9. A college has more than thousand security persons, who are instructed to give duties at different places within the campus. Additionally, they also maintain a routine, which contains all information, such as Date, Duty Start Time, Duty End Time, and Place. Most importantly, all the places are covered by at least one security person. If a security person takes leave, manual entry is done against that person. Finally, at the end of a month, the security persons get paid for their duties, while considering the number of leaves as well. You can see that the manual calculation/operation is a heavy task for the security manager. Therefore, the objective is to build an Online security management system using class diagram through which entire security system within the campus can be controlled in an efficient manner
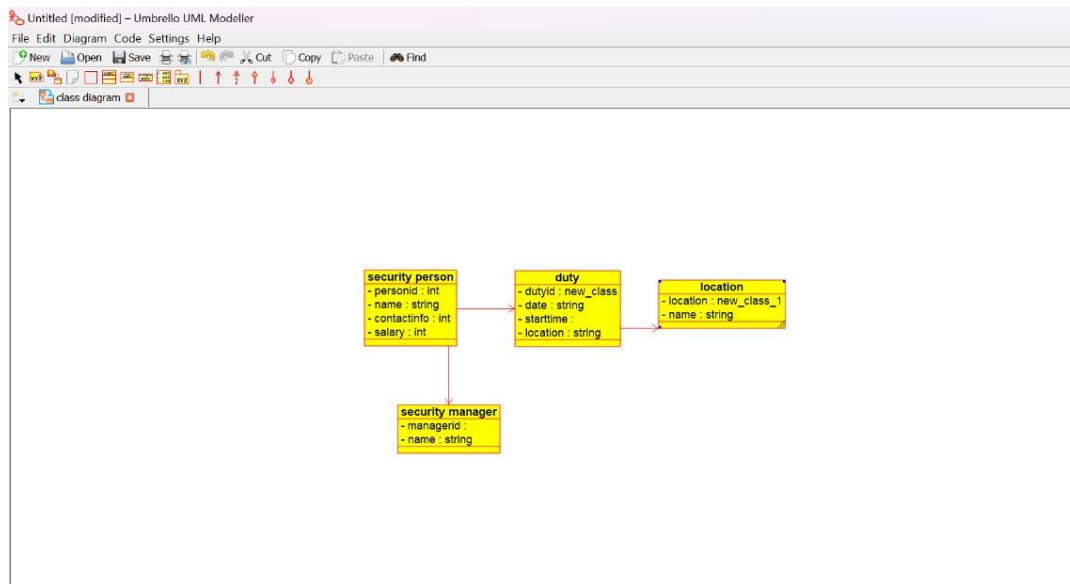
Aim:

To design an Online Security Management System using UML diagrams, which will efficiently manage security personnel, their duties, leave records, and salary calculations, reducing manual workload and increasing efficiency.
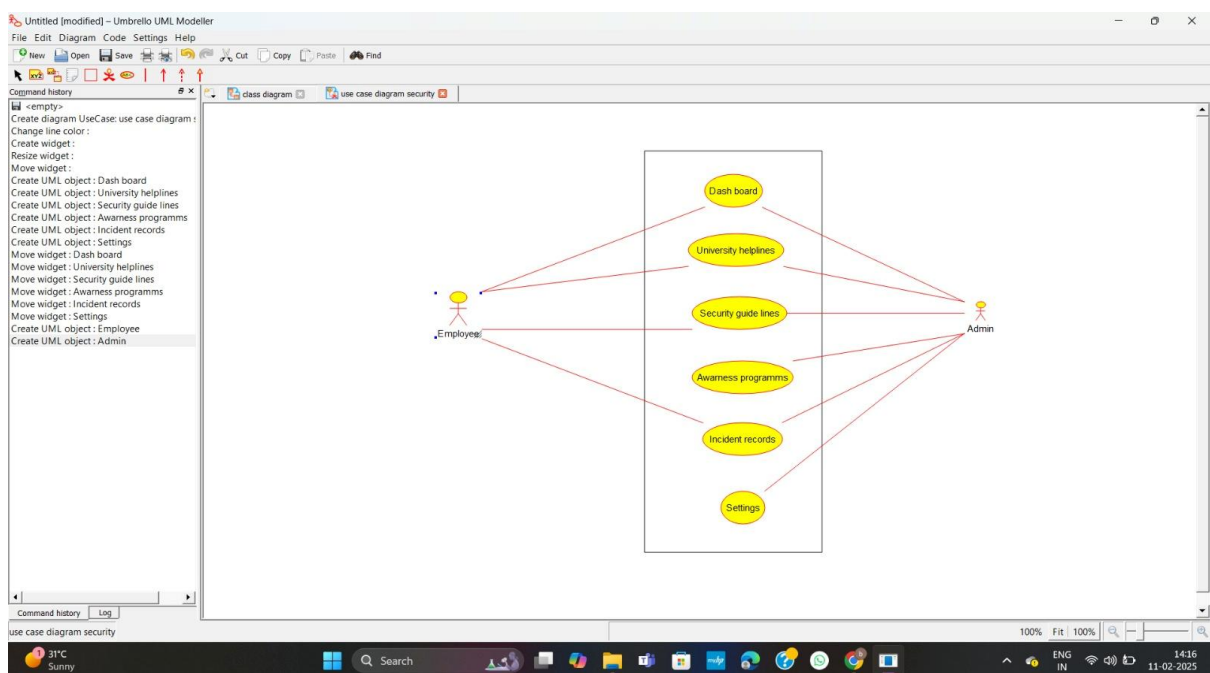
Procedure for UML Diagrams in a Single Point

1. Identify Components & Actors – Define key system components like Security Personnel, Security Manager, and Admin.

2. Create a Use Case Diagram – Show interactions between actors and system functionalities.

3. Design a Class Diagram – Define system classes (e.g., SecurityPerson, DutySchedule) with attributes and relationships.

4. Develop a Sequence Diagram – Represent the flow of interactions for assigning duties, leave approval, and salary calculation.

5. Create an Activity Diagram – Illustrate workflows like duty scheduling and salary processing.

6. Draw a State Diagram – Show state transitions (e.g., SecurityPerson: Available → On Duty → On Leave).

7. Validate & Refine UML Diagrams – Ensure correctness, remove inconsistencies, and optimize for efficiency.

Class Diagram :

Use case Diagram

Result:

A well-structured Online Security Management System UML model that streamlines security personnel management, automates duty assignments, tracks leave records, and simplifies salary processing, reducing manual effort and increasing accuracy.