Project Documentation

Web application for Leave Entry

on behalf of the Employee

Supervised By

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Submitted

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A project submitted in partial fulfillment of the requirement for the degree of Bachelor of Science in Software Engineering.

Department of Software Engineering

Daffodil International University

Approval

This thesis/project/internship titled on "Web Application for Leave Entry on behalf of the Employee", submitted by Tawsif Mowdood, ID: 152-35-1251 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 Bachelor of Science in Software Engineering and approval as to its style and contents.

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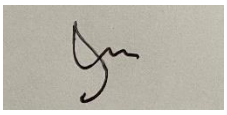

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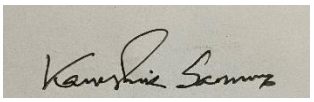

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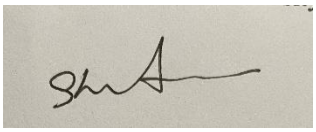

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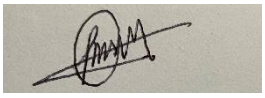

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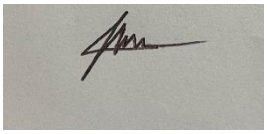
Declaration

I hereby declare that I have taken this project under the supervision of **Md. Shohel Arman, Senior Lecturer, Department of Software Engineering, Daffodil International University.** I also declare that neither this project nor any part of this has been submitted elsewhere forward of any degree.



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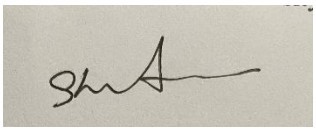

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Acknowledgment

At first, I am grateful to almighty Allah and happy for the successful completion of my final year project and documentation. I would also like to thank my project supervisor **Md. Shohel Arman** for his sincere dedication to my project. It was quite impossible for me to complete this project without his supervision.

I also like to thank my parents for their support and inspiration to do something good.

I like to express my gratitude to, the Head of the SWE department, **Associate Professor Dr. Imran Mahmud,** and other Teachers of our department. This project required a lot of guidance and assistance from many people and I am privileged to have this chance.

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Chapter 1

Requirement Capturing and Scope Define

1.1 Introduction

The client is using a comprehensive HRIS(Human Resource Information System) for a long period. Existing HRIS is a Desktop Application, it was developed using Microsoft .Net Tool (C# .Net), and backend RDBMS(Relational Database Management System) is MS SQL Server. The existing system is running within a private LAN. The client initiated a new requirement of the web application that will be an extension and integral part of the existing HRIS. The current requirement is to design and develop a software for the online Leave Apply, Approval, and recording process. The system will be developed basically for the Line Managers of the factory who will apply for leave on behalf of the workers as a lot of them are not competent enough to use the system.

1.2 Scope of the Web Application

It is already mentioned that the intended web application will have to integrate with the existing HRIS, therefore, any existing process or information/data capturing will not be expected for the system. The new system would rather have to share already available information/data that would be necessary. Identified scope as per the client's requirement is discussed below.

a. Analysis of the necessary part of the existing HRIS for integration and sharing of information/data.

b. Secure Access to the system: Existing HRIS already have the facility of creating Authorized User for the system. Existing HRIS users will access the new system. This system will need a secure option for log in to the system using the existing same Login ID and Password.

c. Submit Leave Application: This is the required key functionality for the system. Workers of the organization are allowed to avail different types of leave according to the predefined policy of the organization. Usually, they(workers) need to apply for the desired category of leave in advance to get a sanction from the relevant authority. Or to regularize unauthorized absence into authorized leave. Designated Line Manager (and Alternate Line Manager) will be allowed to submit a leave

application on behalf of a Worker for approval. The available balance of the desired category of leave is the prerequisite of the leave application. Submitted leave application will go to the leave Approver Authority.

d. Leave Approval: Designated Second Line Manager (for the worker) is the leave sanctioning authority. A facility will be required to incorporate for viewing the submitted leave applications. This module has the facility to Approve or Reject the leave application. On approval of the application, the leave will be preserved as relevant workers' leave records. On rejection, the leave application will be available for the Line Manager for information.

e. View Leave Balance: The First Line Managers/Alt. Line Managers will have the provision to view the Leave Balance of their respective team members

f. Dashboard: The dashboard of this web application gives the facility to see the overview. The **Upcoming Holiday** helps the employees to plan for their leaves effectively. Whenever a Line Manager applies for a leave, the request forwards to the Second Line Manager and it shows in the **Pending Approval List.** The Second Line Manager can click the link and either Approve or Reject the request. Whatever the action is, the First Line Manager will also receive a notification in his/her dashboard as well under the **Notification** grid. The Line Managers can view the Leave Balance from **Your Team** by clicking the **Leave Balance** option.

g. Exit from the System – Logout

1.3 Stakeholders

As this application is an extension version of the HRIS system, there will be two stakeholders

a. **First Line Manager(s)/Alternate Line Manger(s)**, who will apply for the leaves on behalf of the factory employees.
b. **Second Line Manager(s)**, who will approve/decline the requested leaves.

Chapter 2

System Requirement Specification

2.1 Functional Requirements

2.1.1 System Log In

Purpose/General Description	With valid credentials, users will be able to log into the self-service.
Pre-Condition	The following information must be present in the system to run this module: • Employee Details
View & Search Criteria	N/A
Business Rules	The employees will have to be registered as Web Users to use this application.
Work Flow	N/A
Notification	N/A
Test Case Reference	

2.1.2 Line Manager's Dashboard

Purpose/General Description	The dashboard will show the overview of the system.
Pre-Condition	The following information must be present in the system to run this module: • Employee Details • Holiday Setup • Leave Balance
View & Search Criteria	N/A
Business Rules	The Line Managers will have the facility to view the approval request, notifications, upcoming holiday list, leave balance of their respective team members.
Work Flow	The leave request from the First/Alt. Line Managers will be forwarded into the Second Line Managers dashboard. The actions that were taken against those requests will be redirected to the First/Alt. Line Managers dashboard.
Notification	Second Line Manager: Leave request from the First/Alt. Line managers First/Alt. Line Manager: Notifications will be sent to the dashboard whenever the previously forwarded requests have been approved or rejected by the Second Line Managers.
Test Case Reference	

2.1.3 Leave entry on Behalf

Purpose/General Description	The system will facilitate the line managers to apply for leaves on behalf of the employees.
Pre-Condition	The following information must be present in the system to run this module: • Leave year, • Leave types, Leave parameter. • Employee Details • Assigned Line Manager
View & Search Criteria	The system will facilitate the Line Manager/Alt. Line Manager to get employee-wise different leave type, balance, and view in the list.
Business Rules	• Casual Leave: o Entitlement 10 days per year o Leave entitlements to be added in the beginning of a year; days to be prorated for new joiners o Prefix or suffix holiday/ weekends will not to be considered as leave days o Holiday/ weekends in between a casual leave period will be considered as leave days o Max. 3 working days can be taken at a stretch o Max. 8 days can be encashed at the end of year, the rest will be lapsed o 0.5 day leave option for casual leave • Sick Leave: o Entitlement 14 days/year o Leave entitlements to be added in the beginning of a year; days to be prorated for new joiners o Holiday/ weekends in between a leave period are not to be considered as leave days o Max. 8 days can be encashed at the end of year, the rest will be lapsed o 0.5 day leave option for sick leave • Annual Leave:

	○ Entitlement 16 days/year ○ Leave entitlements to be added at the end of a year; days to be prorated for new joiners ○ Holiday/ weekends in between a leave period are not to be considered as leave days ○ Max. 8 days can be encashed at the end of the year, the rest will be added to the accumulated leave balance within a limit of 40 days ○ Option for applying Half Day Leave • Other Leave Types: ○ Maternity Leave (120 calendar days, i.e., at a stretch) ○ Special Leave (no limit) ○ Leave without pay (no limit) • Employee Picker: ○ Facility to pick only those employees who are assigned under a certain First/Atl. Line Manager ○ Line Managers can select an employee using Name/Employee ID/Designation/Department.
Work Flow	The First/Alt. Line Managers will pick the employee from the Employee Picker at first. Then, select the Leave types, From Date-To Date from the date pickers. The system will automatically calculate the total days and check the validations for the leave that has been selected previously. A remark is mandatory for submitting the leave.
Notification	After submitting the leave, a notification will be sent to the Second Line Manager's dashboard.
Test Case Reference	

2.1.4 Leave Approval

Purpose/General Description	The system will facilitate the Authority(Second Line Manager in this regard)to take action against the previously applied leaves by the First/Alt. Line Managers.
Pre-Condition	The following information must be present in the system to run this module: • Leave year, • Leave types, Leave parameter. • Employee Details • Assigned Line Manager • Leave Entry
View & Search Criteria	N/A
Business Rules	The Second Line Managers can see the notifications of the previously applied leaves by the First/Alt. Line Managers. There will be two options for each request, Approve and Reject. A Second Line Manager can then take necessary actions based on the situation.
Work Flow	The Second Line manager will be notified whenever the Line Managers apply for any kind of leave on behalf of the employees. He/she can either Approve or Reject the request. Regardless of the action taken by the Second Line Managers, the First/Alt. Line Managers will be notified.
Notification	A notification will be sent to the dashboard of the First/Alt. LM, whenever the Second LM approves or rejects the leave request.
Test Case Reference	

2.2 Dependability Requirements

The web application's dependability is based on four dimensions,

2.2.1 Availability Requirements

NFR-1	The system is capable of functioning without system errors		
Description	The web application has the potential to see a large number of users at times. And the system should be able to handle them with any major system errors.		
Stakeholders	N/A	Priority	High

2.2.2 Reliability Requirements

NFR-2	The system should be accessible all the time		
Description	The web application should be able to function 24/7, every day. The users should have a trouble-free experience. The system should be able to deliver up to its potential.		
Stakeholders	Line Manager(s)	Priority	High

2.2.3 Security Requirements

Security requirements of a web application are a functional requirement. A secured software ensures a safe environment for the users to use the web application. The functionalities of software security can be observed and tested. There are some security-related requirements is given below,

- User(s) signing into the system in a proper manner.
- Get full access properly after logging in.
- Leave request sent to the Second Line Managers for approval.
- Second Line Managers receive request notifications.
- Log out properly.

The system features a well-integrated and sophisticated security system. It will ensure the data is stored in the system and will prevent malicious modification or accidental destruction. Privacy is important to users and to ensure the users' privacy, the central database will be protected by the team.

NFR-3	The application provides a safe authentication process		
Description	The web application is designed in a way that it will only provide access to authorized and authenticated users.		
Stakeholders	Line Manager(s)	Priority	High

2.2.4 Extensibility or Scalability Requirements

Extensibility or scalability requirements define the ability of a system to grow to its capacity to meet the increasing demand for its service which is offering to the user's demand. The system is capable of avoiding failures and providing fresh data when required.

2.3 Human Interface Guidelines

The system is kept very user-friendly and easy to understand as well as easily manageable. There are not any personalization and internationalization requirements. This application is developed by thinking about the client's perceptions and requirements as the major priorities.

2.4 Document Requirements

The system does not require any documents from the user. Users need to be the employees of the company.

2.5 User Interface Requirements

The system is designed in a way that is easily understandable to the users and it has to be visibly satisfying to the users.

NFR-4	The requirements are precise		
Description	The features on the application are displayed in such a way that the users can find them easily and put their leave requests.		
Stakeholders	First/Alternate Line Manager(s)	Priority	High

NFR-5	The leave requests are shown in the notification grid.		
Description	The leave requests are accumulated in the pending approval grid from where the Second Line Managers can easily access their pending jobs.		
Stakeholders	Second Line Manager(s)	Priority	High

2.6 Legal Requirements

The application is off-limits to the employees of COATS Bangladesh.

Chapter 3
System Analysis

3.1 Use Case Diagram

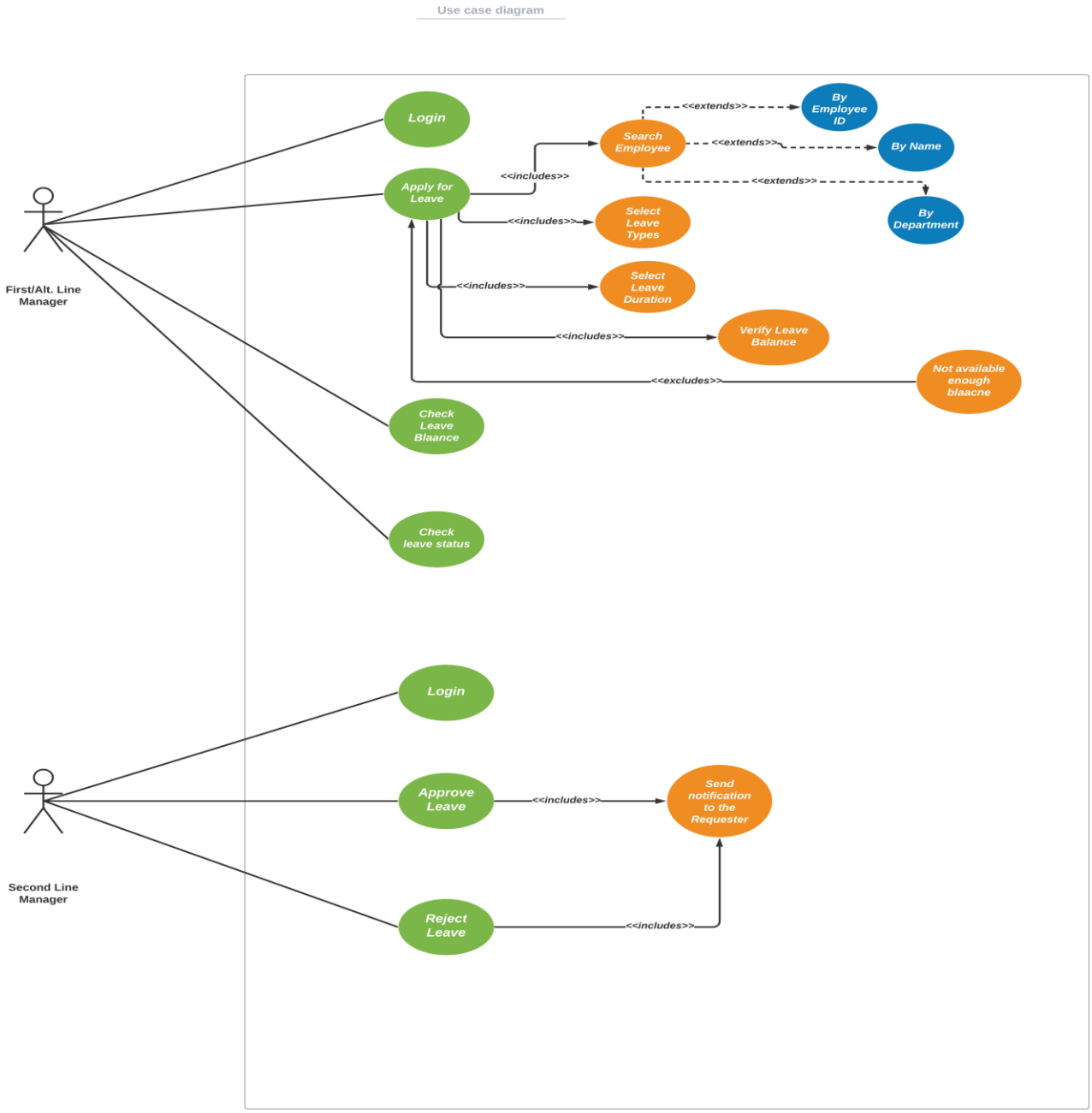


Figure 3.1: Use Case Diagram

3.2 Use Case Description

3.2.1 Log In

Use Case Title	Line Manager Log In
Goal	Line Managers must be able to sign in to the system successfully
Precondition	Line Managers' information needs to be added to the system.
Success End Condition	Logged in successfully
Failure End condition	Failed to Log In
Primary Actor	Line managers
Secondary Actor	Admin
Main Success Scenario	**1.** The logon window displays username and password fields. It also displays buttons for the Actions- Sign-in **2.** The user types his/her username and password into the fields. The password field is hidden i.e. it displays '*' in place of each character typed into the field. **3.** The user clicks the sign-in button. (Request is submitted.) **4.** If authentication by the host server is successful, the user is allowed to access the system **5.** Users will get a total of five chances to log on correctly. After the failure of the maximum logon chance, the user will become inactive. **6.** Admin User will be allowed to make the user active again.
Alternative Flow	**1.1** The logon window doesn't display the username and password field. The sign-in button doesn't work**.** **2.1** The password field displays the typed character instead of '*'. **3.1** The Sign-in button doesn't work. **5.1** The validation for maximum log-on chance fails to execute.

3.2.2 Apply for Leave on Behalf

Use Case Title	Leave Entry on Behalf
Goal	First/Alt. Line Managers will be able to apply for leave on behalf of the employees.
Precondition	The following information must be present in the system to run this module: 1. Employee information 2. Line Manager Information 3. Leave Types and Leve Type –wise Yearly Leave Entitlement 4. Leave Type-wise Leave Balance of Individual Employee 5. Holiday information
Success End Condition	Apply for leave successfully and send a notification to Approver for Approval of the applied leave
Failure End condition	Failed to apply for the leave
Primary Actor	First/Alt. **L**ine **M**anagers(LM)
Secondary Actor	N/A
Main Success Scenario	1. The applier(First/Alt. LM) will search for a certain employee who intends to take a leave using the **Employee Picker**. 2. The applier will search the employee using either **Name** or **Employee ID** or **Department** or **Designation** from the **Employee Picker.** 3. After the selection of the appropriate employee, the applier will choose the desired leave type from the predefined leave types dropdown list. 4. Need to select the leave duration from the date picker, **From Date**(Leave Start Date), and **To Date**(Leave End Date). This will calculate the number of days selected and show it in the **Total-Days(**leave duration) section**.** 5. Applier needs to input a valid reason for applying for leave in the **Reason** field to complete leave entry before submitting the request. 6. Applier will press the **Submit** button to complete the request**.**

Alternative Flow	1.1 When the applier tries to search for an employee who is not under his/her management, the search grid will show, “No record to display.” 2.1 If an employee doesn’t have a sufficient leave balance for a certain type of leave, the system will not allow it by showing a warning message when the applier tries to submit the request. 3.1 The system will restrict whenever the applier tries to apply for a leave that’s duration is against the company policy. I.E. If an applier applies for Casual leave for more than 3 days at a stretch, the system will show a warning message, “You can not apply for causal leave for more than 3 days.” 4.1 Applier can not apply for such leaves for an employee who is not entitled to those. For example, the system will restrict if a male employee tries to apply for Maternity leave. 5.1 If the applier forgets to add a reason and tries to submit the request, the system will show a warning message like, “Reason Needed.”

3.2.3 Search Employee

Use Case Title	Search Employee
Goal	Fetch the information of the employee who is about to apply for the leave
Precondition	The following information must be present in the system to run this module: 1. Employee Basic Information 2. Line Manager Information
Success End Condition	Successfully find the employee
Failure End condition	Failed to find the employee
Primary Actor	First/Alt. Line Manager
Secondary Actor	

Main Success Scenario	1. The applier will open the Employee Picker by clicking it. 2. The Employee Picker will show the options of picking an employee using searching parameters - Name, Employee ID, Department, and Designation. 3. The applier can search for an employee using any of the search parameters or a combination of search parameters (Name/ID/Department/Designation) 4. The searched employee will be shown into a grid along with necessary employee information- ☑ Employee Name ☑ Employee ID ☑ Department ☑ Designation 5. The applier needs to select the employee from the grid. 6. The selected employee will be picked and shown on the leave entry screen.
Alternative Flow	3.1 If the applier(first/Alt. LM) gives input to a wrong Name/ID, the search grid will show the message, "No record to display." This scenario will also occur if the applier tries to find an employee who is not in his/her team. This means the applier is not that employee's First/Alt. Line Manager.

3.2.4 Leave Approve/Reject

Use Case Title	Leave Approve/Reject
Goal	User (Second Line Manager) Approves/Rejects the leave request submitted by the First/Alt. Line Managers
Precondition	The following information must be present in the system to run this module: 1. Login User must be a Valid Approver(Second Line Manager) 2. Leave request submitted (by First/Alt. Line Manager) for approval

Success End Condition	Successfully approve the requested leave and store the approved leave record against the employee who applied for leave. Reject the requested leave.
Failure End condition	Failed to approve/reject the requested leave
Primary Actor	Second Line Manager
Secondary Actor	
Main Success Scenario	1. On Logon (by Second Line Manager/Approver) into the system - Pending Approval Notification of the submitted leave request count will be shown on the dashboard. 2. When the User(the Second Line Manager) clicks on the leave request notification, it will redirect him/her to the Leave Approval module. 3. In the Leave Approval module, the User (Approver - Second LM) will see the list of leave requests pending approval in the grid. There will be options of Approval or Reject the individual leave request. The following information will be in the column of the grid. ☑ Employee ID ☑ Employee Name ☑ Employee Designation ☑ Line Manager Name ☑ Leave Type ☑ From Date -To Date ☑ Total Days 4. The User(Second LM/Approver) will click the Approve option(button) to approve the requested leave one by one. The User may also click the reject button if he/she wishes not to approve the requested leave. 5. After approving/rejecting the leave request, a notification will be sent to the First/Alt. LM's dashboard.
Alternative Flow	N/A

3.3 Activity Diagram

3.3.1 User Login

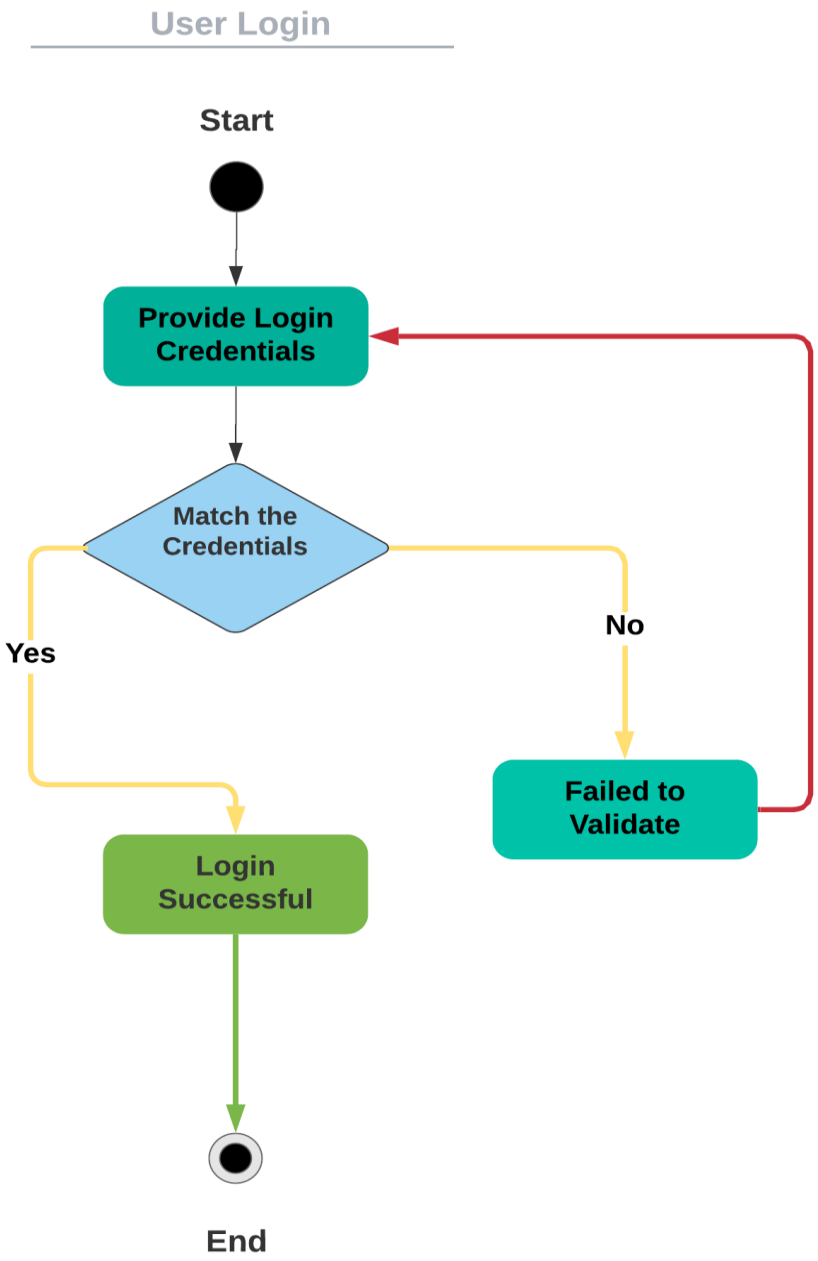


Figure 4.1: Activity Diagram(User Login)

3.3.2 Leave entry on behalf

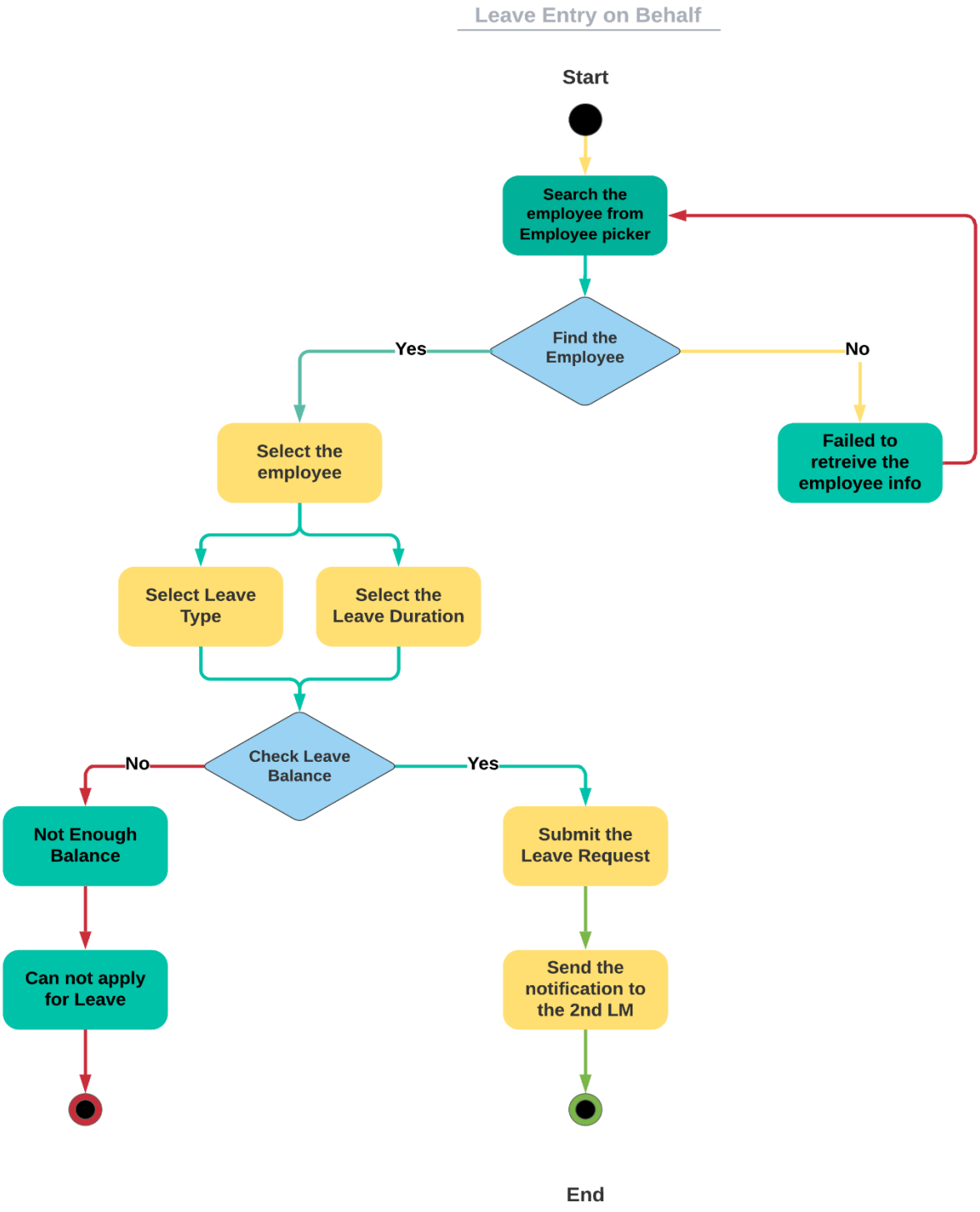


Figure 4.2: Activity Diagram(Leave Entry on behalf)

3.3.3 Search Employee

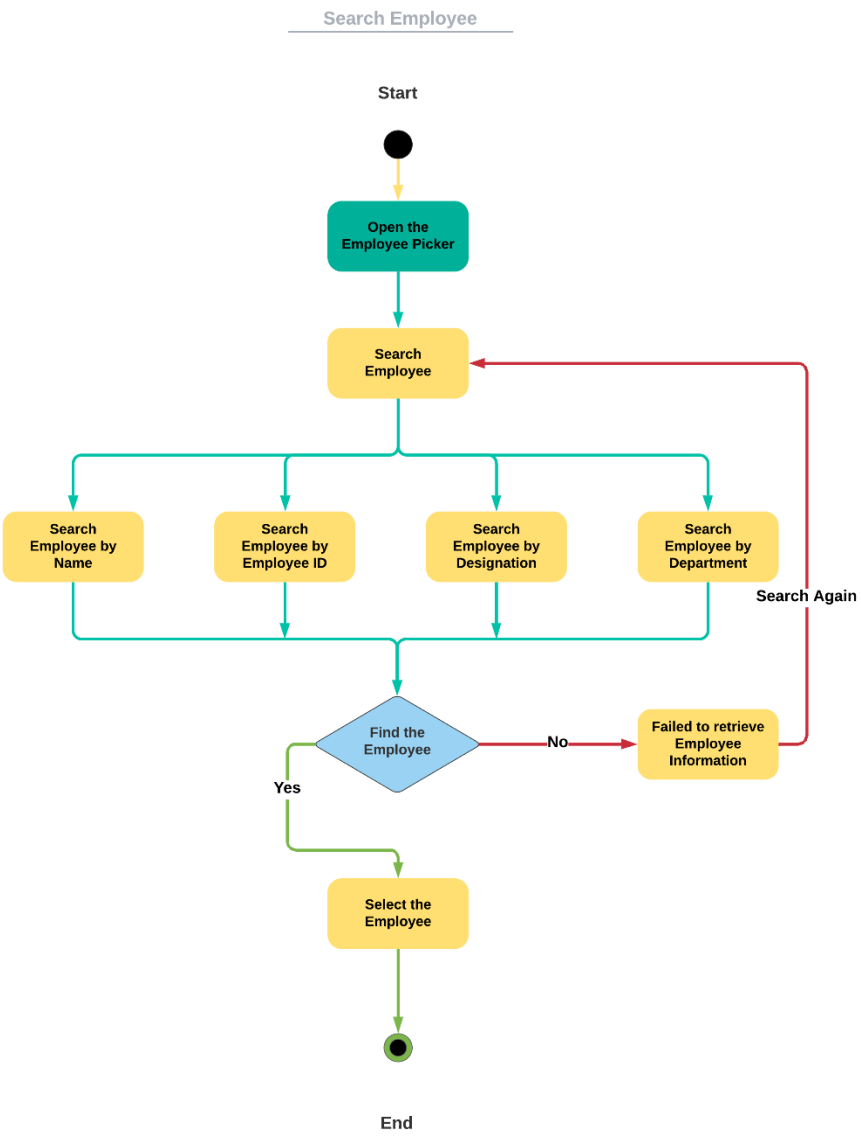


Figure 4.3: Activity Diagram(Search Employee)

3.3.4 Leave Approve/Reject

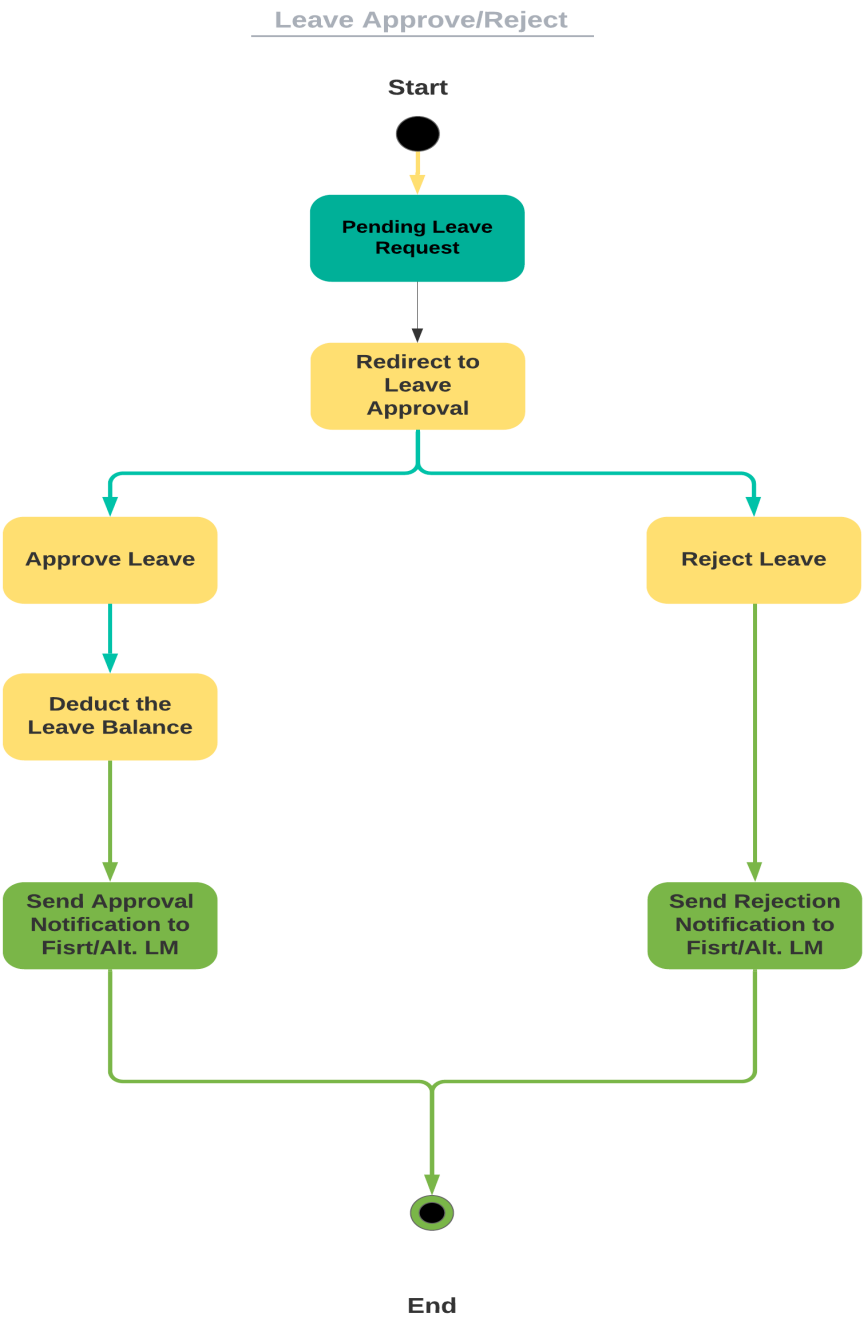
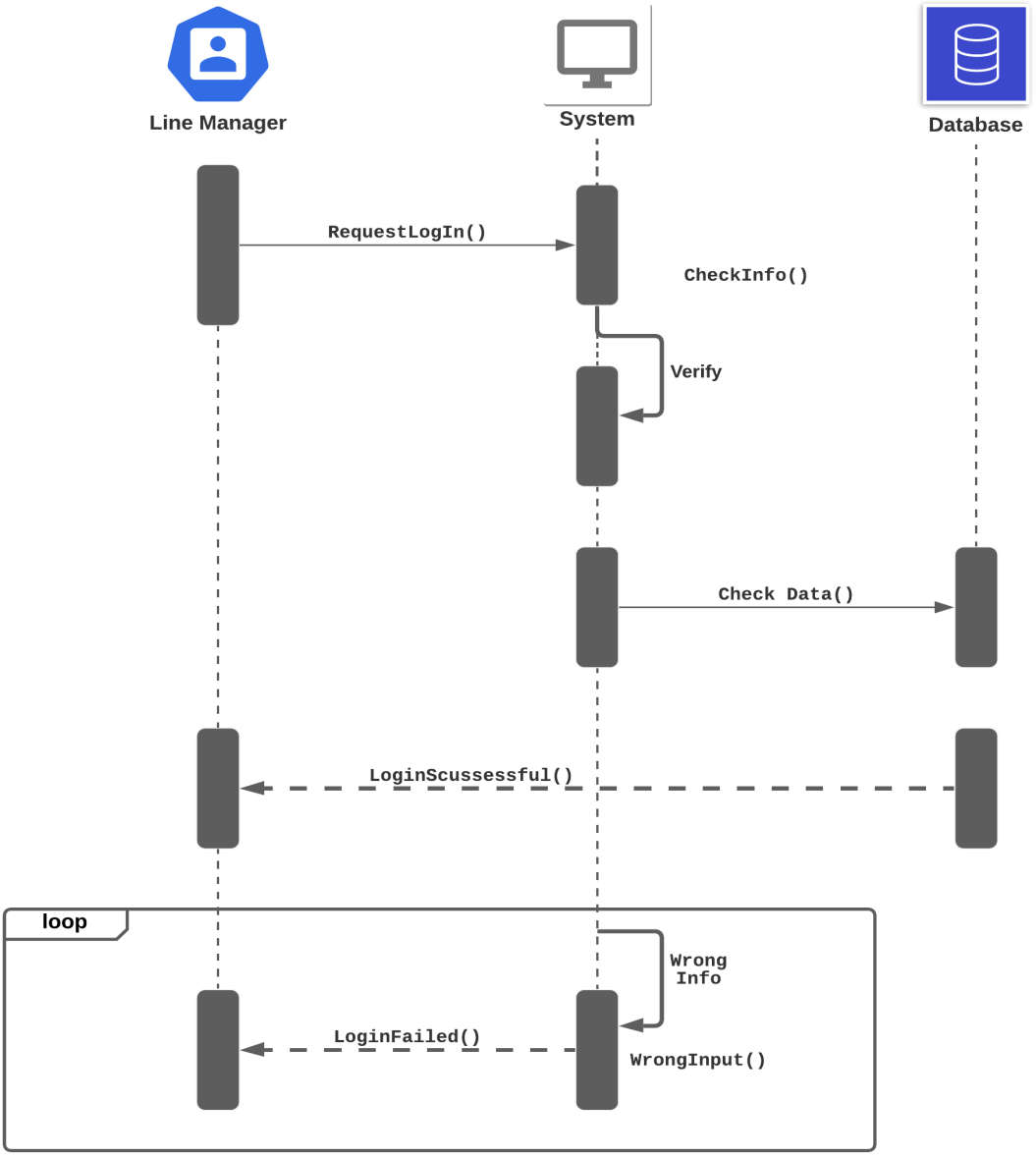


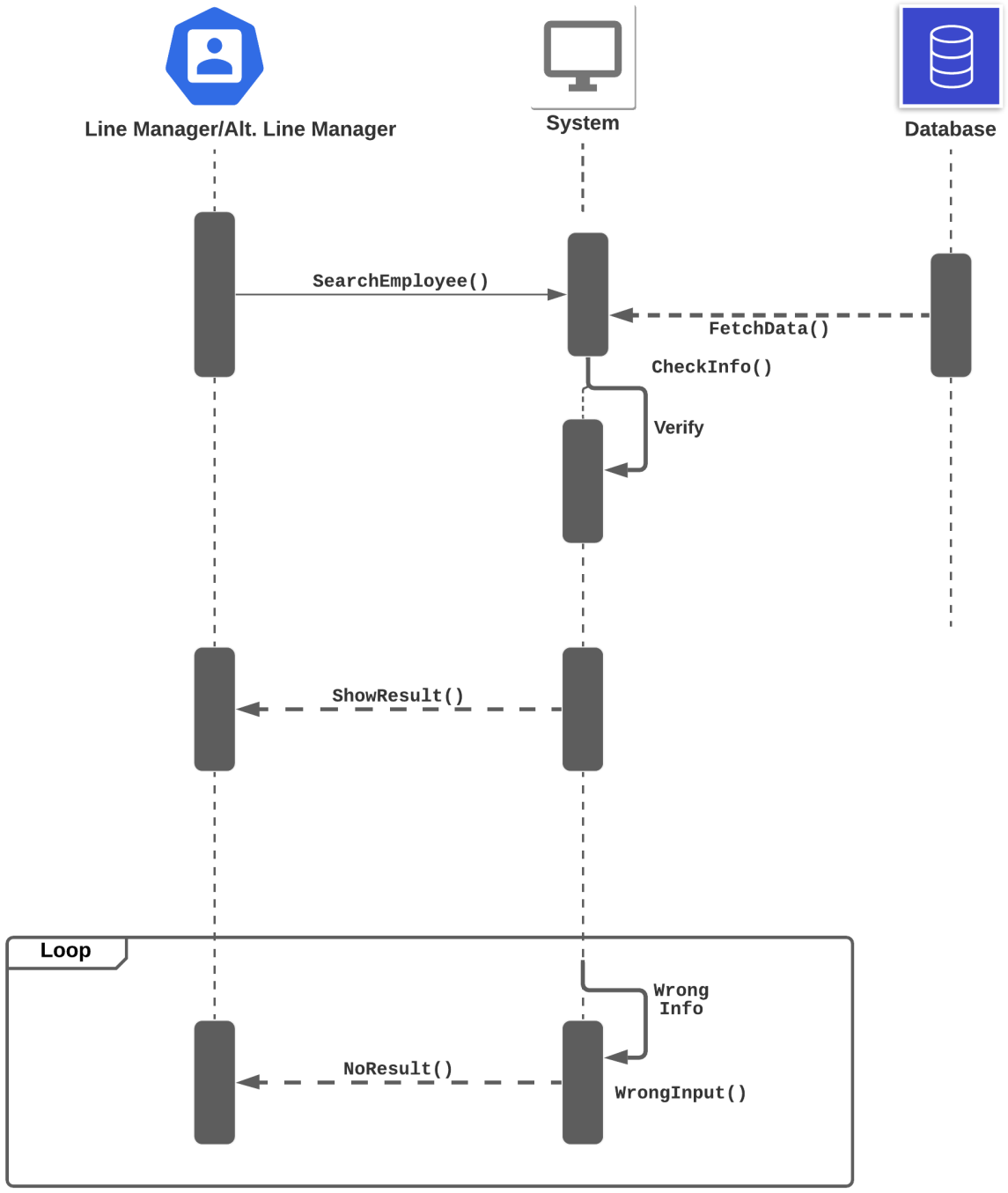
Figure 4.4: Activity Diagram(Leave Approve/Reject)

3.4 Sequence Daigram

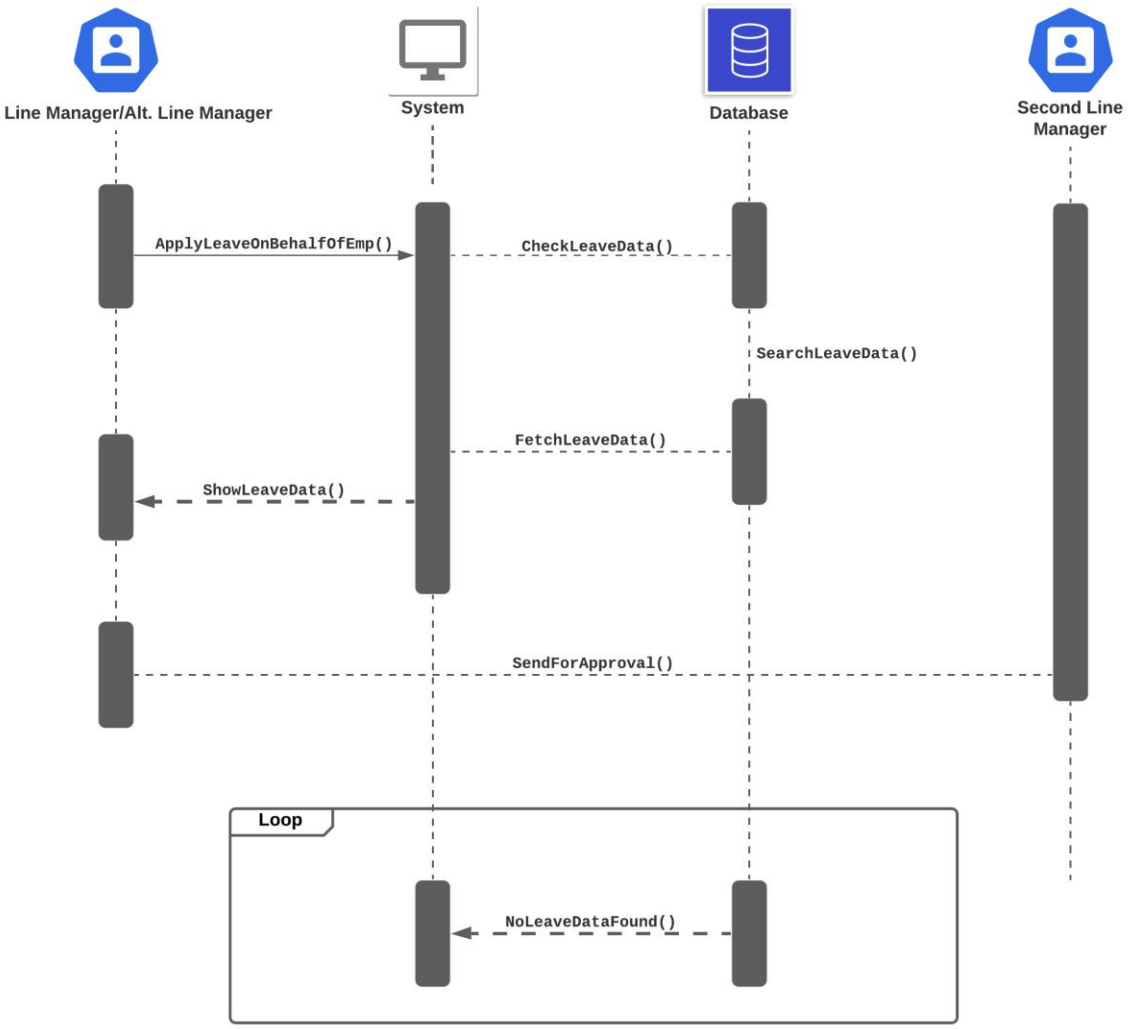
3.4.1 Line Manager Login



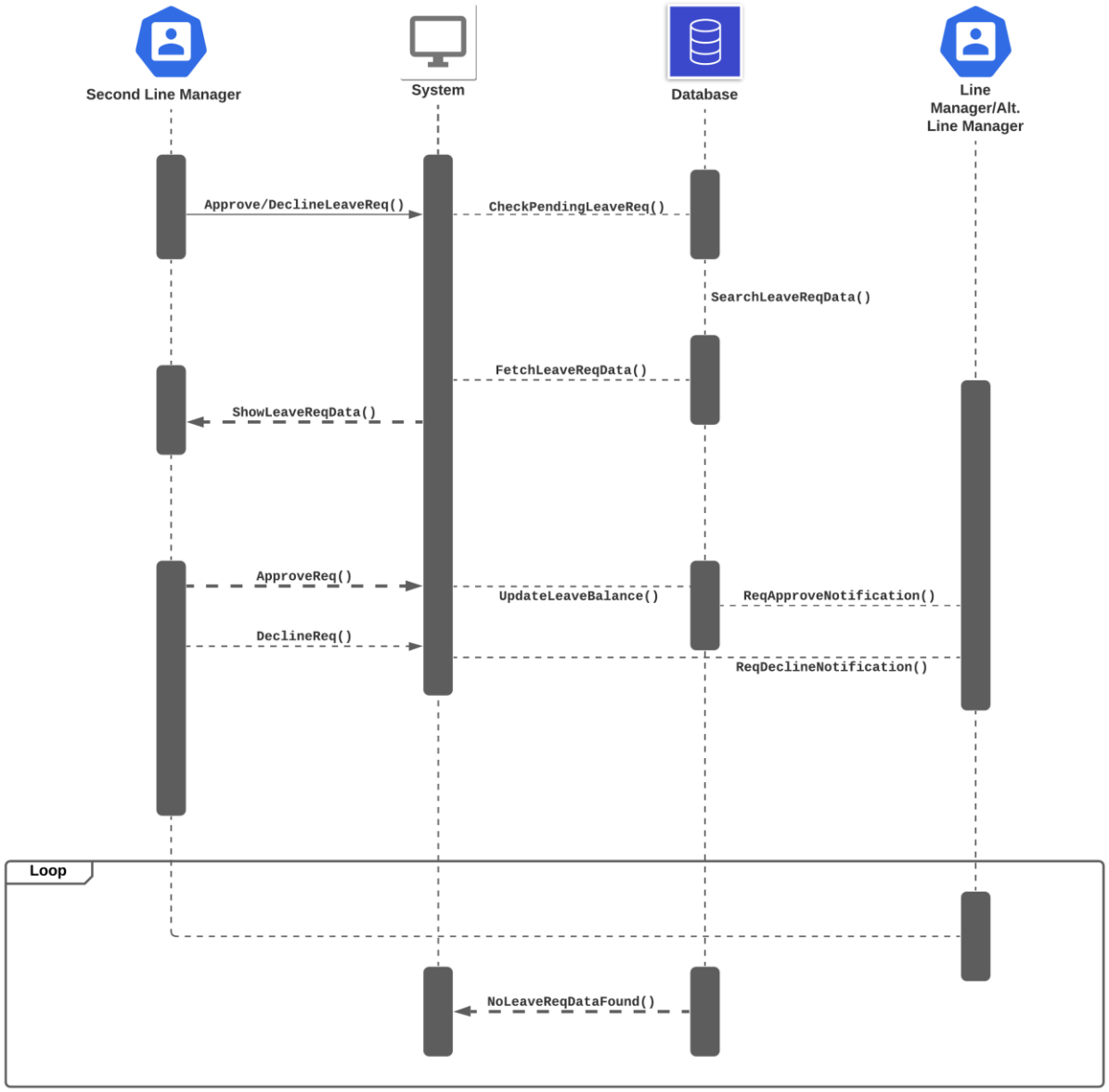
3.4.2 Search Employee



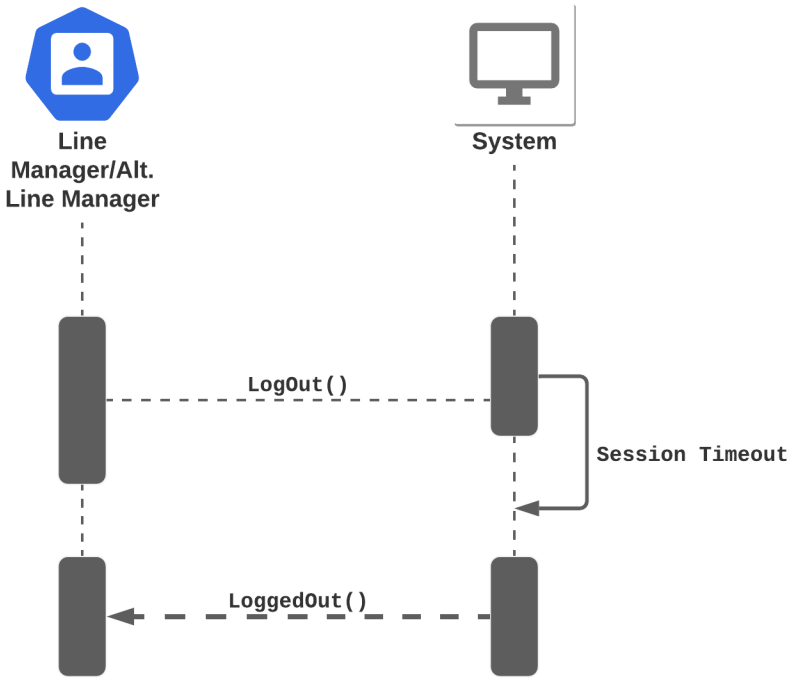
3.4.3 Apply for Leave on Behalf



3.4.4 Leave Approval Process



3.4.5 Line Manager Logout



Chapter 4
System Design Specification

4.1 Development Tools and Technologies

Development tools and technology are the primary and compulsory resources required to make and create a successful application. Development tools such as IDE and technologies like programming language and framework etc are needed for a team to create an application.

4.1.1 User Interface Technology

User interface refers to the parts which are visible to the user. A better user interface makes an application more appealing to the users to use and view the application.

4.1.1.1 HTML

HTML, in full hypertext markup language, a formatting system for displaying material retrieved over the Internet. Each retrieval unit is known as a Web page (from World Wide Web), and such pages frequently contain hypertext links that allow related pages to be retrieved. HTML is the markup language for encoding Web pages.

4.1.1.2 CSS

CSS refers to Cascading Style Sheets. It describes how web elements are going to be displayed on screen paper or in other platform. CSS is responsible for the appearance of an application. CSS can be used internally, externally and inline.

4.1.1.3 Ajax

Ajax is short for Asynchronous JavaScript and XML, which refers to a set of web development techniques rather than an actual programming language. Ajax however, is widely used in client side programming (e.g. JavaScript) to allow for data to be sent and received to and from a database / server. What's special about

using Ajax programming is that you can exchange data in the background without actually disturbing the user experience.

4.1.1.4 Telerik Web UI

The Telerik® UI for ASP.NET AJAX controls suite includes more than 120 versatile and performance-optimized ASP.NET Web Forms components that help to build high-quality, professional line-of-business projects. This controls suite was formerly known as RadControls for ASP.NET AJAX, where RAD stands for Rapid Application Development. From the leading AJAX data grid to the full-featured HTML editor used by Microsoft on sites like MSDN, Telerik UI for ASP.NET AJAX provides all the building blocks to maximize productivity and build richer, slicker, and better-performing applications with ease.

4.1.2 Language and Framework

For developing a robust business application the choice of programming language and the framework are very instrumental. In this regard, C# has been chosen as the programming language, and Asp .NET is used as the framework.

C# is a modern, innovative, open-source, cross-platform object-oriented programming language and one of the top 5 programming languages currently used in the industry. Hundreds of thousands of companies worldwide use C# to power their business across a vast array of industries including media, finance, healthcare, gaming, and more.

ASP.NET is an open-source, server-side web application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic websites, applications, and services.

4.1.3 Integrated Development Environment

An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools, debugger and compiler. Most modern IDEs have intelligent code completion, syntax highlighting, refactoring, debugging features.

For this application Visual Studio 2015 has been used as the IDE for managing the project.

4.1.4 Database Server

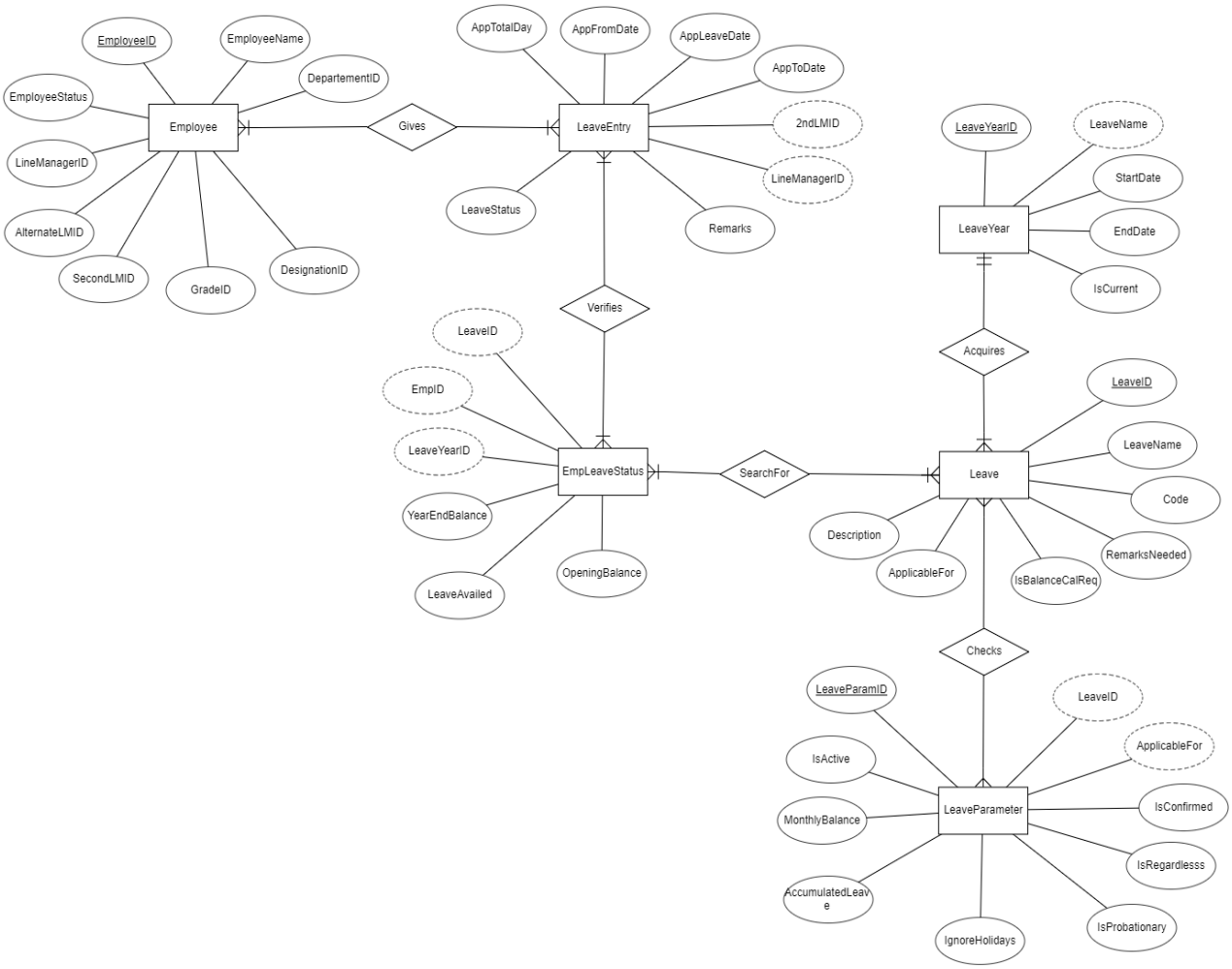
Database server refers to the backend system for a database application using server architecture dedicated to providing database services. The system data structure is actually based on Relational Database Management System(RDBMS), so Microsoft SQL Server is used for this application.

4.1.5 Web-Server

The web server is a computer that runs websites. It's a computer program that distributes web pages as they are requisitioned. The basic objective of the web-server is to store, process, and deliver web pages to the users. This intercommunication is done using Hypertext Transfer Protocol (HTTP). These web pages are mostly static content that includes HTML documents, images, style sheets, tests, etc. Apart from HTTP, a web server also supports SMTP (Simple Mail Transfer Protocol) and FTP (File Transfer Protocol) protocol for emailing and for file transfer and storage.

Internet Information Service(IIS) has been used as the web-server for hosting the application. Internet Information Services (IIS) for Windows Server is a flexible, secure, and manageable Web server for hosting anything on the Web. From media streaming to web applications, IIS’s scalable and open architecture is ready to handle the most demanding tasks.

4.2 Entity Relationship Diagram



Chapter 5
System Test Scripts

5.1 Log In

Purpose: The login screen will facilitate the Line Managers to enter the system after providing valid credentials.

Test Case	Pass	Fail	Comment
The User ID field is taking the input when the user is giving input.	☐	☐	
The Password field is taking the input when the user is giving input.	☐	☐	
The Password field is masking the characters when some input is given.	☐	☐	
The request will submit after clicking the **Log In** button.	☐	☐	
The system will allow entering the users if they give input to the valid credentials in User ID and Password fields respectively.	☐	☐	
The system will restrict the users and show a message, "Invalid User ID or Password" if they give any wrong input.	☐	☐	

5.2 Line Manager's Dashboard

Purpose: The system will provide at-a-glance views of the Leave related information to the Line Managers.

Test Case	Pass	Fail	Comment
The Line Managers will be able to view the dashboard after logging into the system.	☐	☐	
The upcoming holiday list will be available in the dashboard.	☐	☐	
The leave application requests will be accumulated on the **Pending Approval List** section. The 2nd Line Managers will be able to view the requests.	☐	☐	
The First/Alt. Line Managers will receive notifications on the **Notification** section after the approval/rejection of a leave request.	☐	☐	
The Line Managers will be able to access the leave balance of their teams by clicking the **Leave Balance** button.	☐	☐	

5.3 Leave Entry on behalf

Purpose: The First/Alt. Line Managers will be able to apply for leave on behalf of their team.

Test Case	Pass	Fail	Comment
Clicking the **Leave Entry on behalf** menu will redirect the LMs to the Leave application screen.	☐	☐	
LMs can select the employees by clicking the **Employee Picker** option.	☐	☐	
The selected employee will be shown in a read-only text field under the Employee label.	☐	☐	
The leave balance of the selected employee will be shown in the **Leave Balance** section	☐	☐	
Various types of leaves will be shown when the **Leave Type** is expanded.	☐	☐	
Clicking the calendar icons in **From Date** and **To Date** will popup the calendar from where the users can pick dates. The picked dates will be shown.	☐	☐	
The total number of picked days will be shown in Total Days.			

The system will give a warning message if all the mandatory fields are not filled when the user clicks the submit button. I.E. if the user tries to apply for a leave without giving a reason, the system will show a message, Reason needed."	☐	☐	
The system will restrict whenever the applier tries to apply for a leave that's duration is against the company policy. I.E. If an applier applies for Casual leave for more than 3 days at a stretch, the system will show a warning message, "You can not apply for causal leave for more than 3 days."	☐	☐	

5.4 Leave Approve/Decline

Purpose: The Second Line Managers will be able to approve/decline the pending leave requests which have been forwarded from the First/Alt. Line Managers.

Test Case	Pass	Fail	Comment
The pending leave requests will be accumulated in the **Your pending Approval List** grid in the dashboard	☐	☐	

Clicking upon the notification will redirect the 2nd LM(s) to the Leave Approval Page.	☐	☐	
The approval page can be visited from the **Menu→Leave Approval** as well.	☐	☐	
Approve button will approve the leave request	☐	☐	
After the leave is approved a notification will be sent to the requestee.	☐	☐	
Decline button will the leave request	☐	☐	
If the leave has been declined a notification will be sent to the requestee.			
The Approve All button will approve all the leave requests from the grid.	☐	☐	
The Approve Selected button will approve only the selected requests from the grid	☐	☐	
The decline All button will decline all the leave requests from the grid.			

Chapter 6
User Interface

6.1 First Line Manager/Alternative Line Manager

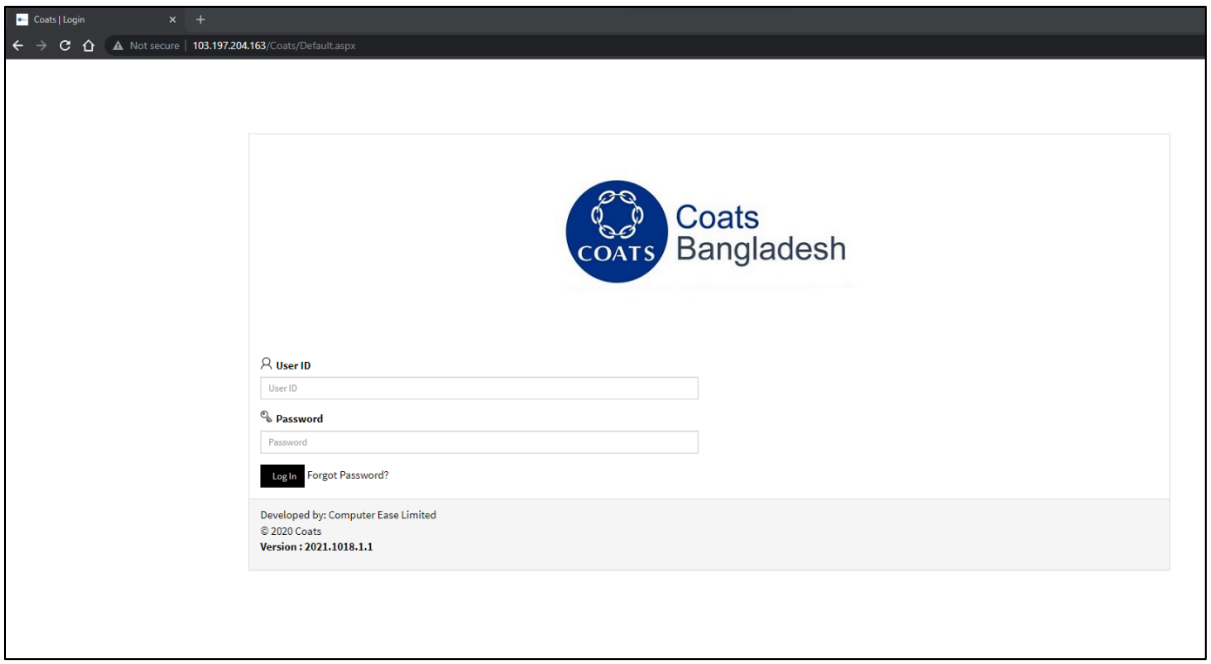


Figure 6.1.1: Login Page

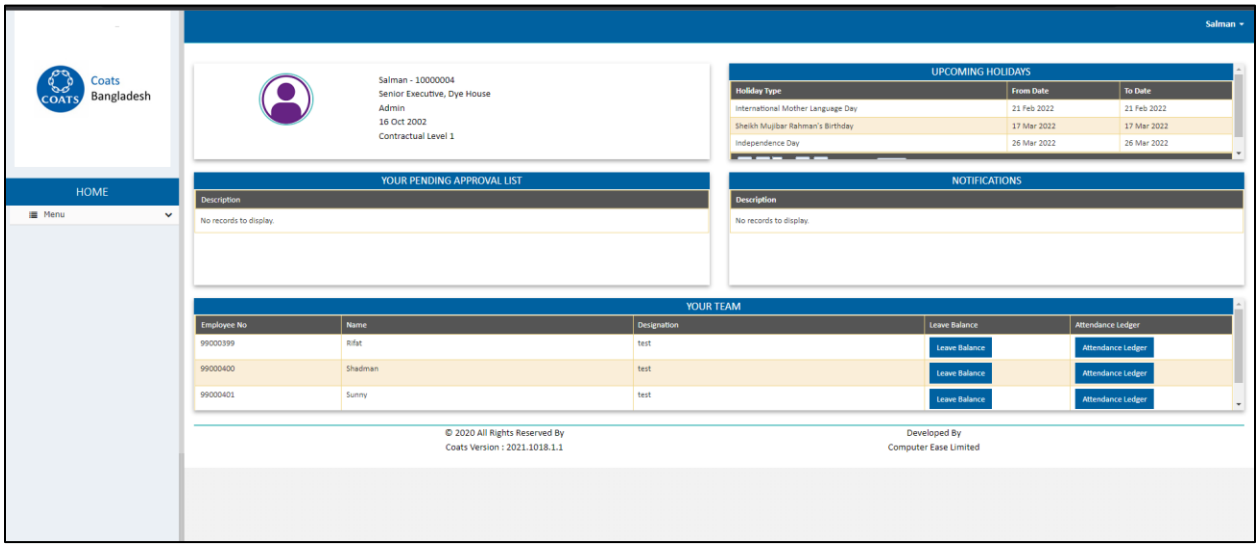


Figure 6.1.2: First/Alternate Line Manager's Dashboard

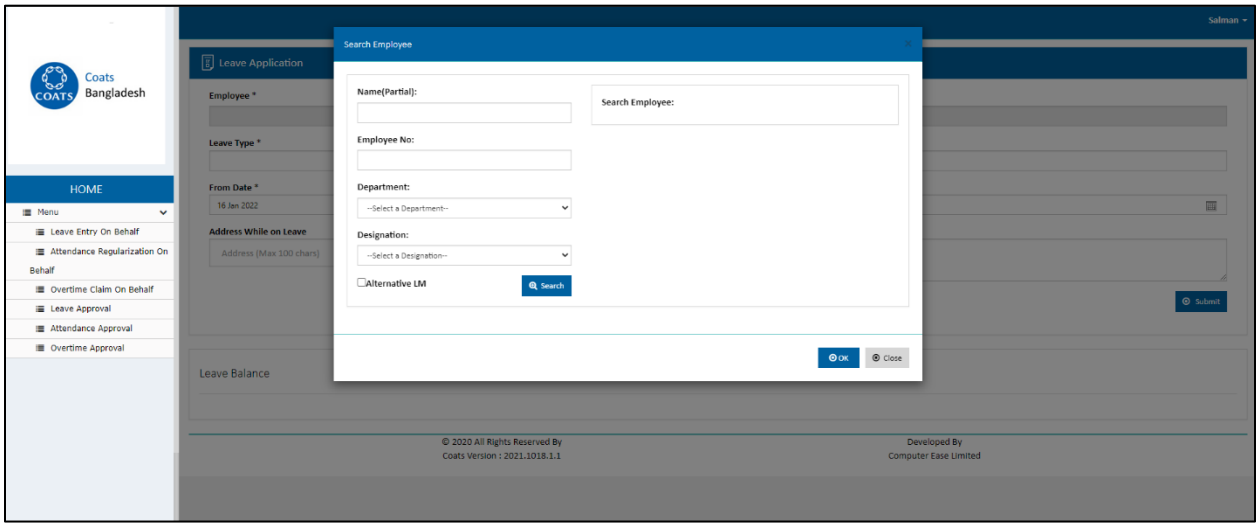


Figure 6.1.3: Employee Picker

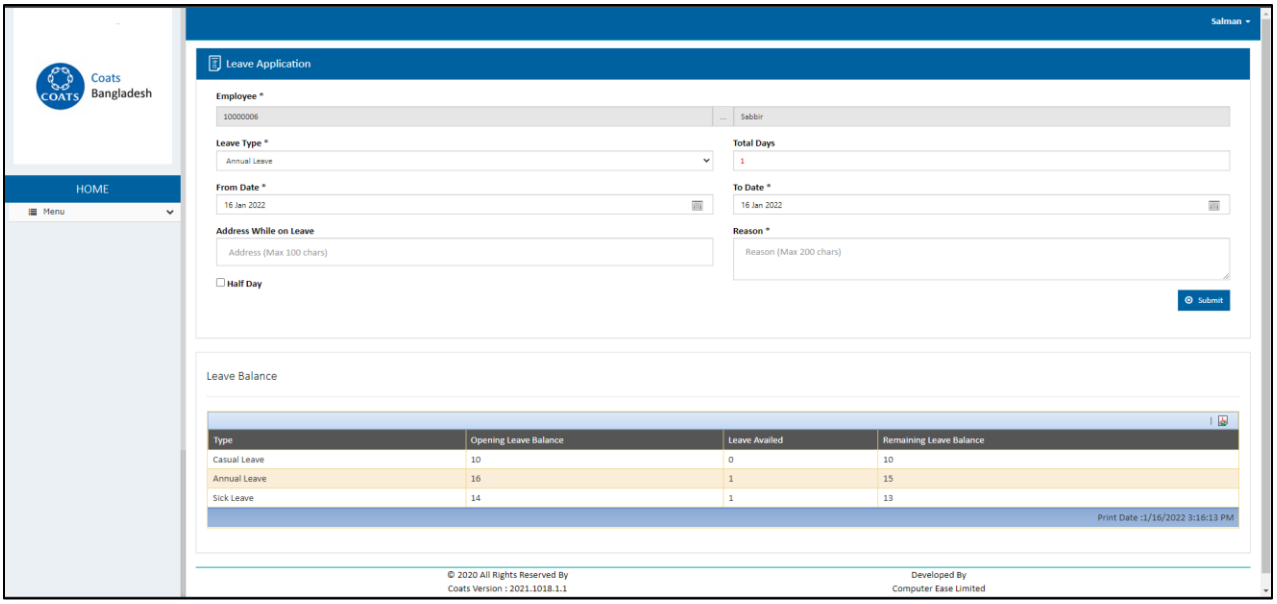


Figure 6.1.4: Leave Application

6.2 Second Line Manager

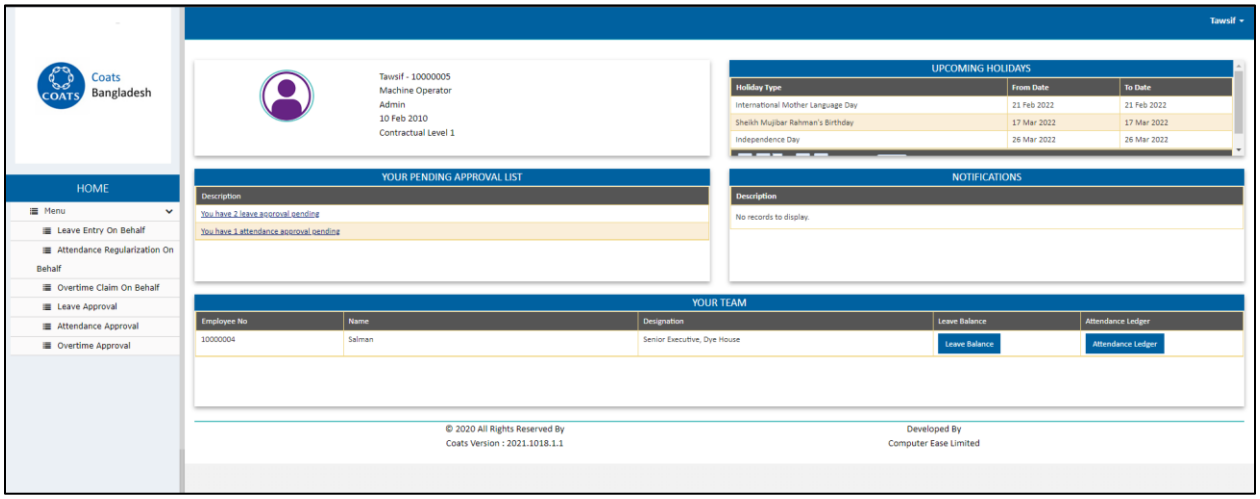


Figure 6.2.1: Second Line Manager's Dashboard

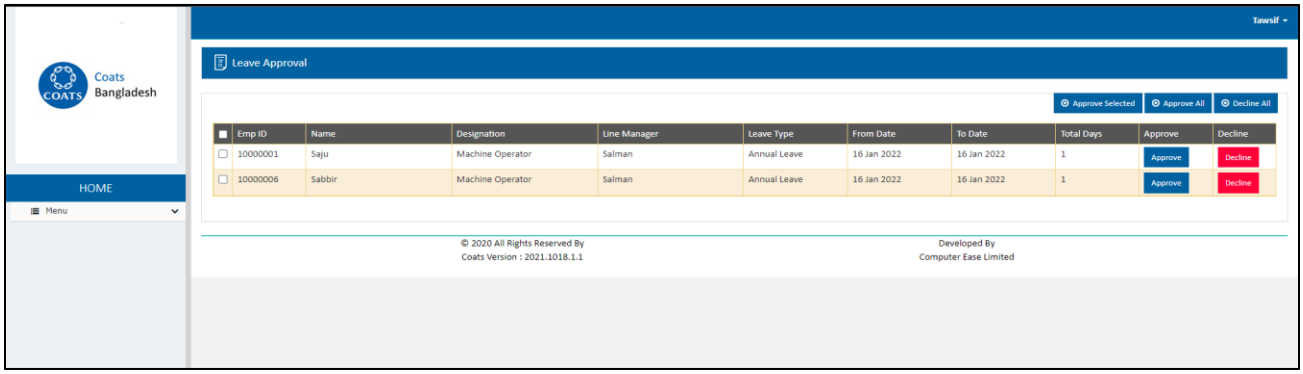


Figure 6.2.2: Leave Approval

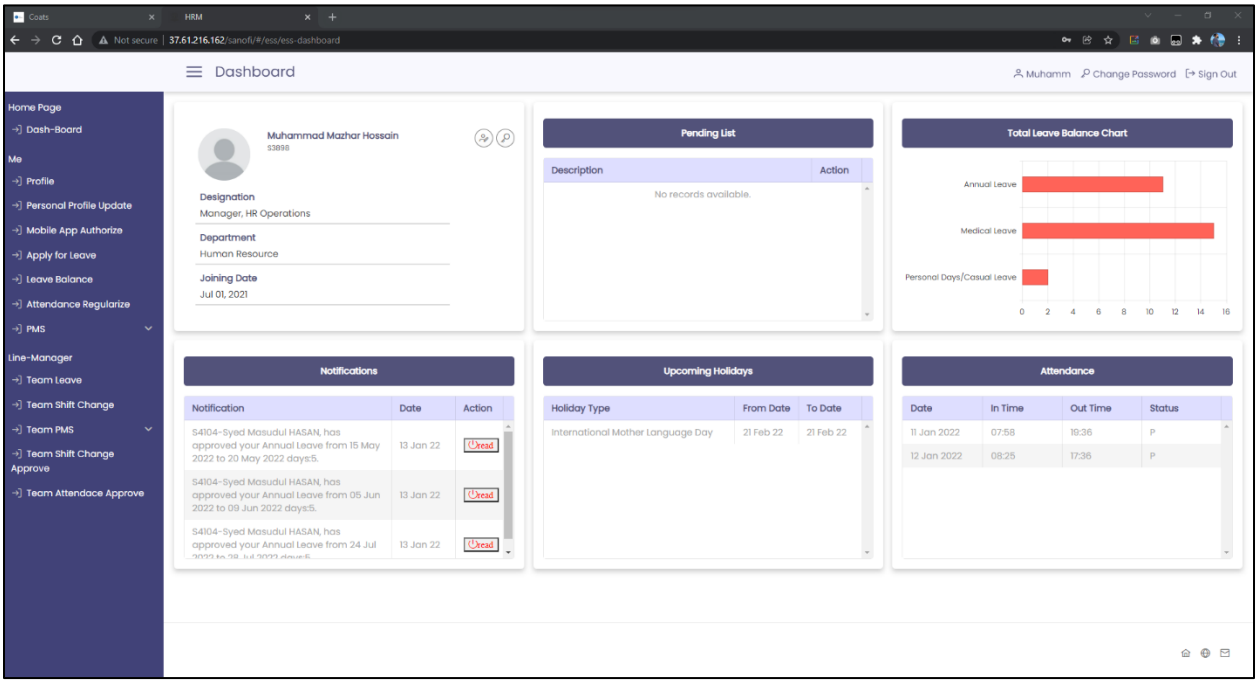
Chapter 7
Project Summary and Conclusion

7.1 Limitations

Although the system is live and running in the COATS Bangladesh environment there is still room more for improvements.

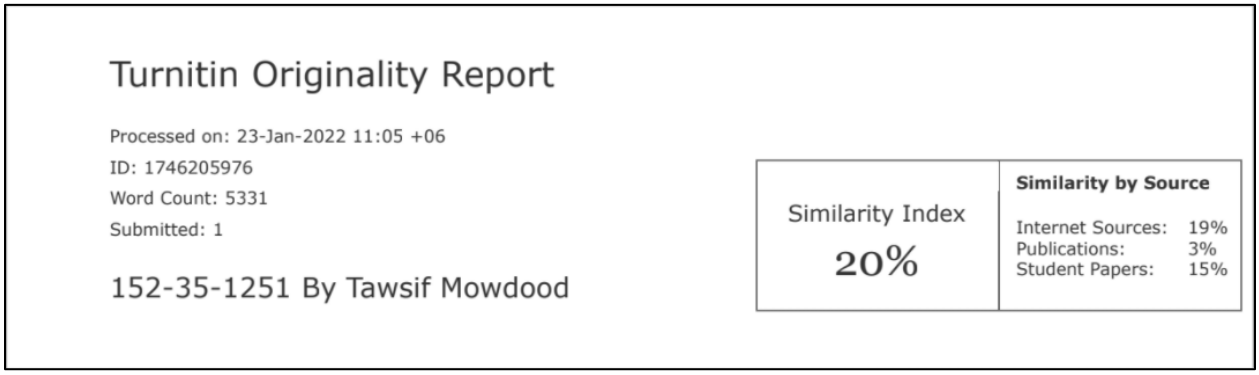
7.2 Future Scope

The system is still evolving and the new features are incorporating gradually. The upcoming features are **Overtime Claim on Behalf** and **Attendance Regularize on Behalf**. This application is now based on a desktop application but soon it will fully emerge as a standalone web application. The work is in progress. There is a glimpse of the ongoing work is given below-



Appendix

Plagiarism Report:



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