

Requirement analysis

Ministry of Justice

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Introduction

This chapter discusses the functionalities, problems, forms, and reports used in the current system. In addition, requirement gathering methodologies and results found after the requirement gathering will be stated. The functional and non-functional requirements of the proposed system are stated here. In addition, this chapter also depicts the system model. Actors of the system, essential use case diagrams with descriptions, sequence diagrams, activity diagrams, and state chart diagrams are presented.

Current System

Major Function of the Current System/ Current System Description

As of this moment, there is no existing system that facilitates organizations or individuals to access services provided in regard to contact negotiation, litigation, mediation, and free legal advice electronically. In addition to providing an explanation of the services provided, it allows people to submit forms to request the service and get updates within a set amount of time. This system has another aspect that allows the internal managers to assign prosecutors to a particular work and track the workflow progress. Due to these reasons, customers have to rely on word of mouth and office visits to find out information regarding the institution

Problems of the Existing System

Performance Issues

- Clients don't have enough information about available services
- Clients can't submit requests online
- Unable to communicate with clients efficiently if there are delays and changes.
- Managers can't assign prosecutors to a specific case and get generated workflow updates
- No electronically generated report for inspection and regulation

Security Issues

- The current system has fewer security and control mechanisms for tracking workflow.

Service Issues

- Not flexible for preparing internal schedules
- Not interactive for the clients
- Not fast enough to meet clients' requirements

Requirement Gathering

Methodologies

Gathering requirements is an important task that should be done in software development. We used different techniques to gather requirements.

Document Analysis

Reviewing the existing system's documentation, like user manuals and instructions.

Requirement workshop

Requirement workshops are a great way to gather information and as a facilitator, it is important to be prepared for the session to go well. Gather and prepare materials and an agenda to give structure to the workshop that helps ensure you get quality insights.

Results Found

Proposed System

Overview

The proposed system is designed to address the problems of the existing system. The proposed system is aimed at providing simple, efficient, and effective means by which the Ministry of Justice increases productivity, efficiently collaborates with branches and other institutions, minimizes cost, and increases client satisfaction.

Functional Requirements

FR1: The system shall have a login functionality

FR2: The system shall allow users to retrieve information

FR3: The system shall allow the clients to submit various request forms in different divisions to track a bus's location

FR4: The system shall allow managers to track workflow

FR5: The system will generate a work execution report

FR6: The system shall provide an alert if there are any changes regarding a procedure and follow up

FR7: The system shall allow managers to assign work to an individual or team

FR8: The system authenticates multiple users

FR9: The system shall provide individuals or organizations history of prior requests and interactions

FR10: The system shall allow regulators to report their inspection results to managers

FR11: The system shall allow branches to send regular reports to CJADG

FR12: The system shall allow the assigned individuals and team to get the assigned task notification

Non-Functional Requirements

User Interface and Human Factors

NFR1: To ease users' interaction with the system, an interactive and easy-to-use user interface has buttons and forms. The user interface shall be designed in a similar style (model) to most common web interfaces.

Documentation

NFR2: Full documentation of the system including the Project Proposal, System Requirement Analysis Document, System Design Document, and Object Design Documents will be compiled to facilitate future reference and system maintenance. User manuals and installation guides shall also be compiled.

Hardware Consideration

NFR3: The web app can be used on various smartphones, tablets, and computers.

Performance Characteristics

As the volume of passengers served using the system increases and related operations increment. The system's architecture shall be optimized to ensure a fair enough response time and throughput.

NFR4: As the volume of passengers served using the system increases and related operations increment. The system's architecture shall be optimized to ensure a fair enough response time and throughput.

Error Handling and Extreme Conditions

NFR5: The system shall be implemented with a design that has the capability to handle errors made during an interaction with users and/or systems. To ensure system availability and robustness, redundancy of the application server and the database server shall be maintained.

Quality Issues

NFR6: The system shall produce well-designed and organized reports compared to the previous system. The system will have different views that facilitate the requirements of various levels of clearance within the company

System Modifications

NFR7: The system will be developed by ????

by the development personnel of the company to meet future changes in requirements and to enhance the usability of the system.

Physical Environment

NFR8: The system is going to be deployed at ????

Security Issues

NFR9: Regarding the security (control) of the proposed system, all the loopholes that have been observed in the manual system shall be expected to be highly minimized. The system is expected to include a security policy to protect sensitive areas of the operation like user registration and ticket registration and payments from malicious users. To protect against intrusions and hacking of the system appropriate security mechanisms like firewalls shall also be in place.

Resource Issues

NFR10: The system will function on any standard hardware and software platforms, as it is developed with the most common development tool and supported with a common database management system.

Operating System:

Database Management System:

Human Resources

System Model

System modeling is the process of developing abstract models of a system, with each model presenting a different view or perspective of that project. System modeling helps the analyst understand the system's functionality and models are used to communicate with customers.

Scenario

A scenario is “a narrative description of what people do and experiences as they try to use computer systems and applications”. A scenario is a concrete, focused, informal description of a single feature of the system from the viewpoint of a single actor. Actors represent external entities that interact with the system. Actors can be human or an external system. The scenarios of the proposed system are presented as follows.

SID	001
Scenario Name	Login
Actor	Employee: Individual from client institution
Flow of Events	<ol style="list-style-type: none">1. The individual opens the web app in a browser2. The system shall display the login form and prompt for username and password3. The client types his username and password and clicks the “Login” button.4. The system shall authenticate the client’s roles and display the system’s communication dashboard.

SID	002
Scenario Name	Requiring a Form
Actor	Client: Institution provided with access
Flow of Events	<ol style="list-style-type: none"> 1. The client goes to the dashboard 2. Navigate various services provided 3. The client can fill in the form that is required and send a request 4. The client gets confirmation about submission

SID	003
Scenario Name	Login
Actor	Employee: Prosecutor or administrators
Flow of Events	<ol style="list-style-type: none"> 5. The employee/administrator opens the web app in a browser 6. The system shall display the login form and prompt for username and password 7. The employee/ administrator types his username and password and clicks the "Login" button. 8. The system shall authenticate employees/administrators' roles and display the system's dashboard

SID	004
Scenario Name	Assign cases
Actor	Minister
Flow of Events	<ol style="list-style-type: none"> 1. The logged manager shall have access to the admin panel 2. The system shall display a table of submitted case forms with the option to assign it to a department 3. The director can assign priority to a particular case 4. Updated task reports are now shown and the assigned department will be notified

SID	005
Scenario Name	Assign work
Actor	Director
Flow of Events	<ol style="list-style-type: none"> 5. The logged manager shall have access to the department head panel 6. The manager sees all the cases assigned for the department 7. The system shall display a table of submitted forms with the option to assign the review to a person or a team 8. The manager assigns a due date and saves the task 9. Updated task reports are now shown and the assigned team or person will be notified

SID	006
Scenario Name	Notification for new assignment
Actor	Employee
Flow of Events	<ol style="list-style-type: none"> 1. Employee navigates to the home page of her panel 2. The system shall display a notification with detailing the due date, assigner, and the submitted form

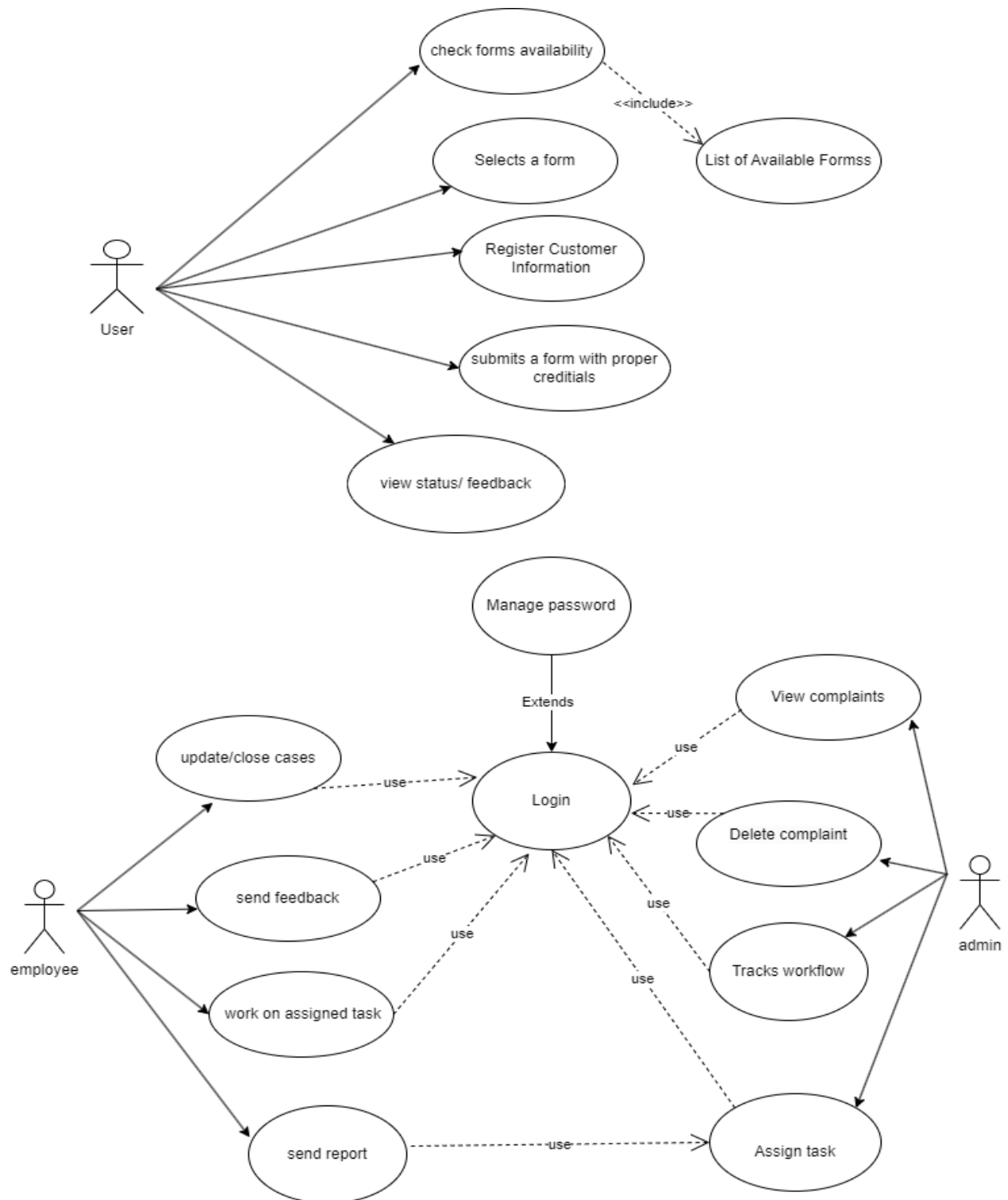
SID	007
Scenario Name	Log progress
Actor	Employee
Flow of Events	<ol style="list-style-type: none"> 1. The employee assigned work updates each step taken regarding case 2. The system shall display a report detailing case flow to people who are granted case access

SID	008
Scenario Name	Generate a Report
Actor	Employee
Flow of Events	<ol style="list-style-type: none"> 3. The manager arrives at the system and clicks Case Report 4. The manager chooses the month or date 5. The system shall display a report detailing the institution's workflow

SID	009
Scenario Name	Inperson cases
Actor	Department: Secretary
Flow of Events	<ol style="list-style-type: none"> 1. The secretary goes to the dashboard 2. Navigate various services provided 3. Registers the in-person request onto the system 4. The secretary will get a confirmation on form submission 5. Updates on requests are now shown and the assigned department director will be notified

Use Case Model

Use Case Diagram



Use case diagrams are used during requirement gathering and analysis to represent the functionality of the system. Use cases focus on the system's behavior from an external point of view. A use case describes a function provided by the system that yields a visible result for an actor. An actor describes any entity that interacts with the system.

Use Case ID	001
Use Case Name	Access To Forms
Objective	To display the forms
Participating Actors	Any Client
Entry Condition	The bus forms should be available
Flow of Events	<ol style="list-style-type: none"> 1. The client arrives at the system and clicks menu 2. The system displays various forms with a description of requirements and preconditions 3. Customer can't submit request unless prior access is provided
Exit Condition	Denied the option to submit the form

Use Case ID	002
Use Case Name	Submit form
Objective	Submit a form that customer requires service on
Participating Actors	Authenticated client
Entry Condition	Actor needs to be authenticated
Flow of Events	<ol style="list-style-type: none"> 1. The client arrives at the system and clicks to get form

	<ol style="list-style-type: none"> 2. The System displays the required form 3. The System validates that the required fields are properly filled 4. The clients can now submit information or close page
Alternate Event	<u>2.</u> The user enters an invalid destination
Exit Condition	Actor successfully forms submission notification

Use Case ID	003
Use Case Name	Login
Objective	User logs into the system
Participating Actors	Admin and employee
Entry Condition	User has a valid account
Flow of Events	<ol style="list-style-type: none"> 1. The system prompts the actor for authentication 2. The actor provides valid authentication for using the system 3. The system verifies the account is valid and permits the actor for using the app
Alternate Flows	<u>2.</u> The system denies login attempts with wrong entries and prompts him/her to reenter his/her User ID and Password correctly
Exit Condition	The application's dashboard will be displayed as per the privilege defined to the user.

Use Case ID	004
Use Case Name	Assign task
Objective	Add a new task to employee
Participating Actors	Admin
Entry Condition	Admin must be logged in
Flow of Events	<ol style="list-style-type: none"> 1. Admin arrives at the system and selects Admin panel in the navigation panel 2. The system displays a list of options 3. Admin selects manage submission 4. The system displays the list of submissions in each category 5. Admin selects assign a task 6. The system prompts Admin for employee information(employee's full name, department) 7. Admin enters deadline and adds task 8. The system asks for confirmation 9. Admin clicks confirm. 10. A new task has been added to the system
Alternate Flow	<u>6a.</u> Invalid input for fields <u>6b.</u> Try to add existing task again
Exit Condition	Admin adds a new task

Use Case ID	005
Use Case Name	Add Employee
Objective	Add a new employee to the database
Participating Actors	Admin
Entry Condition	Admin must be logged in
Flow of Events	<ol style="list-style-type: none"> 1. Admin arrives at the system and selects the Admin panel in the navigation bar 2. The system displays the list of options 3. Admin selects manage employee 4. The system displays the list of employees 5. Admin selects Add Employee 6. The system prompts Admin for employee information 7. Admin enters info and clicks add employee 8. The system asks for confirmation 9. Admin clicks confirm. 10. A new employee has been added to the system
Alternate Flow	<p>6a. Invalid input for fields</p> <p>6b. Try to add existing employee</p>
Exit Condition	Admin adds a new employee

Use Case ID	006
Use Case Name	Update Employee
Objective	Edit and update employee information to the database
Participating Actors	Admin
Entry Condition	Admin must be authenticated
Flow of Events	<ol style="list-style-type: none"> 1. Admin arrives at the system and selects the Admin panel in the navigation bar 2. The system displays the list of options 3. Admin selects manage employee 4. The system displays the list of employees 5. Admin selects Edit beside the employee in the list they want to edit 6. The system displays editable information about the employee 7. Admin enters info and clicks save 8. The system asks for confirmation 9. Admin clicks confirm. 10. Employee info has been updated to the system
Alternate Flow	6a. Invalid input for fields
Exit Condition	Admin edits an exsisting employee

Use Case ID	007
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Use Case Name	Delete Employee
Objective	Remove employee from the database
Participating Actors	Admin
Entry Condition	Admin must be logged in
Flow of Events	<ol style="list-style-type: none"> 1. Admin arrives at the system and selects the Admin panel in the navigation bar 2. The system displays a list of options 3. Admin selects manage employee 4. The system displays the list of buses 5. Admin selects Delete beside the bus in the list they want to edit 6. The system asks for confirmation 7. Admin clicks confirm. 8. The employee is deleted from the system
Exit Condition	Admin deletes an employee

Use Case ID	008
Use Case Name	View Report
Objective	Remove employee from the database
Participating Actors	Admin
Entry Condition	Admin must be logged in
Flow of Events	<ol style="list-style-type: none"> 1. Admin arrives at the system and selects the Admin panel in the navigation bar 2. The system displays a list of options 3. Admin selects reports 4. The system displays the list of work assigned work reports form employees

Exit Condition	Admin gets report
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Use Case ID	009
Use Case Name	Evaluate assigned case
Participating Actor	Employee
Entry Condition	1. The employee is authenticated and logged in 2. The employee can submit reviews to a supervisor who has assigned them to do the work
Flow of Events	<ol style="list-style-type: none"> 1. The supervisor arrives at the system and clicks the review submitted notification in the navigation bar when it toggles. 2. System displays the assigned tasks with estimated deadline
Exit Condition	Employee view assigned

Use Case ID	010
Use Case Name	Update/ Close cases
Objective	Update or close assigned cases
Participating Actors	Employee
Entry Condition	1. Authenticated employee
Flow of Events	<ol style="list-style-type: none"> 1. The employee clicks on the assigned to cases 2. The system displays assigned tasks with the option to review 3. Send an update through the proper channel or set an appointment and

	close the case 4. The client receives an update from the office
Exit Condition	The clients get the case review result

Use Case ID	011
Use Case Name	Generate workflow Report
Objective	Generate a workflow report from start station to final station
Participating Actors	admin
Entry Condition	1. The system displays a review option for assigned work
Flow of Events	1. Admin arrives the at system and clicks review case 2. System displays a report detailing the various workflow for stages and review submitted for cases
Exit Condition	Lists the various reports submitted in regards to cases

Object Model

Data Dictionary

Entity Client

Name	Type	Description
ID	Char	Identification number of the client
Full Name	String	First name and surname of the customer
Phone	Long	Phone number of the customer
Email	String	Email of the customer

Entity Employee

Name	Type	Description
ID	Char	Identification for an employee
Full Name	String	Full Name of the employee
Password	String	Password chosen by employee
Phone	Long	Phone number of the employee
Department	String	The department the employee works in

Entity Form

Name	Type	Description
ID	Char	Identification for a specific form
Title	Strin	Describes the kind of the form
Category	String	The sub-category of service the form is und

Employee ID	Char	Task assigned employee
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Entity Assignment

Name	Type	Description
ID	Char	Identification for the task assignment
Due date	date	Manage estimated due date
Employee ID	Char	Task assigned employee

Entity Review

Name	Type	Description
ID	Int	Identification number of the review
Employee ID	Char	Task assigned employee
Date	date	Date of the form submission
Counter	Int	To count the amount of the submission from the client
Client ID	Char	The client who submitted the form

Entity Report

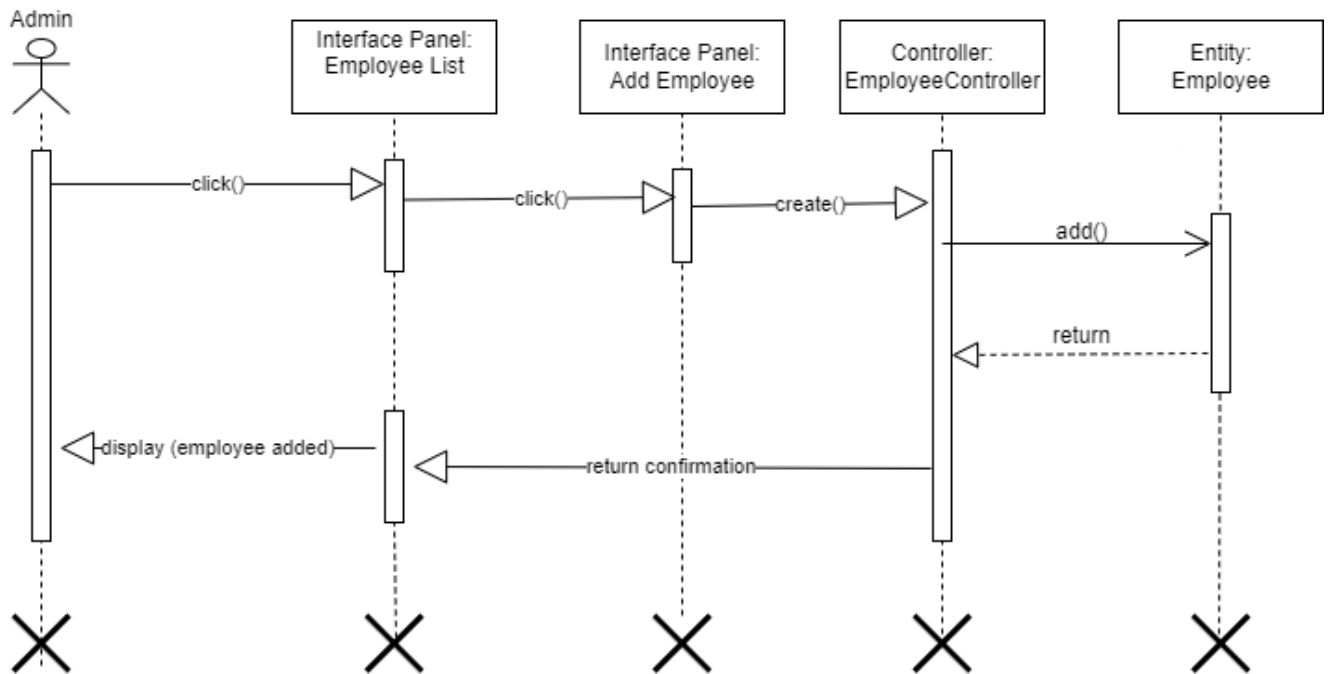
Name	Type	Description
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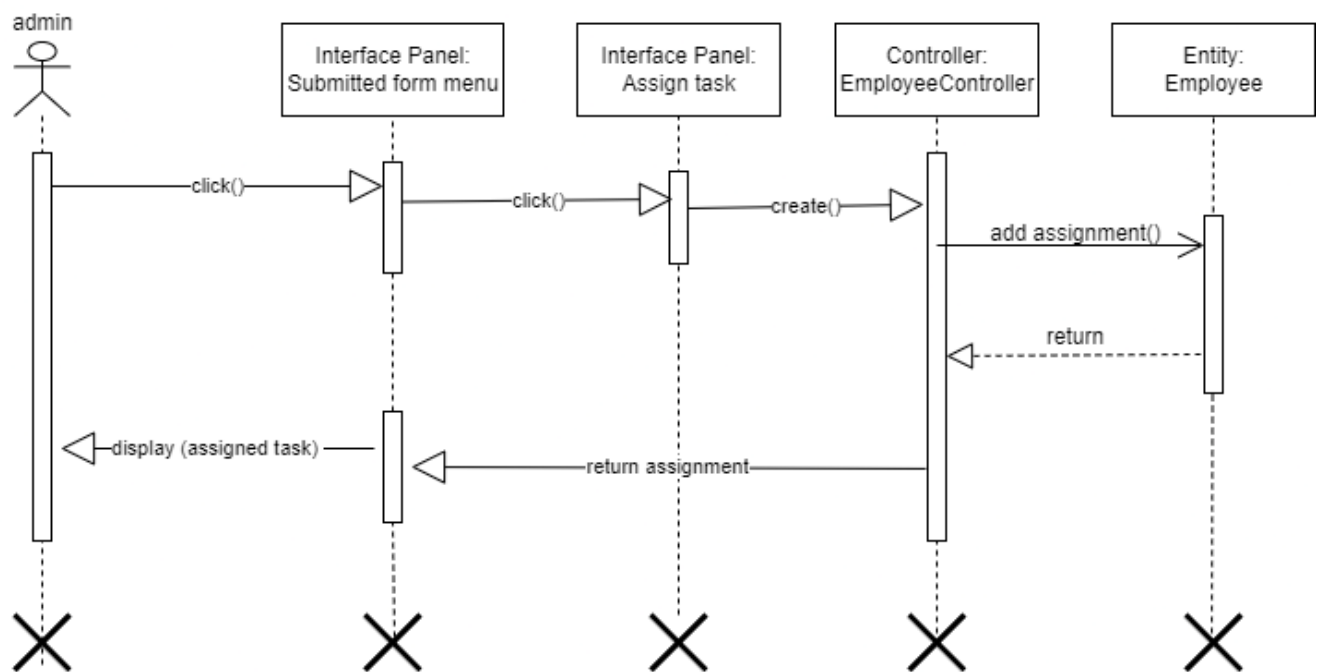
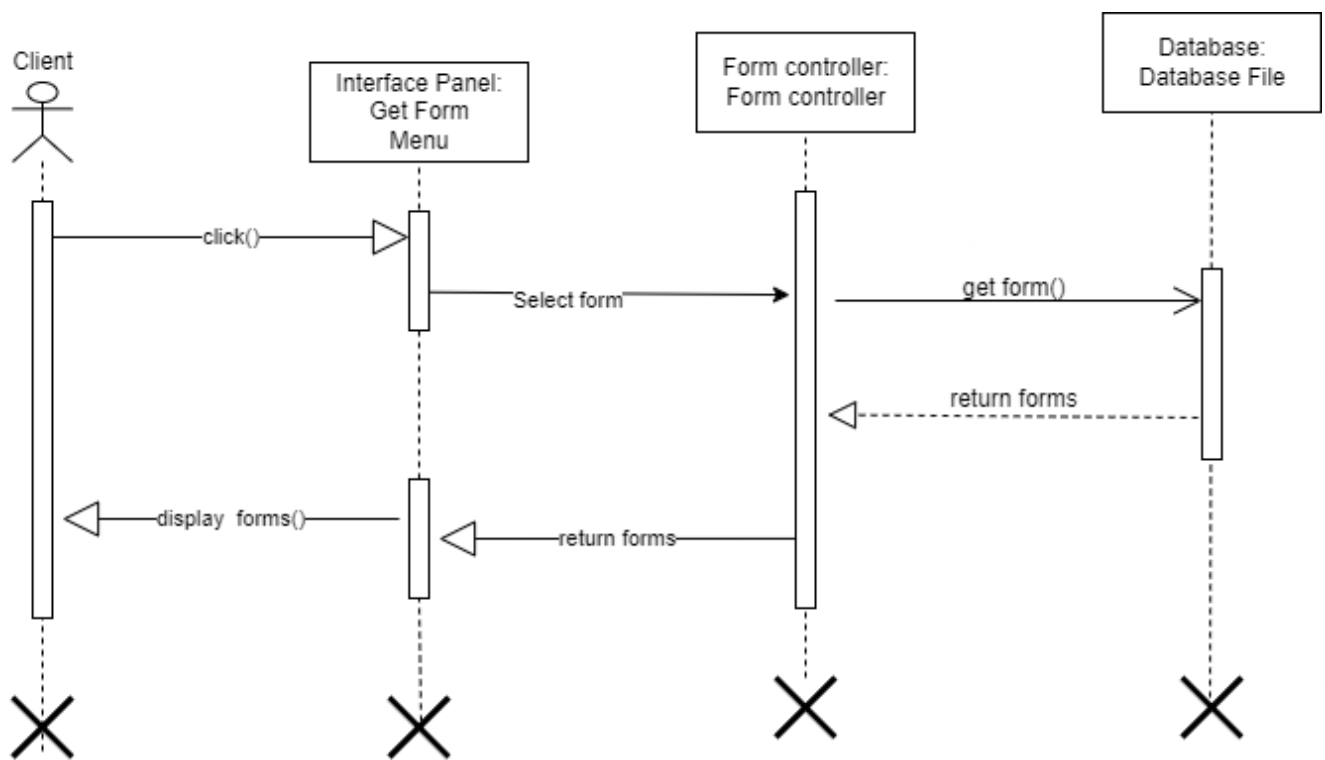
ID	Int	Identification number of the review
Form ID	Char	Updated and Closes opened cases
Phone	Long	Phone number of the customer
Email	String	Email of the customer

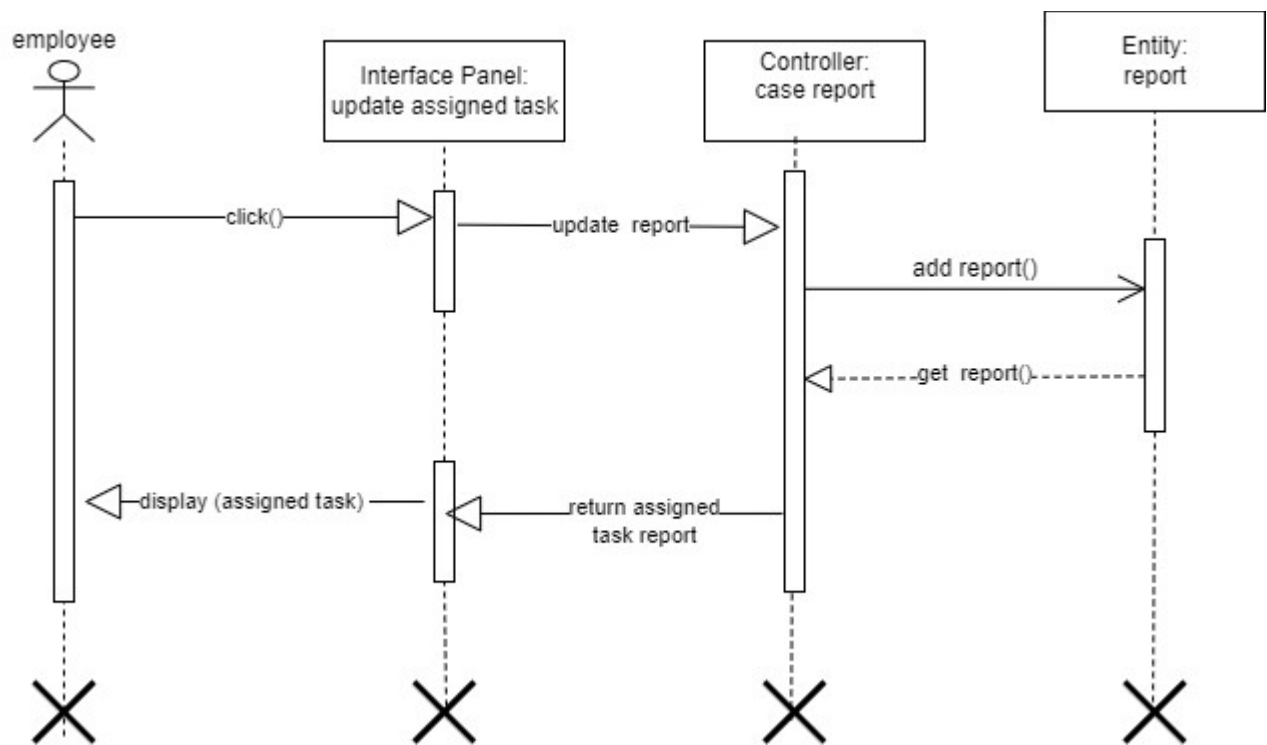
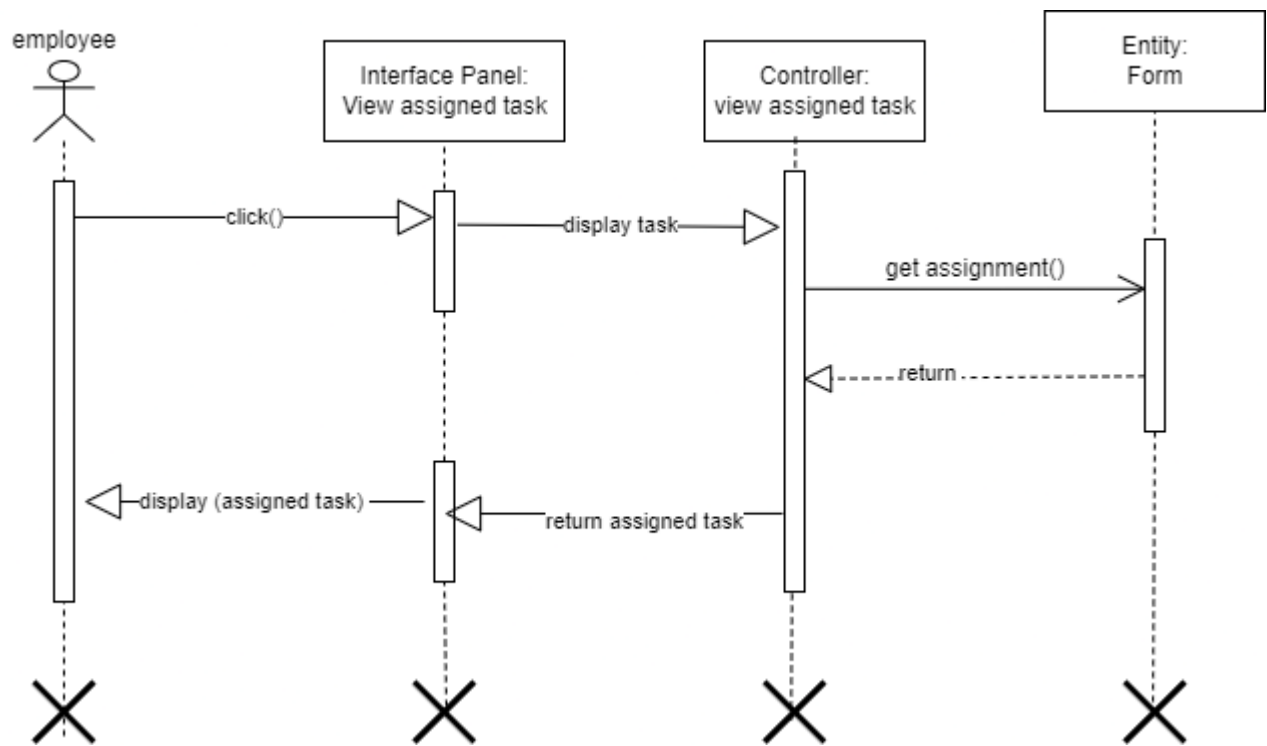
??? the other entities within the system

Dynamic Modeling

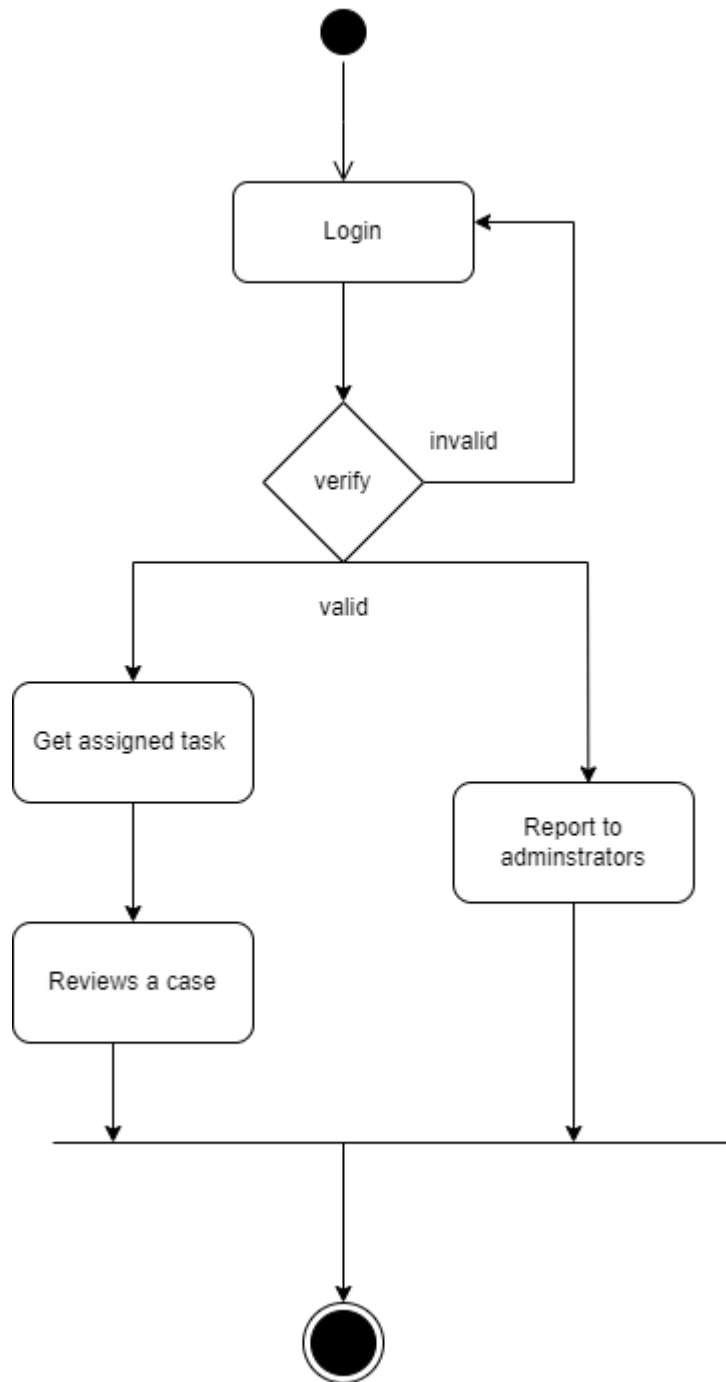
Sequence Diagram



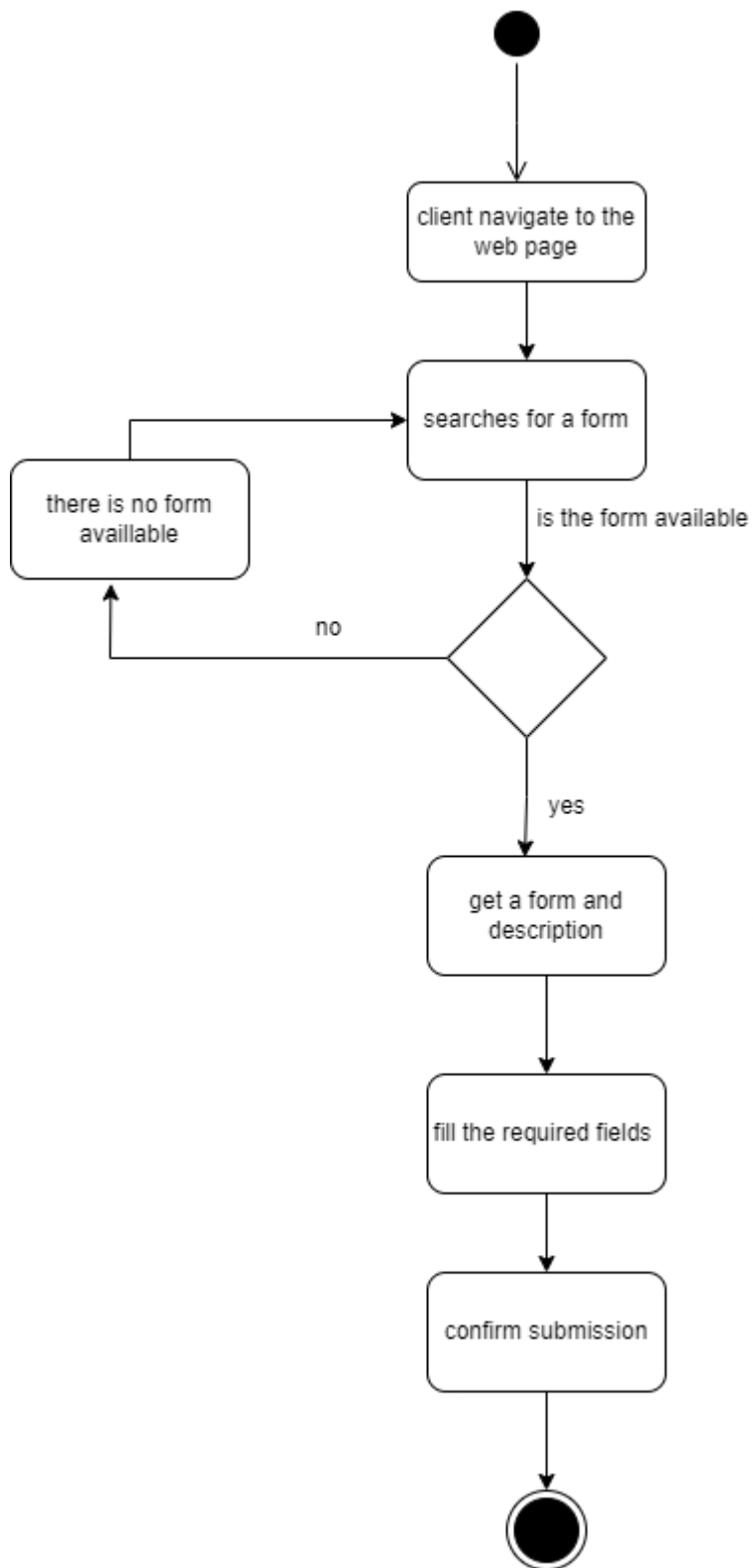




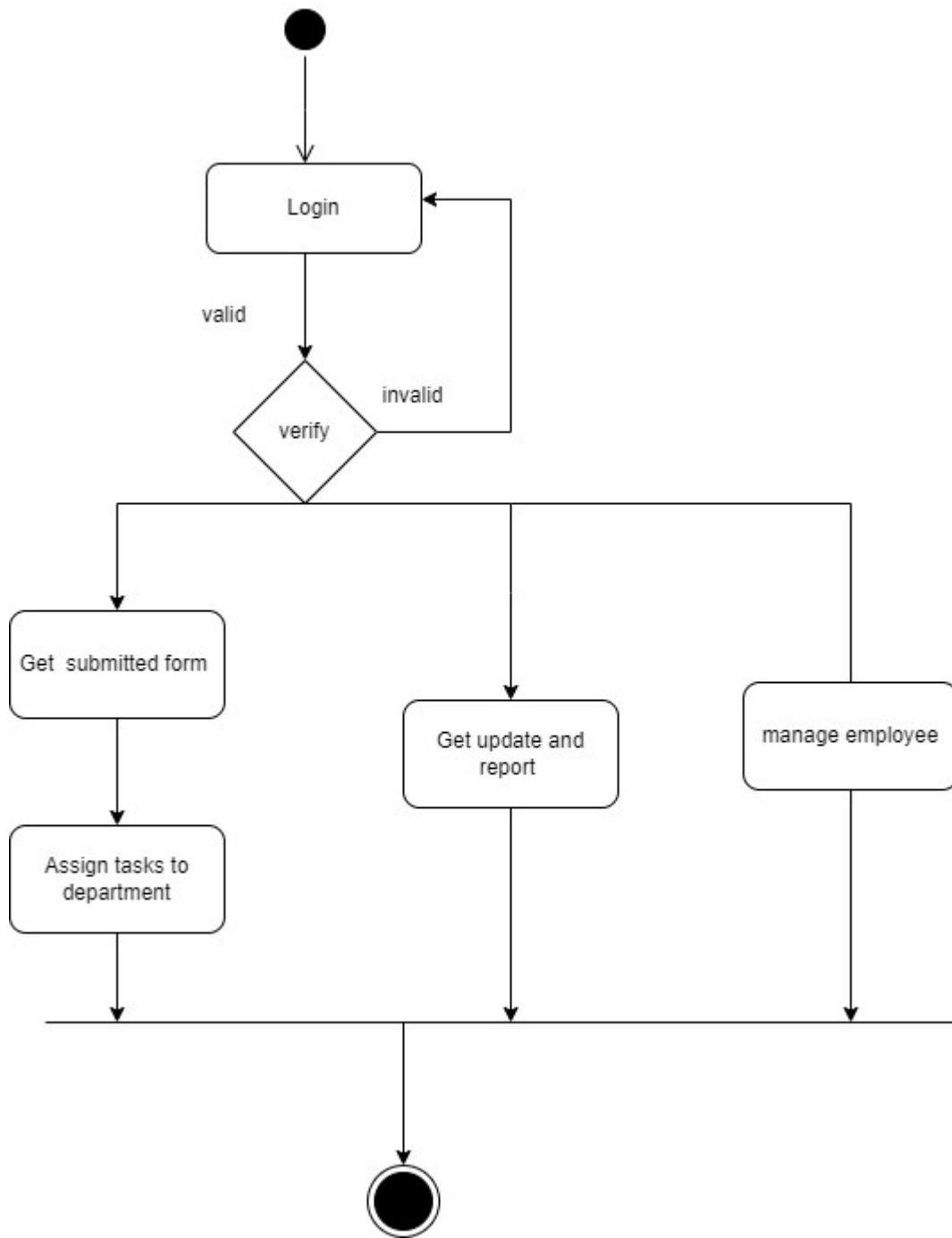
Activity Diagram



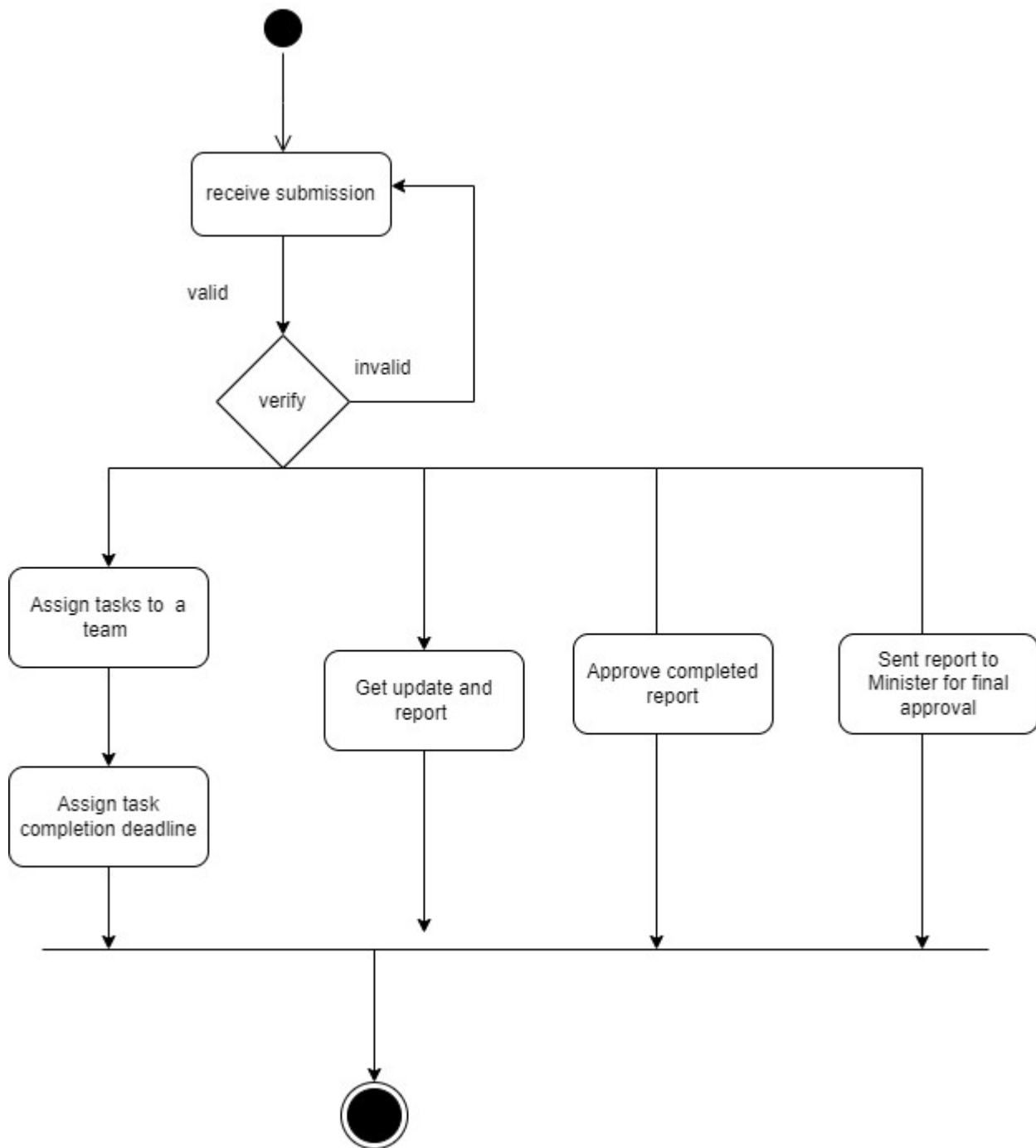
Dashboard activity diagram for Employee



Dashboard activity diagram for client



Dashboard activity diagram for High-level administrator



Dashboard activity diagram for Department head