EXPERIMENT.NO: 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.

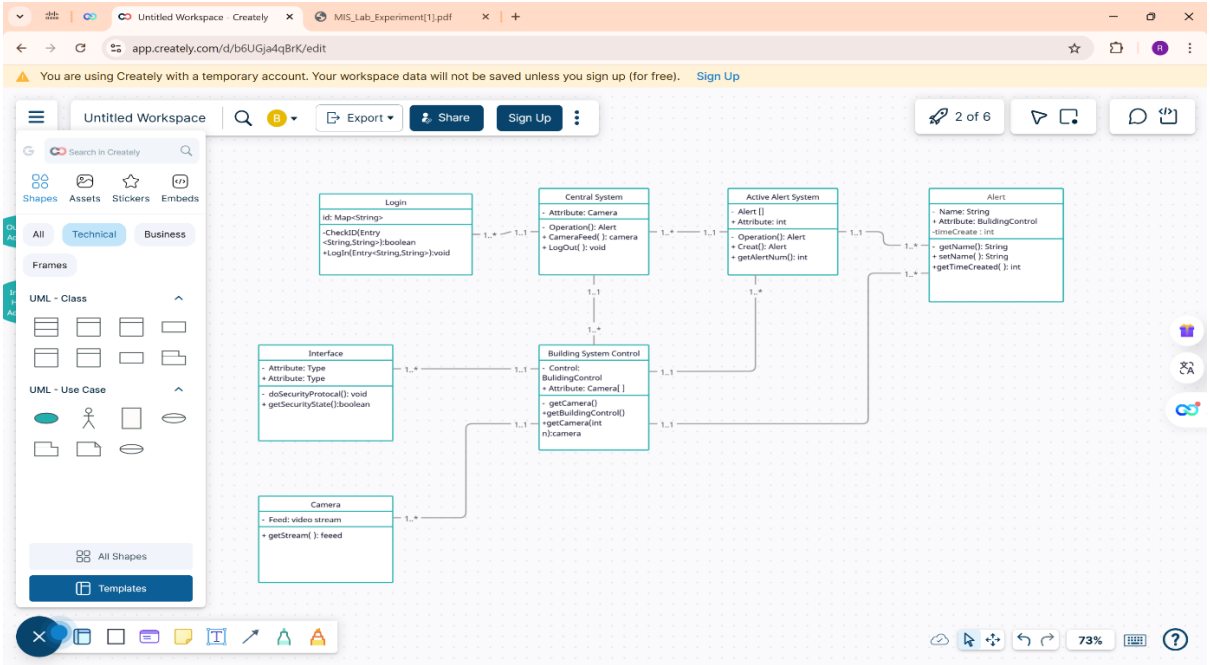
Aim:

To design a class diagram for an Online Security Management System that automates the scheduling, duty tracking, leave management, and payroll calculation for security personnel in a college campus.

Procedure:

1. Identify the main entities: **SecurityPerson**, **DutySchedule**, **LeaveRecord**, **Payroll**, and **SecurityManager**.
2. Define attributes and methods for each class (e.g., SecurityPerson: name, ID; DutySchedule: date, startTime, endTime, place).
3. Establish relationships: SecurityPerson is assigned to DutySchedule, LeaveRecord tracks absences, and Payroll calculates salary based on duties and leaves.
4. Validate the flow: SecurityPerson is assigned duties → Leaves are recorded → Payroll is calculated at month-end.
5. Ensure the system automates manual tasks like duty allocation, leave tracking, and salary calculation.

Output:



Result:

Above is the **class diagram** for the Online Security Management System, designed to automate scheduling, duty tracking, leave management, and payroll calculation for security personnel in a college.