



Daffodil
International
University

Leave Management System

Supervised by

Farhan Anan Himu
Lecturer
Department of Software Engineering
Daffodil International University

Submitted by

Md. Nasim Kabir
ID: 153-35-1339
Department of Software Engineering
Daffodil International University

This Project report has been submitted in fulfillment of the requirements for the Degree of Bachelor of Science in Software Engineering.

© All right Reserved by Daffodil International University
Fall-2019

APPROVAL

This **Project** titled “**Leave Management System**”, submitted by **Md. Nasim Kabir, ID: 153-35-1339** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of BSc in Software Engineering and approved as to its style and contents.

BOARD OF EXAMINERS

Dr. Touhid Bhuiyan

Professor and Head

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Chairman

Md Fahad Bin Zamal

Assistant Professor

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Internal Examiner 1

Md. Shohel Arman

Lecturer

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Internal Examiner 2

Prof Dr. Mohammad Abul Kashem

Professor

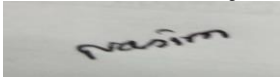
Department of Computer Science and Engineering
Faculty of Electrical and Electronic Engineering
Dhaka University of Engineering & Technology, Gazipur

External Examiner

DECLARATION

I hereby declare that, this project report submitted to the Daffodil International University, is a record of an original work done by me under the guidance of Farhan Anan Himu, lecturer at the department of Software Engineering, Daffodil International University. I also declare that the project reported in this document has not been submitted to any other University or Institute for the award of any degree or diploma.

Submitted by:



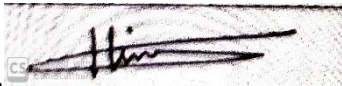
.....

Md. Nasim Kabir

ID: 153-35-1339

Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

Certified by:



.....

Farhan Anan Himu

Lecturer
Department of Software Engineering
Faculty of Science and Information Technology
Daffodil International University

ACKNOWLEDGEMENT

First, I express my heartiest thanks and gratefulness to almighty Allah for His divine blessing makes me possible to complete the final year project successfully. I really grateful and wish my profound my indebtedness to Farhan Anan Himu, Lecturer, Department of Software Engineering, Daffodil International University, Dhaka. His endless patience, strong guidance, continual encouragement and energetic convoy, constructive criticism, valuable advice and correcting them at all stage have made it possible to complete this project. I would like to express my heartiest gratitude to Asif Khan Shakir, Lecturer, Department of Software Engineering and Professor Dr. Touhid Bhuiyan, Head, Department of Software Engineering, for his kind help to finish my project and also to other faculty member and the staff of Software Engineering department of Daffodil International University. I would like to thank my entire course mate to encourage and motivate me to complete the project successfully. And finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

1. This project report is about a leave management system which is targeted for any medium or large organization with a big quantity of human resource.
2. This project includes leave policy, apply leave, recommended leave application, view leave calendar list and approver approve application. The report has every details of those features.
3. This project is developed for final year project of my BSC in SWE program under the supervisor of Farhan Anan Himu.
4. The experience of working in this task is significant for me as an understudy of programming designing. I had an arrangement to build up an ERP framework, by this framework the genuine work has been begun in light of the fact that it is a module of ERP framework. This framework will guarantee that a worker of any association don't have to take consent for leave by sending a paper mail or by setting off to the Supervisor physically, rather the person in question can carry out this responsibility effortlessly utilizing this framework.

Contents

Approval	ii
Declaration.....	iii
Acknowledgement.....	iv
Abstract.....	v
CHAPTER: 01	11
1. Introduction.....	11
1.1. Project Overview	11
1.2. The Purpose of the Project	11
1.2.1. Background.....	11
1.2.2. Benefits & Beneficiaries.....	11
1.2.3. Goal of the Project	11
1.3. Stakeholders	12
1.4. Proposed System Model (block diagram)	12
1.5. Project Schedule	13
1.5.1. Gantt chart	13
CHAPTER: 2	14
2. Software Requirement Specification	14
2.1. Performance Requirements	14
2.1.1. Speed and Latency Requirements	14
2.1.2. Accuracy Requirements.....	14
2.1.3. Capacity Requirements.....	14
2.2. Dependability Requirements	14
2.2.1. Reliability Requirements	14
2.2.2. Availability Requirements	14
2.3. Maintainability and Supportability Requirements	15
2.3.1. Maintenance Requirements	15
2.3.2. Supportability Requirements	15
2.4. Security Requirements	15
2.4.1. Access Requirements	15
2.5. Usability and Human-Interaction Requirements	15
2.5.1. Ease of Use Requirements	15
2.5.2. Understandability and Politeness Requirements.....	15
2.5.3. Accessibility Requirements	15
2.6. Look and Feel Requirements.....	16
2.6.1. Style Requirements	16
2.7. Legal Requirements	16
2.7.1. Standards Requirements	16
CHAPTER: 03	17
3. System Analysis	17
3.1. Use Case Diagram	17
3.2. Use Case Description.....	18

3.2.1. Sign in	18
3.2.2. Create Leave Policy	18
3.2.3. Create Holiday List	19
3.2.4. View Holiday List	19
3.2.5. Create User	20
3.2.6. Apply Leave Application.....	20
3.2.7. Recommended Leave Application	21
3.2.8. Application accept/reject	21
3.2.9. View Leave Status.....	22
3.2.10. Report Generator.....	22
3.2.11. Sign out.....	23
3.3. Activity Diagram	24
3.3.1 Sign in	24
3.3.2 Create Leave Policy	25
3.3.3 Create Holidays List.....	26
3.3.4 View Holidays List	27
3.3.5 Create User	28
3.3.6 Apply Leave Application	29
3.3.7 Recommended Leave Application	30
3.3.8 Application accept/reject	31
3.3.9 View Leave Status	32
3.3.10 Report Generator.....	33
3.3.11 Singin out.....	34
3.4. System Sequence Diagram.....	35
3.4.1 Sign in	35
3.4.2 Create Leave Policy	35
3.4.3 Create Holidays List.....	36
3.4.4 View Holidays List	36
3.4.5 Create User	37
3.4.6 Apply Leave Application	37
3.4.7 Recommended Leave Application	38
3.4.8 Application accept/reject	38
3.4.9 View Leave Status	39
3.4.10 Report Generator.....	39
3.4.11 Singin out.....	40
CHAPTER: 04	41
4. System Design Specification	41
4.1. Database Design Diagram.....	41
4.2. Development Tools & Technology	42
4.2.1. User Interface technology.....	42
4.2.2. Implementation Tools & Platforms.....	42
CHAPETR: 05	43

5. System Testing	43
5.1. Testing Features.....	43
5.1.1. Feature to be tested.....	43
5.1.2. Feature not to be tested.....	43
5.2. Testing Strategies.....	43
5.2.1. Test Approach.....	43
5.2.2. Pass/Fail Criteria	43
5.2.3. Suspension and Redemption.....	43
5.2.4. Testing Schedule	44
5.3. Test Cases.....	44
5.3.1. Test Case: 01.....	44
5.3.2. Test Case: 02.....	45
5.3.3. Test Case: 03.....	46
5.3.3. Test Case: 04.....	46
5.3.3. Test Case: 05.....	47
5.3.3. Test Case: 06.....	48
5.3.3. Test Case: 07.....	48
CHAPTER: 06	46
6. User Manual.....	50
6.1 Sign In(Admin, Supervisor and User)	50
6.2 User Sign In(Admin)	50
6.3 Leave Policy Creation(Admin).....	51
6.4 Add Department Name(Admin)	51
6.5 Add Role Name(Admin)	52
6.6 Create User(Admin).....	52
6.7 Create Leave Calendar Event(Admin).....	53
6.8 Supervisor or User Homepage	53
6.9 View Leave Policy(Supervisor and User).....	54
6.10 View UserList(Admin)	54
6.11Apply Leave Application(Supervisor and User)	55
CHAPTER: 07	56
7. Project Summery	56
7.1. GitHub Link	56
7.2. Limitations	56
7.3. Obstacles & Achievements	56
7.4. Future Scope.....	56
Conclusion	57
References.....	58

List of Table

<u>Table 01: Gantt Chart</u>	13
<u>Table 02: Sign in</u>	18
<u>Table 03: Create Leave Policy</u>	18
<u>Table 04: Create Holidays List</u>	19
<u>Table 05: View Holidays List</u>	19
<u>Table 06: Create User</u>	20
<u>Table 07: Apply Leave Application</u>	20
<u>Table 08: Recommended Leave Application</u>	21
<u>Table 09: Application Accept/reject</u>	21
<u>Table 10: View Leave Status</u>	22
<u>Table 11: Report Generator</u>	22
<u>Table 12: Sign out</u>	23
<u>Table 13: Testing Schedule</u>	44
<u>Table 14: Test Case-01</u>	45
<u>Table 15: Test Case-02</u>	45
<u>Table 16: Test Case-03</u>	46
<u>Table 17: Test Case 04</u>	47
<u>Table 18: Test Case 05</u>	47
<u>Table 19: Test Case 06</u>	48
<u>Table 20: Test Case 07</u>	49

List of Figure

Figure 1: Block Diagram	12
Figure 2: Use Case Diagram	17
Figure 3: Sign in Activity Diagram	24
Figure 4: Create Leave Policy Activity Diagram	25
Figure 5: Create Holidays List Activity Diagram	26
Figure 6: View Holidays list Activity Diagram	27
Figure 7: Create User Activity Diagram	28
Figure 8: Apply Leave Application Activity Diagram	29
Figure 9: Recommended Leave Application Activity Diagram	30
Figure 10: Leave Application accept/reject Activity Diagram	31
Figure 11: view leave Status Activity Diagram	32
Figure 12: Report Generator Activity Diagram	33
Figure 13: Sign out Activity Diagram	34
Figure 14: Sign in Activity Diagram	35
Figure 15: Create Leave Policy Sequence Diagram	35
Figure 16: Create Holidays List Sequence Diagram	36
Figure 17: View Holidays List Sequence Diagram	36
Figure 18: Create User Sequence Diagram	37
Figure 19: Apply Leave Application Sequence Diagram	37
Figure 20: Recommended Leave Application Sequence Diagram	38
Figure 21: Leave Application accept/reject Sequence Diagram	38
Figure 22: view leave Status Sequence Diagram	39
Figure 23: Report Generator Sequence Diagram	39
Figure 24: Sign out Sequence Diagram	40
Figure 25: Database Design Diagram	41
<u>Figure 26: Sign in Page</u>	50
<u>Figure 27: Sign in Admin Page(Admin)</u>	50
<u>Figure 28: Leave Policy Creation</u>	51
<u>Figure 29: Add Department Name</u>	51
<u>Figure 30: Create User</u>	52
<u>Figure 31: Create Leave Calendar Event</u>	52
<u>Figure 32: Supervisor or User Homepage</u>	53
<u>Figure 33: View Leave Policy</u>	53
<u>Figure 34: View UserList</u>	54
<u>Figure 35: Apply Leave Application</u>	55

CHAPTER: 01

1. Introduction

1.1. Project Overview

In this application, only Employee can apply leave and Supervisor can recommend leave application. On the other hand, the application accepted only by Administrator. Employee can also view Leave application calendar.

1.2. The Purpose of the Project

The main objective of the proposed system is to make easy the recording of all the information because it brings lower amount of paper works and easier record maintenance by having a particular website for leaves. This system brings about an easy way of maintaining the details of employees working in any organization. It is simple to understand and can be used by anyone who is not even familiar with simple employees' system. It is user friendly and just asks the user to follow step by step operations by giving easy to follow options.

1.2.1. Background

Recently I visited a Hospital there is no online leave management system because of this, a staff applied for leave and the management granted this but he did not take the leave. Another staff applied for leave but that was not granted then he complains to upper level management. This shows the miscommunication between different tiers of this organization that can be easily solved using online Leave management system.

1.2.2. Benefits & Beneficiaries

This project are mainly beneficiaries for students. Benefits are,

1. It is very easy to use.
2. Reduce cost.
3. Reduce changes of data lost.
4. Saving time.

1.2.3. Goal of the Project

A flexible and easy to use Leave management System software solution for small and medium sized companies provide modules for personnel information management thereby organization and companies are able to manage the crucial organization asset.

1.3. Stakeholders

There are three types of stockholders.

1. Employee
2. Supervisor
3. System Administrator

1.4. Proposed System Model

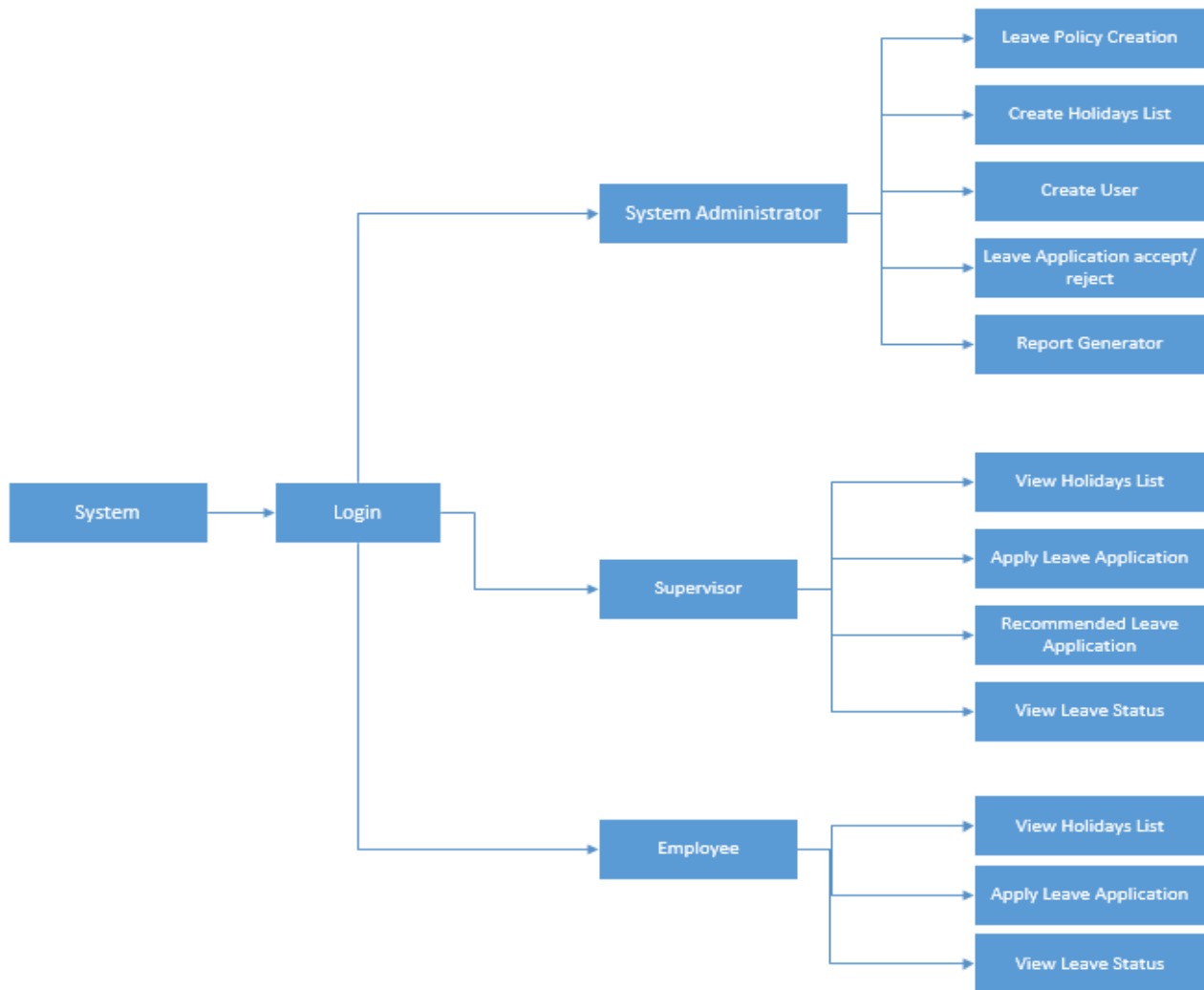


Figure 1: Block Diagram

1.5. Project Schedule

1.5.1. Gantt chart

Task/Date	Start Date	End Date	Status	February	May	June	July	August
Proposal	02-02-2019	10-02-2019	Complete	█				
Requirements	12-02-2019	28-02-2019	Complete		█			
Design	03-05-2019	31-05-2019	Complete		█			
Implementation	01-06-2019	24-07-2019	Complete			█	█	
Testing	02-08-2019	06-08-2019	Complete					█
Documentation	09-06-2019	20-09-2019	Complete					█

Table 01: Gantt char

CHAPTER: 2

2. Software Requirement Specification

2.1. Performance Requirements

2.1.1. Speed and Latency Requirements

1. Data should update in database within 1 second.
2. Query should bring result within 2 seconds.
3. UI design should load within 7 seconds.
4. Validation error should show within 1 second.

2.1.2. Precision or Accuracy Requirements

1. After login the index should show the accurate data for the specific user.
2. The project file and screenshot should accurate in the required form.
3. The registration form should provide accurate data to store in database.
4. The user should get accurate data which is assigned to them.

2.1.3. Capacity Requirements

1. Not more than 1000000 users to be registered.
2. Not more than 100 users should login at the same time.

2.2. Dependability Requirements

2.2.1. Reliability Requirements

1. User register can register new user according to role based.
2. Define multiple leave types like personal, sick and casual leave.
3. Log in should perform when the correct user name and password is given.
4. Employee applying online leave application.
Forwarding to the supervisor and view leave application and recommended.
5. Approver approve the leave application.
6. Admin should show the individual project upload statuses.

2.2.2. Availability Requirements

1. Available for 90% active.
2. The system should run in any kind of web browser.

2.3. Maintainability and Supportability Requirements

2.3.1. Maintenance Requirements

1. Modify the system when the software environment changes.
2. Fix bug when the system is corrupted.
3. Fix accidental data mistakes by user.

2.3.2. Supportability Requirements

1. Provide documentation for user guidance.

2.4. Security Requirements

2.4.1. Access Requirements

1. Only registered user can login to the system.
2. Other user cannot use the system.
3. Different user for different access.

2.5. Usability and Human-Interaction Requirements

2.5.1. Ease of Use Requirements

1. The system UI should user friendly.
2. The system maintenance should not complex.

2.5.2. Understandability and Politeness Requirements

1. Any user should understand the system.
2. Non-technical person should operate also.

2.5.3. Accessibility Requirements

1. The system should accessible from any other devices.
2. User should access their account within a request.

2.6. Look and Feel Requirements

2.6.1. Style Requirements

Leave Management System Software look like beautiful and user friendly. User use them efficiently.

2.7. Legal Requirements

2.7.1. Standards Requirements

1. The employee should register their account with academic email id.
2. The admin should have good knowledge about different types of programming language.

CHAPTER: 03

3. System Analysis

3.1. Use Case Diagram

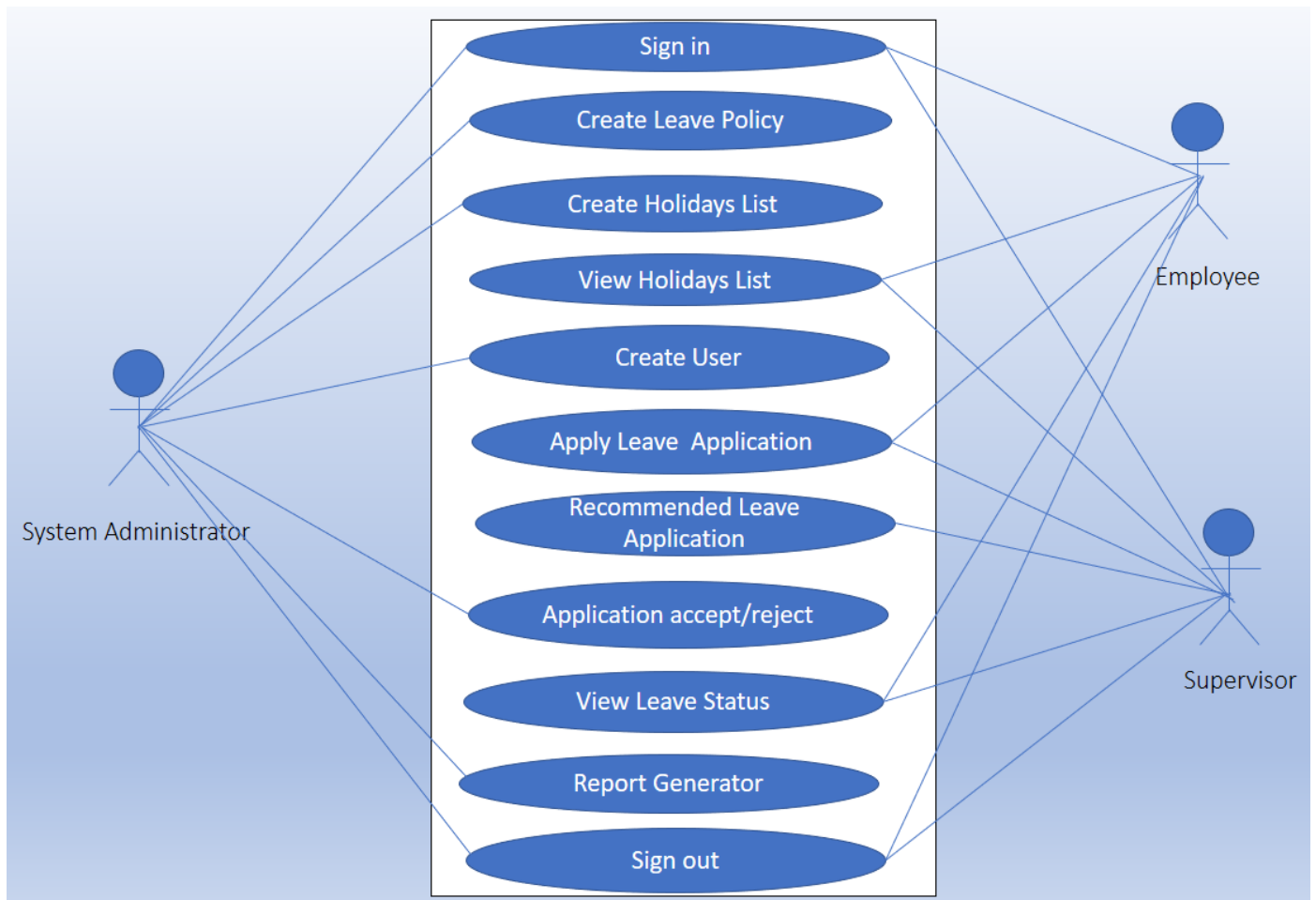


Figure 2: Use Case Diagram

3.2. Use Case Description

3.2.1. Use Case: Sign in

Use Case	User Login	
Use case no	01	
Goal	User must login into the system.	
Preconditions	The system has to keep a record about that login.	
Actors	Employee, Supervisor, Administrator	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select login button
	3	Enter username and password
	4	Then system give access
Alternative Flows	Cannot access the account and go back to login page	

Table 02: Sign in

3.2.2. Use Case: Create Leave Policy

Use Case	Create Leave Policy	
Use case no	02	
Goal	Define multiple leave types like personal, sick and casual leave.	
Preconditions	User must login into the system, before leave policy form creates.	
Actors	Administrator	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select Create Leave Policy button
	3	Give Information
	4	Then Submit
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 03: Create Leave Policy

3.2.3. Use Case: Create Holidays List

Use Case	Create Holidays List	
Use case no	03	
Goal	Define all kinds of holiday's list.	
Preconditions	User must login into the system, before leave policy form creates.	
Actors	Administrator	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select Create Leave Policy button
	3	Give Information
	4	Then Submit
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 04: Create Holidays List

3.2.4. Use Case: View Holidays List

Use Case	View Holidays List	
Use case no	04	
Goal	Employee and Supervisor view holidays list	
Preconditions	User must login into the system, before Holidays list data store.	
Actors	Employee, Supervisor	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select View Holidays List button
	3	View Holidays List
Alternative Flows	There are no alternatives flows	

Table 05: View Holidays List

3.2.5. Use Case: Create User

Use Case	Create User	
Use case no	05	
Goal	Create user and categories his/her department.	
Preconditions	User must login into the system, before user registration form creates.	
Actors	Administrator	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select Create User button
	3	Give Information
	4	Then Submit
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 06: Create User

3.2.6. Use Case: Apply Leave Application

Use Case	Apply Leave Application	
Use case no	06	
Goal	User can be applying leave application.	
Preconditions	User must login into the system, before apply leave application registration form creates.	
Actors	Employee, Supervisor.	
Trigger	Form	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	Select Apply Leave Application button
	3	Give Information
	4	Then Submit
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 07: Apply Leave Application

3.2.7. Use Case: Recommended Leave Application

Use Case	Recommended Leave Application	
Use case no	07	
Goal	Supervisor recommend leave application and forward to the administrator.	
Preconditions	User must login into the system, before leave application list data store and comment box.	
Actors	Supervisor.	
Trigger	Text Area	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	View Leave Application
	3	Supervisor comment's his/her employee.
	4	Then forwarding to the administrator.
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 08: Recommended Leave Application

3.2.8. Use Case: Application accept/reject

Use Case	2.7.2. Application accept/reject	
Use case no	08	
Goal	Administrator can application accept or reject.	
Preconditions	User must login into the system, before Recommended application list data, Action and comments form	
Actors	Administrator.	
Trigger	Select box	
Description / Main Success Scenario	Step	Action
	1	User enters the system
	2	View Recommended leave application
	3	Select application
	4	Application accept or reject.
	5	Submit
Alternative Flows	If user input is not complete, then give message to complete the required information.	

Table 09: Application accept/reject

3.2.9. Use Case: View leave status

Use Case	View leave status	
Use case no	09	
Goal	Supervisor and Employee can view leave status	
Preconditions	User must login into the system, before storing leave status data	
Actors	Supervisor, Employee	
Trigger	Button	
Description / Main	Step	Action
Success Scenario	1	User enters the system
	2	Select View leave application Status button
	3	View leave Status
Alternative Flows		There is no alternative flow.

Table 10: View Leave Status

3.2.10. Use Case: Report Generation

Use Case	Report Generation	
Use case no	10	
Goal	System administrator can be generating report.	
Preconditions	User must login into the system, before Employee and leave all information data need.	
Actors	Administrator.	
Trigger	Form	
Description / Main	Step	Action
Success Scenario	1	User enters the system
	2	Select Report Generator button
	3	Give all information
	4	Submit
Alternative Flows		If user input is not complete, then give message to complete the required information.

Table 11: Report Generation

3.2.11. Use Case: Sign out

Use Case	Sign out	
Use case no	11	
Goal	User can logout to the system.	
Preconditions	User must login into the system.	
Actors	Employee, Supervisor and system administrator	
Trigger	Button	
Description / Main	Step	Action
Success Scenario	1	User enters the system
	2	Select Logout button
Alternative Flows		There is no alternative flow.

Table 12: Sign out

2.8.Activity Diagram

3.3.1 Sign in

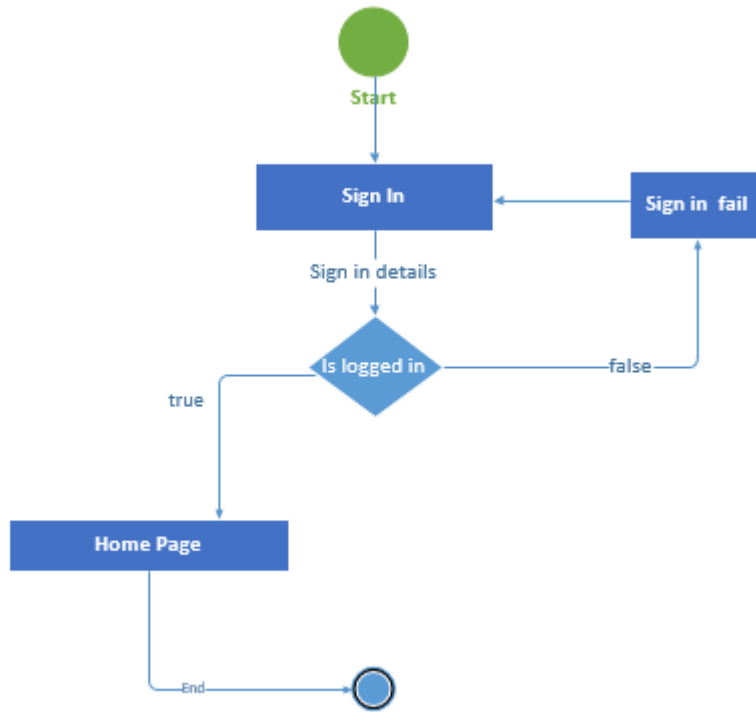


Figure 3: Sign in Activity Diagram

3.3.1 Create Leave Policy

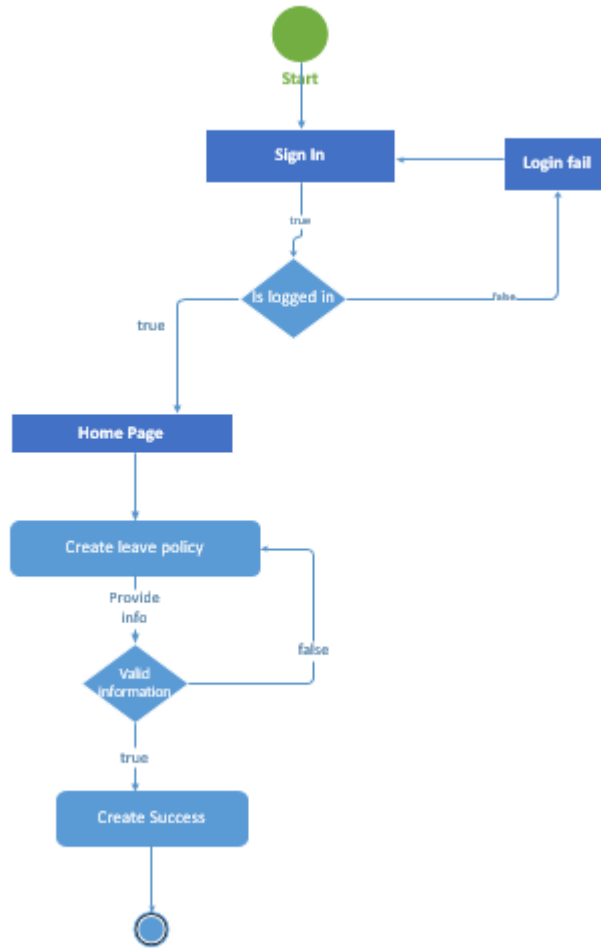


Figure 4: Create Leave Policy Activity Diagram

3.3.2 Create Holidays List

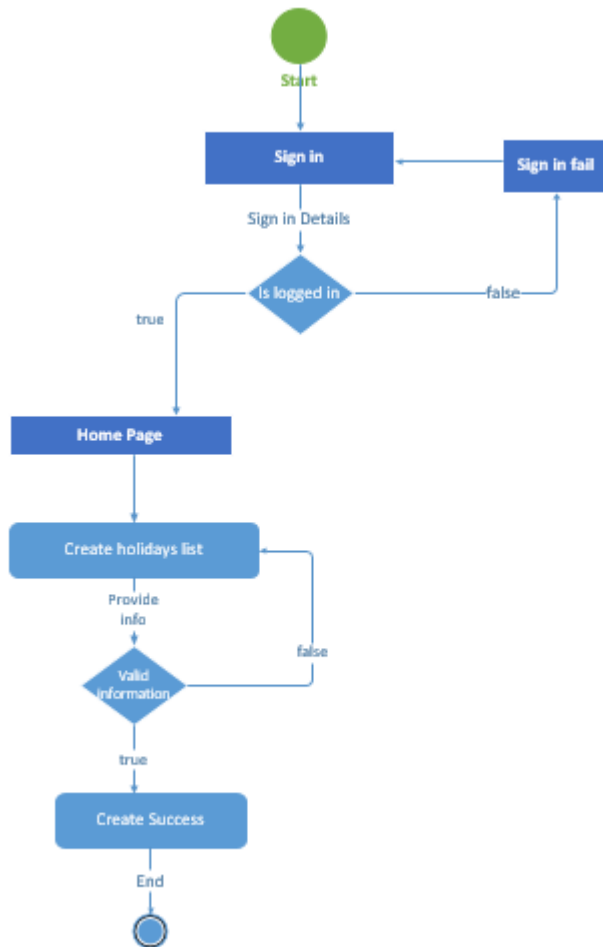


Figure 5: Create Holidays List Activity Diagram

3.3.3 View Holidays List

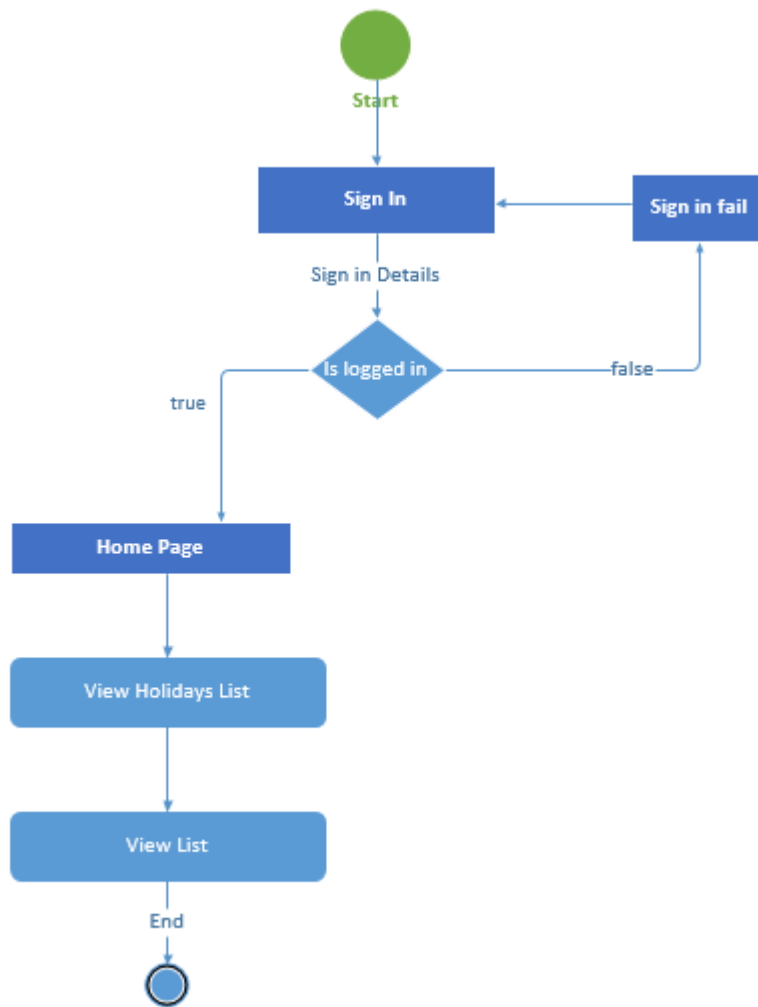


Figure 6: View Holidays List Activity Diagram

3.3.4 Create User

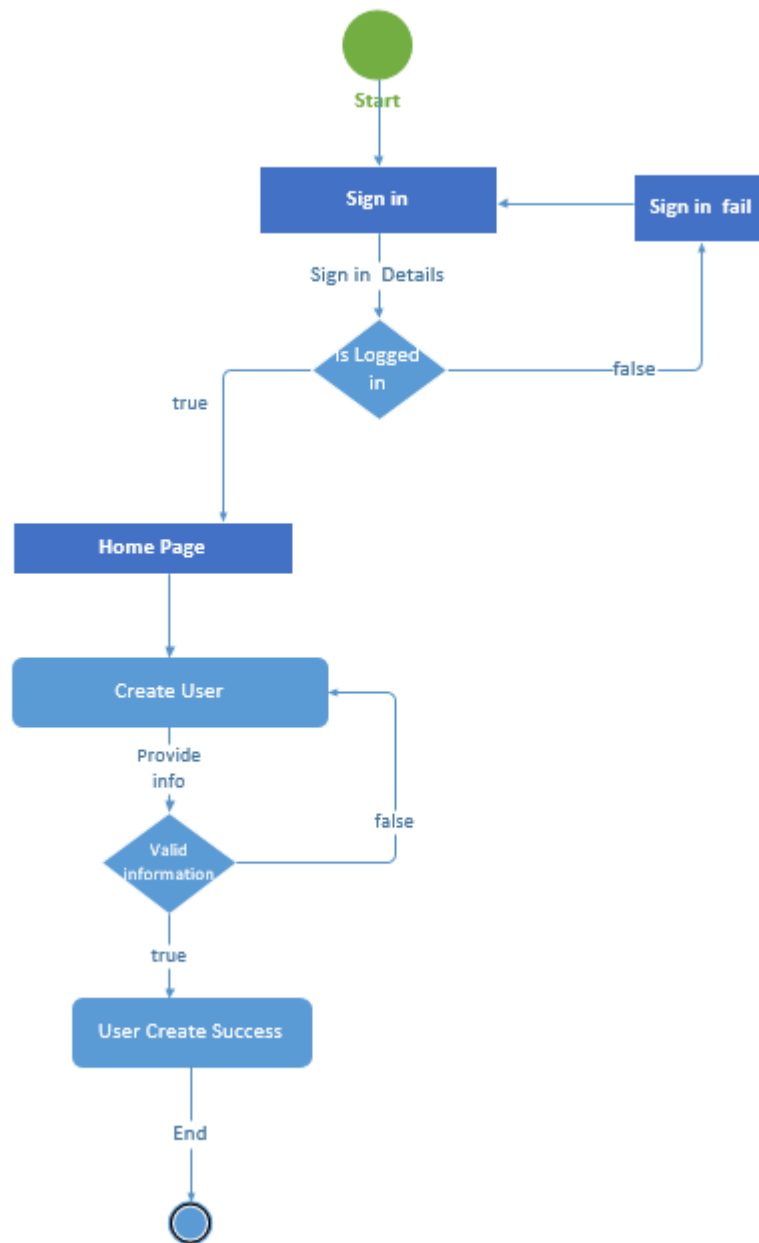


Figure 7: View Holidays List Activity Diagram

3.3.5 Apply Leave Application

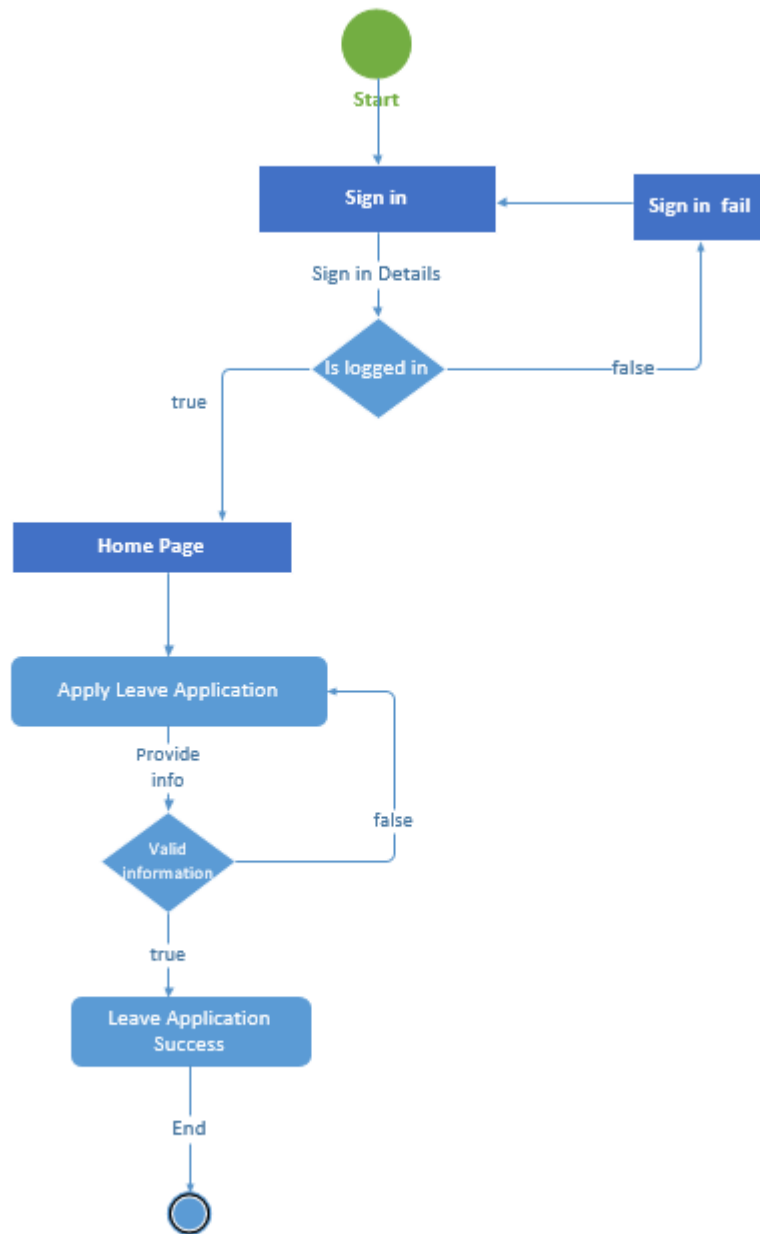


Figure 8: Apply Leave Application Activity Diagram

3.3.6 Recommended Leave Application

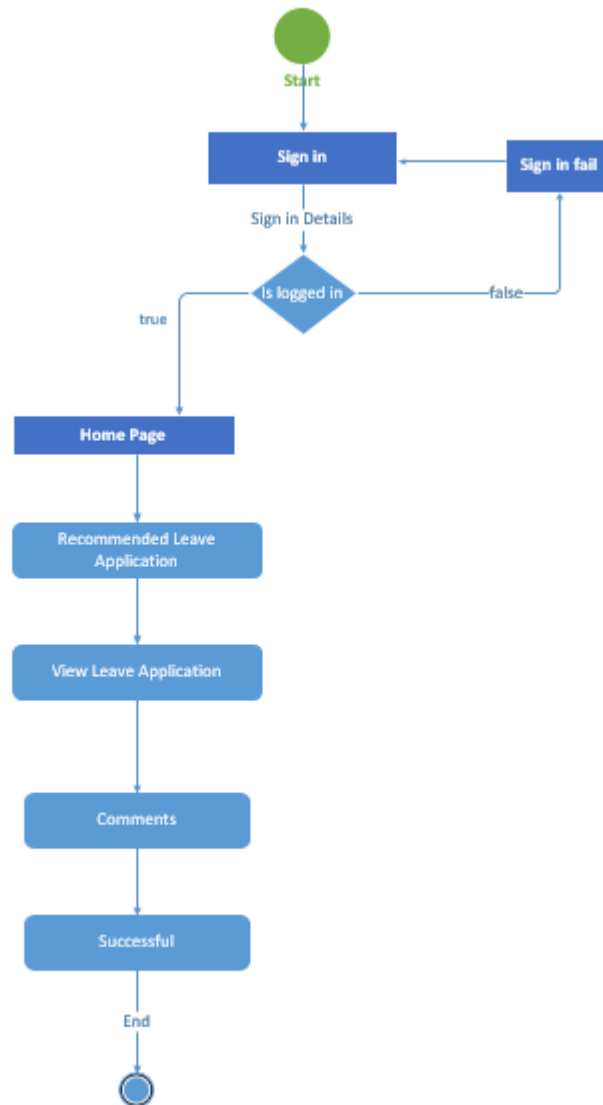


Figure 9: Recommended Leave Application Activity Diagram

3.3.7 Leave Application accept/reject

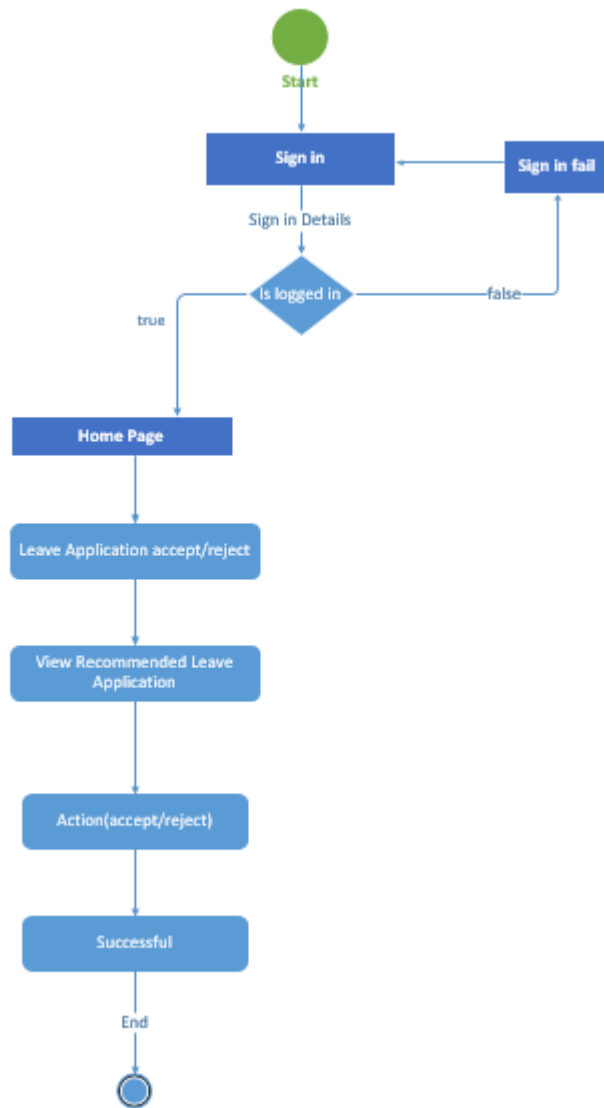


Figure10: Leave Application accept/reject Activity Diagram

3.3.8 View Leave Status

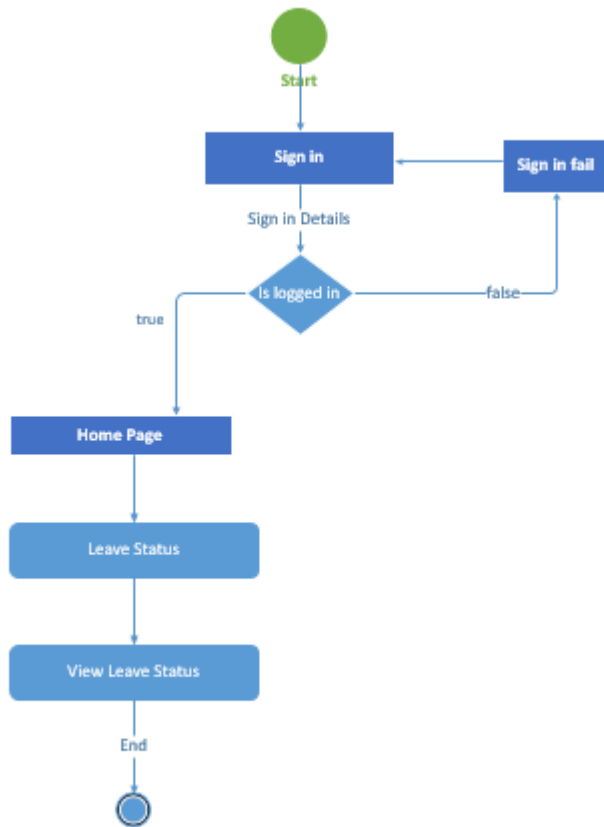


Figure 11: View Leave Status Activity Diagram

3.3.9 Report Generator

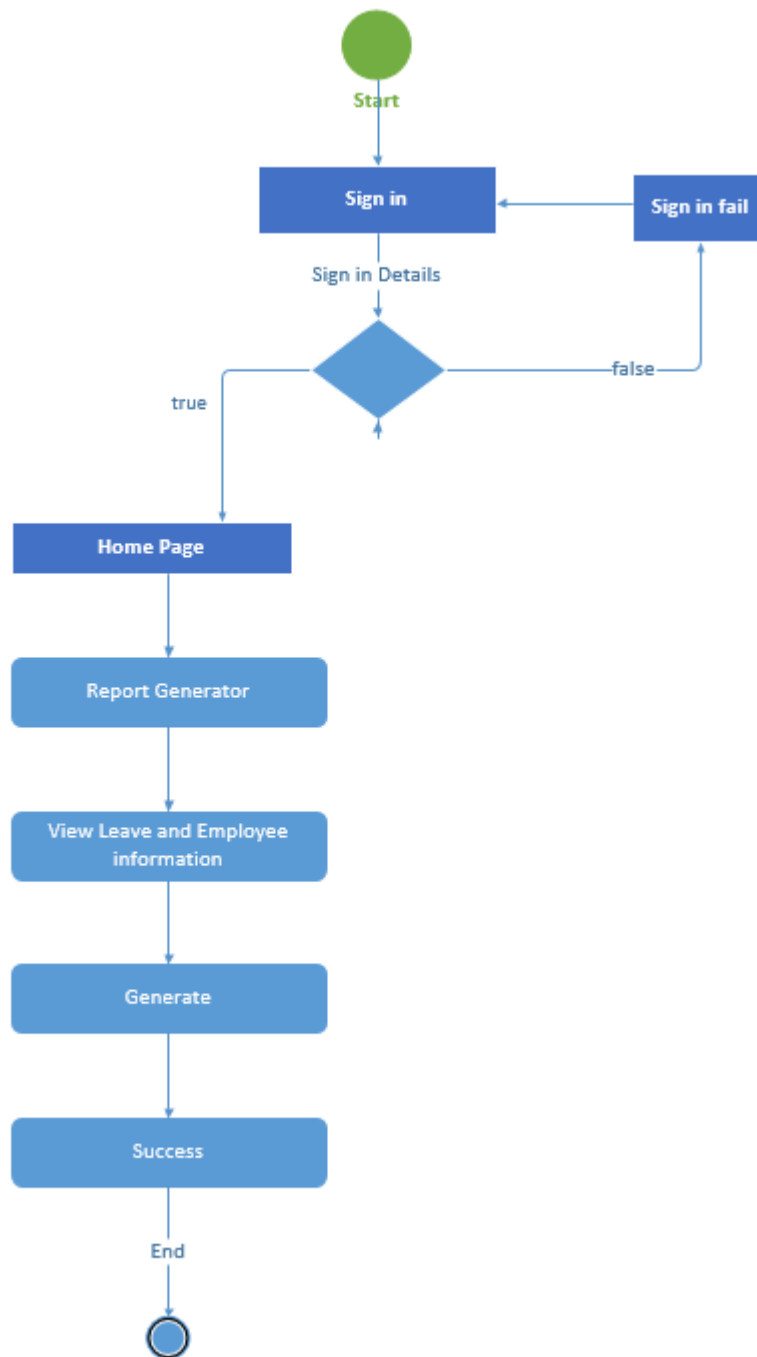


Figure12: Report Generator Activity Diagram

3.3.10 Sign Out

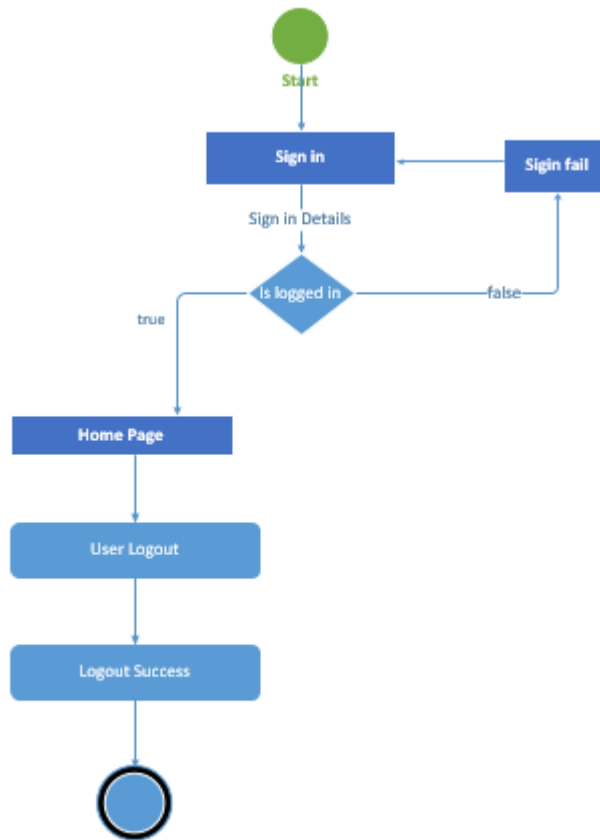


Figure13: Sign out Activity Diagram

3.4. System Sequence Diagram

3.5.1 Sequence Diagram (Sign in)

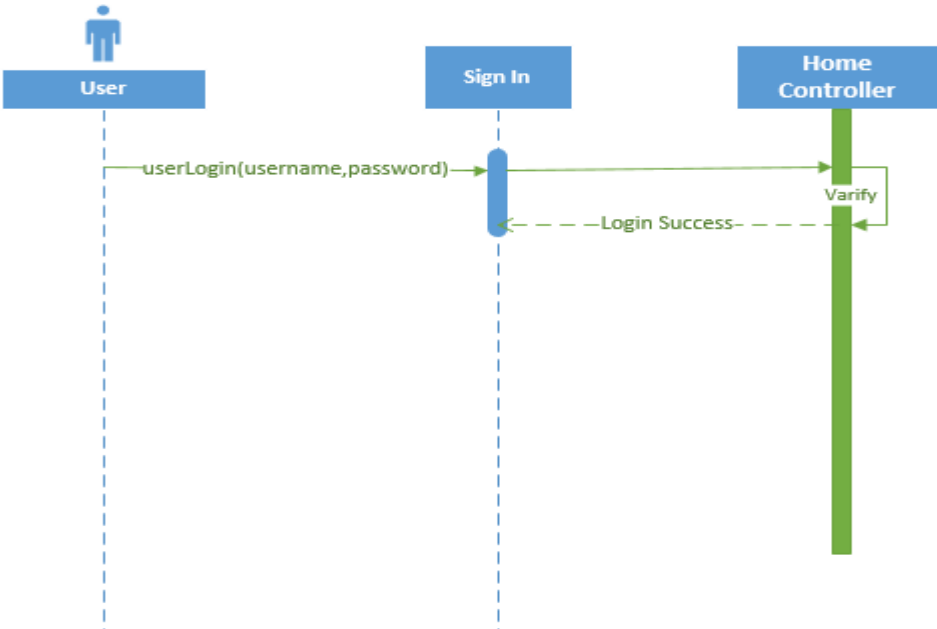


Figure 14: Sequence Diagram-(Sign In)

3.5.2 Sequence Diagram (Create Leave Policy)

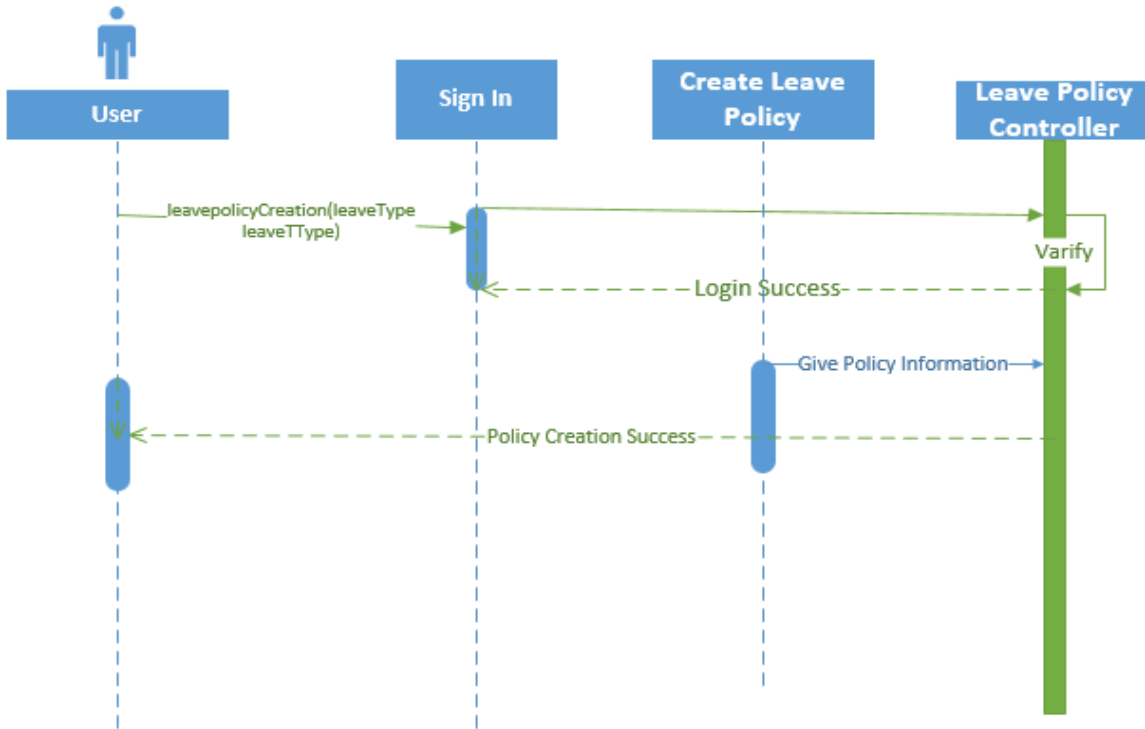


Figure 15: Sequence Diagram-(Create Leave Policy)

3.5.3 Sequence Diagram (Create Holidays List)

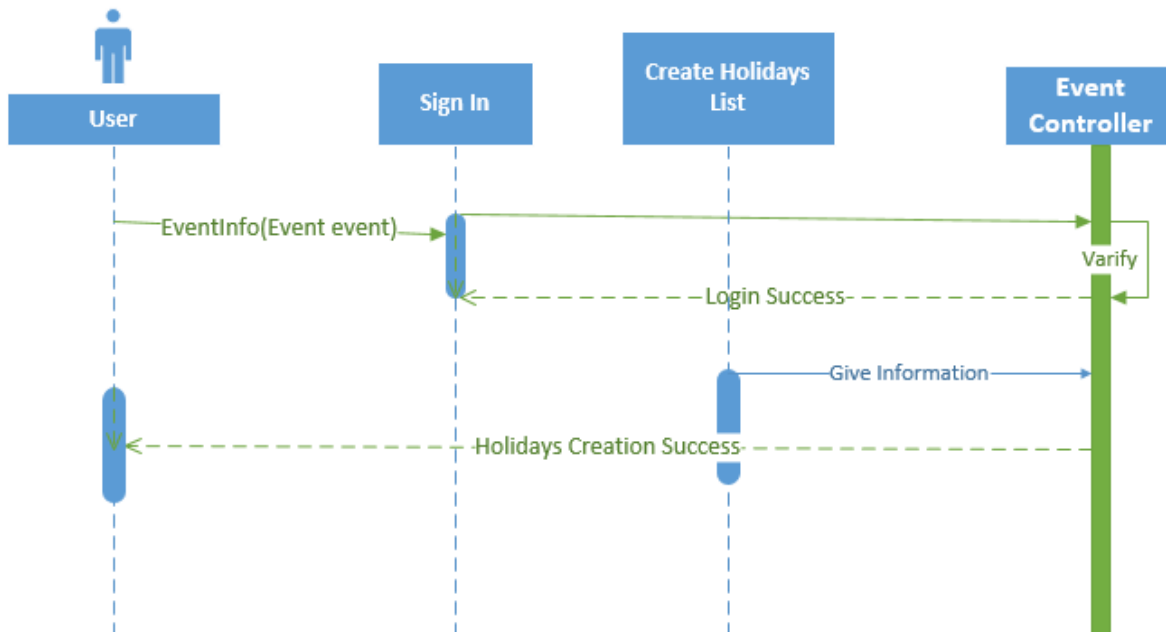


Figure 16: Sequence Diagram-(Create Holidays List)

3.5.4 Sequence Diagram (View Holidays List)

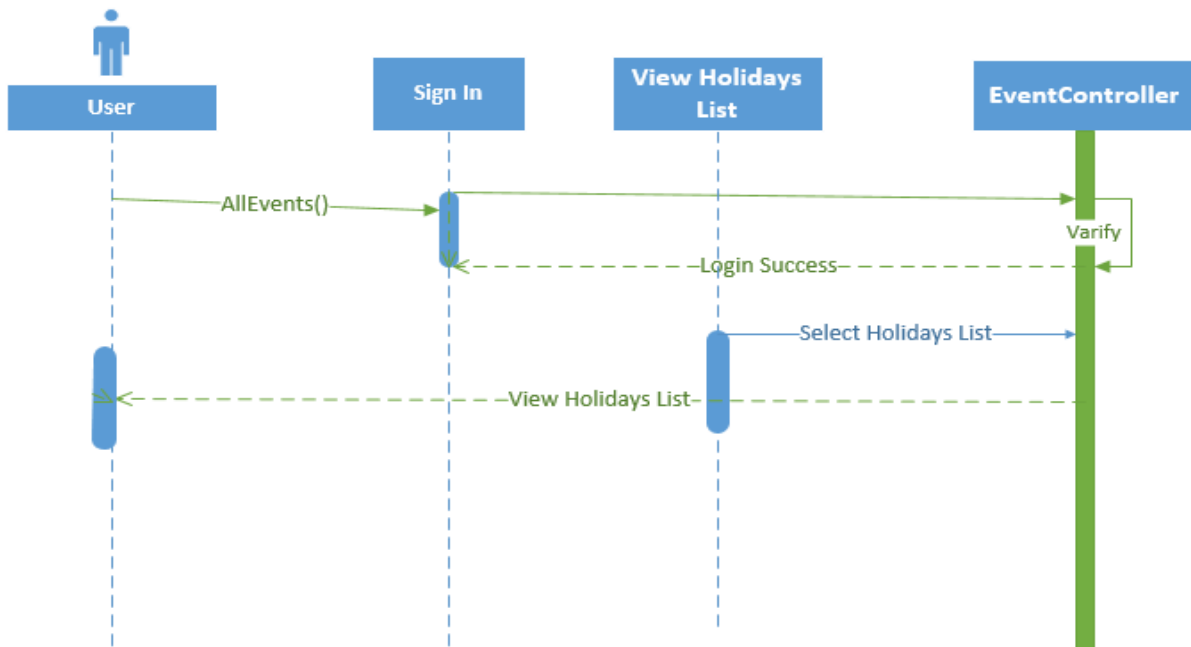


Figure 17: Sequence Diagram-(View Holidays List)

3.5.5 Sequence Diagram (Create User)

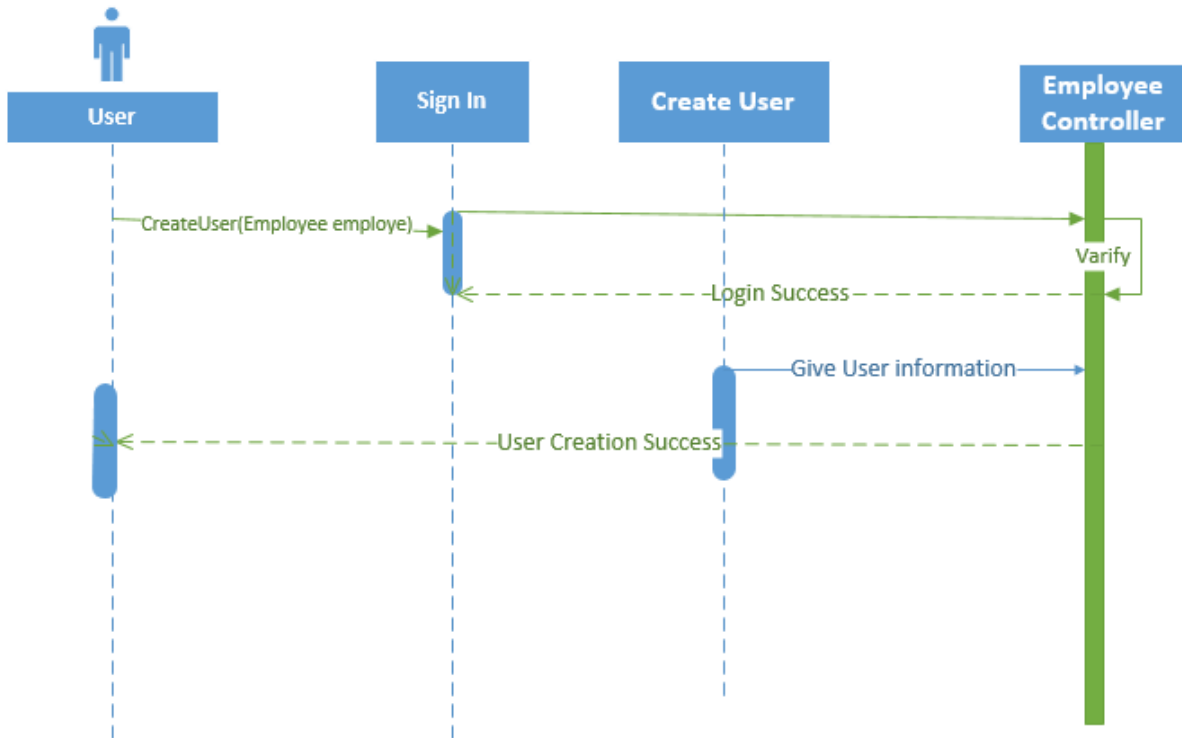


Figure 18: Sequence Diagram-(Create User)

3.5.6 Sequence Diagram (Apply Leave Application)

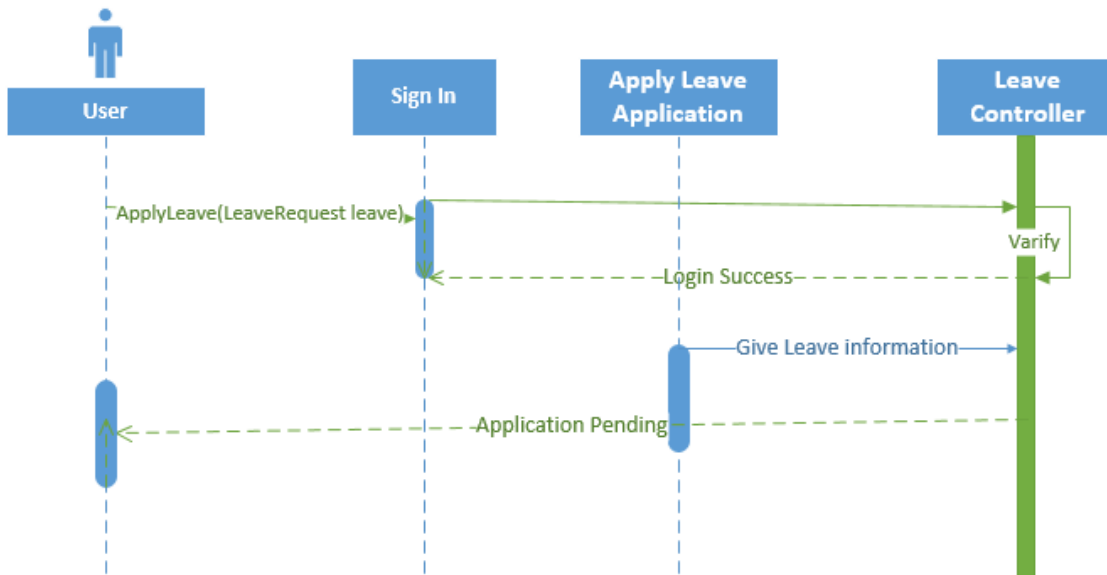


Figure 19: Sequence Diagram-(Apply Leave Application)

3.5.7 Sequence Diagram (Recommended Leave Application)

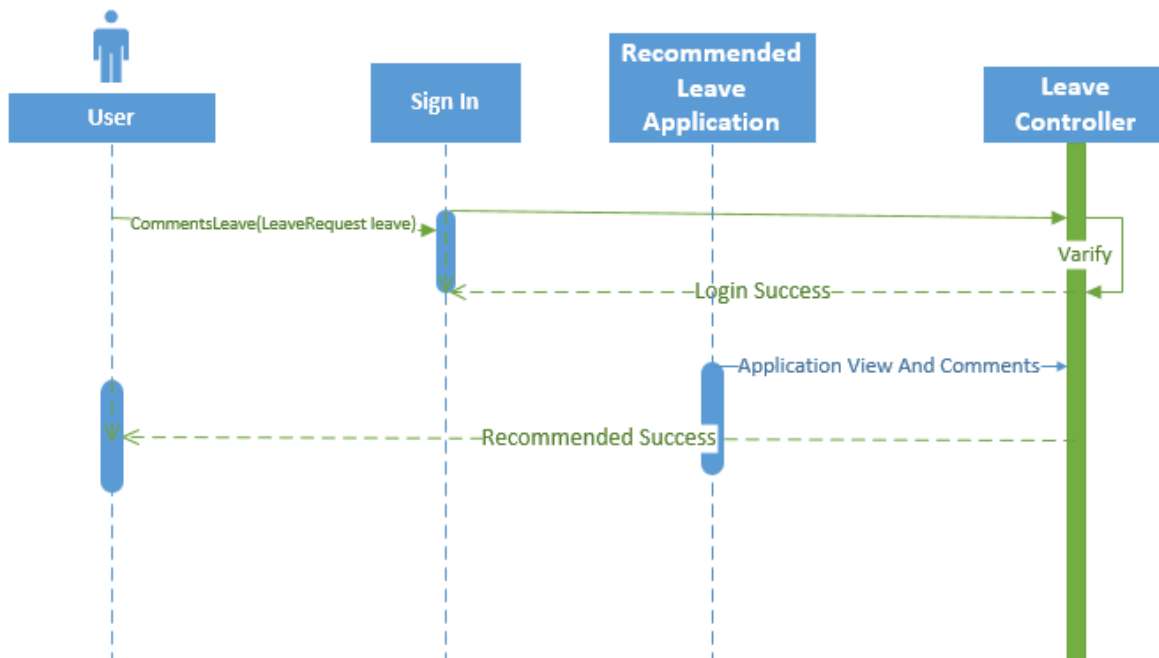


Figure 20: Sequence Diagram-(Recommended Leave Application)

3.5.8 Sequence Diagram (Application accept/reject)

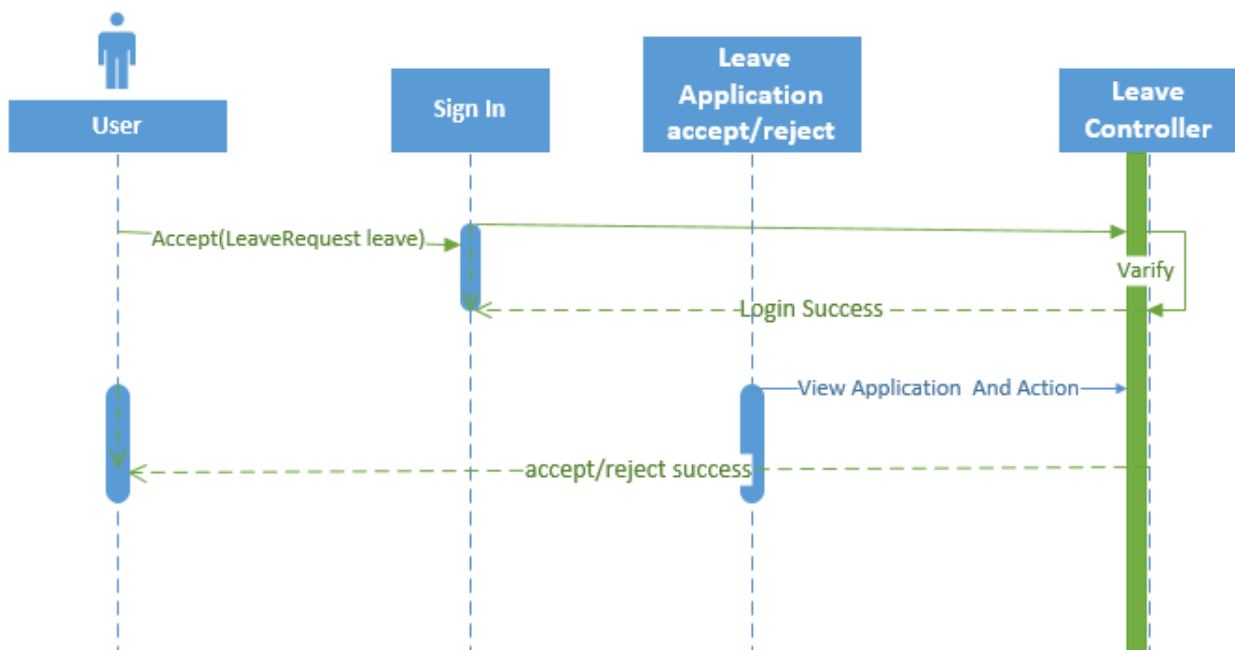


Figure 21: Sequence Diagram-(Leave Application accept/reject)

3.5.9 Sequence Diagram (View Leave Status)

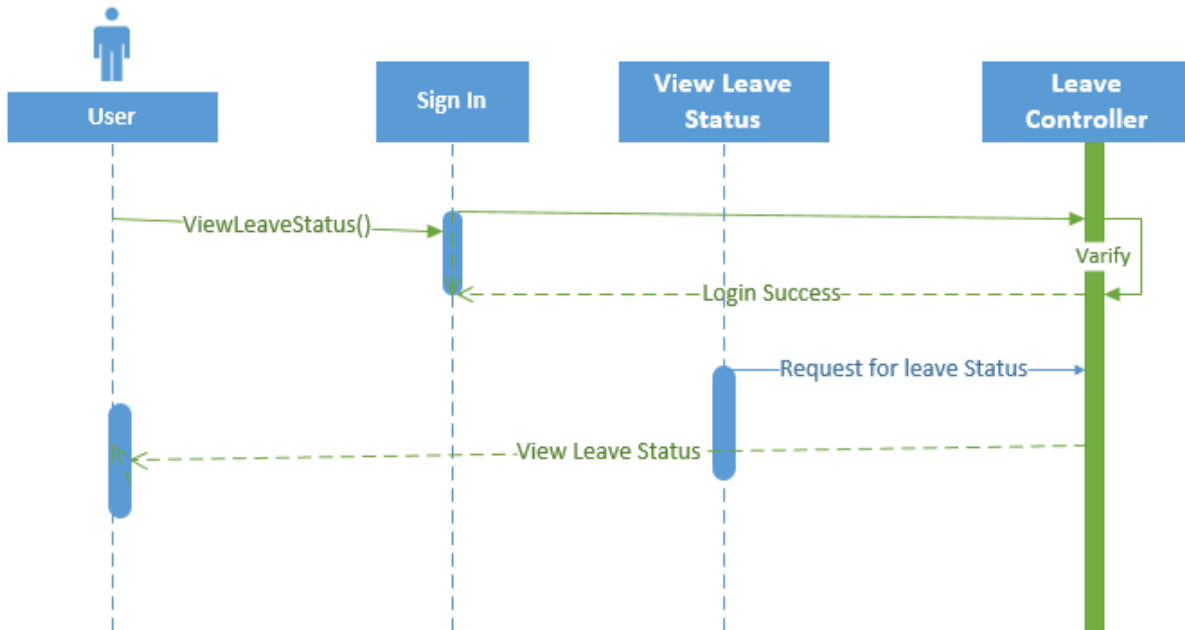


Figure 22: Sequence Diagram-(View Leave Status)

3.5.10 Sequence Diagram (Report Generator)

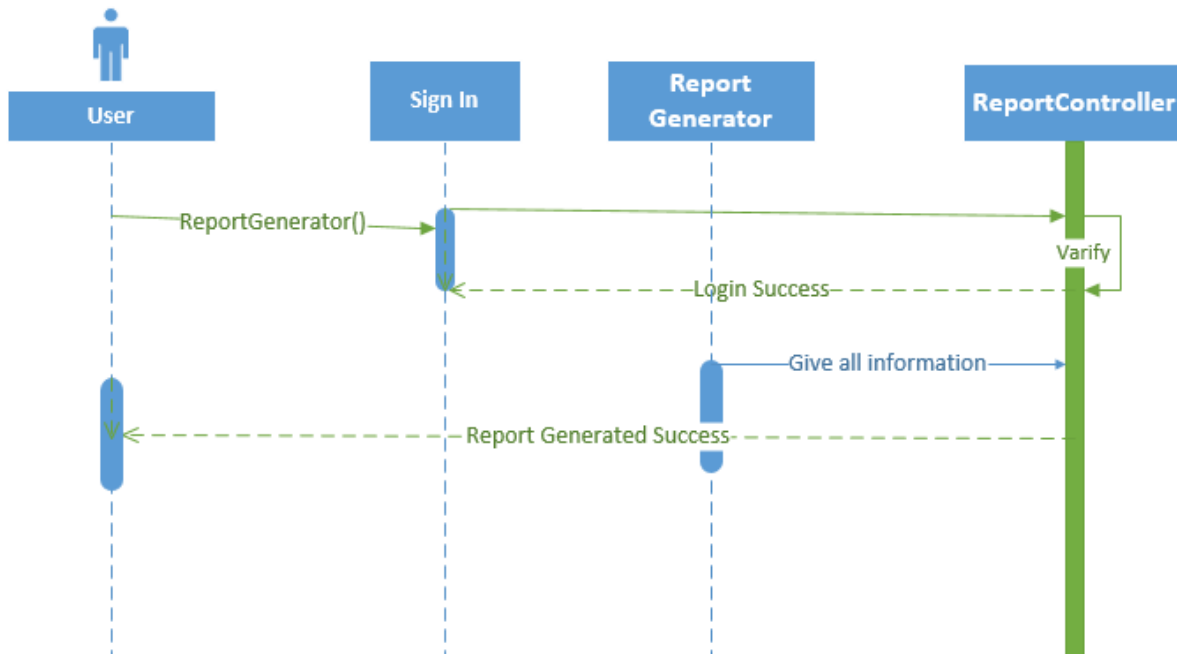


Figure 23: Sequence Diagram-(Report Generator)

3.5.11 Sequence Diagram (Sign Out)

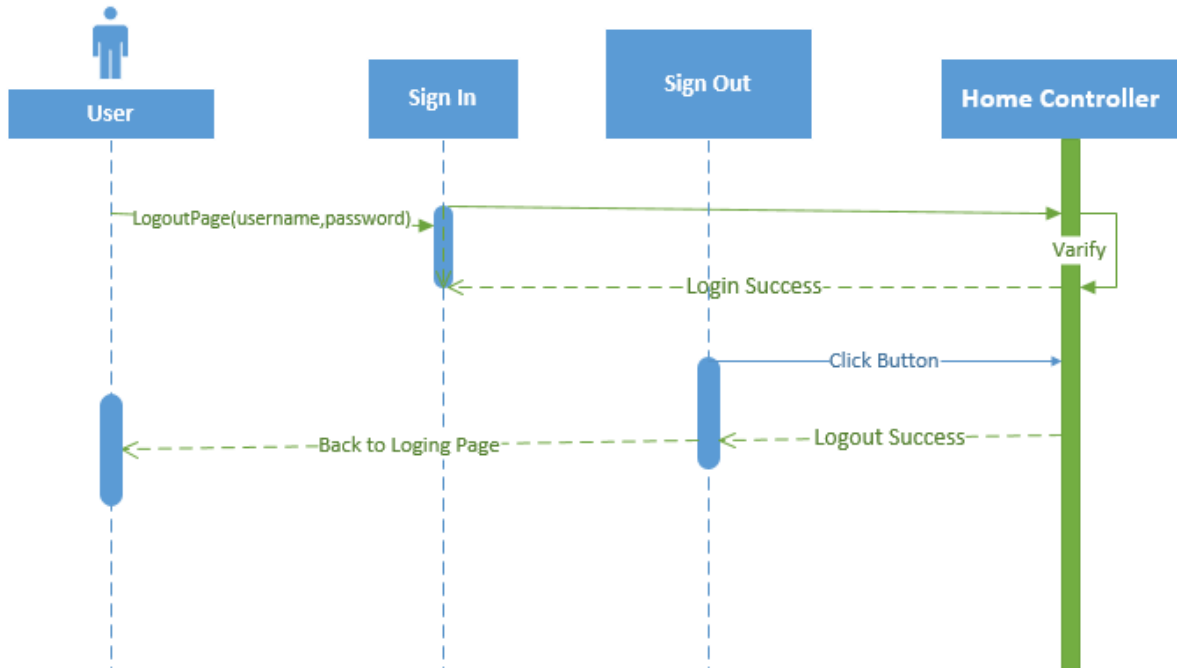


Figure 24: Sequence Diagram-(Sign Out)

CHAPTER: 04

4. System Design Specification

2.1. Database Design Diagram

4.1 Database Design Diagram

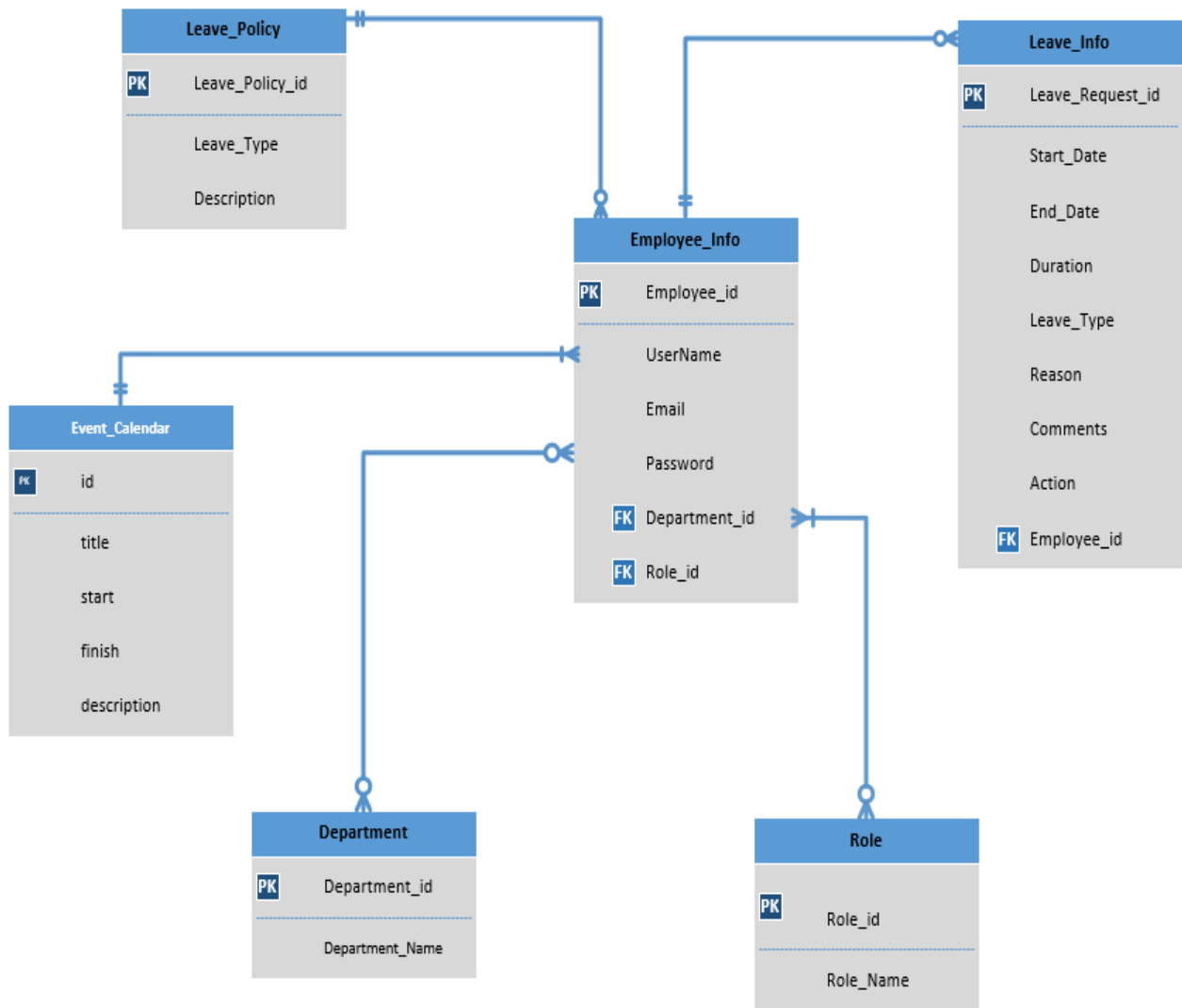


Figure25: Database Design Diagram

4.2. Development Tools & Technology

4.2.1. User Interface technology

1. HTML
2. CSS
3. JavaScript
4. Bootstrap

1.2.2. Implementation Tools & Platforms

1. Spring Tool Suite4
2. MySQL Work Bench8
3. JVM

CHAPETR: 05

3. System Testing

3.1. Testing Features

3.1.1. Feature to be tested

1. User Login
2. User Creation
3. Create Leave Policy
4. Apply Leave Application
5. Recommended Leave Application
6. Application Accept/reject
7. Report Generator

3.1.2. Feature not to be tested

1. View Holidays List
2. View Leave Status

3.2. Testing Strategies

3.2.1. Test Approach

1. The system will manually be tested.
2. The system testing is based on user acceptancy.

3.2.2. Pass/Fail Criteria

1. Component Pass/Fail criteria – The test will pass if the case meet the object design requirement or fail if not.
2. Integration Pass/Fail criteria – The test will pass if the case meet the object design architecture requirement or fail if not.
3. System Pass/Fail criteria – The test will pass if the case meet the functional and non-functional requirements or fail if not.

3.2.3. Suspension and Redemption

1. Build Acceptance Test – The system will pass the test if every build is successful if not than try build again.
2. Regression Testing – The system should work properly after each change on the system.
3. System Design Changes – The system should work properly after each change in the design.

3.2.4. Testing Schedule

Table 13: Testing Schedule

Test Phase	Time	Owner
Test Plan Creation	1 week	Md. Nasim Kabir
Test Specification Creation	1 week	Md. Nasim Kabir
Test Specification Team Review	2 weeks	Md. Nasim Kabir
Component Testing	2 weeks	Md. Nasim Kabir
Integration Testing	2 weeks	Md. Nasim Kabir
System Testing	3 weeks	Md. Nasim Kabir

3.3. Test Cases

3.5.12 Test Case: 01

Test Case: 01	Test Case Name: User Login
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 01-08-2018

Pre-Condition: The system has to keep a record about that login.

Step	Action	Expected Response	Pass/Fail	Comment
1.	Enter the invalid Username.	The system will display the message: Username field is required.	Pass	Username field is required.
2.	User enter password without	Username field is required.	Pass	Username field is required.

	Username			
3.	When a user clicks the login button without the username and password field	Username and password are required.	Pass	Username and password are required.

Table

14: Test Case-01

3.5.13 Test Case: 02

Test Case: 02	Test Case Name: User Create
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: Need User login, user Creation form

Step	Action	Expected Response	Pass/Fail	Comment
1.	If Username fields is empty	The system will display the message: Username field is required.	Pass	Username field is required.
2.	Password is empty	Password field is required.	Pass	Password field is required.
3.	Email address fields is empty	Email address is required.	Pass	Email address is required.
4.	Departments Name is empty	The system will display: Departments Name is required	Pass	Departments Name is required
5.	Role Name is empty	The system will display: Role Name is required	Pass	Role Name is required
7.	Fill up Username, Password, Department Name and Role Name	The system will display User Creation Successful	Pass	The system will display successfully.

Table 15: Test Case-02

3.5.14 Test Case: 03

Test Case: 01	Test Case Name: Create Leave Policy
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: User need login, leave policy form

Step	Action	Expected Response	Pass/Fail	Comment
1.	User empty casual Leave fields.	Casual leave field is required.	Pass	Casual Leave field is required.
2.	User empty Sick Leave fields	Sick Leave field is required.	Pass	Sick Leave field is required.
3.	User empty Personal Leave fields	Personal Leave field is required.	Pass	Personal Leave is required.
4.	User Enter fill up casual, Sick, Personal and Other Leave properly	Leave Policy Creation Successful	Pass	The system will display successfully.

Table 16: Test Case-03

3.5.15 5.3.4 Test Case: 04

Test Case: 02	Test Case Name: Apply Leave Application
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: User need login, leave application form

Step	Action	Expected Response	Pass/Fail	Comment
1.	User cannot give Employee id.	The system will display Employee id field is required.	Pass	Employee id field is required.
2.	User give empty From Date fields	From Date field is required.	Pass	From Date field is required.
3.	User give empty To Date fields	To Date fields is required.	Pass	To Date fields is required.
4.	User give Leave Type fields is empty	The system will display: Leave Type fields is required	Pass	Leave Type fields is required
5.	User give Reason fields is empty	The system will display: Reason fields is required.	Pass	Reason fields is required
7.	User give properly From Date, To Date, Reason and Leave type information and submit	The system will display Apply leave application is pending.	Pass	The system will display successful.

Table Test

17:
Case-04

3.5.16 Test Case: 05

Test Case: 05	Test Case Name: Recommended Leave Application
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: User need login, leave application list data, comment box

Step	Action	Expected Response	Pass/Fail	Comment
1.	If User data is empty	The system will display the message: Leave application data is empty.	Pass	Leave Application data is empty.
2.	User Data is present empty	Display all leave application	Pass	Display all leave

				application
3.	Comments box is empty	Display comments box field is required.	Pass	Comments box field is required.
4.	Comments box is cannot null and submit	The system will display: Success	Pass	Success

Table 18: Test Case-05

3.6

3.6.1 Test Case: 06

Test Case: 06	Test Case Name: Leave application accept/reject
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: User need login, Recommended application list data, Action and comments form

Step	Action	Expected Response	Pass/Fail	Comment
1.	View Recommended Leave application data is not null	View Recommended application success.	Pass	View Recommended application success.
2.	Action box is fields empty	Action box field is required.	Pass	Action box field is required.
3.	Action box is not empty and take an action	Leave application accept/reject Successful	Pass	Leave application accept/reject Successful

Table 19: Test Case-06

3.6.2 Test Case: 07

Test Case: 07	Test Case Name: Report Generate
System: Leave Management System	Subsystem: N/A
Designed By: Md. Nasim Kabir (153-35-1339)	Design Date :31-07-2019
Executed By: Md. Nasim Kabir	Execution date: 02-08-2018

Pre-Condition: User need login, Employee and leave all information data need.

Step	Action	Expected Response	Pass/Fail	Comment
1.	Employee id fields is empty.	Employee id field is required.	Pass	Employee id field is required.
2.	Leave id fields is empty	Leave id field is required.	Pass	Leave id field is required.
3.	Department id fields is empty	Department id field is required.	Pass	Department id is required.
4.	Role id fields is empty	Role id fields is required	Pass	Role id fields is required
5	Use Give all fields id and submit	Report Generation Success	Pass	Report Generation Success

Table
Test

20:

Case-07

CHAPTER: 06

6. User Manual

6.1. Sign In (Admin, Supervisor and User)

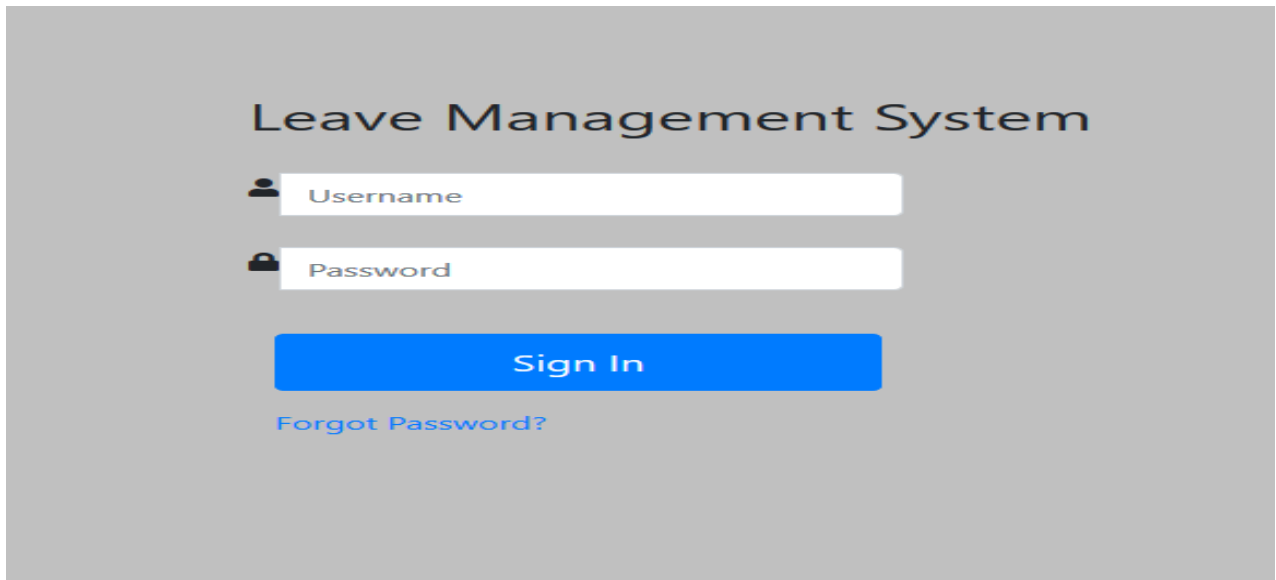


Figure 26: User Login Page

6.2. User Sign In (Admin)

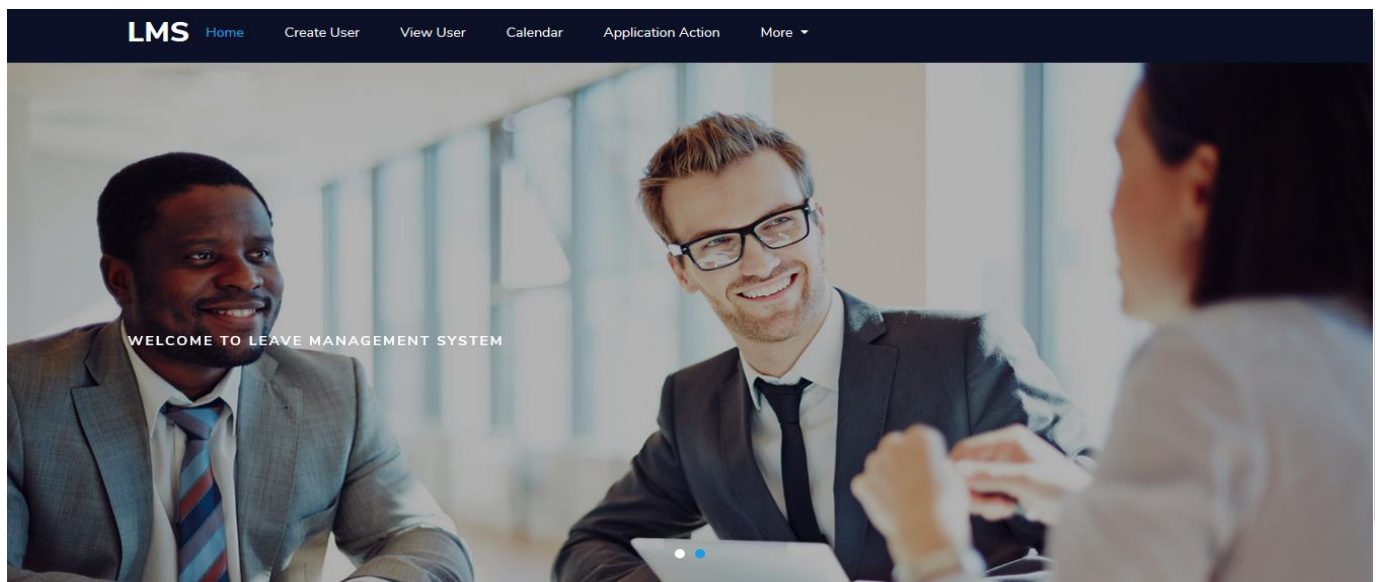


Figure 27: User Login (Admin)

6.3. Leave Policy Creation

The screenshot shows a dark blue navigation bar at the top with the text 'LMS' in white, followed by links for 'Home', 'Create User', 'View User', 'Calendar', 'Application Action', and 'More'. Below the navigation bar, the page title 'Leave Policy Creation' is centered. There are two input fields: 'Leave Policy Type' and 'Leave Policy Name'. Below these fields is a blue 'Submit' button. At the bottom of the page, there is a footer text: 'Place sticky footer content here. © 2019 @Nasim Kabir'.

Figure 28: Leave Policy Creation (Admin)

6.4. Add Department Name

The screenshot shows a dark blue navigation bar at the top with the text 'LMS' in white, followed by links for 'Home', 'Create User', 'View User', 'Calendar', 'Application Action', and 'More'. Below the navigation bar, the page title 'Add Department Name' is centered. There is one input field labeled 'Department Name'. Below this field is a blue 'Add' button. At the bottom of the page, there is a footer text: 'Place sticky footer content here. © 2019 @Nasim Kabir'.

Figure 29: Add Department Name (Admin)

6.5. Add Role Name

The screenshot shows the 'Add Role Name' page in an LMS application. At the top, there is a dark blue navigation bar with the text 'LMS' and several menu items: 'Home', 'Create User', 'View User', 'Calendar', 'Application Action', and 'More'. Below the navigation bar, the page title 'Add Role Name' is centered. A text input field contains the value 'ROLE_ADMIN'. Below the input field is a blue circular button with the text 'Add'. At the bottom of the page, there is a footer that reads 'Place sticky footer content here. © 2019 @Nasim Kabir'.

Figure 30: Add Role Name (Admin)

6.6. Create User

The screenshot shows the 'Create new user' page in an LMS application. At the top, there is a dark blue navigation bar with the text 'LMS' and several menu items: 'Home', 'Create User', 'View User', 'Calendar', 'Application Action', and 'More'. Below the navigation bar, the page title 'Create new user' is centered. The form consists of several input fields: 'UserName', 'Password', and 'Email' are text input fields; 'Image' is a file upload field with a 'Browse...' button and the text 'No file selected.'; 'Role' is a dropdown menu with 'ROLE_ADMIN' selected; and 'Department' is a dropdown menu with 'SWE' selected. Below the input fields is a 'Submit' button. At the bottom of the page, there is a footer that reads 'Place sticky footer content here. © 2019 @Nasim Kabir'.

Figure 31: Create User (Admin)

6.6. Create Leave Calendar Event

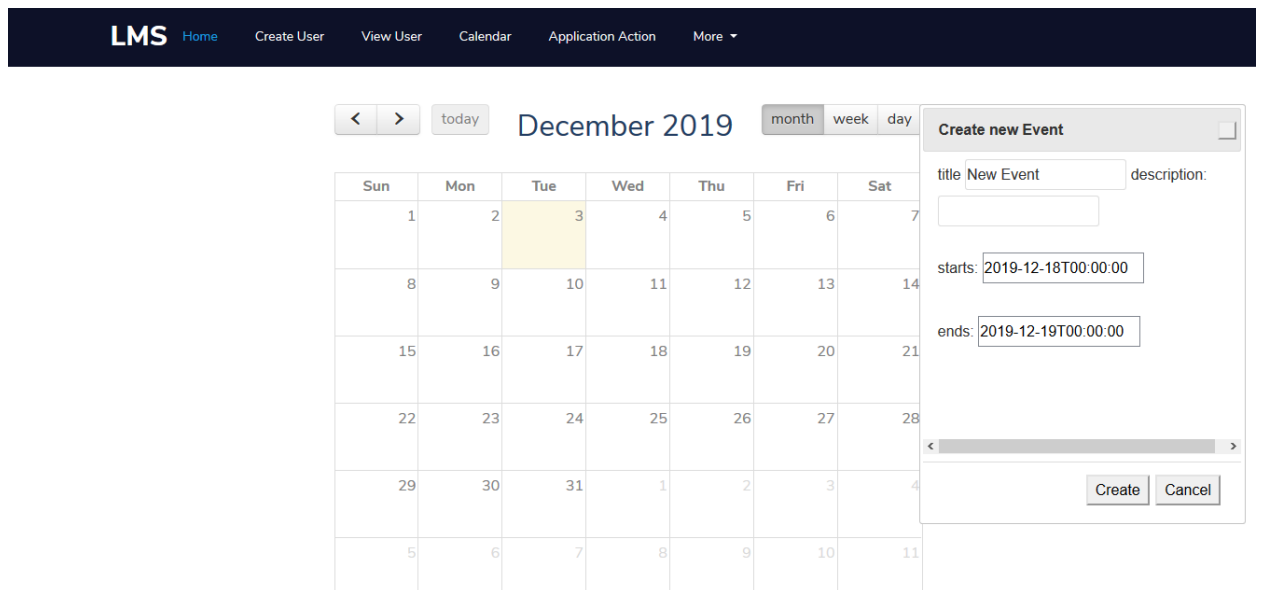


Figure32: Create Leave Calendar Event (Admin)

6.7. Supervisor or User Homepage

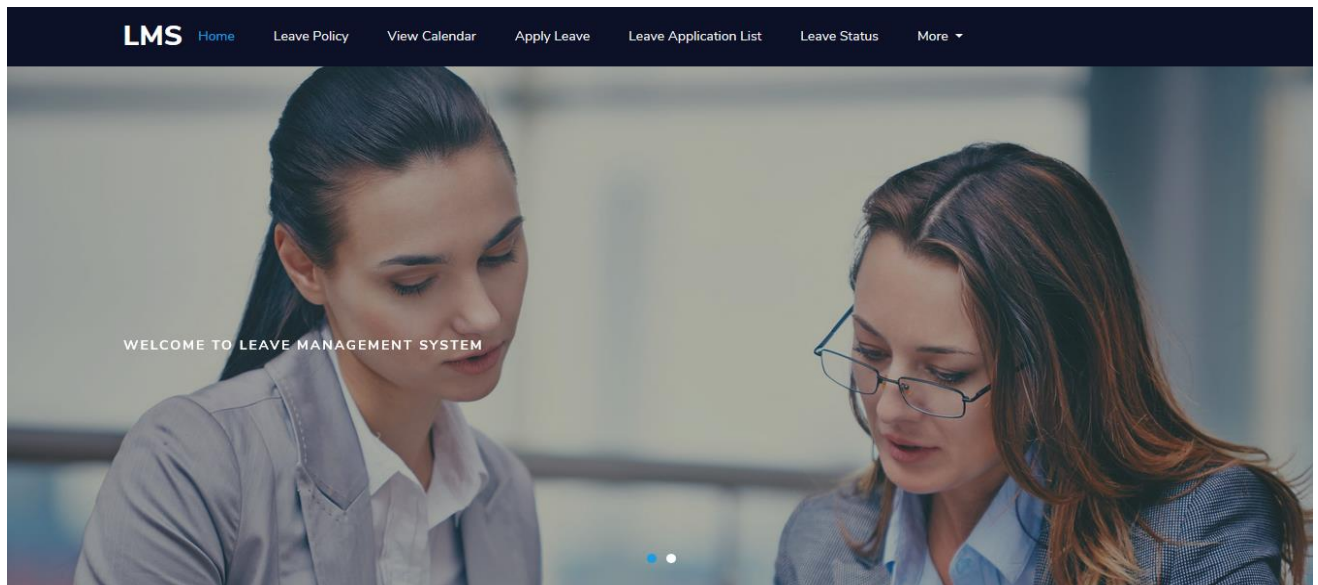


Figure33: Supervisor or User Homepage

6.8. View Leave Policy (Supervisor and User)

Leave Policy Type	Leave Policy Description	Action
Casual Leave	1. Generally 10 days for all workers. 2. Not applicable for workers employed in tea plantation.	
Sick Leave	1. Generally 14 days for all workers. 2. Sick Leave based on the certificate of a registered practitioner examining his sickness.	
Annual Leave	1. In the case of a worker in tea plantation, one day for every twenty two days of work. 2. In the case of a newspaper employee, one day for every eleven days of work. For young worker.	

0 1

Place sticky footer content here. © 2019 @Nasim Kabir

Figure34: View Leave Policy (Supervisor and User)

6.9. View User List

ID	UserName	Email	Role	Departments
1	admin	admin@gmail.com	ROLE_ADMIN	SWE
2	aaa	aaa@aaa	ROLE_SUPERVISOR	SWE
3	bbb	bbb@bbb	ROLE_USER	SWE

0 1

Place sticky footer content here. © 2019 @Nasim Kabir

Figure35: View User List (Admin and Supervisor)

6.10. Apply Leave Application

LMS [Home](#) [Leave Policy](#) [View Calendar](#) [Apply Leave](#) [Leave Application List](#) [Leave Status](#) [More](#) ▾

Leave application Form

Enter Employee Id	<input type="text" value="0"/>
FromDate	<input type="text" value="yyyy-MM-dd"/>
ToDate	<input type="text" value="yyyy-MM-dd"/>
Leave Type	<input type="text" value="select"/>
Reason	<input type="text"/>
Duration	<input type="text" value="0"/>

Place sticky footer content here. © 2019 @Nasim Kabir

Figure 36: Apply Leave Application (Supervisor and User)

CHAPTER: 07

7. Project Summery

7.1. **GitHub Link:** <https://github.com/NasimKabir/LeaveManagementSystem>

7.2. Limitations

1. Recommended Leave application process cannot well decoration.
2. This application uses only medium size company not big company.

7.3. Obstacles & Achievements

Spring Framework is an open source system. Spring system gives numerous highlights like lightweight, invers of control, perspective situated programming, MVC structure, exchange the executives and JDBC special case taking care of and so forth. It is generally secure. In the wake of finishing my undertaking Leave Management System, I confronted numerous issues and comprehend it.

7.4. Future Scope

Future I want to work cloud system and develop my online Leave Management System. This System will work multi-channel and All Employees can apply leave, approve leave and reject leave any places.

Conclusion

Though I have successfully implemented the system “Leave Management System” but there also some restriction in my project. Now this web system is using “local host”. In near future domain should be taken and launch this web application.

References

1. https://github.com/NasimKabir/Online_Counseling_Hour
2. <https://www.baeldung.com/spring-boot-crud-thymeleaf>
3. <https://www.codejava.net/frameworks/spring-boot/spring-boot-crud-example-with-spring-mvc-spring-data-jpa-thymeleaf-hibernate-mysql>
4. <https://www.javaguides.net/2019/04/spring-boot-thymeleaf-crud-example-tutorial.html>