

Object Oriented Analysis and Design using Java (UE20CS352)

Lab Assignment-9&10: Design Patterns

A Company's Leave Management System has the following features. An Employee (client) can apply for Casual Leave (CL), Sick Leave (SL) and Vacation Leave (VL). The roles in the hierarchy who are responsible for approving or rejecting the leave using the process specified are Director, Project Manager and Tech Lead. The Leave request contains the following details: empName, leaveStatus, approvedBy, requestDate and approvalDate. A CL and SL are for only one day. A VL will have a startDate and endDate. A CL will also need a reason to be specified. The Leave created by the client is assigned a "New" status. If the leave is SL, then it will be processed by Tech Lead, if it is CL, it will be processed by the Project Manager, and if it is VL, will be processed by the Director. The Leave when created is sent to Tech Lead for processing, if it is not SL, the Tech Lead will just pass the request to the next higher level. Similarly, Project Manager will process a CL request or forward the VL request to the next higher level. Once the request is processed, a message should be displayed on the console showing request details and approval details.

Represent the design (using appropriate design patterns) in a UML Class Diagram and implement the same.

Note: Design the application in such a way that extensibility is easy. It should be easy to add new types of Employee and new types of Leave.

Submission:

Prepare a PDF document with the following:

1. Problem statement
2. Design patterns considered
3. Design patterns used
4. UML Class Model
5. Code
6. Input and Output Screenshots for all types of leaves