



YEDİTEPE UNIVERSITY FACULTY OF ENGINEERING

**ISE 402 - CSE 344
INTERDISCIPLINARY PROJECT
TASK MANAGER SYSTEM**

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1. Introduction

This document aims to provide detailed information on the structure of Task Management software. It encompasses various components, including the frontend (mobile application), database, and their interactions. Using relevant diagrams and detailed descriptions, the document provides a clear understanding of the software's architecture. By providing a holistic and detailed look at the design and function of the system, the aim is to improve collaboration between stakeholders involved in the development, maintenance and use of Task Management software. Additionally, this document facilitates the coding process during the software implementation phase by utilizing reusable diagrams and serves as a guiding resource.

1.1 Purpose Of The Document

The system streamlines task management and fosters collaboration, ensuring fairness and boosting productivity in business environments. With real-time progress tracking and a points-based ranking system, it incentivizes excellence and motivates employees. Additionally, the recommendation feature provides personalized development opportunities, enhancing individual and team performance. Overall, it transforms corporate operations, creating a more efficient and engaging work environment while maximizing employee potential.

1.2.1 The New System

The system offers users a wide feature set with the following capabilities:

- **Monthly point calculation and ranking:** Using our algorithm that calculates task points based on task difficulty, time to complete, and cooperation, it provides monthly calculations by adding up the task points made by an employee that month. Likewise, these points become visible to users on the leaderboard with the monthly ranking system. In this way, a feature that encourages users to work has been added.
- **Helping feature:** The system, which includes a feature (help button) that allows users to ask for help on tasks and provide assistance, adds a new feature that encourages

information exchange between employees and increases learning from each other within the company.

- **Employee monitoring:** CTO keeps track of all employees, department managers, all employees in the department, what jobs they did, what jobs they completed, how long it took them to finish, the employee's score, the employee with the highest score, etc. can follow. They can easily observe. There are such things in this system. These are done with algorithms and designs implemented in the background.
- **Smart reminders and feedback:** Employees receive deadline reminders, automatic monthly feedback based on their scores, etc. They see things through notifications automatically generated by the system. Automatic feedback has added a new feature that facilitates the work of superiors and informs employees.
- **Take tasks freely:** With open pools, employees can manage their own workload and can take tasks from the pool to do on their own accordingly. Productivity and motivation is enhanced. It is also a feature that may encourage users to get a job and improve themselves in a field they know little about.
- **Different features and UI's for employees:** The system contains different screens and features for CTO, department manager and staff, and the application is actually personalized for everyone. This adds a feature that improves the user experience, allows everyone to focus on their tasks, and protects information security.

1.3 Structure Of The Document

This software design report is structured to provide a detailed understanding of the software architecture of the Task Manager application. For easy navigation and accessibility, the document begins with a cover page and table of contents.

Other sections show diagrams depicting various aspects of software architecture. Detailed explanations are added to these diagrams to facilitate a clear understanding of the system structure. These diagrams make it easy to understand and explain key components such as the mobile application (front end), the database, and the interaction between these elements.

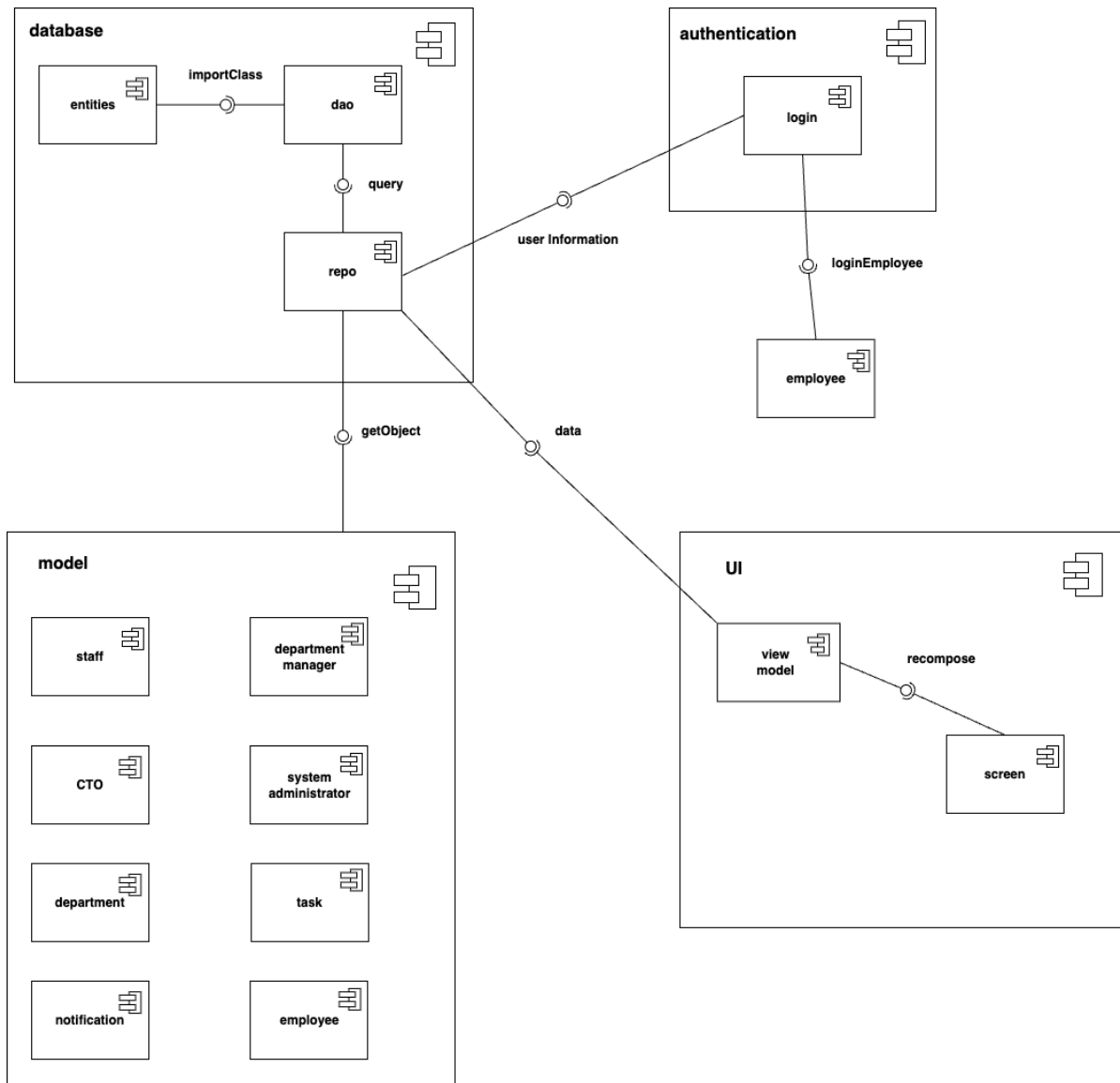
After the diagram presentations, the document ends with the glossary and references page. The glossary provides brief definitions of key terms and abbreviations used throughout the report. The References page lists sources of information consulted during the document preparation process.

This software design report aims to facilitate effective understanding and navigation for stakeholders involved in the development, maintenance and use of the Task Manager application.

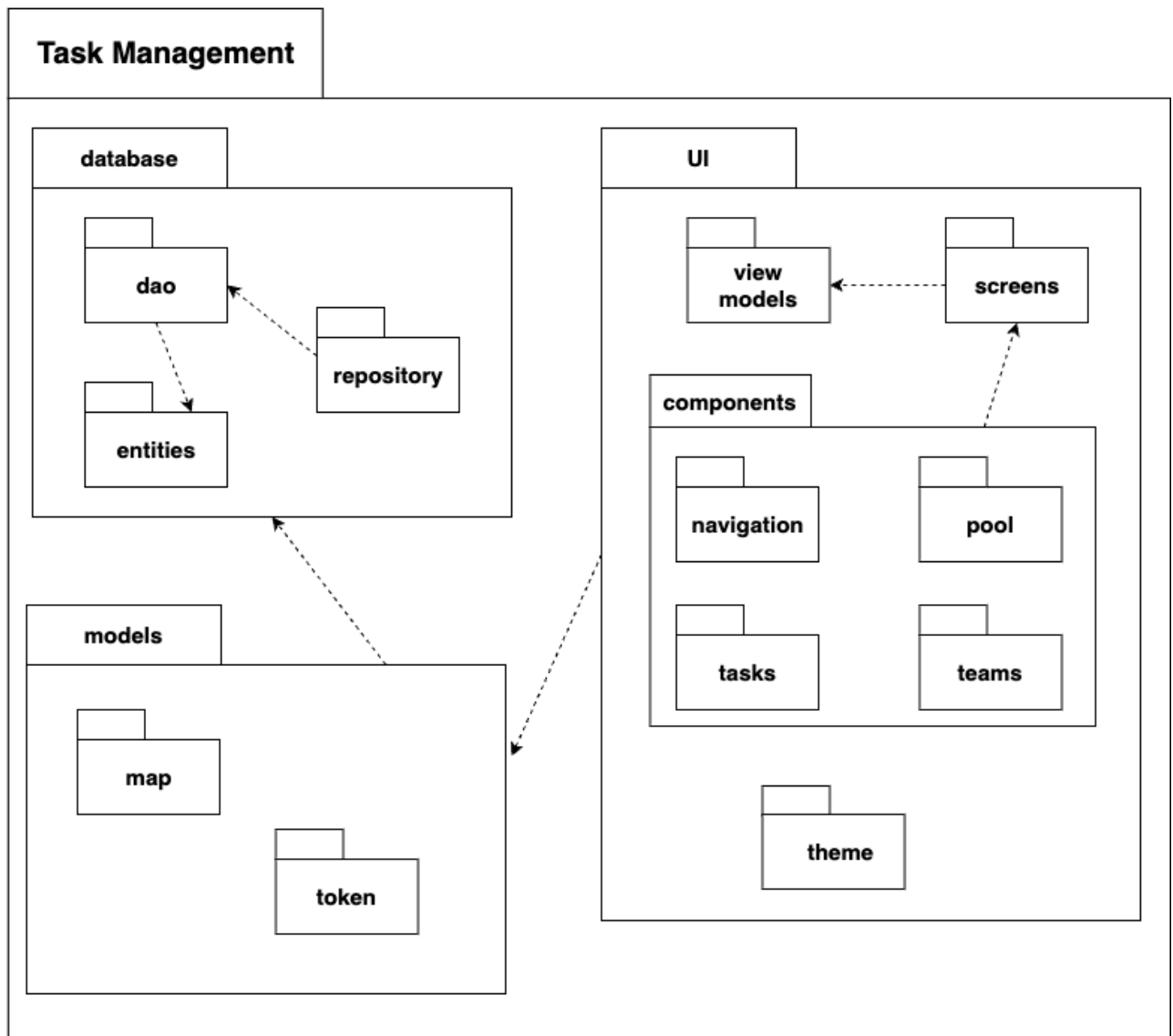
Diagrams, explanations are a valuable resource for understanding software architecture and effective communication among team members.

2. Systems Architecture Models

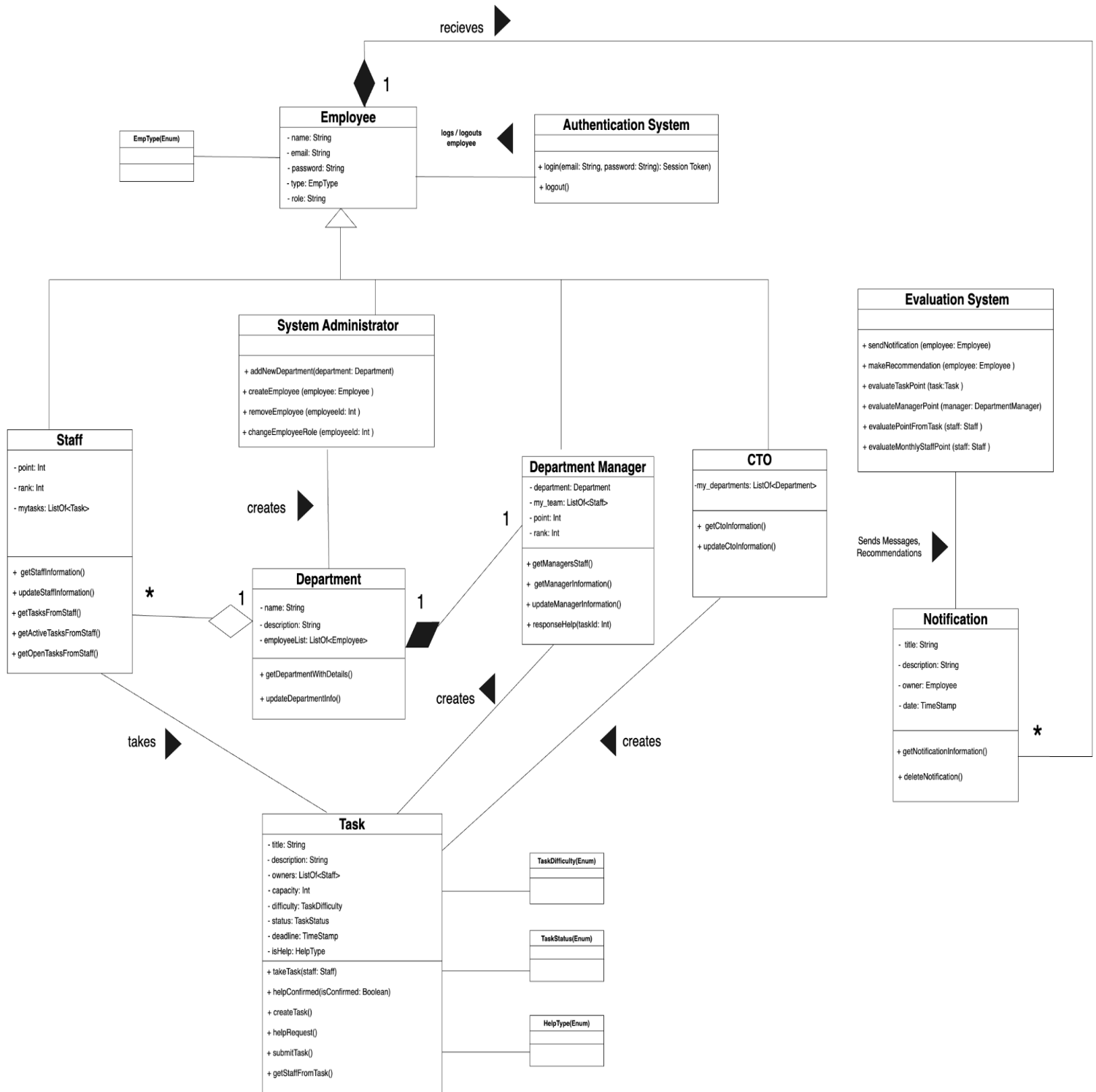
2.1 UML Component Diagram



2.2 UML Package Diagram



Detailed Class Diagram



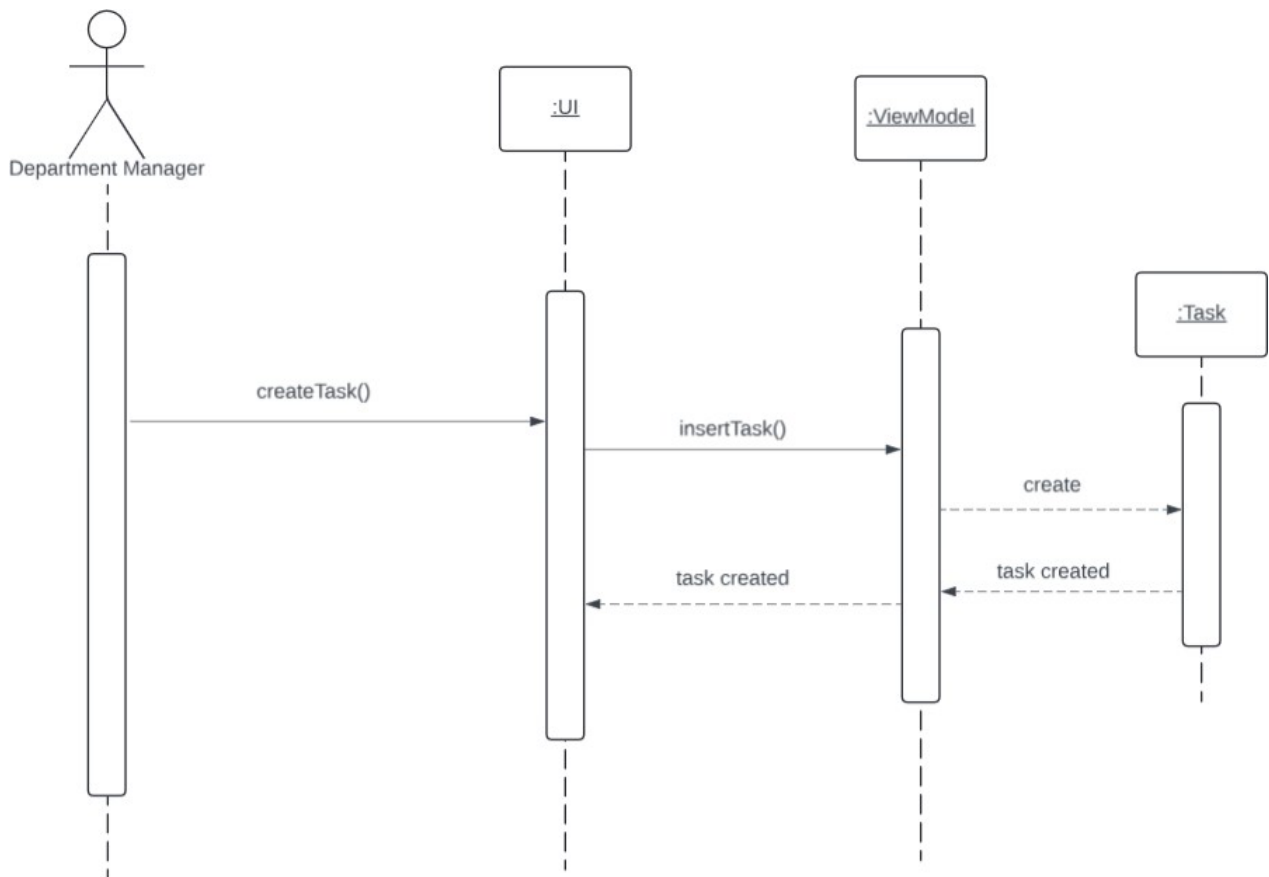
UI Class Model Diagram



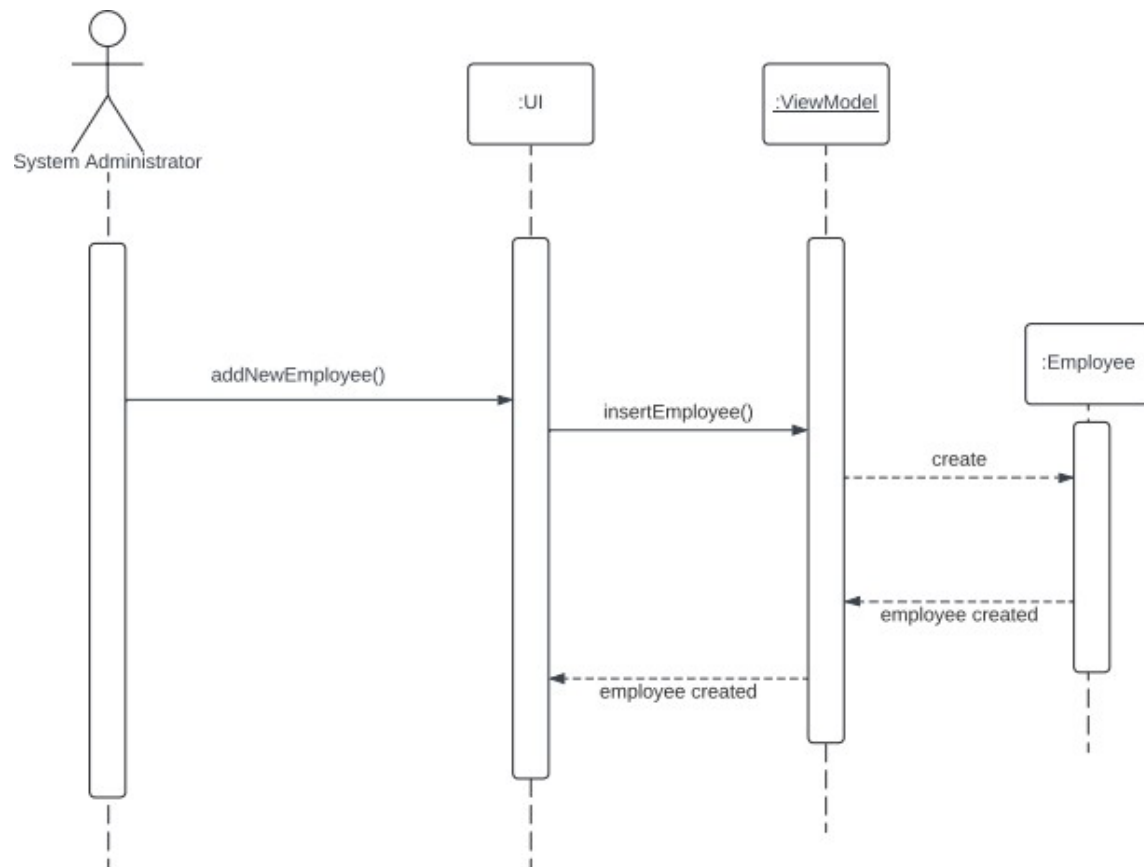
4. Dynamic Models

4.1 Sequence Diagrams:

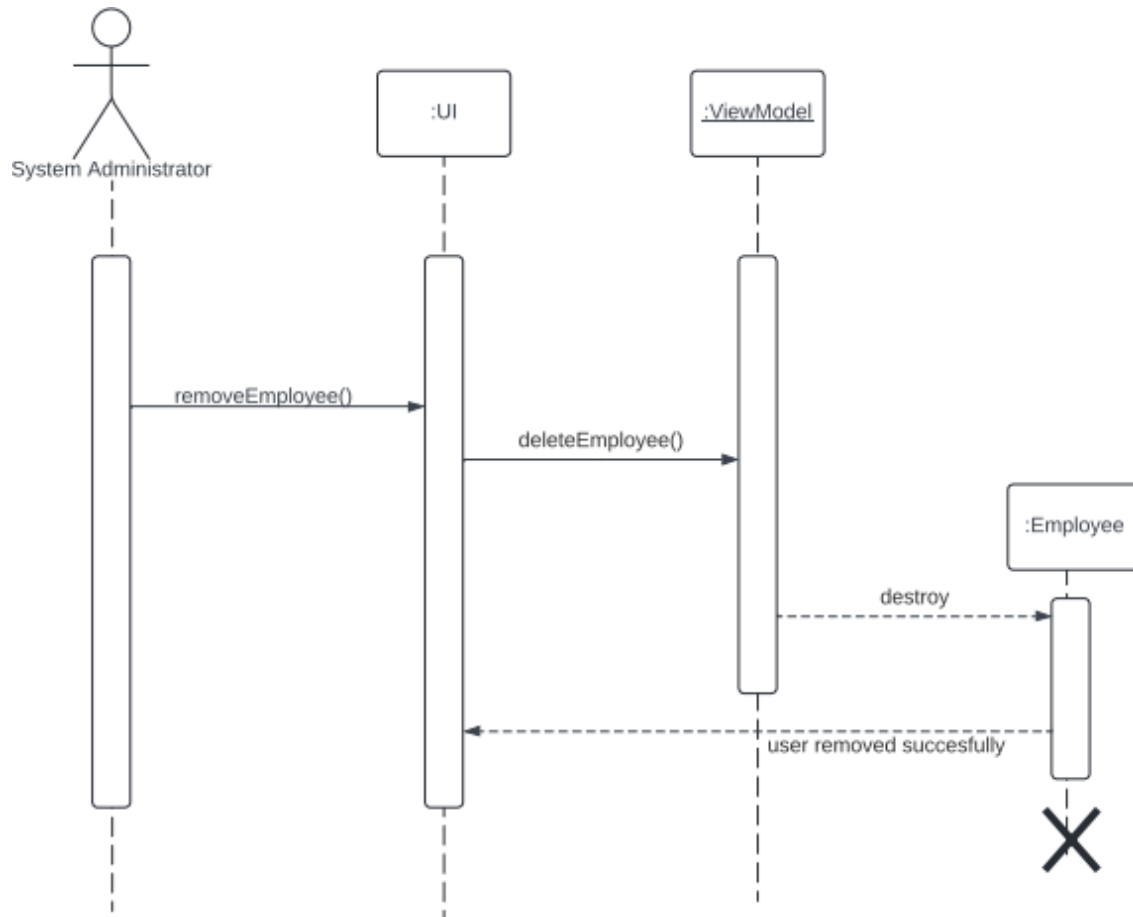
1) Create Task Sequence Diagram



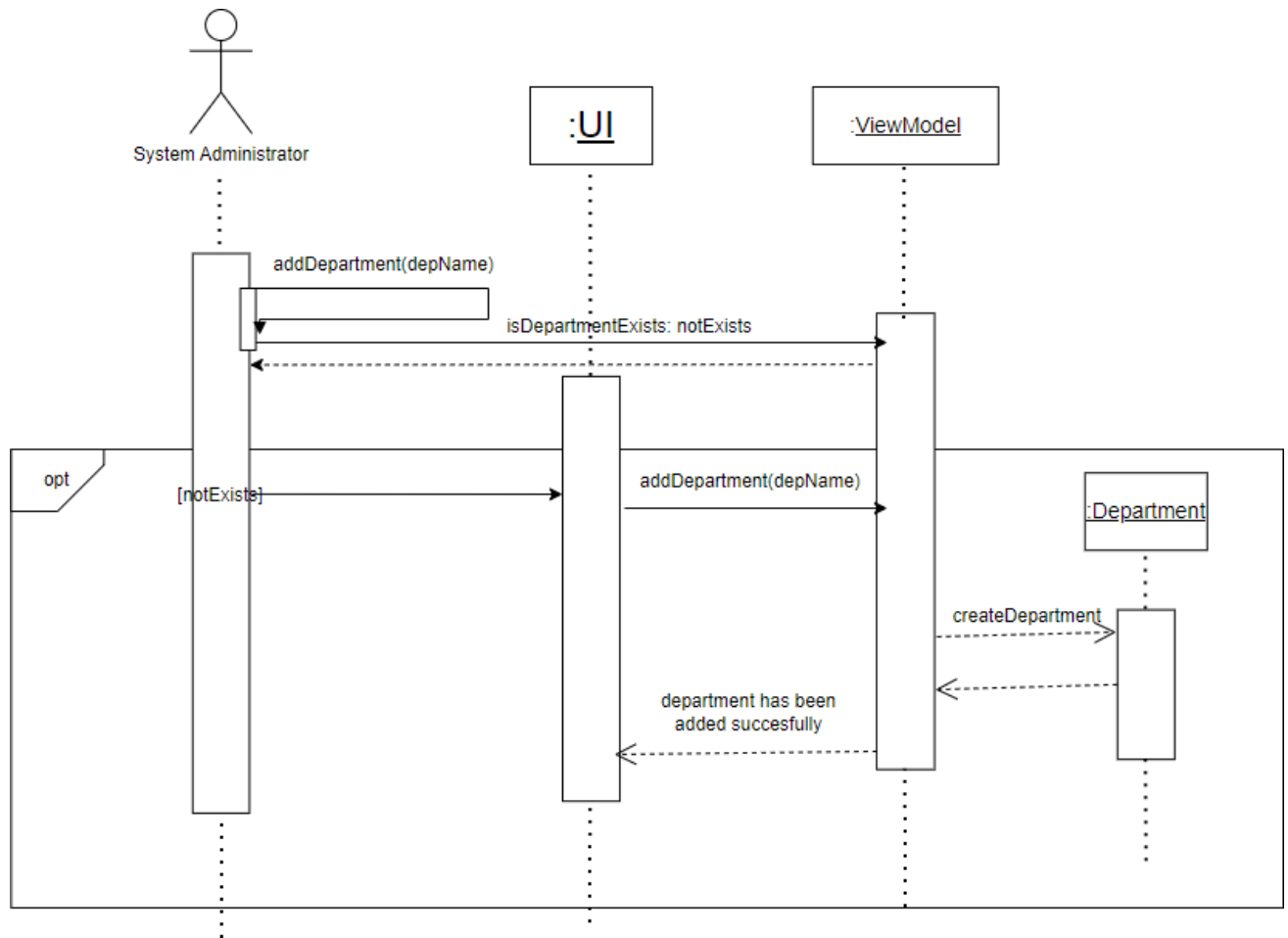
2) Create Employee Sequence Diagram



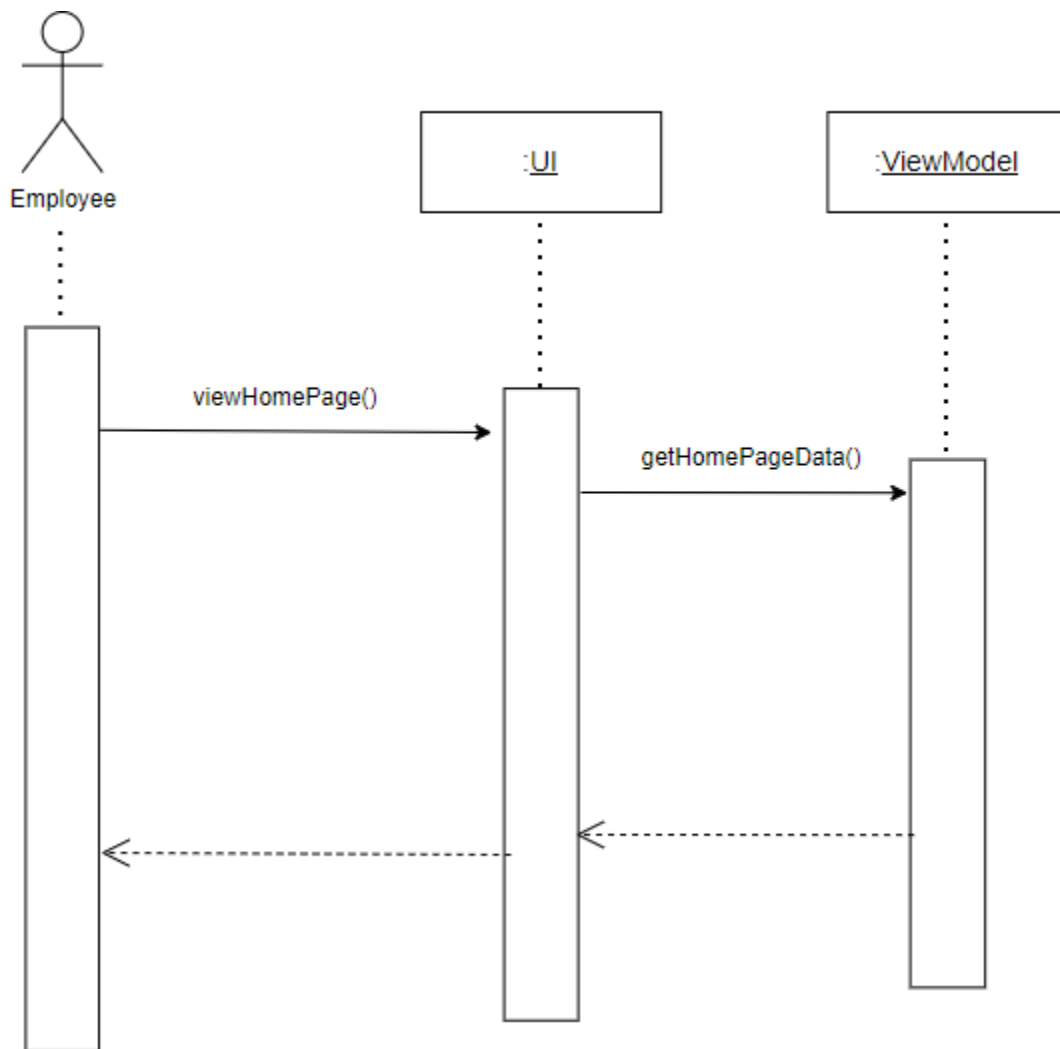
3) Remove Employee Sequence Diagram



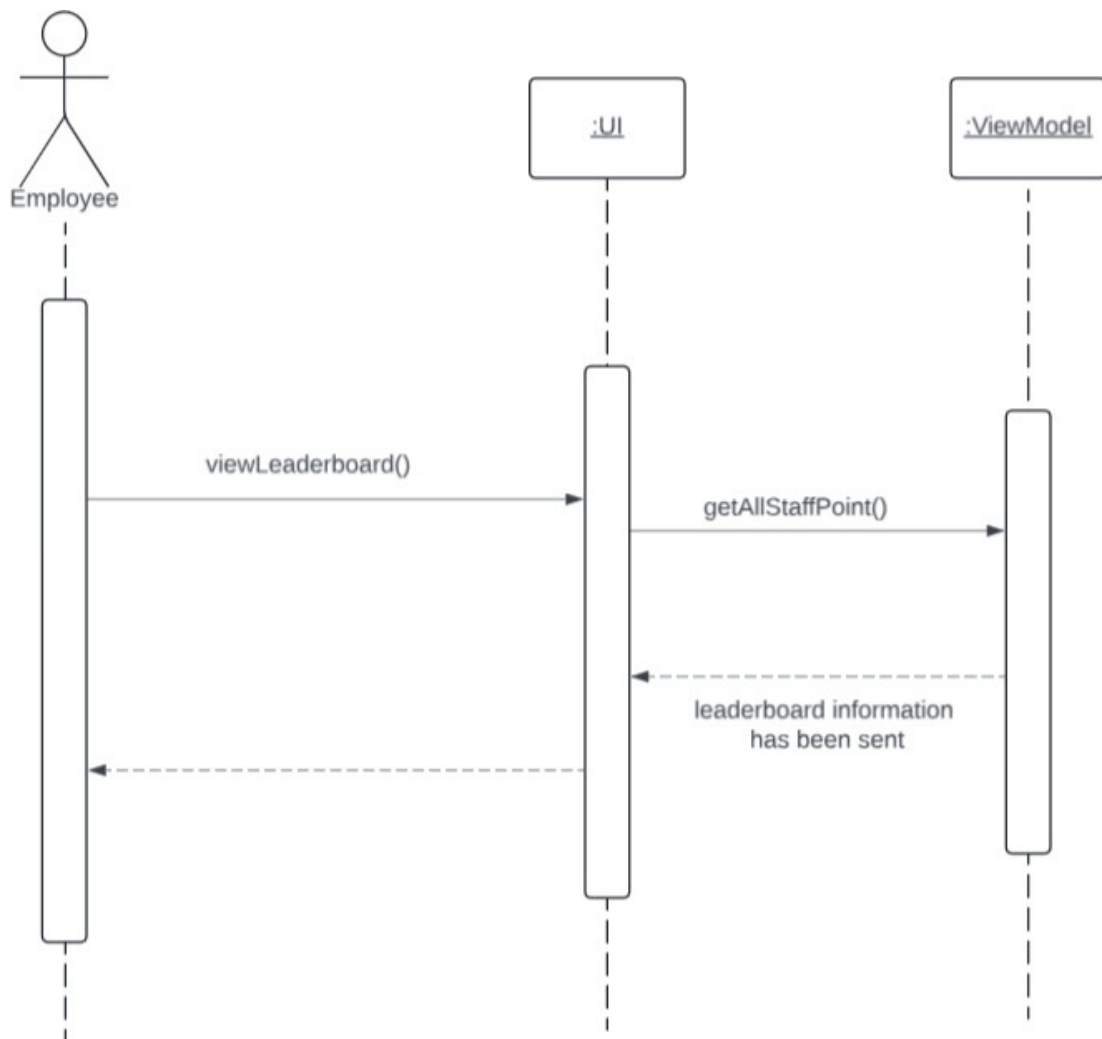
4) Add Department Sequence Diagram



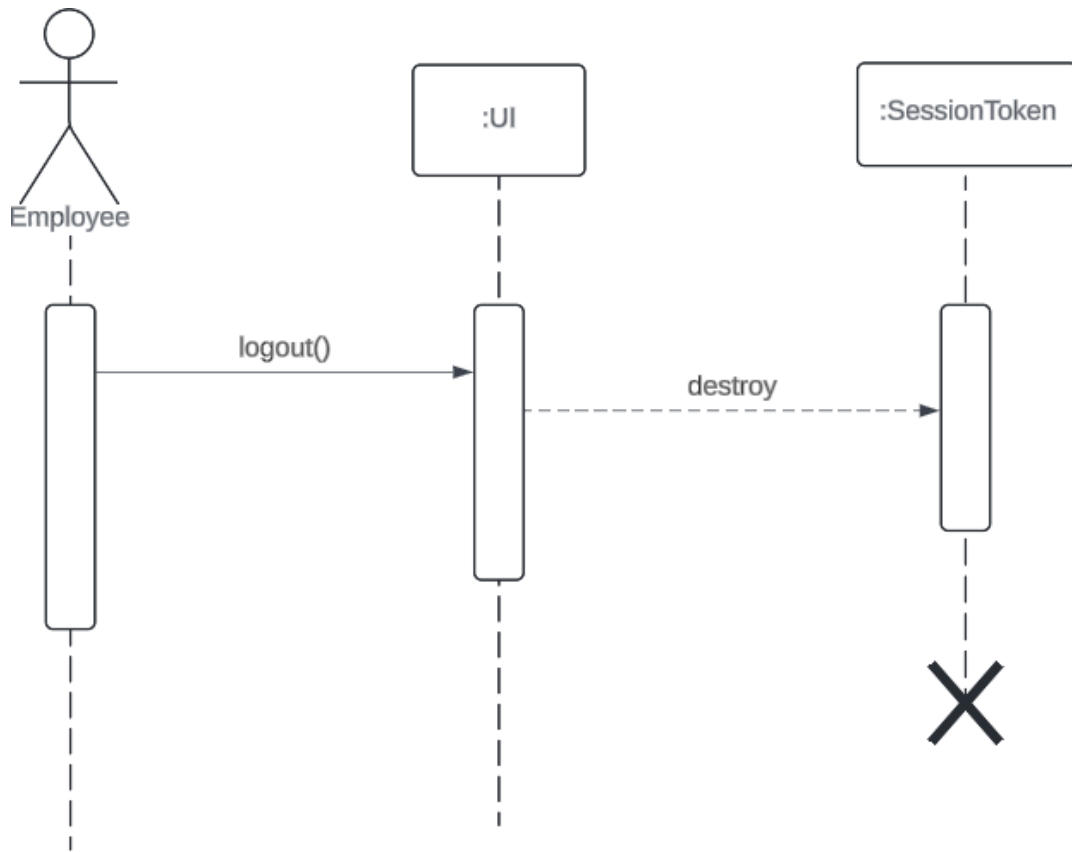
5) View HomePage Sequence Diagram



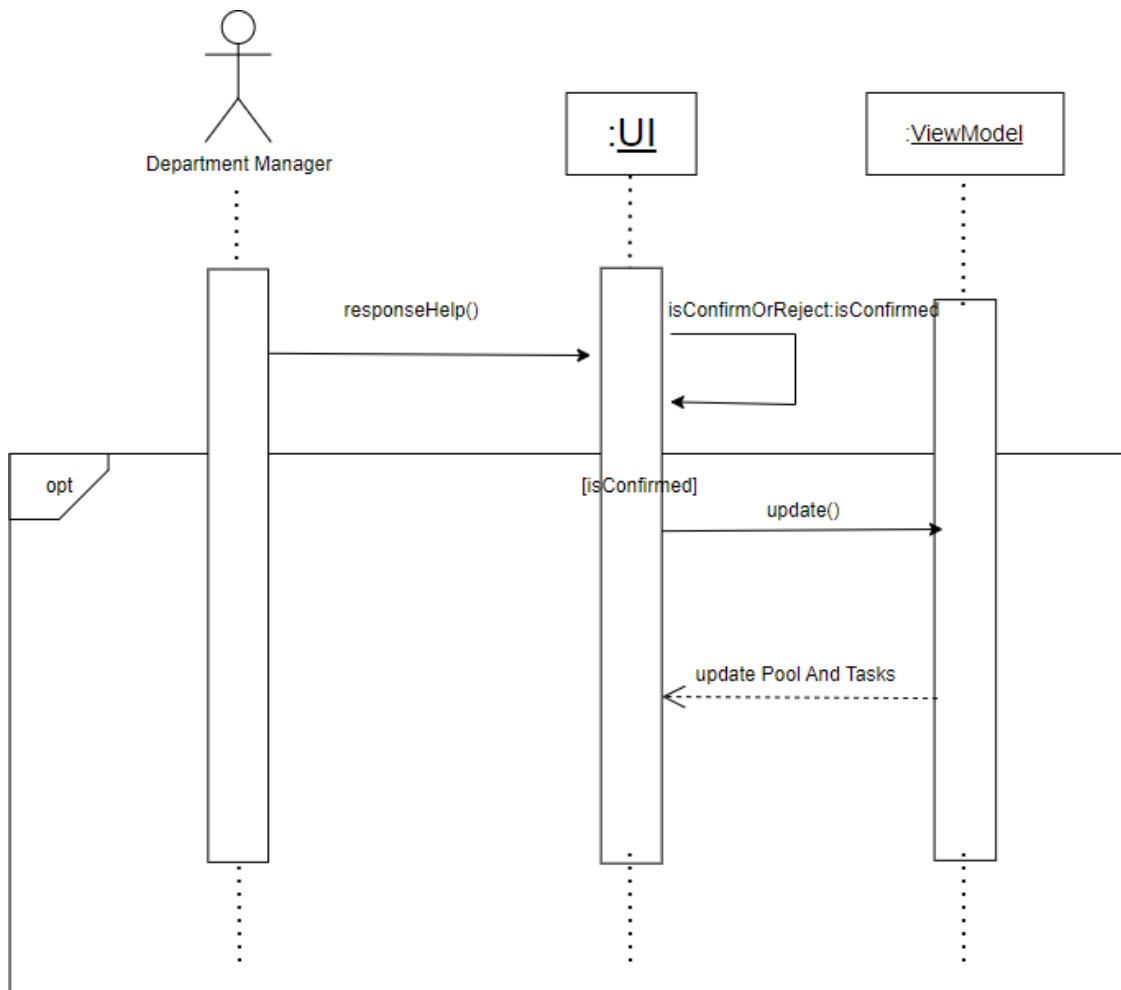
6) View Leaderboard Sequence Diagram



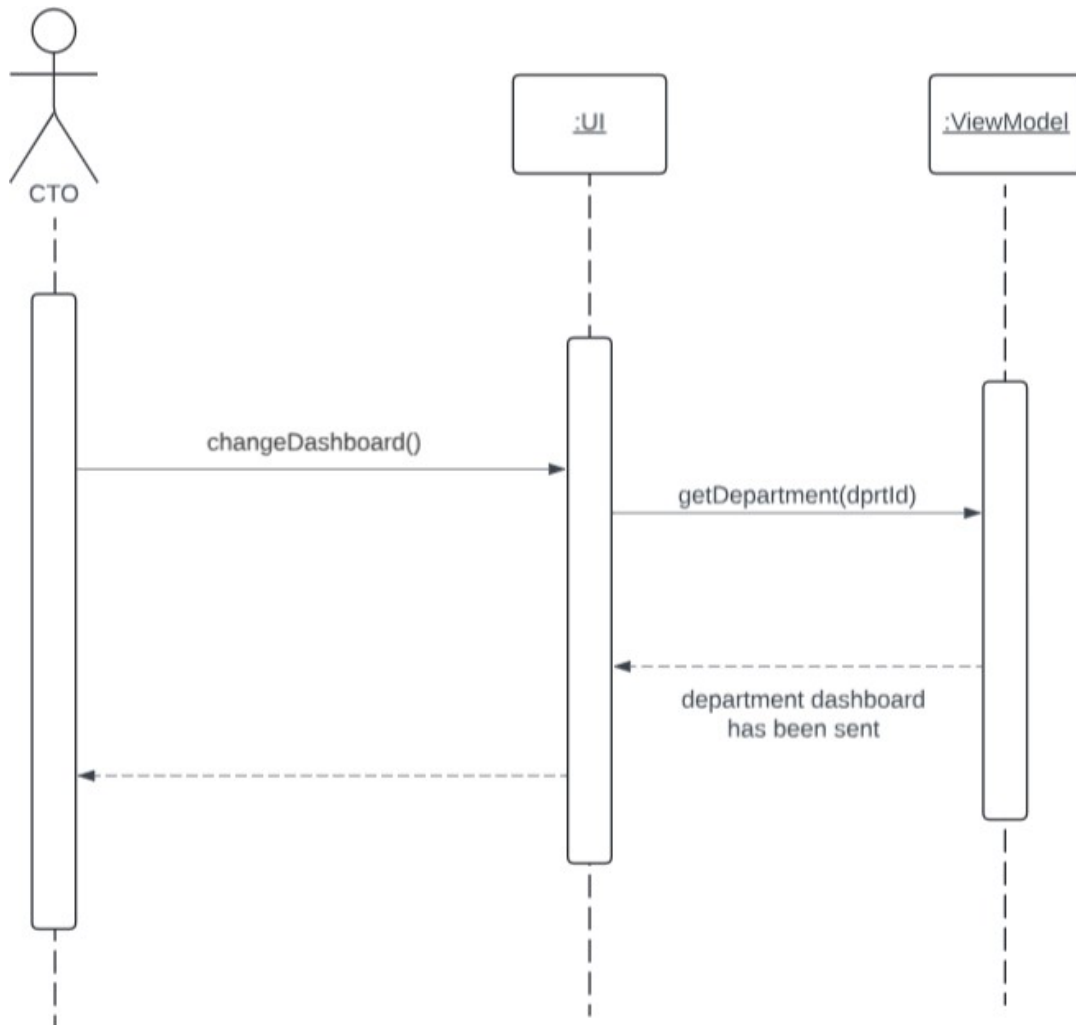
7) Logout Sequence Diagram



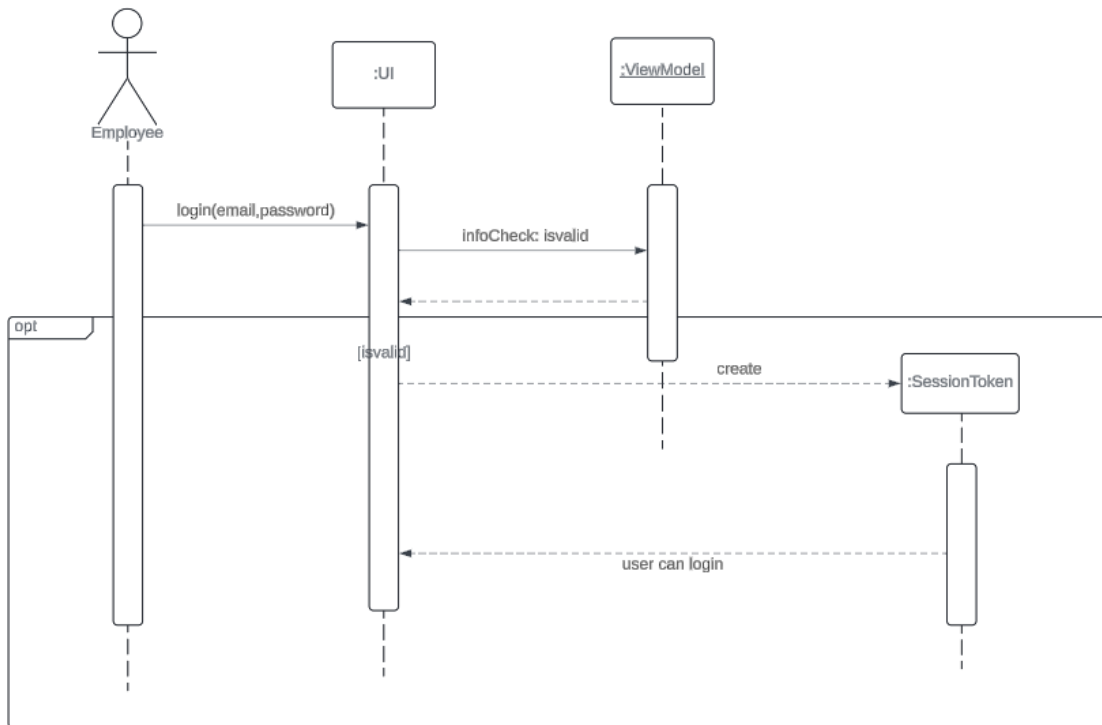
8) Response Help Sequence Diagram



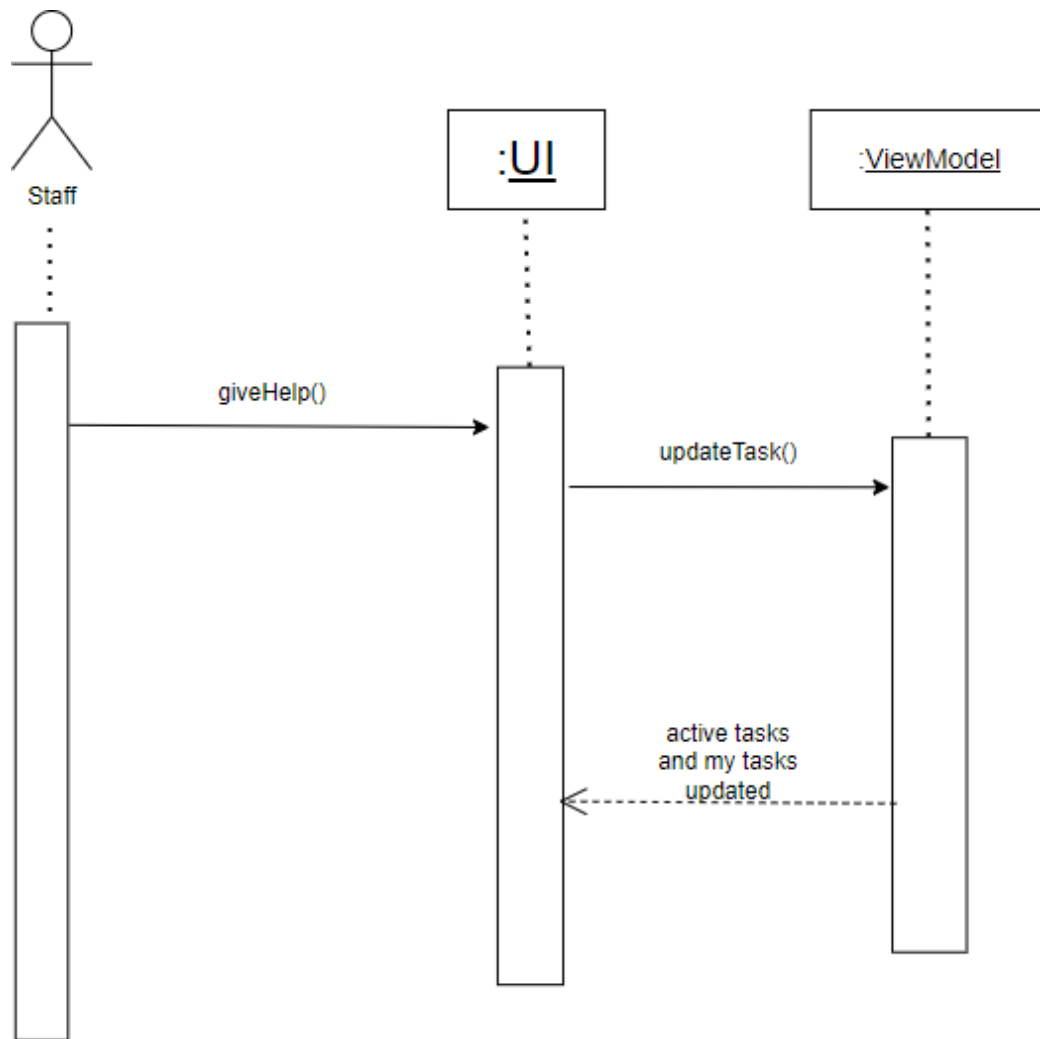
9) Change Department Dashboard Sequence Diagram



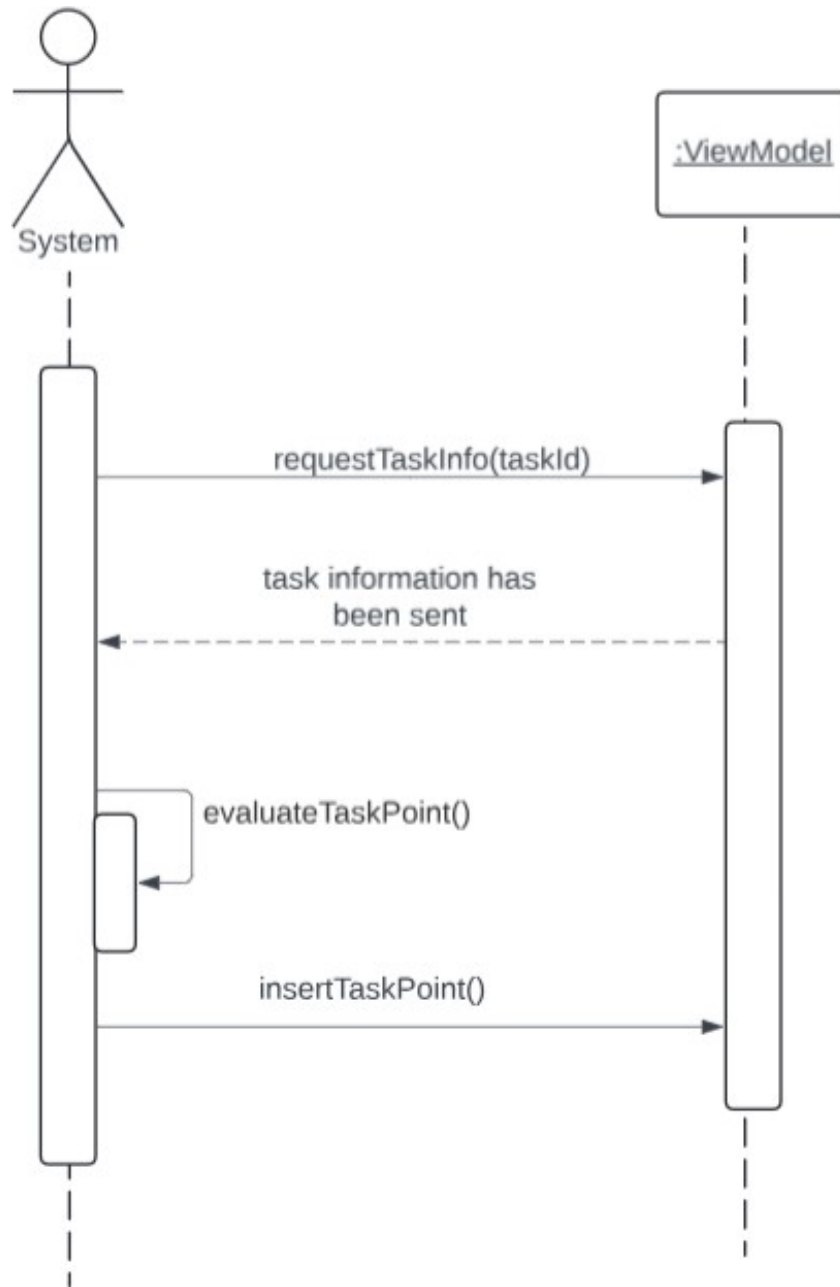
10) Login Sequence Diagram



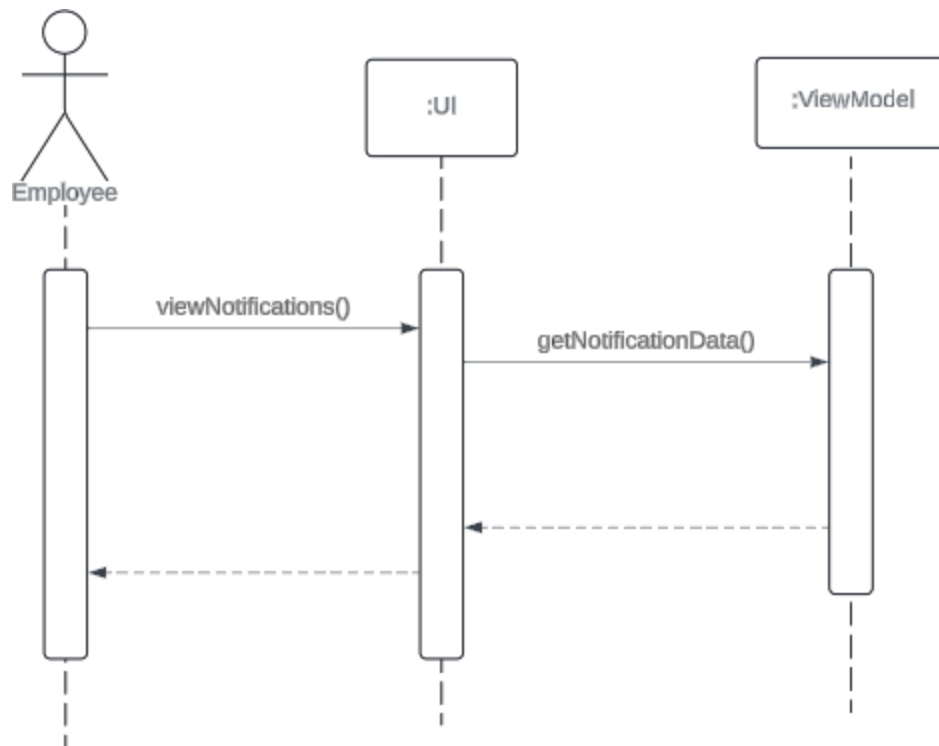
11) Give Help Sequence Diagram



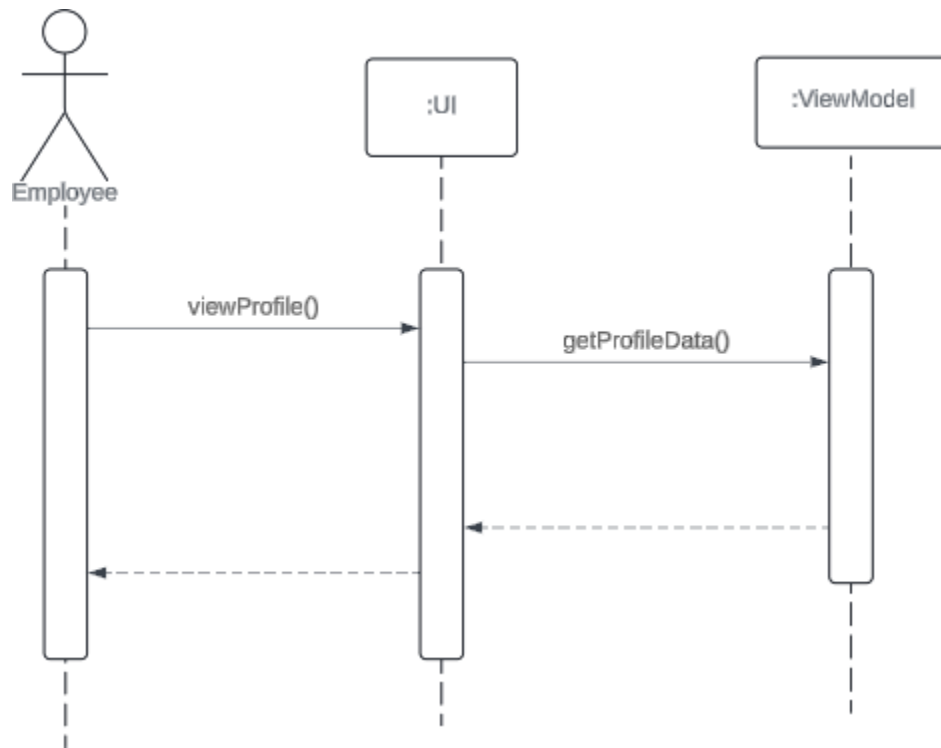
12) Evaluate Task Point Sequence Diagram



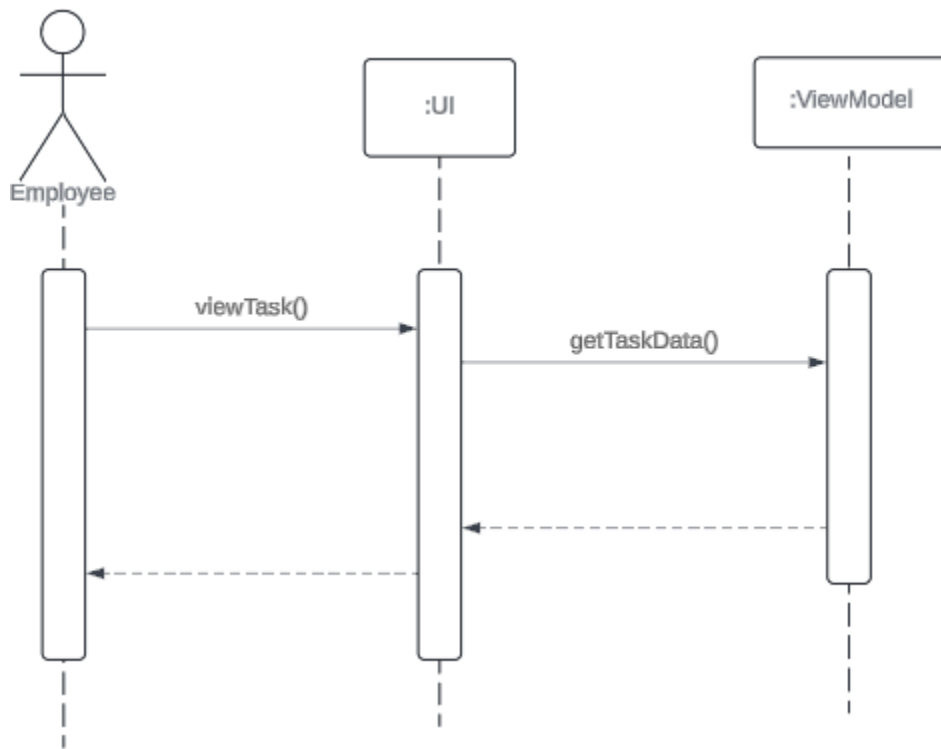
13) View Notification Sequence Diagram



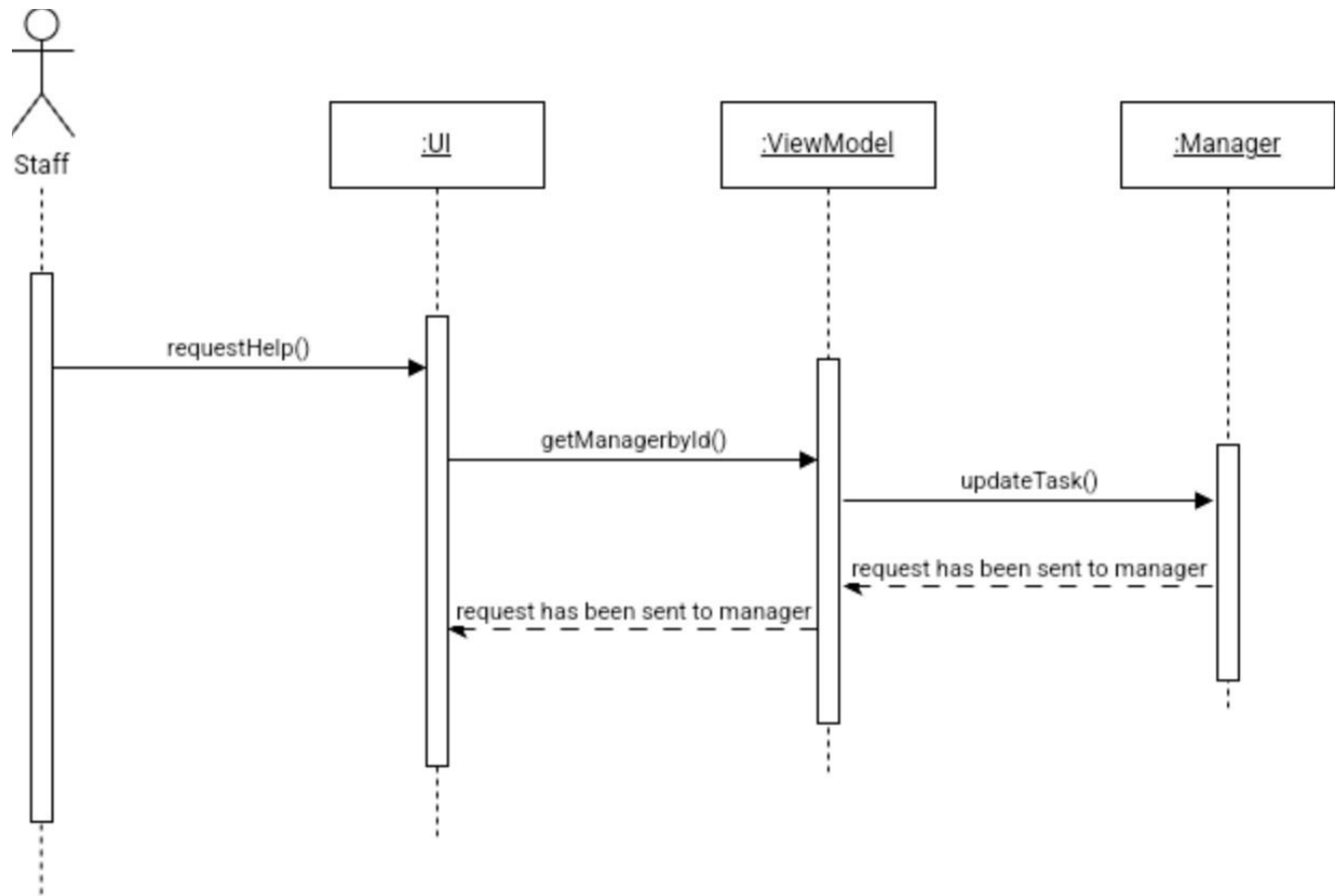
14) View Profile Sequence Diagram



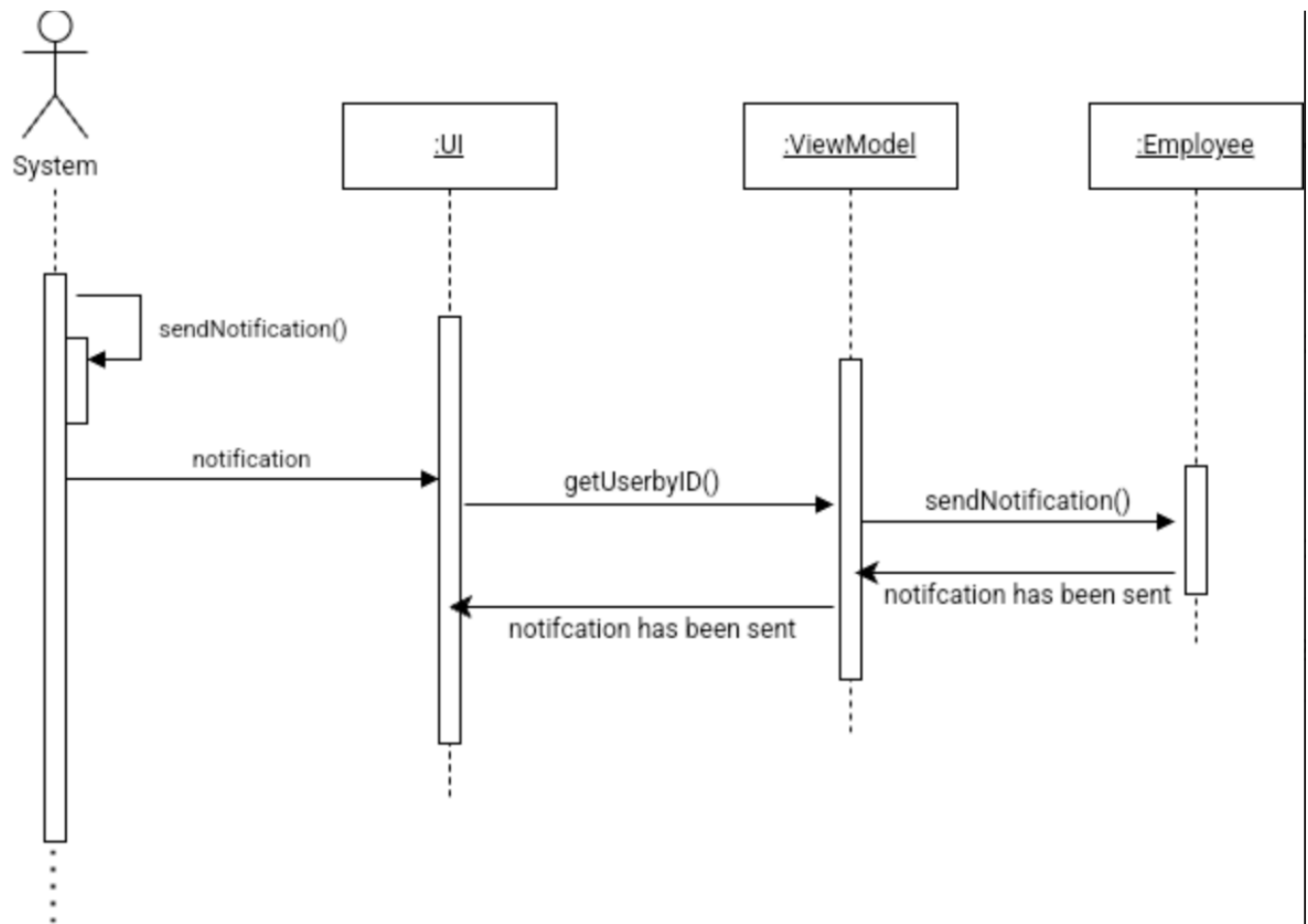
15) View Task Sequence Diagram



16) Ask Help Request Sequence Diagram

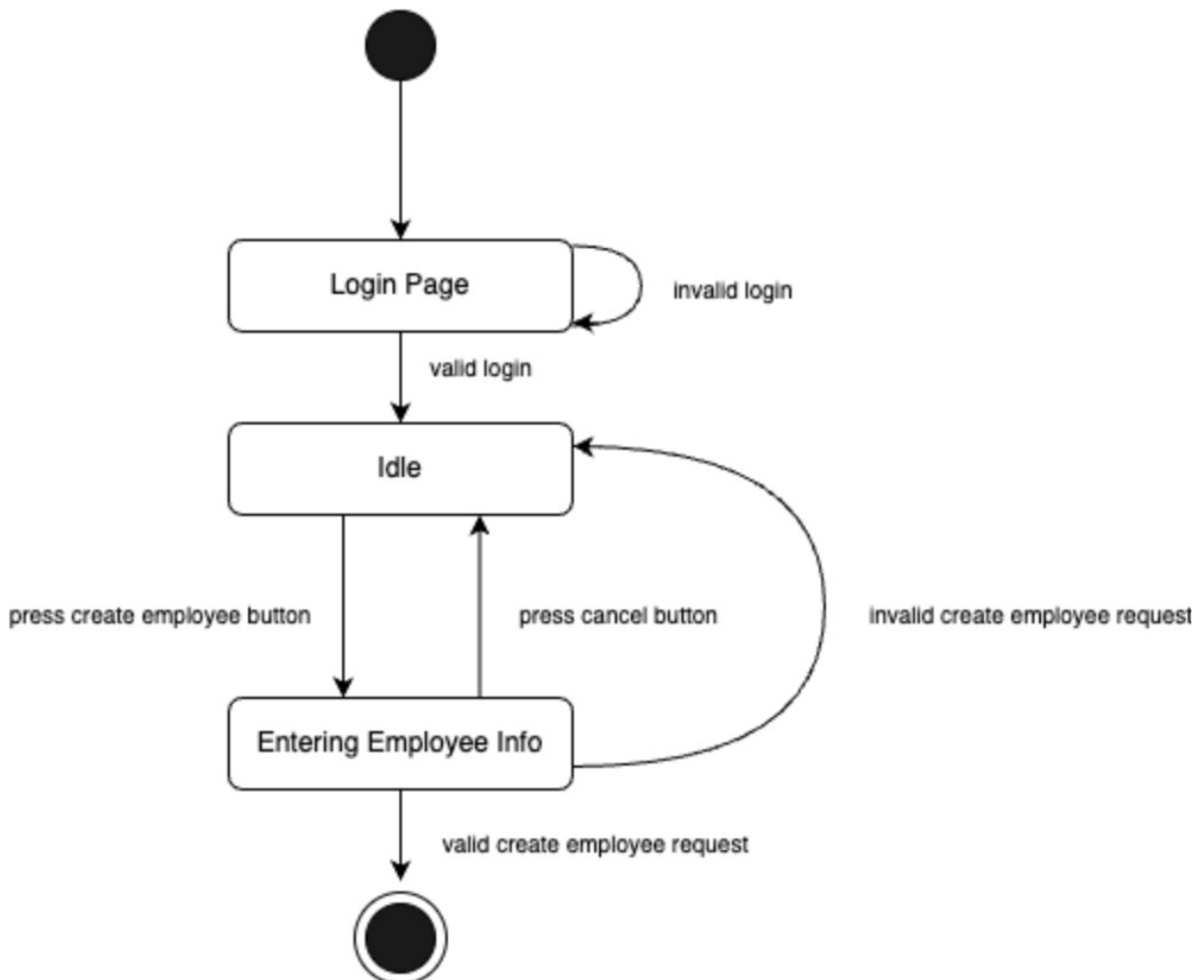


17) Send Notification Sequence Diagram

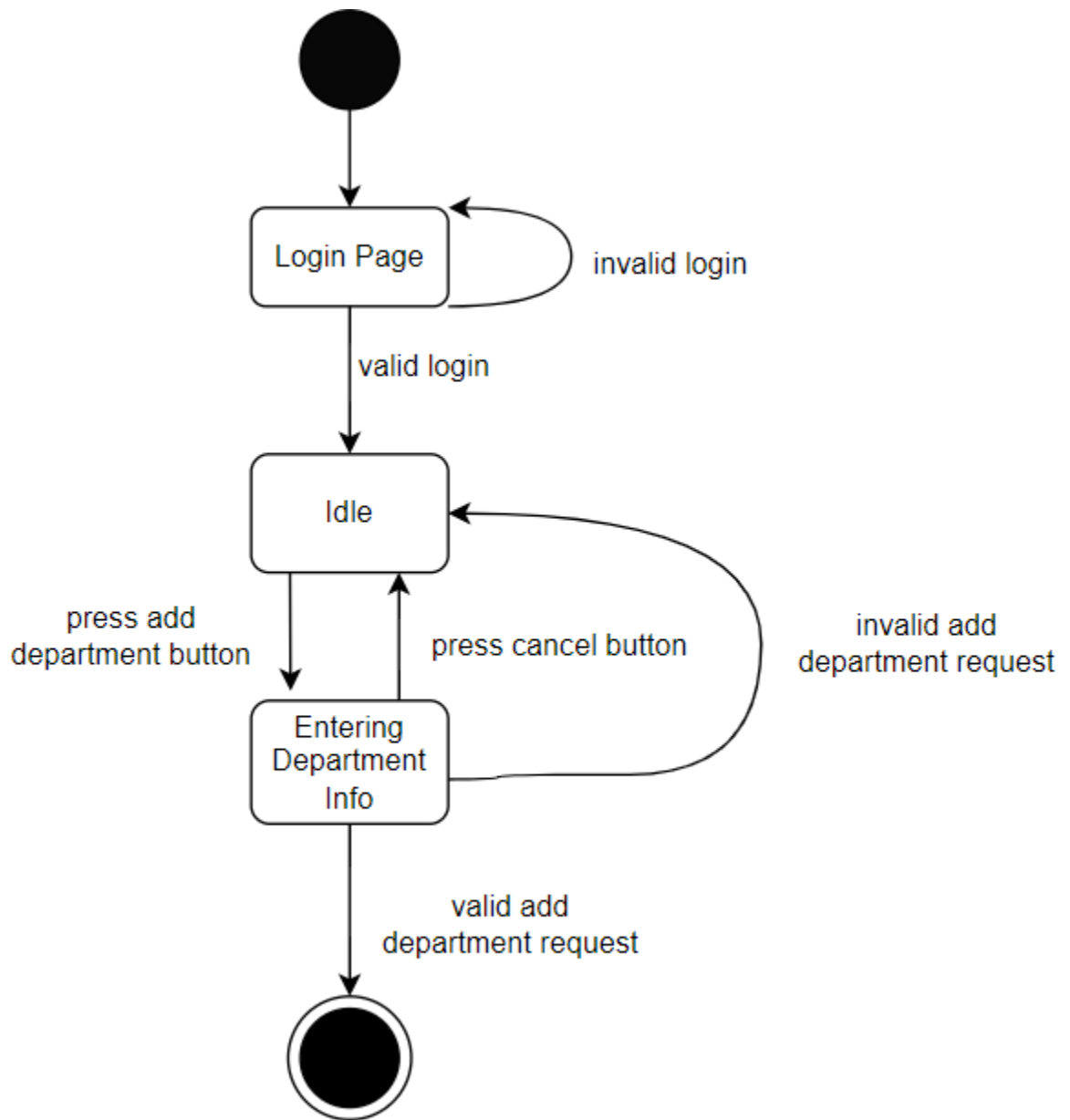


4.2 State Diagrams:

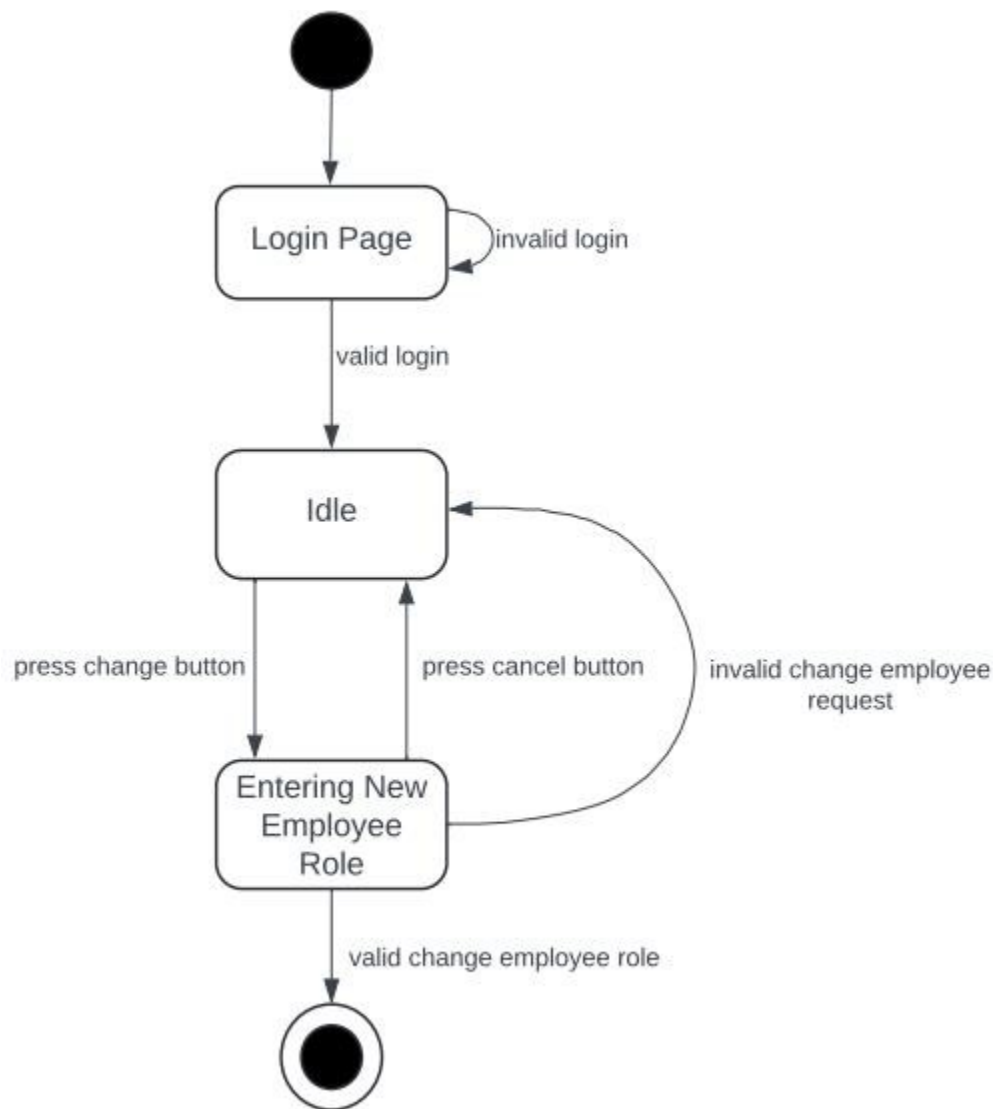
1) Create Employee State Diagram:



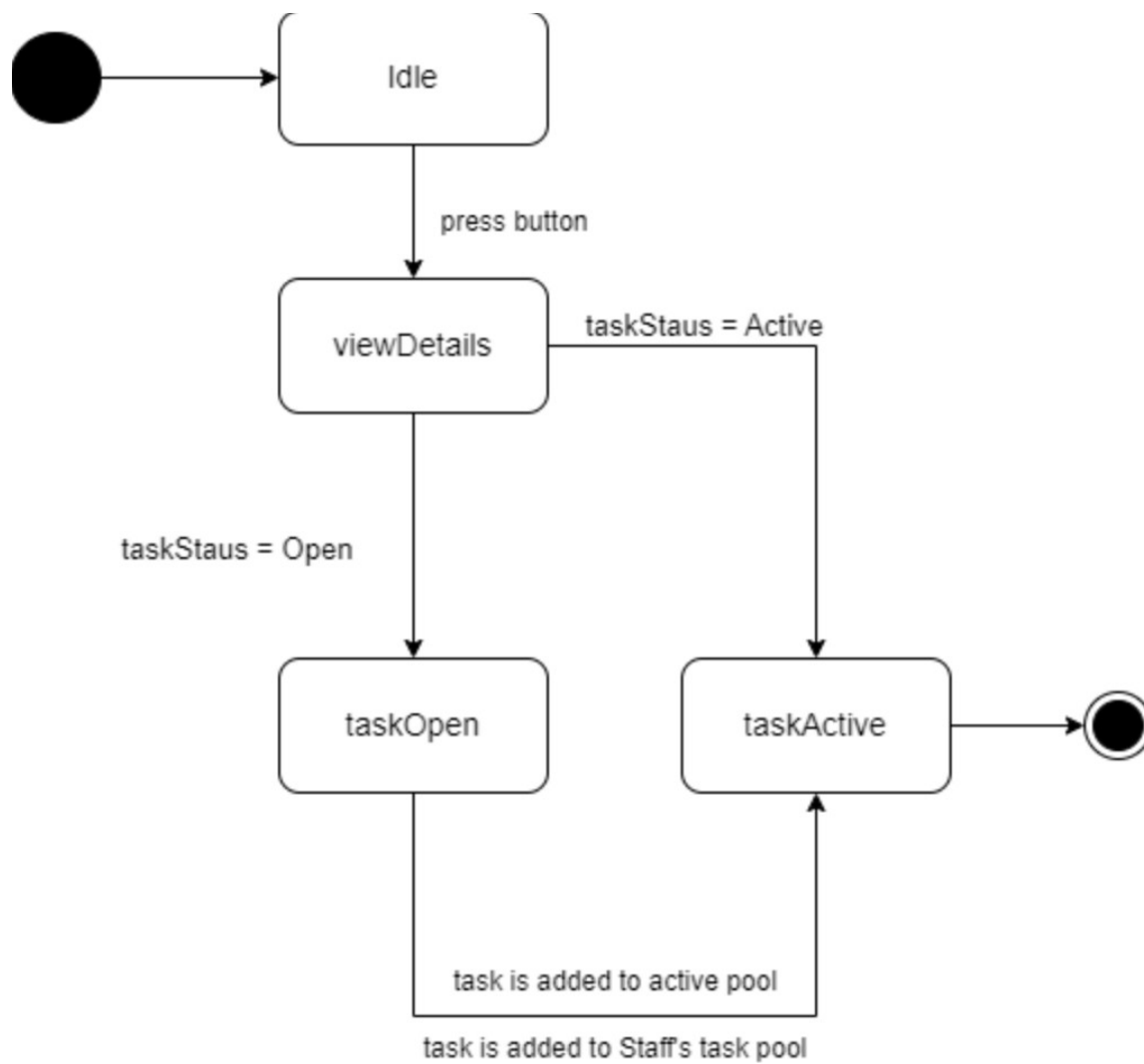
2) Add Department State Diagram:



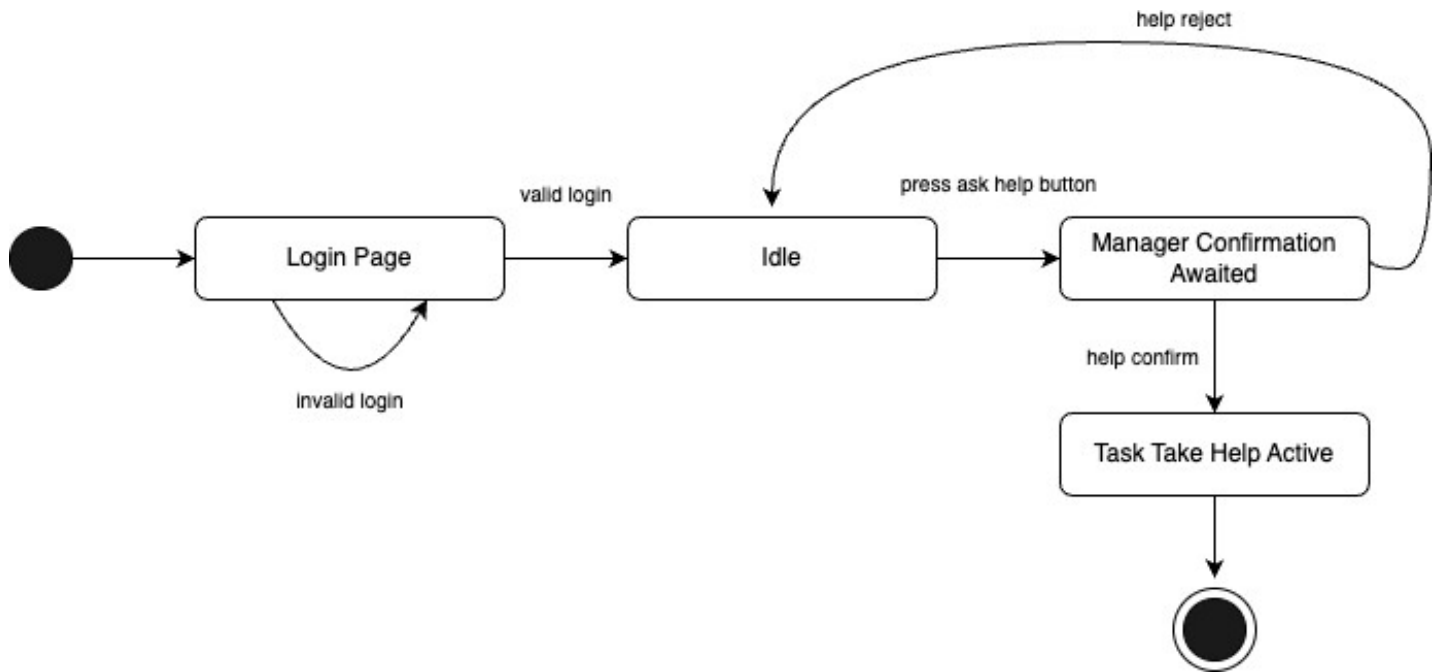
3) Change Employee Role State Diagram:



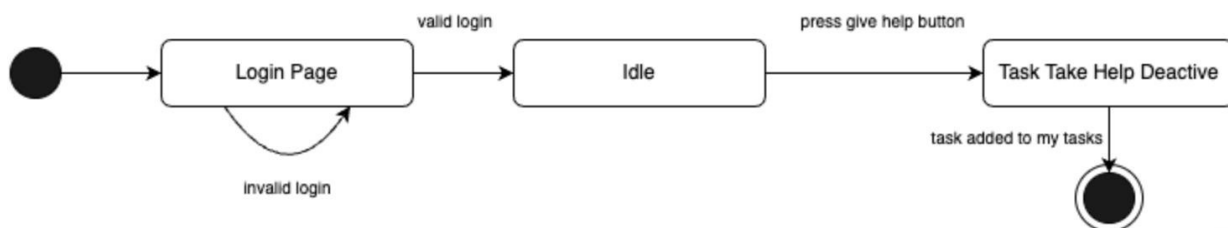
4) Take Task State Diagram:



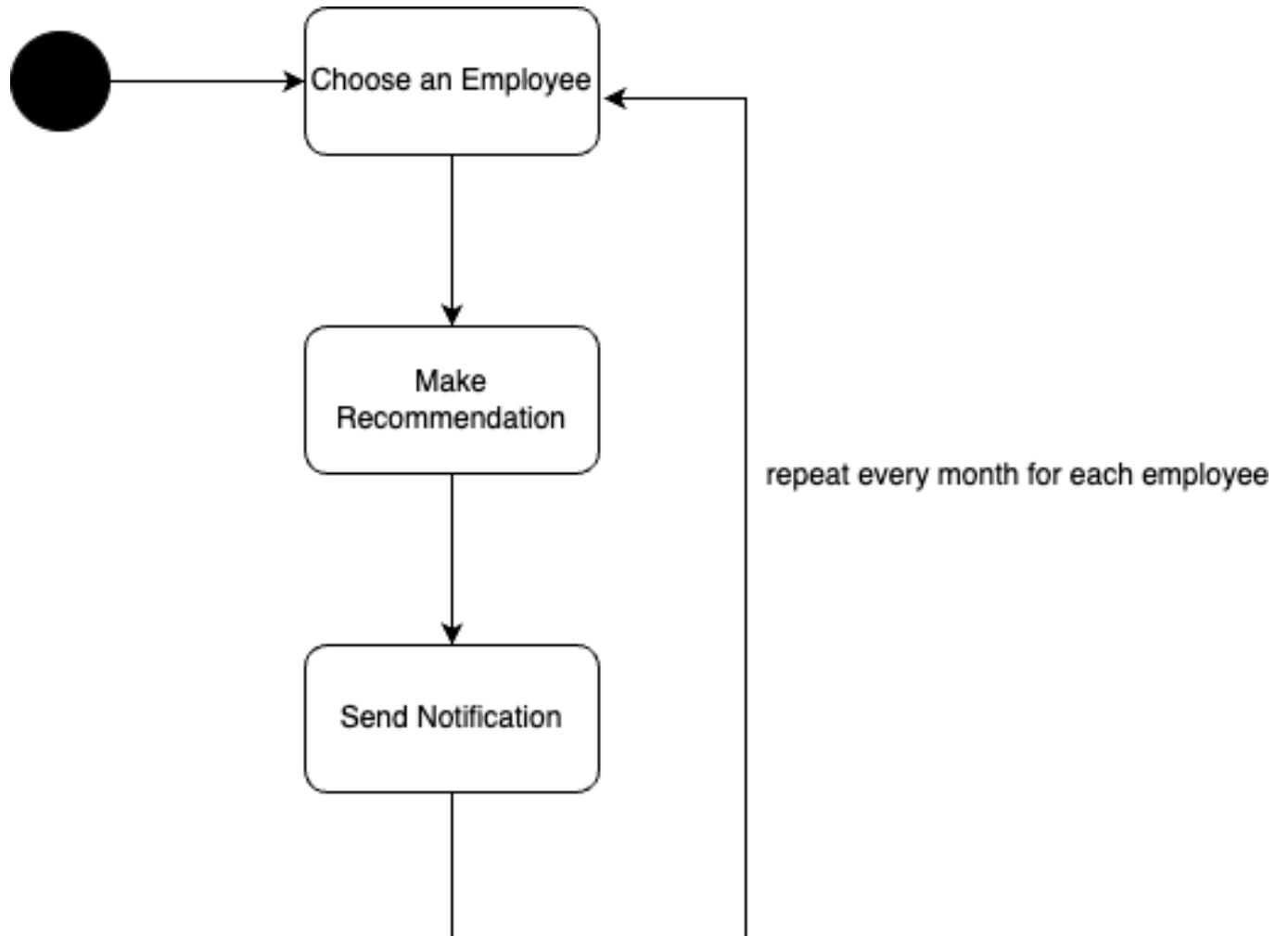
5) Ask Help and Response Help State Diagram:



6) Give Help State Diagram:

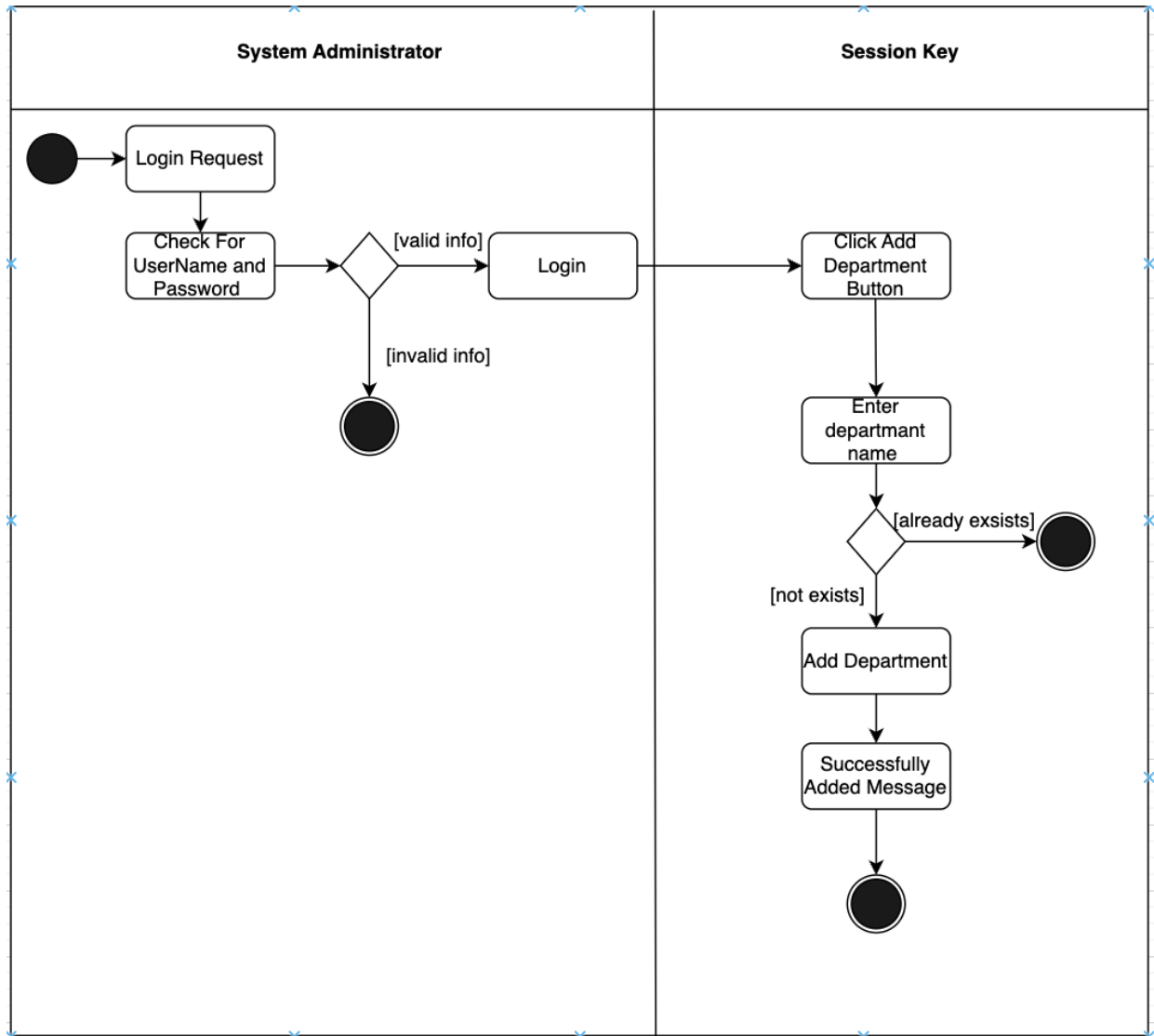


7) Make Recommendation:

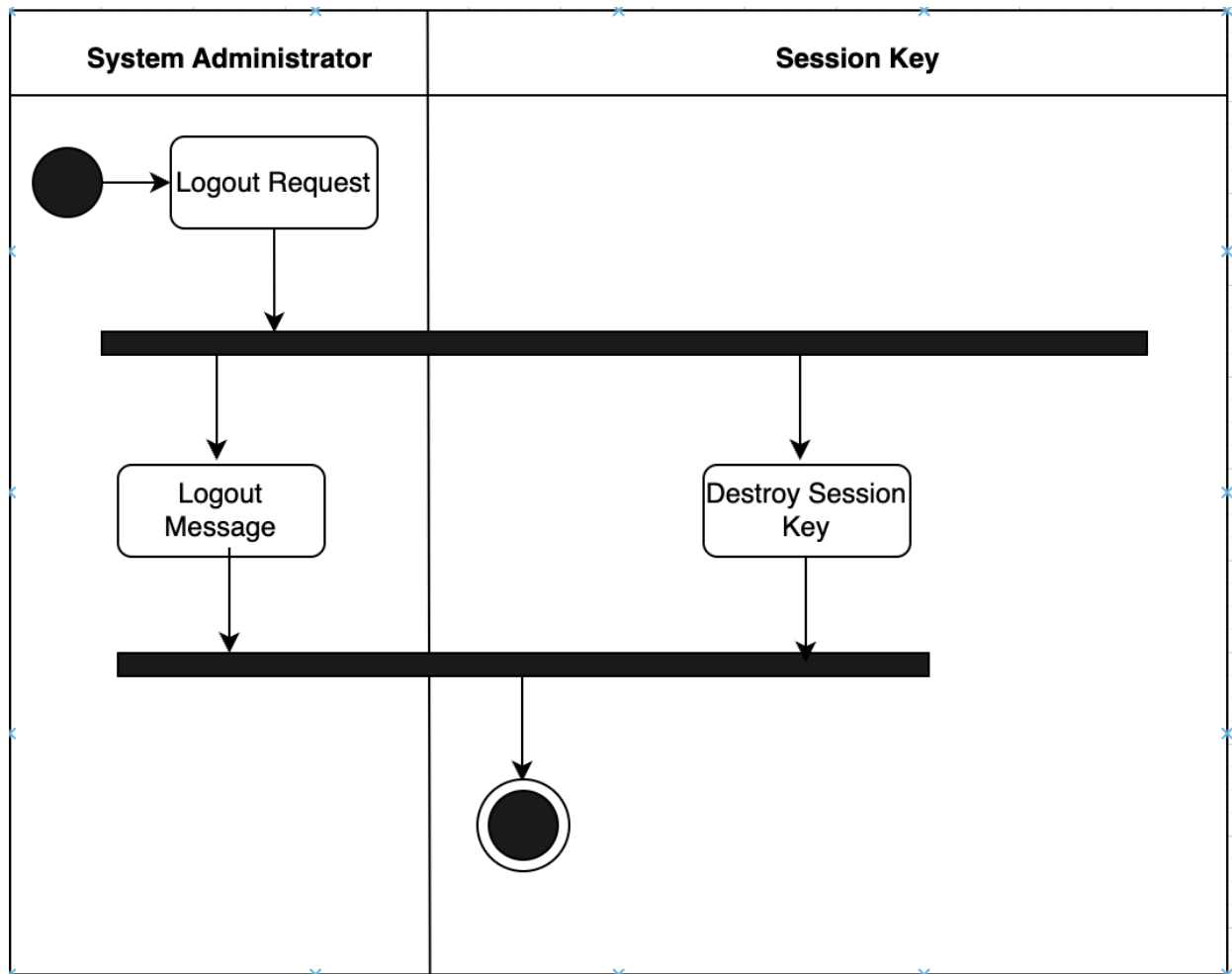


4.3 Activity Diagrams:

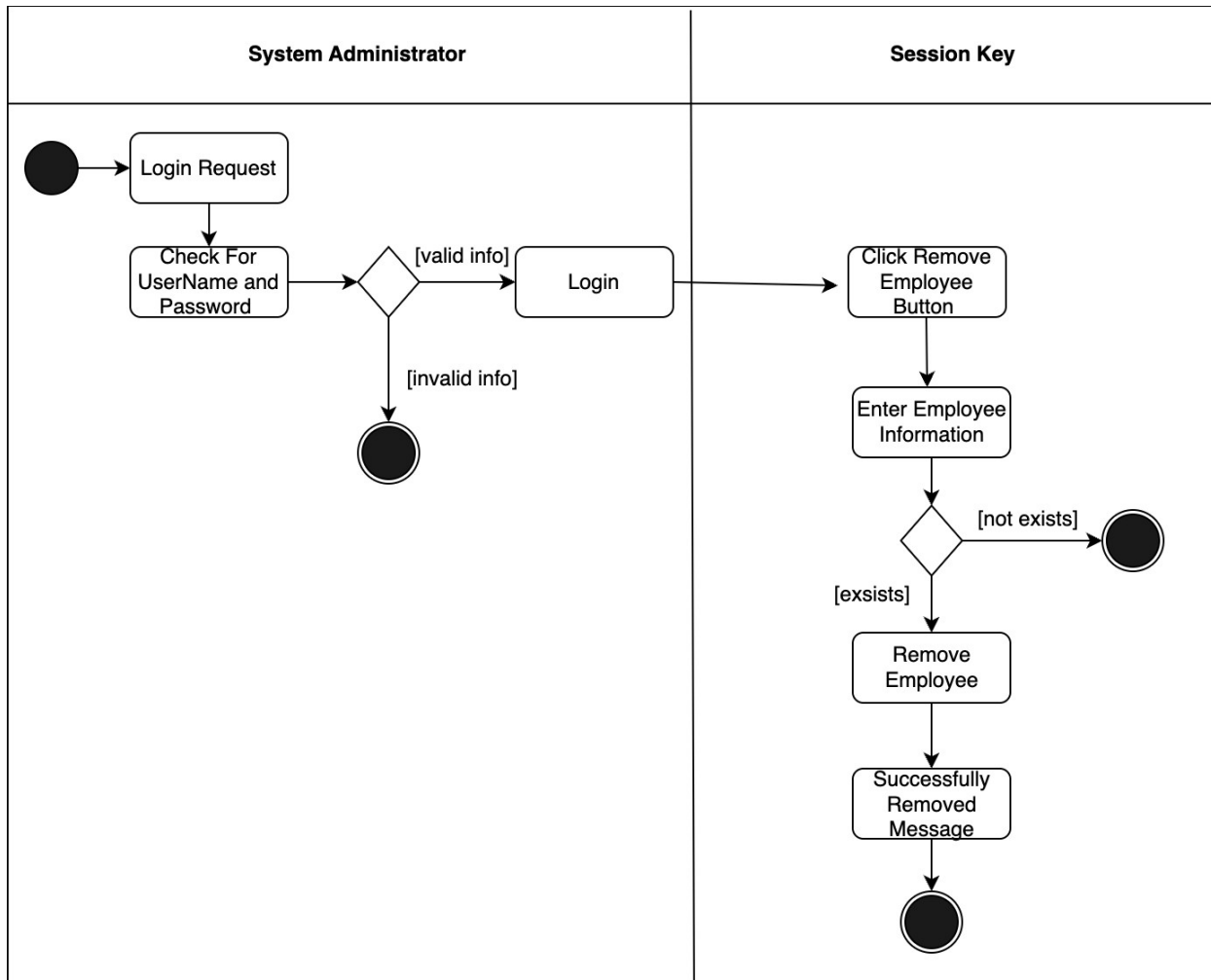
1) Add Department Activity Diagram:



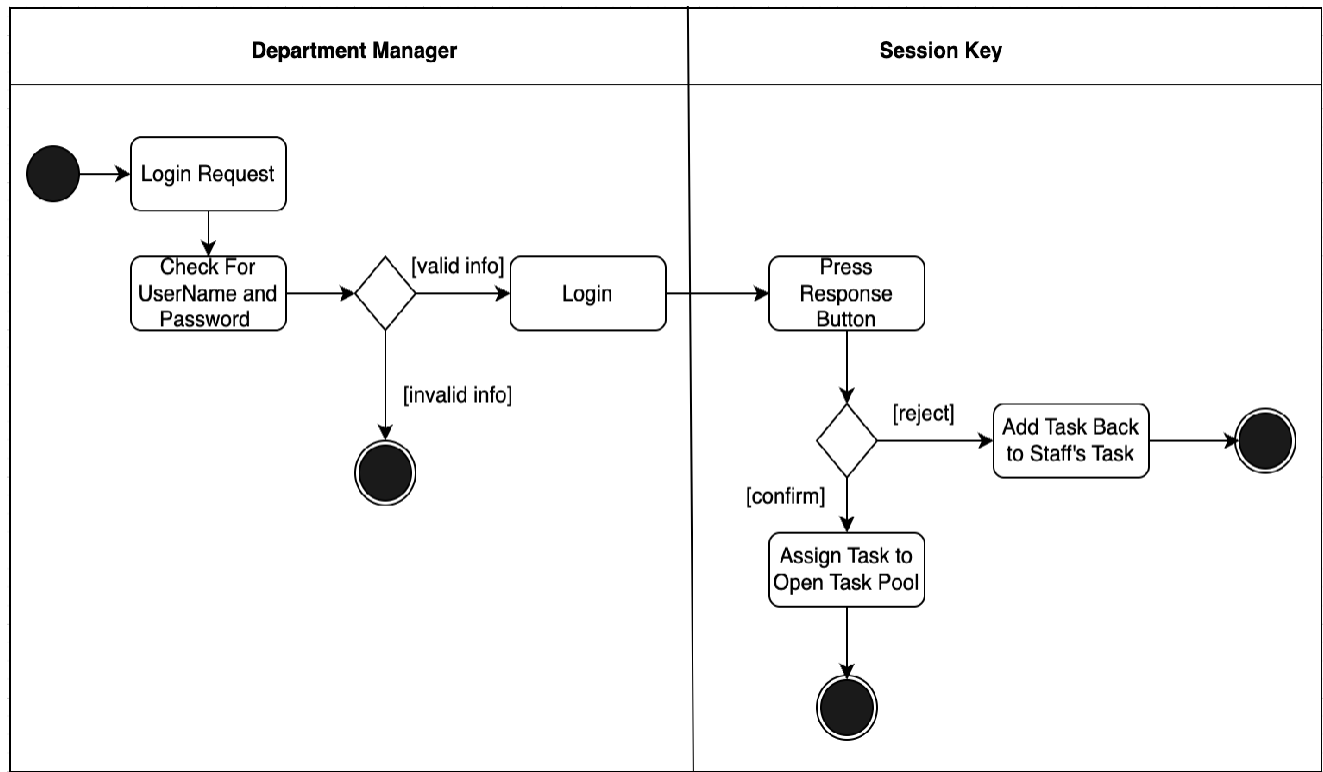
2) Employee Logout Activity Diagram:



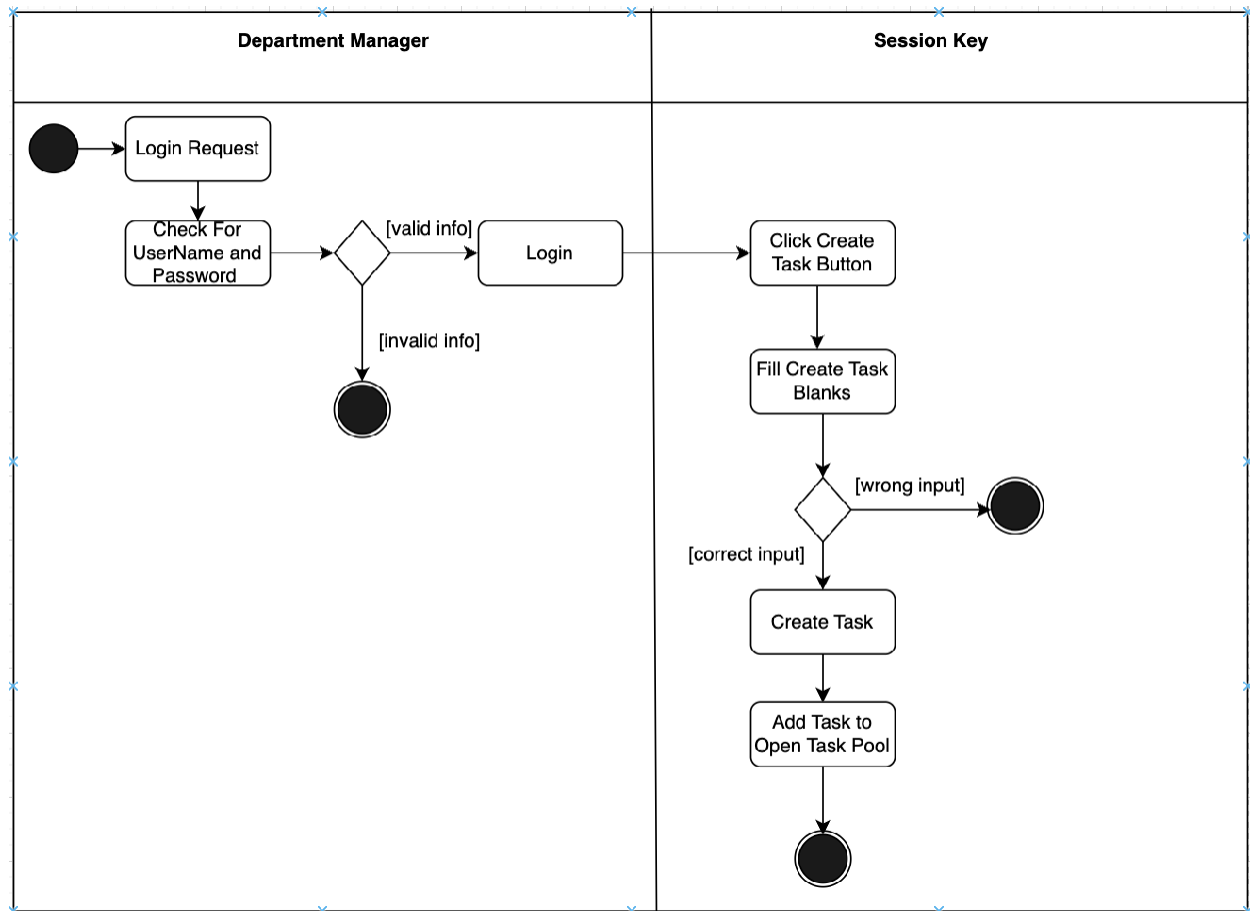
3) Remove Employee Activity Diagram:



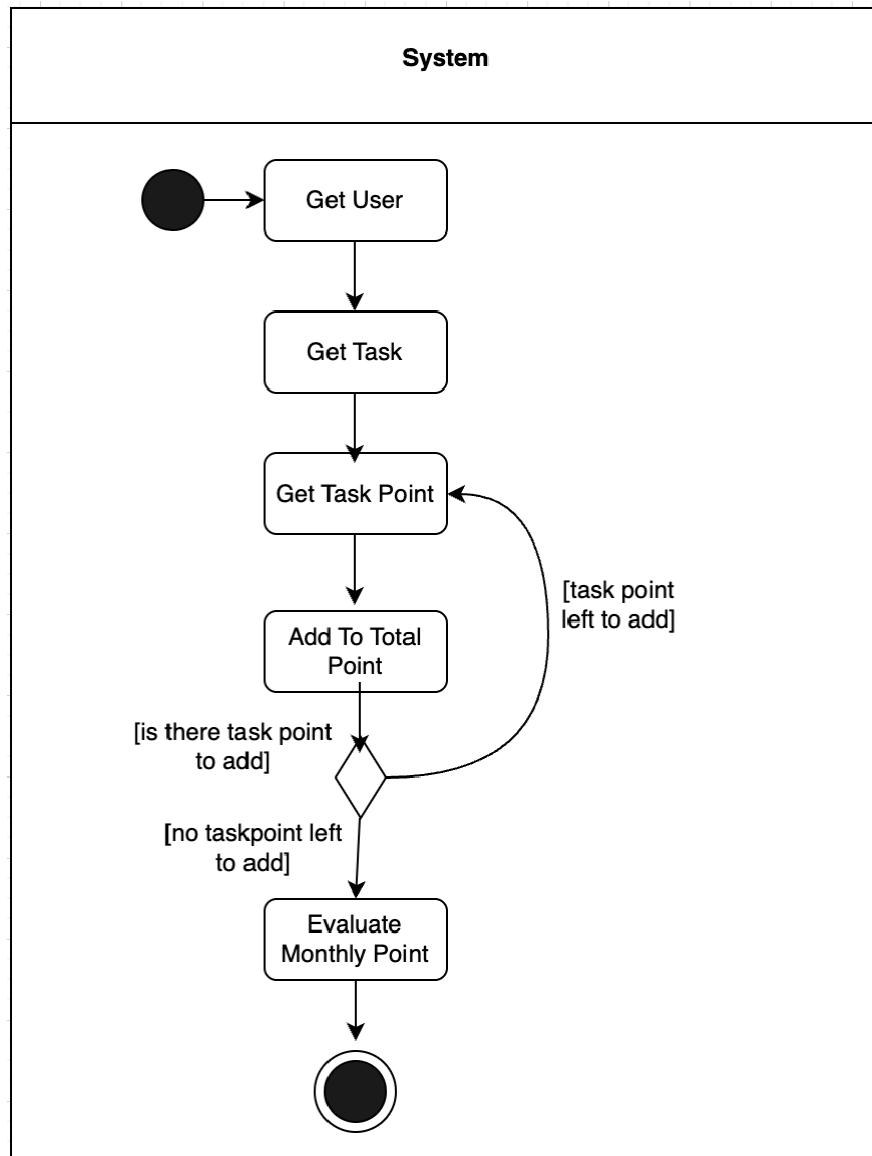
4) Response Help Request Activity Diagram:



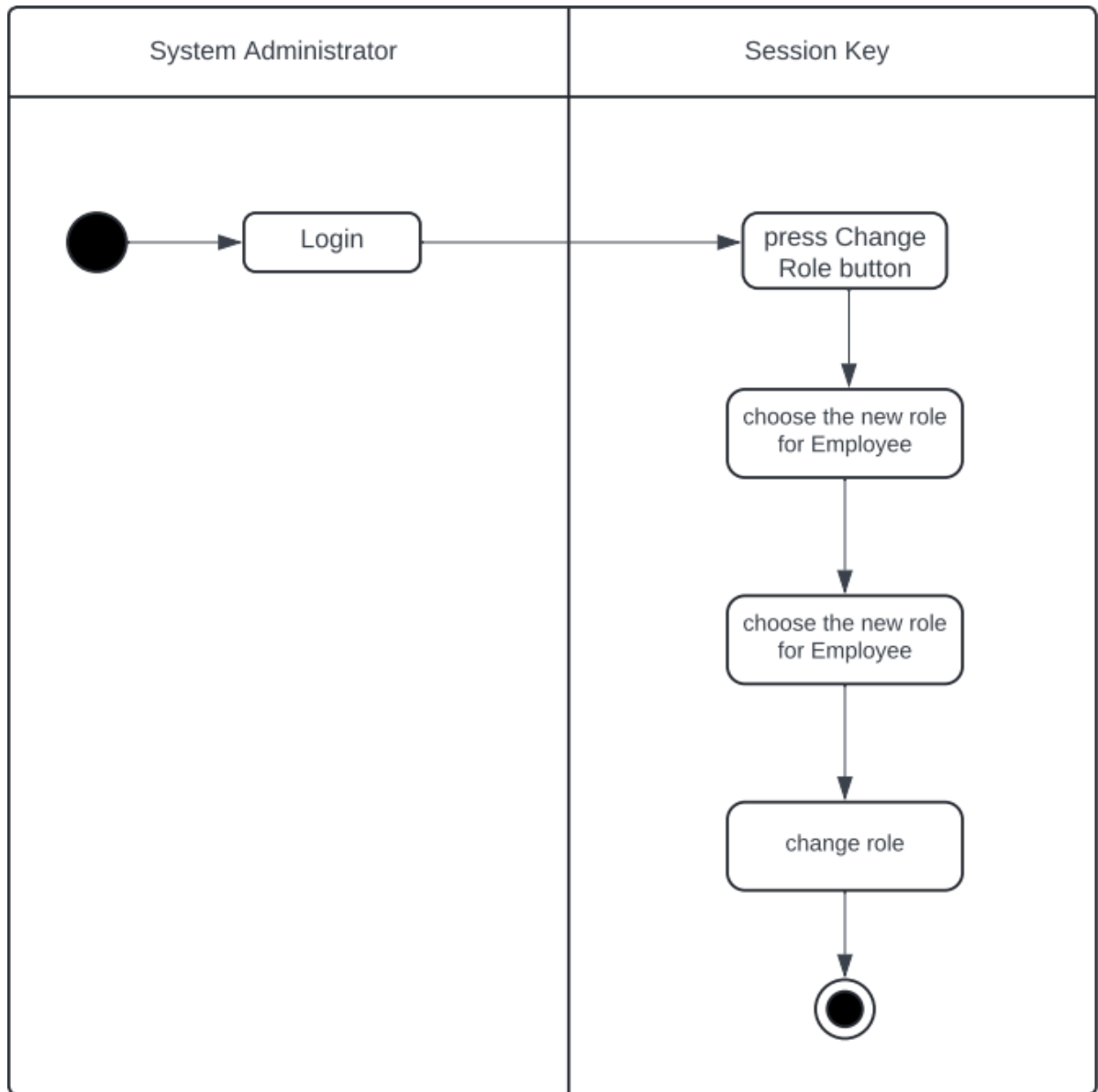
5) Create Task Manager Activity Diagram:



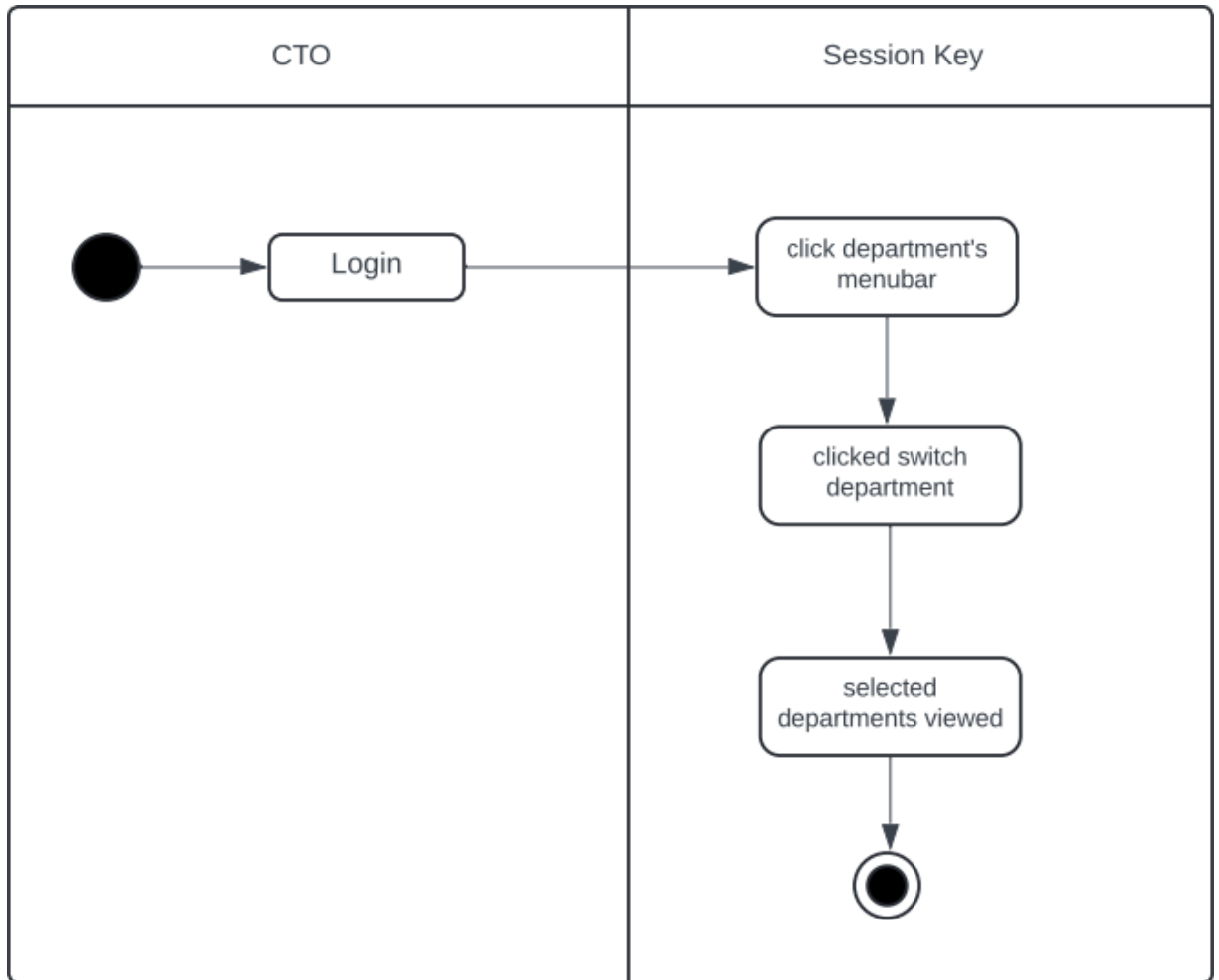
6) Evaluate Monthly Employee Point Activity Diagram:



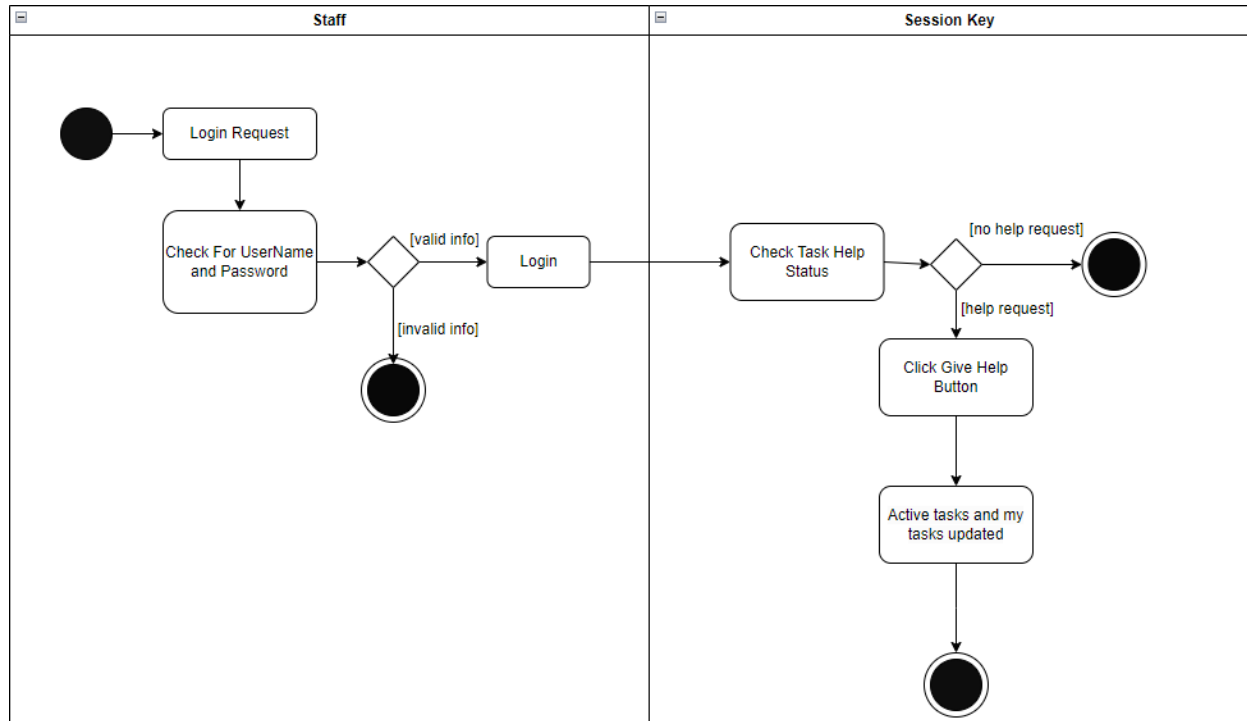
7) Change Employee Role Activity Diagram:



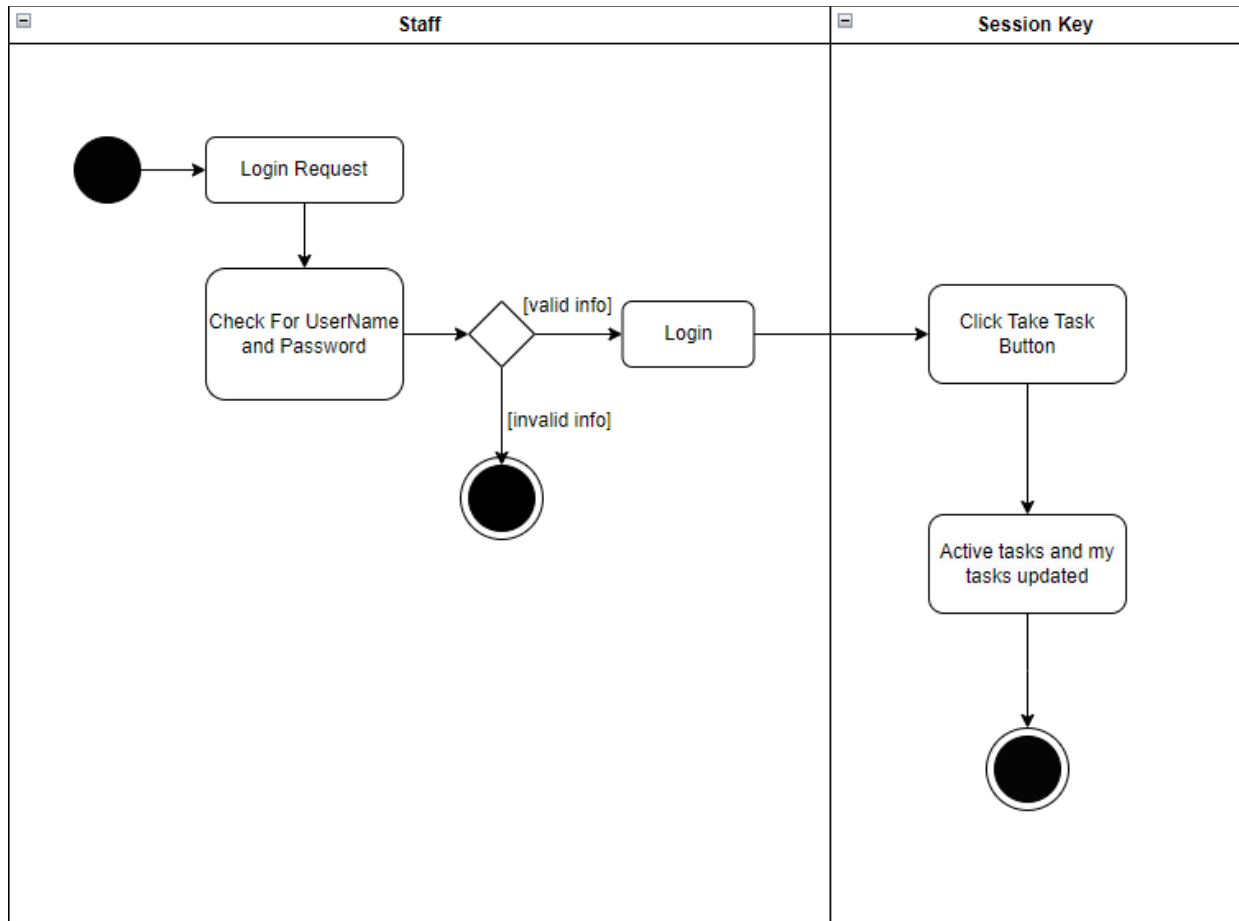
8) Change Department Dashboard Activity Diagram:



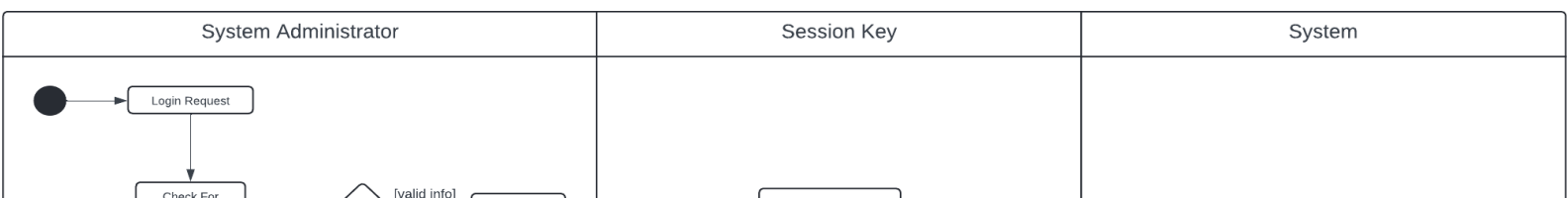
9) Give Help Activity Diagram:



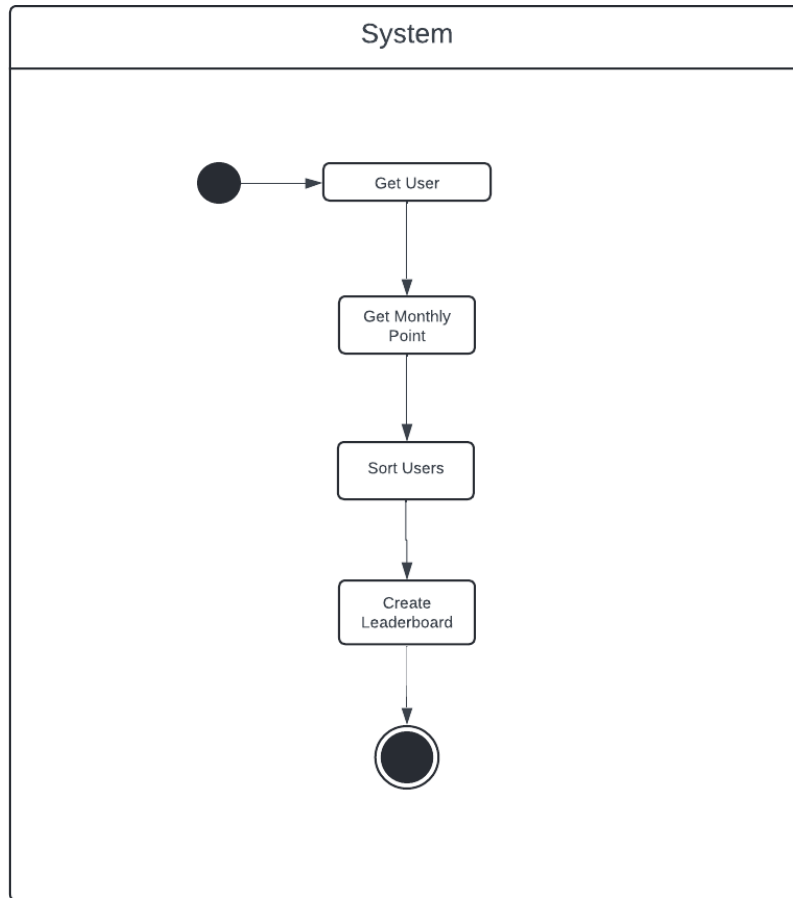
10) Directly Take Task Activity Diagram:



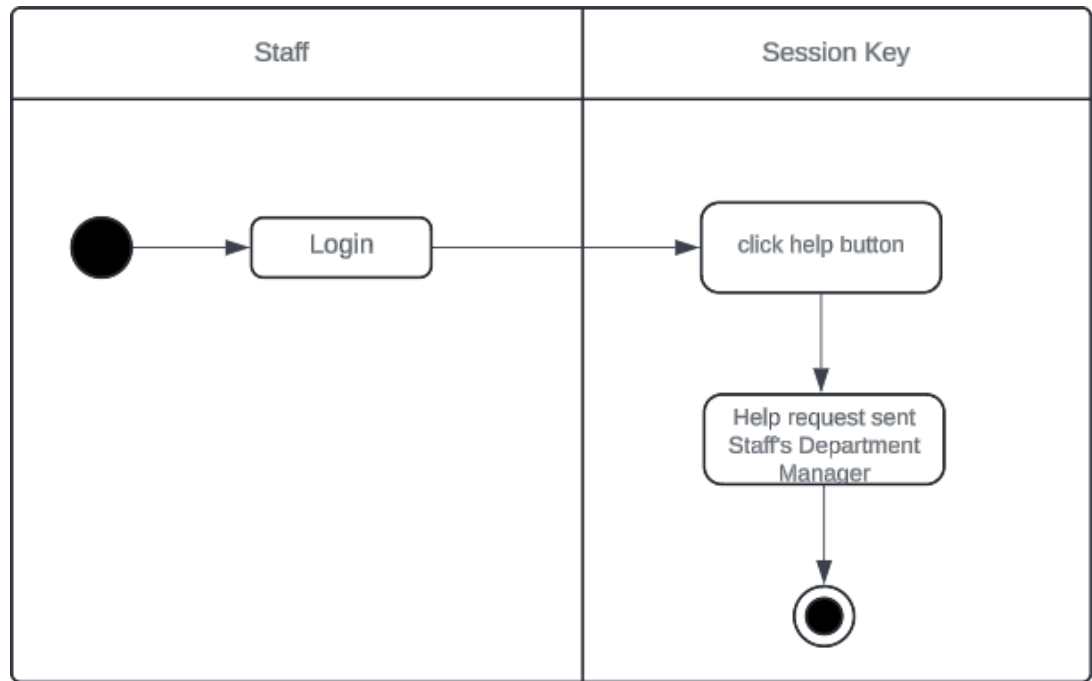
11) Create Employee Activity Diagram



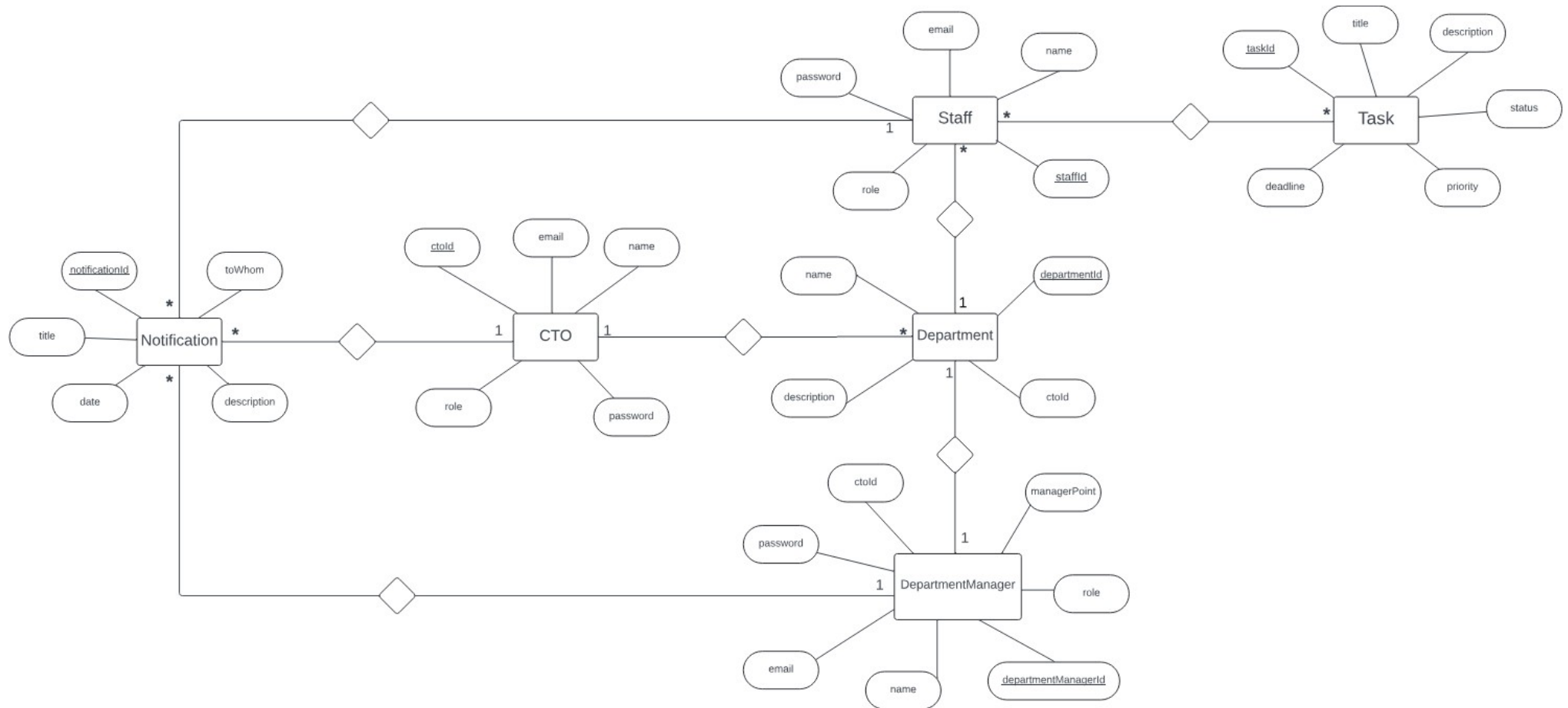
12) Create Leaderboard Activity Diagram:



13) Ask Help Request Activity Diagram



5 Entity Relationship Diagram



6 Glossary & References

1. Timothy C. Lethbridge and Robert Laganière, Object-Oriented Software Engineering: Practical Software Development using UML and Java, any edition, McGraw Hill
2. CSE 344 Lecture Slides, Pearson
3. <https://developer.android.com/develop/ui/compose>
4. <https://www.youtube.com/@PhilippLackner>