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Communication organizer (Webook)

Chapter Three

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3.1 Introduction

Requirements analysis is a process that focuses on the tasks that determine the needs or conditions to meet the new or improved product considering the possibility of conflicting requirements, analyzing, documenting, validating, and managing software system requirements.

It focuses on the tasks that determine the needs or conditions to meet the new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating, and managing software or system requirements [Wikipedia 2021].

Requirements analysis is critical to the success or failure of a systems or software project. The requirements should be documented, actionable, measurable, testable, traceable, related to identified business needs or opportunities, and defined to a level of detail sufficient for system design [Wikipedia 2021].

In this chapter, we will focus on system analysis on **webook**. The following core activities will be elaborated in detail

- Current and Proposed Systems overview
- Functional and Non-functional Requirements
- System Models

3.3 Proposed System Overview

Webook proposes a web service controlled by an organization's employees. It includes efficient subsystems for communication. Employees can express their communication without any barrier.

Employees can access this system from any computer which is connected to the server of the organization. They can use any service that is described in the functional requirements.

3.3.1 Functional requirements

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. So, it's important to make them clear both for the development team. Generally, functional requirements describe system behavior under specific conditions.

Webook performs the following functionalities.

- ✓ Create employees based on their role in the organization
- ✓ Edit delete registered employees
- ✓ Create, edit and delete roles of employees.
- ✓ Show all registered employee

- ✓ Create, edit, show, and delete departments
- ✓ Create, edit, and show company information.
- ✓ Login and create an account
- ✓ Activate and deactivate users
- ✓ Reset passwords for forgotten passwords.
- ✓ Identify users based on their role.
- ✓ Create, edit, show, and delete letters.
- ✓ For approval letter add, edit and delete approval stages.
- ✓ Create, edit, show, and delete reports and memos.
- ✓ Show progress of letters, reports, and memos.
- ✓ Chat-box for communicating.
- ✓ Name, role, and last seen status on the chat-box.
- ✓ Chat lists and history of chatting.
- ✓ Share files on the chatbot.
- ✓ announce messages.
- ✓ Show notification when receiving new messages, letters, reports, or memos.

3.3.2 Non-Functional Requirements

Non-functional requirements describe how a system must behave and establish constraints of its functionality. This type of requirement is also known as the system's quality attributes [Alexsoft 2021].

Webook performs the following non-functional requirements.

- ✚ The system should be available for all employees.
- ✚ The system will have an interface that is easy to understand easily.
- ✚ Performance should not decrease.
- ✚ Data integrity must be insured.
- ✚ Secure authentication must be enabled.
- ✚ Secured data communication must be enhanced.
- ✚ The website should work flawlessly from any web browser.
- ✚ The system should always give real-time data

3.4.1 Essential Use Case Modelling

A use-case model is a model of how different types of users interact with the system to solve a problem. As such, it describes the goals of the users, the interactions between the users and the system, and the required behaviour of the system in satisfying these goals [utm 2007].

3.4.1.1 Use Case Diagram

Use case diagrams have a building block it commonly depends on.

- **Actors:** The users that interact with a system. An actor can be a person, an organization, or an outside system that interacts with your application or system. They must be external objects that produce or consume data.
- **System:** A specific sequence of actions and interactions between actors and the system. A system may also be referred to as a scenario.
- **Goals:** The result of most use cases. A successful diagram should describe the activities and variants used to reach the goal.

In this sense, the system is a **webook**. The actors are employees, managers, and system admin. They are connected to their goal through the line and the goals are circled in the following figure.

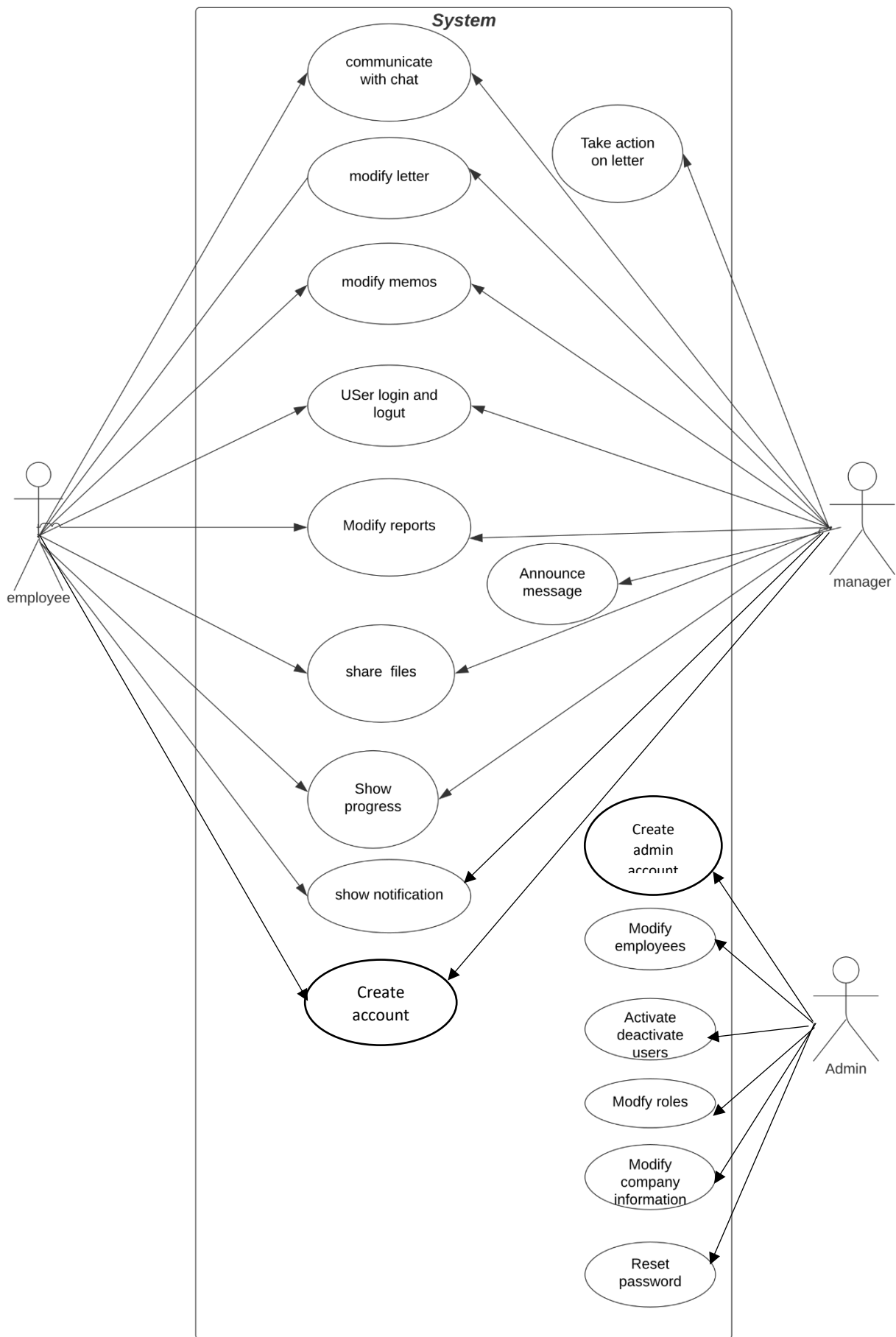


Fig 1.0 usecase diagram

3.4.1.2 Use Case Documentation

The Use Case Document is a business document that provides a story of how a system, and its actors, will be utilized to achieve a specific goal. An effective Use Case should provide a detailed step-by-step description of how the system will be used by its actors to achieve the planned outcome. The purpose of the Use Case is to tie the needs of the system to the design parameters of the system to ensure that the completed system achieves the goals established by the requirements. [projectmanagementdocs 2017]

Webook use case identifier starts with UC- and is followed by numbers.

Name	User login and logout
Identifier	UC-01
Description	Login and logout from webook
Actor	Employees, Managers, and admins
Precondition	Users must create an account
Postcondition	Redirect to the landing page
Basic course of action	<ul style="list-style-type: none">➤ A user enters his employee id.➤ A user enters his password.➤ A user presses the login button➤ forget password ask admin to reset password

Name	Create user Account
Identifier	UC-02
Description	The user creates an account to use the system
Actor	Employees, Managers, and admins
Precondition	Employee or manager should be registered by the admin first
Postcondition	Redirect to a landing page
Basic course of action	<ul style="list-style-type: none">➤ Users employee id➤ Users enter their password➤ Users enter to create an account button

Name	Create admin account
Identifier	UC-03
Description	Create an admin account this is done once only the system starts for the first time
Actor	Admin
Precondition	None
Postcondition	Redirect to enter Company information
Basic course of action	<ul style="list-style-type: none"> ➤ Enter admin employee id ➤ Enter admin password ➤ Press create account button

Name	Modify company information
Identifier	UC-04
Description	Add company data when the system starts for the first time
Actor	Admin
Precondition	None
Postcondition	Redirect to login page
Basic course of action	<ul style="list-style-type: none"> ➤ Enter company name, address, and some other basic information ➤ Enter company logo ➤ Press submit button

Name	Modify employees
Identifier	UC-05
Description	Admin create, edit, and delete user data
Actor	Admin
Precondition	User must be logged via the admin account
Postcondition	employee's data modified (created, updated, or deleted)
Basic course of action	<ul style="list-style-type: none"> ➤ Create an employee by entering basic information ➤ Edit employee's data that are added ➤ Delete employee ➤ Read and search employees

Name	Modify roles
Identifier	UC-06
Description	Create, edit, delete and read the role of the organization
Actor	Admin
Precondition	User must be logged via an admin account
Postcondition	Organization role data modified (created, updated, or deleted)
Basic course of action	<ul style="list-style-type: none"> ➤ Create a role ➤ Set role level ➤ Edit and delete role ➤ Read and search role

Name	Modify department
Identifier	Uc-07
Description	Create, edit, delete and read the departments of the organization
Actor	Admin
Precondition	User must be logged via an admin account
Postcondition	Organization departments data modified (created, updated, or deleted)
Basic course of action	<ul style="list-style-type: none"> ➤ Create an employee by entering basic information ➤ Edit employees data that are added ➤ Delete employee Read and search employees

Name	Activate and deactivate employee
Identifier	UC-08
Description	Activate and deactivate user account
Actor	Admin
Precondition	User must be logged via an admin account
Postcondition	User account activated or deactivated
Basic course of action	<ul style="list-style-type: none"> ➤ User account activated ➤ User account deactivated

Name	Reset password
Identifier	UC-09
Description	Reset password for forgotten passwords
Actor	Admin
Precondition	User must be logged via an admin account
Postcondition	A user account is deleted and they enter a new password
Basic course of action	<ul style="list-style-type: none"> ➤ Employee request to reset password ➤ Admin Seen the request and reset the password

Name	Communicate with chat
Identifier	UC-10
Description	Users real-time communication
Actor	Employees and managers
Precondition	A user must be logged in by manager or employee account
Postcondition	the user sends messages.
Basic course of action	<ul style="list-style-type: none"> ➤ User writes a message on the chatbox. ➤ User send message

Name	Modify letter
Identifier	UC-11
Description	User can create, edit and delete letter
Actor	Employees and managers
Precondition	A user must be logged in by manager or employee account
Postcondition	User modify letter
Basic course of action	<ul style="list-style-type: none"> ➤ Choose letter type ➤ Write letter ➤ Add approval stage for approval letters ➤ Send letters

Name	Modify memos
Identifier	UC-12
Description	User can create, edit and delete
Actor	Employees and Managers
Precondition	A user must be logged in by manager or employee account
Postcondition	User modifies memos
Basic course of action	<ul style="list-style-type: none"> ➤ Select letter to refer ➤ Write memo ➤ Send memos

Name	Write reports
Identifier	UC-13
Description	Write reports
Actor	Employees and Managers
Precondition	User modify reports
Postcondition	User modifies reports
Basic course of action	<ul style="list-style-type: none"> ➤ Create reports ➤ Edit and delete reports ➤ Send reports

Name	Share files
Identifier	UC-14
Description	Share files between users
Actor	Employees and managers
Precondition	A user must be logged in by manager or employee account
Postcondition	User sends a file.
Basic course of action	<ul style="list-style-type: none"> ➤ User choose file to send ➤ User send file

Name	Show progress and notification
Identifier	UC-15
Description	Show progress of the letter, memos, and reports whether the receiver sees and reacts to it.
Actor	Employees and managers
Precondition	A user must be logged in by a manager or employee account
Postcondition	User understands the progress

Basic course of action	<ul style="list-style-type: none"> ➤ Select a letter, memo, or report ➤ Press show progress button
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Name	Show notification
Identifier	UC-16
Description	Show when a new action is performed
Actor	Employee and manager
precondition	A user must be logged in by manager or employee account
postcondition	Users see when a new action is performed
Basic course of action	Show notification icon and bar when the user browses

Name	Take action on a letter
Identifier	UC-17
Description	Show when a new action is performed
Actor	Manager
precondition	A user must be logged in by the manager
postcondition	A Letter is approved or unapproved
Basic course of action	Select a letter and take actions

Name	Announce message
Identifier	UC-18
Description	Show when a new action is performed
Actor	Manager
precondition	A user must be logged in by manager or employee account
postcondition	A Message is written on employees dashboard
Basic course of action	Write a message and press announce button

3.4.2 Essential UI Prototype

User interface (UI) prototyping is an iterative analysis technique in which users are actively involved in the mocking-up of the UI for a system. The figures below are the essential UI prototype of **Webook**.

Webook has multiple pages to show. But other than log in and logout pages the rest page relies on two common side-navbar. it is the admin **side navbar** and **the employee side navbar**. They also have a common header navbar.



LOGO

Employee id

Enter password

Login

New to webook
create account

Forget password

?

Fig 2.0 Login page






create account





can't Create account? it means you are
not registered to this system please
contact admin

fig 3.0 create Account page




contact
admin





Employee Name
Employee role



chat

Letter


Memos

Reports

Announce something

Posts

Notification



Manager name
date

*There is a metting at 11:00 Am.Please
employees come to conference hall with
your note books and work report.*

Fig 4.0 Landing page (Home page)

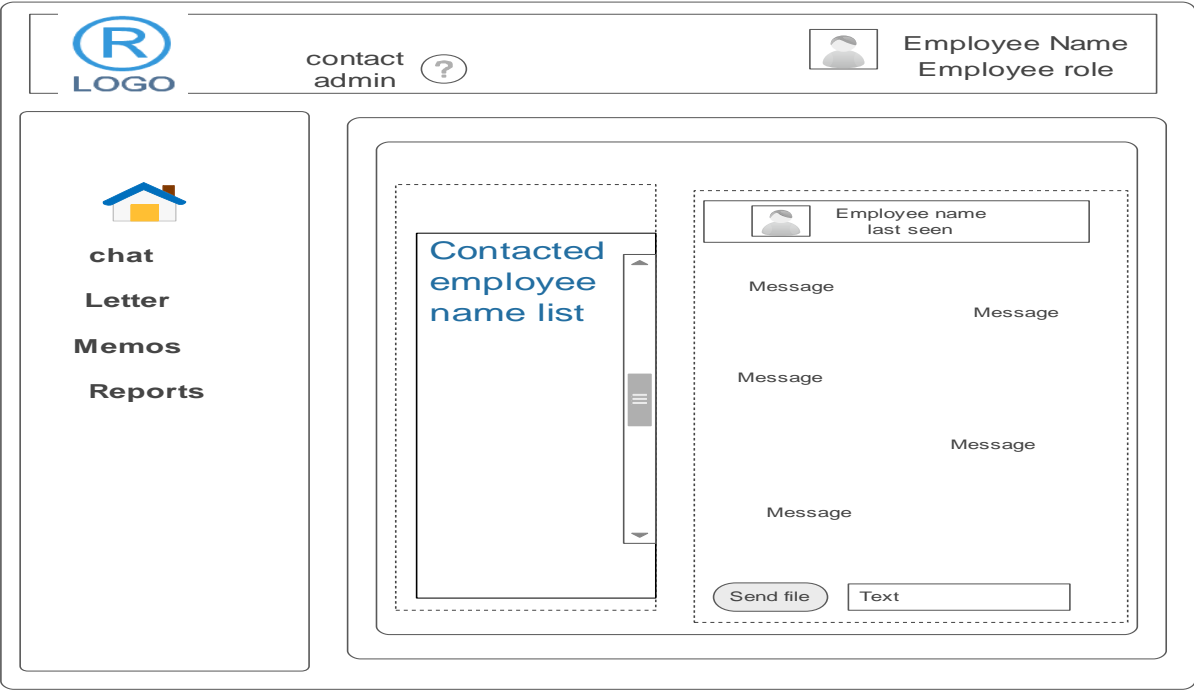


Fig 5.0 Chat page (Home page)

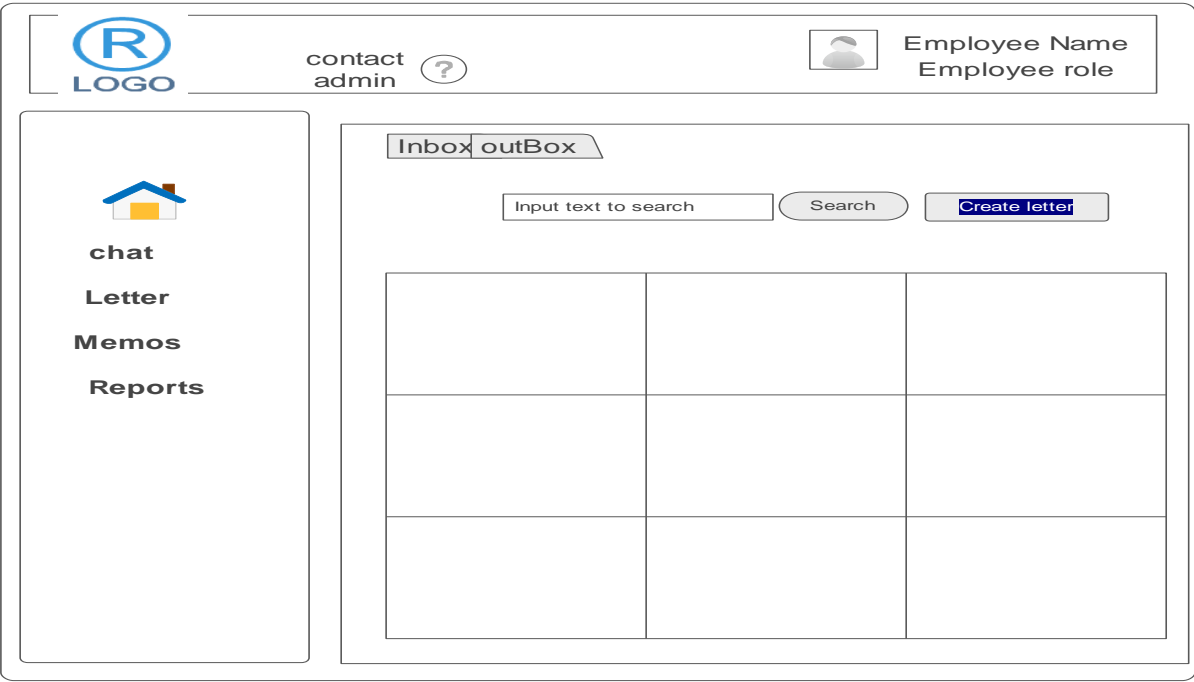


fig 6.0 Letter page

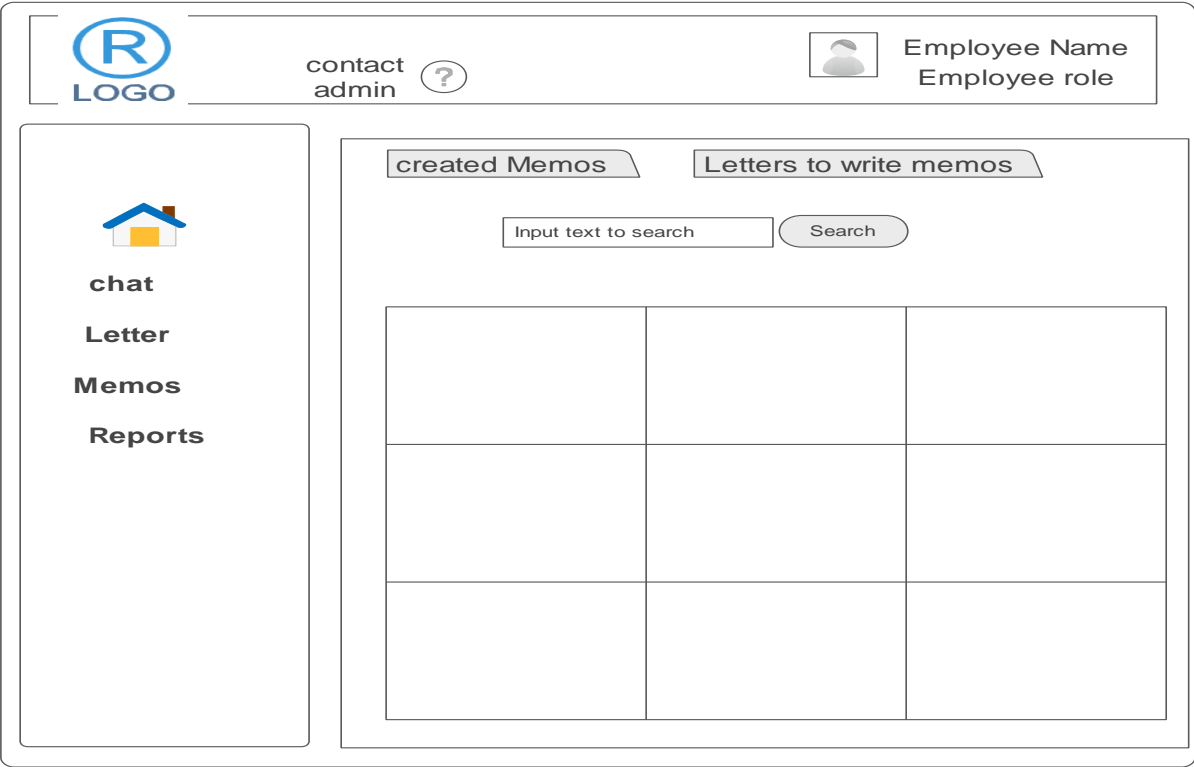


Fig 7.0 Memos page

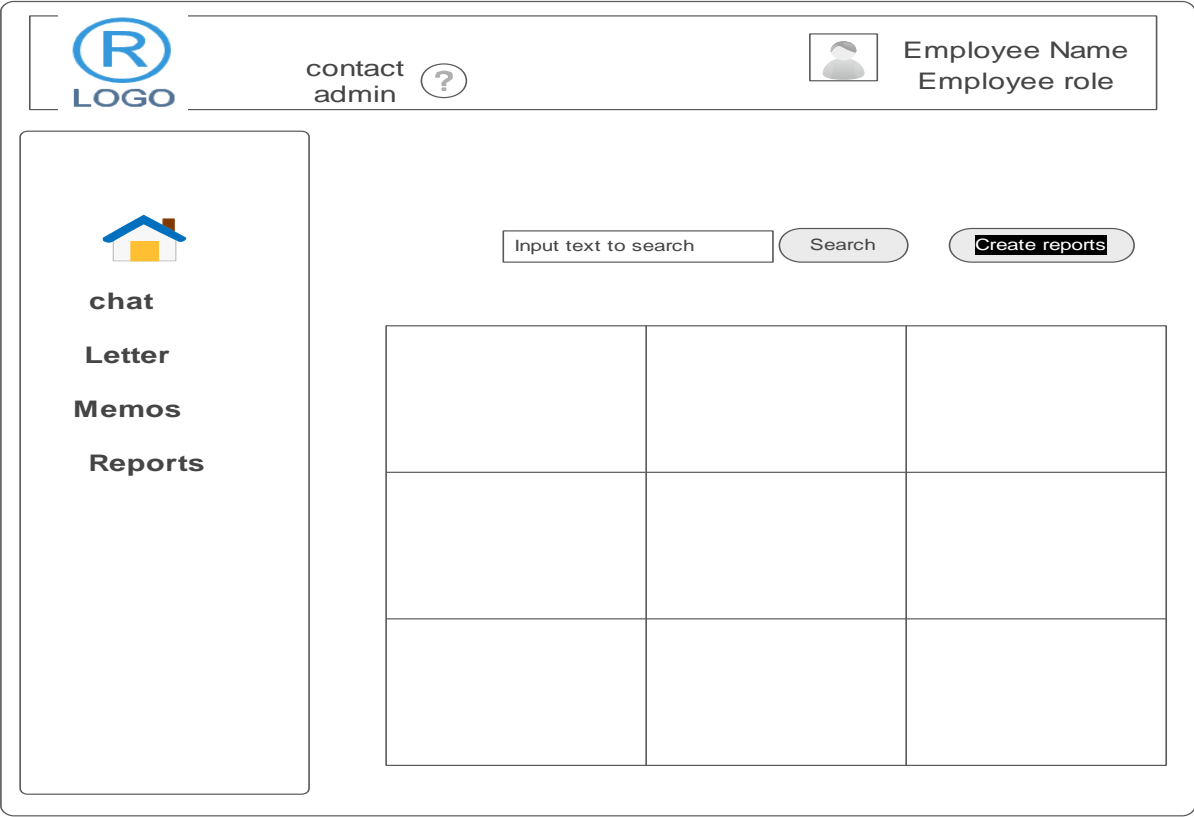


Fig 8.0 Reports page

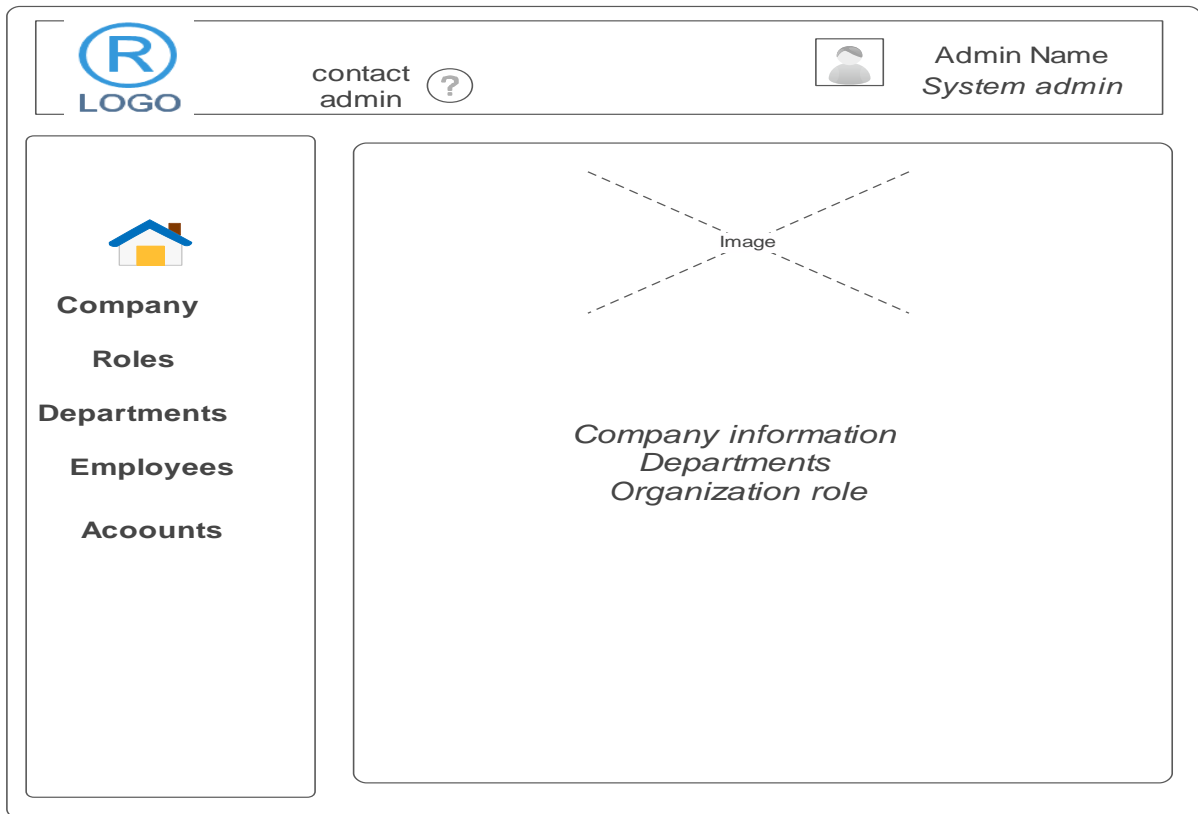


Fig 9.0 Admin page

3.4.3 User Interface Flow Diagram

User interface-flow diagrams - also called storyboards, interface-flow diagrams, windows navigation diagrams, and context-navigation maps - enable you to model the high-level relationships between major user s elements and thereby ask fundamental usability questions. [Agilemodeling 2016]

User interface-flow diagrams are typically used for one of two purposes. First, they are used to model the interactions that users have with your software, as defined in a single use case. For example, a use case can refer to several screens and provides insight into how they are used. Based on this information, you can develop a user interface-flow diagram that reflects the behavioral view of the single use-case. [Agilemodeling 2016] .

When **Webook** runs the first time there is no data to start and process it. So it first asks company and administrator information to control the system.

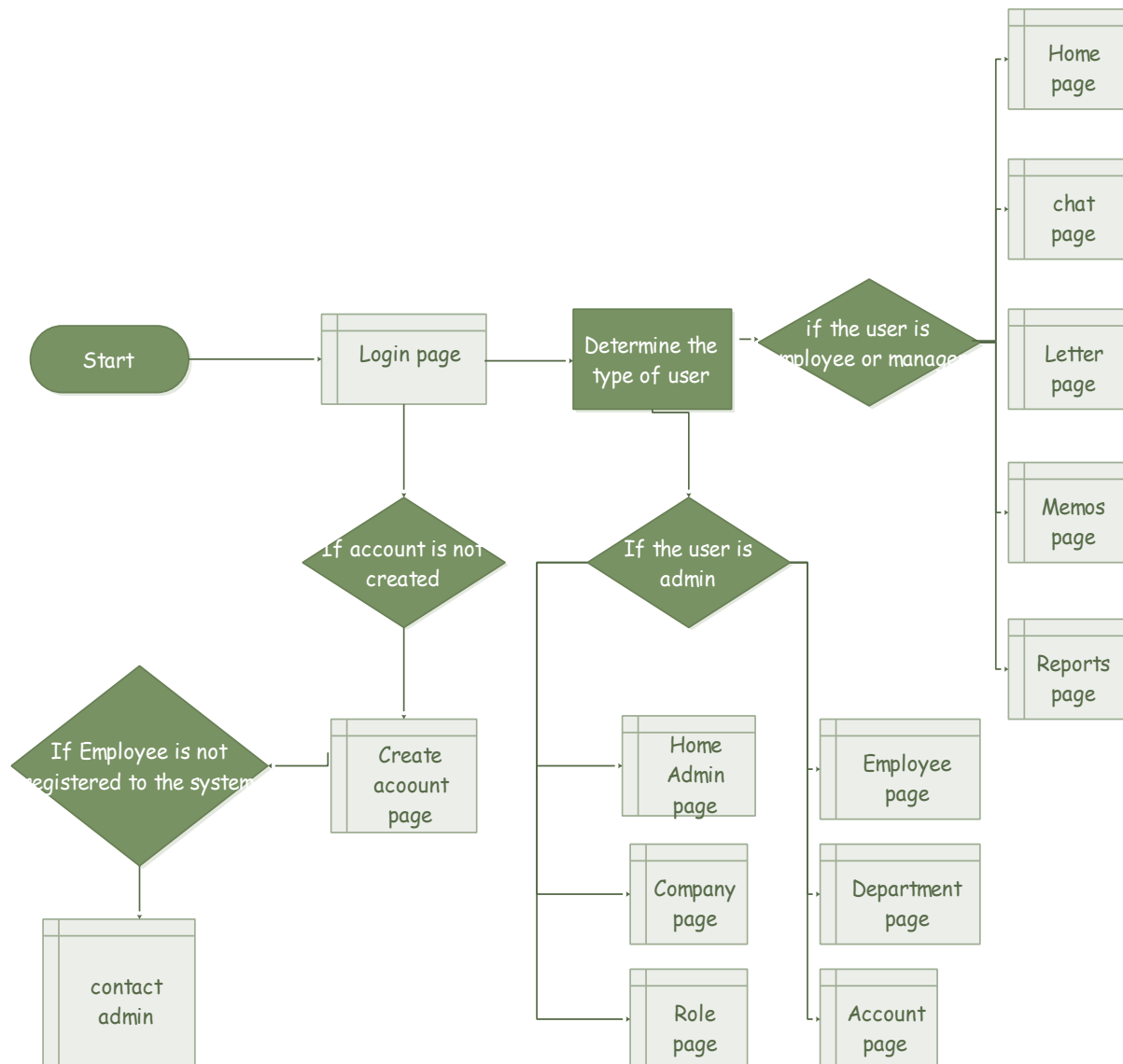
The following diagram explains how the system runs for the first time.



Fig 10.0 UI flow diagram for the first time

After the information is inserted employee's data. Employees can start using the system by creating an account. If employees id is unknown that means they are not registered to the system. They can contact the admin to register them.

The following UI flow chart explains how the employee access **webbook**



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