



# **PES UNIVERSITY**

(Established under Karnataka Act No. 16 of 2013)

## **Object Oriented Analysis and Design using Java (UE18CS353)**

### **Mini Project**

As part of the course, students are expected to do a mini project. This course focuses on designing an application using Object Oriented Approach and implementing it using Java.

#### **Different stages:**

- 1: Team formation and Title Finalization
- 2: Design -1 (Use Case and Class Diagram)
- 3: Design -2 (Activity Diagram and State Diagram)
- 4: Project Implementation

#### **1: Team formation and Title Finalization:**

The project will be done by a group of 3 students (3 and no more or no less). One or two teams in a class may be an exception, based on class strength. These teams will need prior approval of the class teacher. Teams must be among students belonging to the same section.

- Team has to identify an application case study for implementation
- Prepare a synopsis to enlist all the features of the chosen application to get title approval.
- After the approval, prepare a detailed document consisting of requirements/features planned to be implemented for the chosen project.
- Complete description of the features to be included in the project should be documented in a paragraph each.

#### **2: Design -1 (Use Case Diagram, Class Diagram)**

##### **Use case Diagram:**

- Identify all the usecases along with the associated actors of the usecase. Identify the relationship that exist between the usecases (include/extend/generalisation).
- Represent all the usecases identified using use case diagram along with its relationship with appropriate UML notations of use case diagram.

##### **Class Diagram:**

- 1: Identify the classes and design the class diagram with appropriate UML notations. For each class, specify the attributes and methods (complete signature) to be included.
- 2: Represent the relationship (association/composition/inheritance) between the classes.

### **3: Design -2 (Activity Diagram, State Diagram)**

#### **Activity Diagram:**

1: For use cases specified need to write an activity diagram to show all set of activities of a use case using appropriate UML notations.

2: Each student in a team has to choose one use case from the list of use cases specified and prepare activity diagram for the same.

#### **State Diagram:**

Identify all the classes with temporal behavior and formulate the state diagram.(At Least two state diagrams)

### **4: Project Implementation:**

- All the use cases specified in the use case diagram have to be implemented
- The implementation should be done using any JAVA technologies.
- Each student should choose a use case and implement
- The implemented use cases should be merged into a single application.

#### **Note:**

- 1: There should be equal participation of each student in a team.
- 2: Equally distribute the design and implementation load of the project among the team members.
- 3: The data related to the project should be persisted in any database of your choice

#### **Complexity of the project:**

Few aspects to be considered while choosing the project:

1: A typical team size of 3 members would be required to implement at least 3 major features/use cases and 3 minor features/use cases (1 of each type per team member)

#### **Evaluation Policy:**

- 1: Presentation of the project will be in a team.
- 2: Each student will be evaluated individually.

#### **Marks Distribution:**

Analysis and Design Models	2 marks
Use of Architecture Pattern	2 marks
Use of Design Pattern (atleast 1)	2 marks
Presentation/ Demo/ Explaining the code	4 marks
Total	10 marks