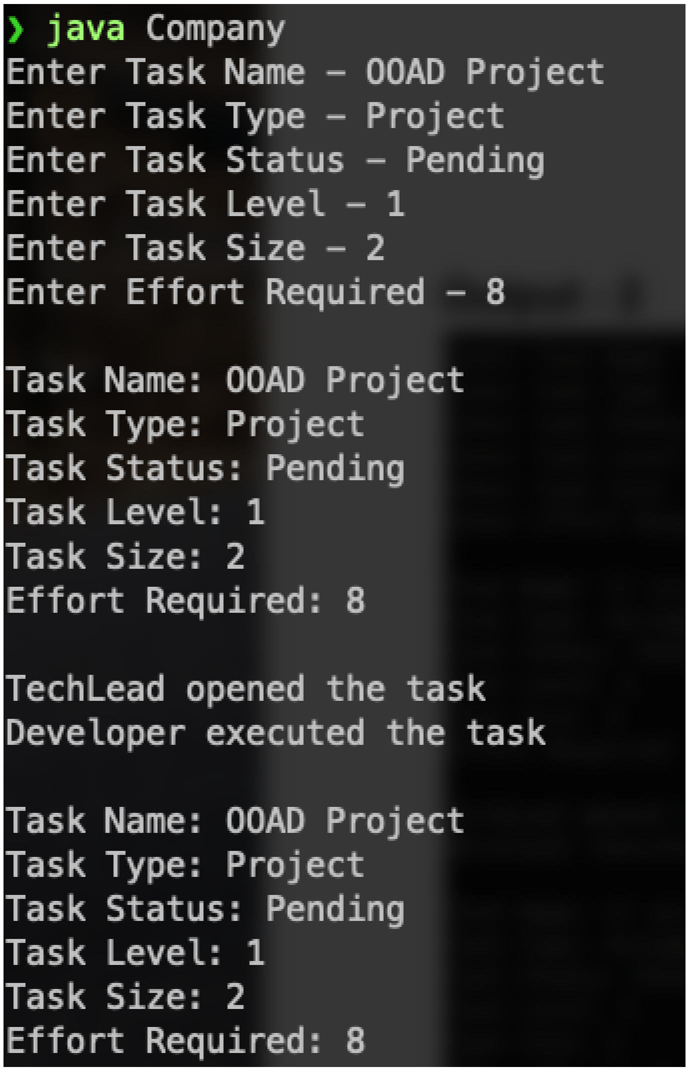
```
        Task task = new Task(taskName, taskType, taskStatus, taskLevel, taskSize, effortRequired);

        task.showTaskDetails();

        company.executeTask(task);

    }

}
```

Output 1



```
❯ java Company
Enter Task Name - OOAD Homework
Enter Task Type - Assignment
Enter Task Status - Pending
Enter Task Level - 2
Enter Task Size - 3
Enter Effort Required - 10

Task Name: OOAD Homework
Task Type: Assignment
Task Status: Pending
Task Level: 2
Task Size: 3
Effort Required: 10

Manager opened the task
TechLead executed the task

Task Name: OOAD Homework
Task Type: Assignment
Task Status: Pending
Task Level: 2
Task Size: 3
Effort Required: 10
```

Output 2



```
❯ java Company
Enter Task Name – OOAD Project
Enter Task Type – Project
Enter Task Status – Pending
Enter Task Level – 1
Enter Task Size – 2
Enter Effort Required – 8

Task Name: OOAD Project
Task Type: Project
Task Status: Pending
Task Level: 1
Task Size: 2
Effort Required: 8

TechLead opened the task
Developer executed the task

Task Name: OOAD Project
Task Type: Project
Task Status: Pending
Task Level: 1
Task Size: 2
Effort Required: 8
```