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Web Application : TaskRise

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Web Application : TaskRise

By

Umme Tasnim

1921848

Summer, 2023

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05 October , 2023

Dissertation submitted in partial fulfillment for the degree of
Bachelor of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

Attestation

The purpose of attestation certifies that I, Umme Tasnim (1921848), am the writer of the report titled "Web Application: TaskRise (A Task Management System)". It was finished and submitted as a requirement for the Independent University Bangladesh (IUB) degree in computer science and engineering. I completed the report while working under the supervision of Mr. Sajed Imtenanul Haque Sir (Supervisor). I further attest that each item of work in this report was created when I was an intern and is entirely original.

Tasnim

Signature

18.10.23

Date

Umme Tasnim

Name

Acknowledgement

I would like to begin by expressing my profound gratitude to Almighty Allah. With His grace and blessings, I have successfully completed my internship and report.

I extend my heartfelt thanks to the esteemed faculty of the Computer Science and Engineering (CSE) department for their invaluable teachings and guidance. Additionally, I am deeply grateful to my academic supervisor, Sajed Sir, for his unwavering support, guidance and valuable instructions throughout my internship and during the preparation of this report.

My sincere appreciation goes out to my dedicated team, whose support and assistance were instrumental in making my internship a meaningful experience. I am especially thankful to my industrial supervisor, Mr. Sazal Kumer Hazra, who is a down-to-earth person. His continuous guidance & support were invaluable during my internship.

In this report, I have written about my work, outcomes, and experiences at Fiber@Home Global Limited to the best of my abilities, aiming to provide comprehensive insights. I earnestly request your valuable feedback upon reviewing this report.

Sincerely,

Umme Tasnim

1921848

Department of Computer Science and Engineering

Independent University, Bangladesh

Letter of Transmittal

Mr. Sajed Imtenanul Haque
Lecturer
Department of CSE
School of Engineering & Computer Science
Independent University, Bangladesh

Subject: Final Internship Report Submission

Dear Sir,

With due respect, I am submitting my internship report as this is a requirement to complete my Bsc. degree in CSE (Computer Science & Engineering).
I am lucky to get the opportunity to work under your esteemed direction has been a great honor. This paper is the outcome of my three-month internship at Fiber@Home Global Limited, where I had the honor of working under Mr. Sazal kumer Hazra's direction. I had the chance to develop both theoretical and practical knowledge during this internship, as well as professional relationships. I have diligently worked to make this report as detailed and educational as possible. Using the knowledge and abilities I gained during my internship will be made possible.

Sir, it would be an honor for me if the report was helpful and gave you a better understanding of my internship experience at FGL.

Sincerely your student,
Umme Tasnim
ID: 1921848
Department of CSE
Independent University, Bangladesh

Evaluation Committee

Supervision Panel

Academic Supervisor	Industry Supervisor

Sazal Kumer Hazra
Chief Executive Officer
Fiber@Home Global Limited

Panel Members

Panel Member 1	Panel Member 2

Office Use

Program Coordinator	Head of the Department

Abstract

Throughout my internship at Fiber@Home Global Ltd. software division, I had the opportunity to learn more about creating web apps and applying them in practical settings.

We present a unique TaskRise - A task management system created to meet the specific requirements of Fiber@Home Global Limited, a business that has more than 70 employees.

Employees and Supervisors are two distinct user roles in this system. Employees can see the task that they have been assigned, check their meeting schedules to manage their time effectively, apply for leave with ease, request for repair if anything is damaged or need to get repair and also can monitor the status of their leave requests. Whereas the supervisors assign tasks to employees, distribute work assignments efficiently, edit assigned tasks as needed, can call for meetings, review leave applications, ensuring that time-off requests align with organizational needs, watch repair requests. And Add new users to the system.

The system promotes greater efficiency, open communication and personal accountability by centralizing task creation, assignment tracking, meeting schedule, leave management and repair request.

Fiber@Home Global Limited starts a journey toward operational optimization, simplified workforce management and increased transparency as soon as it implements this task management system. Through efficient task coordination and leave management, this system is ready to empower the organization to meet its goals.

My teamwork and communication skills have considerably increased as a result of this internship, which will be an enormous asset in my future job as a web developer.

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Chapter 1

Introduction

1.1 Overview/Background of the Work

TaskRise - A task management system's main purpose is to help individuals and teams to plan efficiently and track tasks according to it. It is such a platform where not only tasks can be created or tracked but also it can be monitored throughout the life cycle also more features will be included in this system. The most significant challenge as an intern is putting theoretical knowledge into practice. July 3rd, 2023 I started my internship at Fiber@Home Global Limited as a software engineer there I was assigned to contribute to developing A task management system project.

The system has different user roles such as - Employees and Supervisors – each with unique responsibilities. Supervisors can assign, edit and delete tasks. Monitor the progress of the task, can call for meetings and review, accept or reject leave applications, repair requests from employees and can also add users on the system.
Employees can update the status of their assigned task, watch meeting schedule along with time and location where the meeting will be held. Apply for leave, Request for repair.

This project will use technology to develop a user-friendly web app that meets the unique demands of Fiber@Home Global Limited, helping the company on its path to better workforce management and more efficient operations.

1.2 Objectives

The project's main objective is to Create, Assign and Track task of employee
Track Task Details
Update of task
Apply for Leave
Review, Accept or Reject Leave Applications
Request for repair
Watch repair request
Fix Meeting schedule
Watch meeting schedule
Different User has different role
Design a better User Interface
Having secure user authentication
Improving Data Security

1.2 Scopes

1. Design and develop a user-friendly interface for task creation, task management, task tracking.
2. Two separate user roles – Employee & Supervisor that should be implemented.
3. Supervisors should be able to assign tasks to employees.
4. Supervisors should be able to monitor the progress of assigned tasks.
5. Supervisors should be able to review, approve or reject leave requests.
6. Supervisors should be able to watch repair requests.
7. Supervisors should be able to call meetings.
8. Supervisors should be able to add user accounts to the system.
9. Employees should be able to view and update their assigned tasks.
10. Employees should be able to see the meeting schedule on the dashboard.
11. Employees should be able to request for repair.
12. Leave Application form for employees to get approval from their supervisor.
13. Secure user authentication and authorization.

Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

Our project “TaskRise” will be created using the theoretical knowledge we have gained from these courses in our undergraduate degree.

• **CSE203+L - Data Structure:** This course covers the principles and practices of data structures such as lists, stacks, queues, trees, and graphs while also enhancing the analytical and problem-solving skills required of any software developer.

• **CSE211+L - Algorithm:** This course focused on teaching students how to do analysis on an issue to see if it can be solved or not and whether it has one or more feasible answers.

• **CSE303+L - Database Management:** DBMS is a very fundamental & necessary course. Which includes planning, designing & using a database. Rich Picture, ER Diagram, BPMN all these techniques proved to be quite helpful during the project's planning and strategy-based development phase.

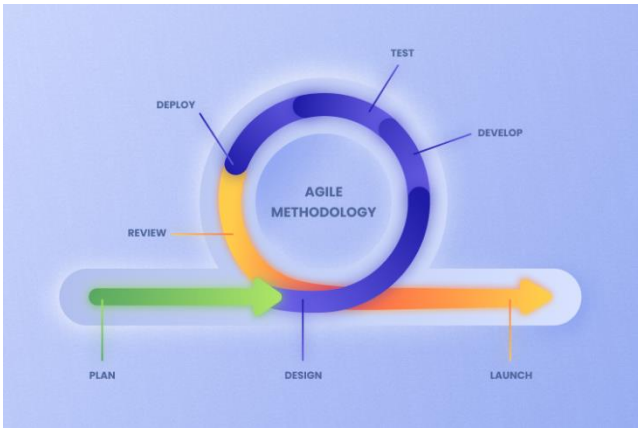
• **CSE309 - Web Applications and Internet:** This course discuss about the development of web applications. The front-end languages discussed in the course are HTML, Cascading Style Sheet (CSS), JavaScript & jQuery as well as the back-end languages PHP, MySQL have had the biggest contribution in this project.

• **CSE451-Software Engineering:** This course gives the fundamental insights of the Software Development Life Cycle (SDLC), which enables to execute projects and software development in a well-structured manner. The SDLC outlines a detailed roadmap consisting of various stages or phases, each with its own defined processes and outcomes. By following the SDLC, we can mitigate project risks while also accelerating the development process and improving overall production efficiency. This newfound knowledge proves to be immensely beneficial and advantageous for my future endeavors and particularly this project.

2.2 Related works

The Agile methodology is characterized by its iterative and incremental approach, emphasizing collaboration, flexibility, and customer involvement throughout the development process. Given the dynamic nature of software development and the need for continuous feedback, Agile could be a suitable approach for the TaskRise project.

We should use this methodology because of its- flexibility, collaboration, Continuous Improvement.



Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

It provides a clear summary of the tasks necessary to complete the project's objectives. Using WBS ,a project is broken down into more manageable, smaller bits of work .WBS is a visual and structural tool for project management that helps with complex project planning, organization and tracking. It breaks a project down into more manageable, smaller tasks, making it easier to allocate responsibilities, estimate resource, time requirements and monitor progress.

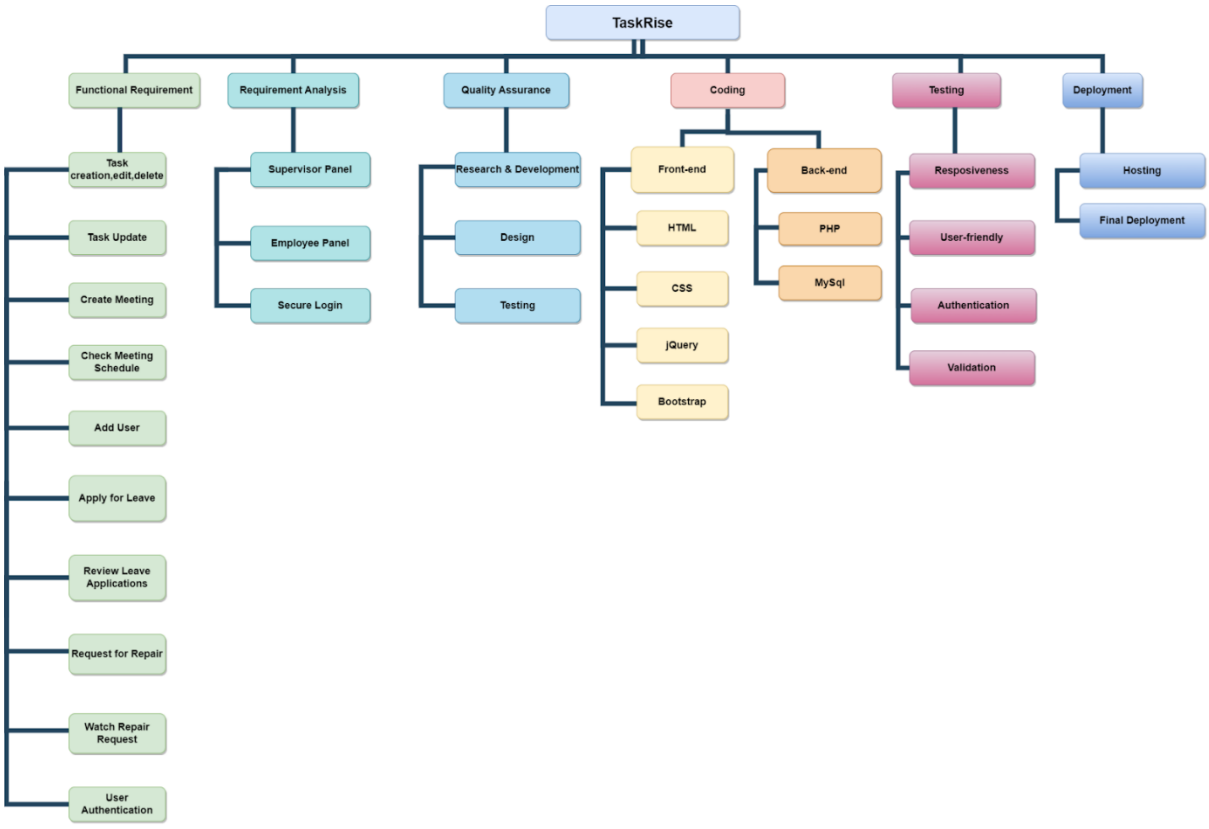


Figure 3.1: Work Breakdown Structure

3.2 Process/Activity wise Time Distribution

A series of interconnected actions known as the critical path directly impacts the project's completion deadline. If any work on the crucial path is delayed, our entire project will be behind schedule. The critical path is a set of tasks that regulates anticipated start and finish dates of a project.

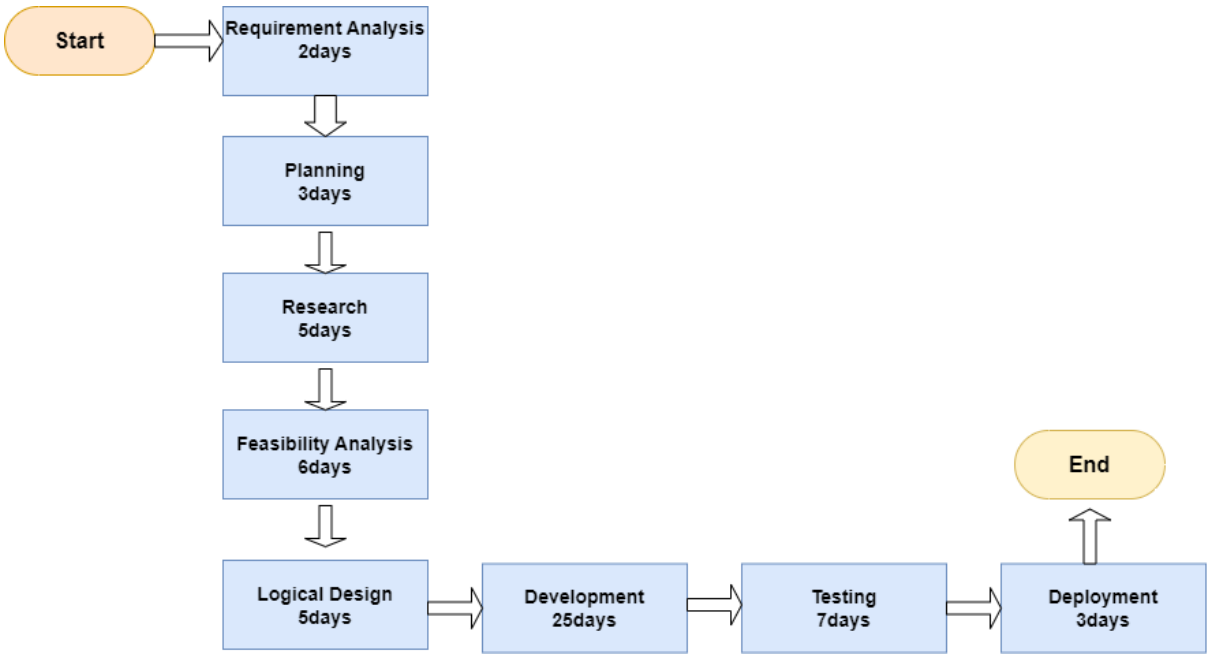


Figure 3.2: Critical Path method

3.3 Gantt Chart

Project managers and team members may easily understand the sequence, dependencies and progress of the project using Gantt charts which show tasks, activities or events as horizontal bars on a timeline.

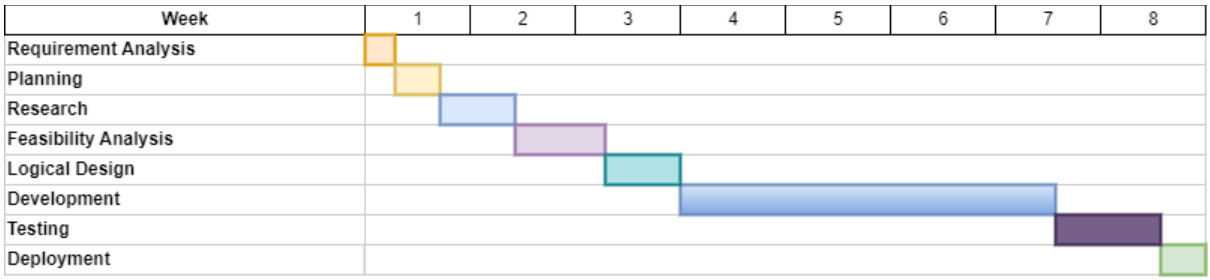


Figure 3.3: Gantt Chart

3.4 Process/Activity wise Resource Allocation

To maximize productivity, meet project deadlines and accomplish overall corporate goals, resource allocation must be done effectively. To guarantee that resources are used effectively and efficiently. It calls for careful planning, a thorough assessment of resource availability, the prioritization of activities and the making of well-informed judgments.

Requirement Analysis : The quality of the requirement analysis often determines whether a systems or software project succeeds or fails. For this project's requirement analysis about 2 days were allocated.

Planning : Effective project planning is necessary for a successful software development. 3 days were allocated for planning purposes.

Research : Research is also necessary for building a successful web app. 5 days were allocated for this purpose.

Feasibility analysis : Usually, this study is done at the start of the project. It aids in determining the viability of an information system project. In this instance, the feasibility analysis took around 6 days to complete.

Logical-Design : 5 days were allocated for this purpose.

Development : Here we have to do coding in this part. It took 3 and half week for the process.

Testing : At the end of this development process testing will be done. 7 days were allocated for this testing phase.

Deployment : Deployment is the final phase of this. 3 days were allocated for this phase.

Process/ Activity wise resource allocation

Process	Days	Estimated Work Percentage
Requirement Analysis	2	3.57
Planning	3	5.36
Research	5	8.93
Workability Analysis	6	10.71
Logical Design	5	8.93
Development	25	44.65
Testing	7	12.5
Deployment	3	5.36
Total	56days	100%

Figure 3.4: Process/Activity wise Resource Allocation Table

3.5 Estimated Costing

Any development project's cost varies according to the technology used, the features required & project's complexity. In our case the costing is Tk 1,20,000(BDT). Also, the maintenance cost will be decided upon once the project is deployed.

Features	Estimated Cost in BDT
Development cost	40,000
Infrastructure cost	70,000
Others	10,000
Total	1,20,000

Table 3.5

Chapter 4
Methodology

An agile methodology was used to work on different tasks and challenges during the internship. This methodology is based on incremental and iterative development.
A set of development principles and a philosophy are combined in agile software engineering. The ideology promotes informal methodologies, small, highly motivated project teams, early incremental software delivery, client satisfaction, minimal software engineering work items and overall development simplicity.
Agile methodology promotes continuous communication between the development team and the client. Adding new features, establishing protocols and bringing the solution into compliance with industry standards are the primary objectives of each iteration. As a result, it helps the development team to reduce backlogs & provide better solutions.

HTML, CSS, JQuery, Bootstrap, PHP, MySql all will be use to develop our project. PHP, is a runtime server-side application and used for developing dynamic websites. MySql that stores data into a database. Using PHP we can use CRUD operation and storing data into databases with MySql. For building user interference and client side applications JavaScript library - jquery is also used. Also Various libraries can be used for web application further development.

Chapter 5
Body of the Project

5.1 Work Description

Our web application aims to provide a smooth & user-friendly experience for the company's supervisor & employees. It offers various features. Following are the options available on the website:

1. User sign-in to the system based on their roles:
   Supervisors and employees need to fill their username, password, role and click on the login button for login to the system.

2. Dashboard:
   Both of these roles have different features in their dashboard. Employees can see the assigned task and meeting schedule whereas the supervisor will assign them tasks and create meeting schedules.

3. Features as Employee:

   Update Task Status: Employees have the flexibility to effectively manage their tasks. Once they complete the task they will submit the complete button and the status will be changed and the supervisor will be able to see the progress.

   View Assigned Tasks: To enhance workflow transparency and efficiency, employees can conveniently access their assigned tasks directly from their personalized dashboard. This feature ensures that everyone stays aligned and focused on their responsibilities.

   View Meeting Schedule: Staying organized and well-informed is essential, which is why our dashboard now includes a dedicated section for the meeting schedules. This allows employees to effortlessly keep track of important meetings, ensuring they never miss the meeting.

Apply For Leave: Taking time off is a crucial aspect of work-life balance. Our user-friendly leave application form simplifies this process. Employees can effortlessly fill out the form and submit it with a single click, ensuring a smooth and successful leave application.

Request For Repair : Clicking on the option employee needs to fill the form and submit on the request button. This form is dedicated to employees who need to get repaired something - such as a desk, laptop etc. Watching the form Supervisor will see the real condition and decide if it needs to get repaired or not.

View Leave Application Status: Clicking on the "Leave Status" option, employees can quickly see their status of leave request. This transparency ensures employees are always informed about their leave status, reducing uncertainty and promoting a more harmonious work environment. And there will be a record on the system of all employees leave applications.

4. Features as Supervisor:

Assign Task- It is the duty of supervisors to complete the relevant fields on task assignment forms and assign tasks to workers.

Manage Task: Alongside task assignment, supervisors also have the authority to manage tasks. This includes the ability to edit or delete assigned tasks when necessary.

Create Meeting- They Schedule meetings when they need to discuss important matters.

Review, Accept or Reject Application- supervisors will be responsible for reviewing applications and making decisions on whether to accept or reject them.

Watch Repair Request- Supervisor will be able to watch the request form. Where employees will describe their problems and details. Supervisor will get to decide whether to repair it or not.

Add users to the System- When it comes to expanding our team or granting access to our systems, supervisors are responsible for filling out the necessary information to add users.

5.2 Requirement Analysis

To identify the needs & requirements of a system, a company's current system and processes must be researched and visualized as part of the requirement analysis stage of the development process. Best practices to achieve this is to follow Industry-standard techniques & methodologies.

5.2.1 Rich Picture

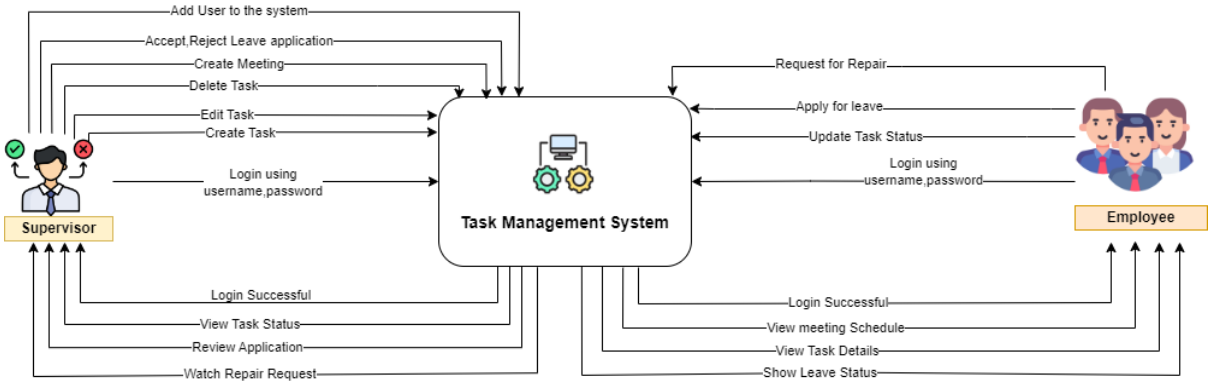


Figure 5.1: Rich picture

Functional and Non-Functional Requirements

A functional requirement is a feature, function or characteristic that a system must have in order to satisfy the user's needs and meet business requirements. Employees and Supervisors are the users of this system.

Table 5.1: Functional Requirement- User sign-in to the system

Name of the Function: User Sign-in to the system			
Input	Process	Output	Priority
1.User name 2.Password 3.Role	1. User will enter the username and password 2. User will choose the role and click on login button 3. The given information will be verified and if correct user will enter into the system	User will sign-in into the system and perform their action	High

Precondition: • Users must have account to the system • Users must have internet connection
Post condition: • User will directly go to their dashboard if login success
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to login to the system

Table 5.2: Functional Requirement- Supervisor Create task for employee.

Name of the Function: Supervisor Create task for employee.			
Input	Process	Output	Priority
1..Employee Name 2.Description 3.Start Date 4.End Date	1. After sign-in the user will redirect to their dashboard. From there he will choose create task button 2.User will fill all the boxes and click on the dates to assign task 3. After filling all the boxes the user will click on the Assign task button. And the task will be created and it will shown on employee's dashboard	User will successfully assign tasks to employees.	High
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to assigned tasks. Users will have to manually do the work.			

Table 5.3: Functional Requirement- Supervisor Create meeting

Name of the Function: Supervisor Create meeting			
Input	Process	Output	Priority
1. Subject 2. Description 3. Date 4. Time 5. Link 6.Place	1. After login the user will redirect to their dashboard. From there user will click on create meeting option 2.User will fill all the boxes 3. After filling all the boxes the user will click on the Create button. And the meeting will be created and it will shown on employee's dashboard	Meeting created successfully	High
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to create meeting. Users will have to manually do the work.			

Table 5.4: Functional Requirement- Supervisor review status, edit, delete task

Name of the Function: Supervisor review status, edit, delete task			
Input	Process	Output	Priority
1.Click on delete button to delete task 2.Click on edit button for edit task details	1. After login the user will redirect to their dashboard. From there user can be able to see the task table 2. User will be able to see the status of the task , once the status is change to complete user won't be able to delete or edit task 3. If user wants to delete, user will click on the delete button	Delete Task Successful Or Edit Task Successful	Medium

	4. If user wants to edit, user will click on the edit button 5. User will edit the boxes which user wants 6. After this the user will click on the update button. And the task information will be updated.		
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Updated data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to delete or edit task.			

Table 5.5: Functional Requirement- Supervisor Add user to the system

Name of the Function: Supervisor Add user to the system			
Input	Process	Output	Priority
1.User id 2.Username 3.Email 4.Password 5. Role	1. After login the user will redirect to their dashboard. From there user will click on add user option from dashboard for add user to the system 2. Supervisor will fill the fields for account creation and click on the add user button	Account creation success	High
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Updated data will be sent by the system to the database & information will be saved in database			

Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to add users.

Table 5.6: Functional Requirement- Supervisor review leave application, review repair request

Name of the Function: Supervisor review leave application, review repair request			
Input	Process	Output	Priority
	1. After login the user will redirect to their dashboard. When user will click on the leave application option , all the applications will be shown 2. When user will click on the repair requests, all the applications will be shown	Review success	High
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Updated data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system. Users will have to manually do the work.			

Table 5.7: Functional Requirement- Employee Apply for leave

Name of the Function: Employee Apply for leave			
Input	Process	Output	Priority
1.Subject 2. Message	1. After login the user will redirect to their dashboard. From there user will click on apply leave option from dashboard 2. Then they will get a form and after filling the form if he click on the submit button application	Leave Application success	Medium

Precondition: • Users must have account to the system • Users must have internet connection
Post condition: • Updated data will be sent by the system to the database & information will be saved in database
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to apply for leave. Users will have to manually do the work.

Table 5.8: Functional Requirement- Employee can Request for repair

Name of the Function: Employee can Request for repair			
Input	Process	Output	Priority
1.Item 2. Description	1. After login the user will redirect to their dashboard. From there user will click on Request for repair option from dashboard 4. Then they will get a form and after filling the form if he/she click on the Request button application will sent successfully	Request sent success	Medium
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Updated data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to give a repair request. Users will have to manually do the work.			

Table 5.9: Functional Requirement- Employee Task Updation

Name of the Function: Employee Task Updation			
Input	Process	Output	Priority
	1. After login the user will redirect to their dashboard. From there user will click on Complete button 2. Task status will be updated and set to complete	Task Updation Success	High
Precondition: • Users must have account to the system • Users must have internet connection			
Post condition: • Updated data will be sent by the system to the database & information will be saved in database			
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system and failed to update task. Users will have to manually do the work.			

Table 5.10: Functional Requirement- Employee Review Task, Meeting schedule, Leave status

Name of the Function: Employee Review Task, Meeting schedule, Leave status			
Input	Process	Output	Priority
	1. After login the user will redirect to their dashboard. User have meeting table and assigned task table on dashboard, also another option is available in dashboard such as leave application 2. If User will click on leave status option, status of the leave applications will be shown on the table	Watch applications successfully	High
Precondition: • Users must have account to the system • Users must have internet connection			

Post condition: • Updated data will be sent by the system to the database & information will be saved in database
Alternate Options: • If the given information is not accurate, the user won't be able to login to the system

Non Functional Requirements

NFRs or non-functional requirements, are a group of specifications that describe a system's operational capabilities and constraints with the goal of enhancing performance rather than fundamental functionality.

Performance: These specifications emphasize the system's responsiveness, speed, and use of resources.

Availability: A user must be able to access the system whenever they need.

Reliability: Reliability requirements ensure that the system runs continuously and reliably without any interruption.

Maintainability: Maintainability requirements pertain to how easily the system can be maintained, updated, and extended.

Security: To access the information stored in the system, each user will need to log into the system. Additionally, each user will have their own profile that only they may access. When users enter the appropriate username and password into the system, they usually gain access to their accounts.

5.3 System Analysis

5.3.1 Six Element Analysis

Each element's function throughout each process is explained by the six elements analysis.

Table 5.3.1

Process	System Rules				
	Human	Computing Hardware	Database	Software	Network & Communication
User Login	1.Supervisor 2.Employee	1.Computer or Laptop	MySql	Web Browser e.g. - (Chrome, Firefox, Microsoft Edge)	Internet
Employee	Employee	1.Computer or Laptop	MySql	Web Browser e.g. - (Chrome, Firefox, Microsoft Edge)	Internet
Supervisor	Supervisor	1.Computer or Laptop	MySql	Web Browser e.g. - (Chrome, Firefox, Microsoft Edge)	Internet

5.3.2 Feasibility Analysis

Feasibility analysis identifies the potential risks and examines projects ability to fulfill user requirements. The main goal of this approach is to find out whether the project is a viable choice and whether it ought to forward to the following stage of development or not. Generally, this is conducted at the very beginning of the project. It’s a method to quickly identify whether the project can be completed successfully or not (as many tools and expenses are needed to develop and deploy a project)

The developer is used to the technologies we have used in this project. The project size and functionality are fixed. And there is no risk in this case.

This system is user-friendly, responsive and also user experience is also taken into consideration while developing this system.

Users don't need to take any training for using this app. This is a project which is made for company usage according to their requirements.

And this project is also budget-friendly.

5.3.3 Problem Solution Analysis

Understanding what the client's requirements are and fulfilling them according to it is the most difficult task for any software developer for developing a project. So, keeping things in mind we need to work according to it.

5.3.4 Effect and Constraints Analysis

During the various stages of a project's development, the following restrictions are frequently encountered:

Time: Project's time component primarily concerns the deadline for completion. There are due dates for each task we must complete, and there is also a deadline by which everything must be finished. That is what they refer to as the "time" constraint.

Cost: The project's cost also known as the budget for developing a project, encompasses all necessary funds and resources to ensure the project is completed on time and within budgeted amount.

Scope: Project's objectives, deliverables, features, functionalities & labor requirements for completing the project modules.

5.4 System Design

5.4.1 UML Diagrams (Unified Modeling Language)

It refers to a group of excellent engineering methods that have been successfully used to represent vast and complex systems. Project teams can communicate, find potential designs and verify the software program's architectural structure by using the UML.

Use case diagrams

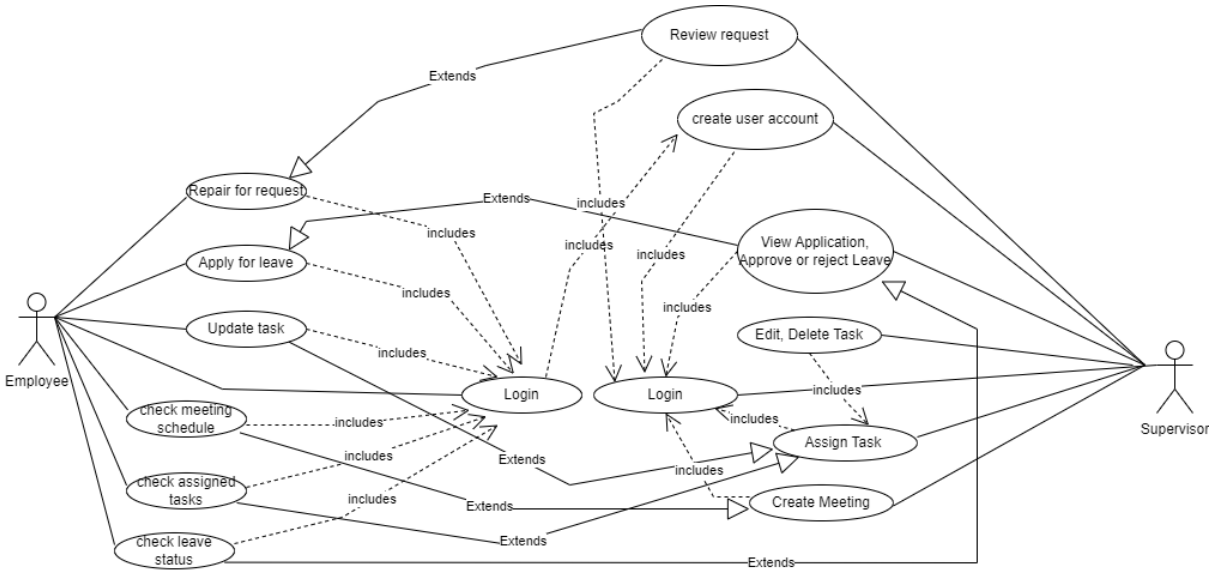


Figure 5.2: Use Case of our system

Entity Relationship Diagram:

The relationships between the entities in a database are displayed in an entity relationship diagram. The term "ER Diagram" is frequently used to describe it. An ER Diagram is crucial for constructing the database in DBMS. Here is my ER diagram:

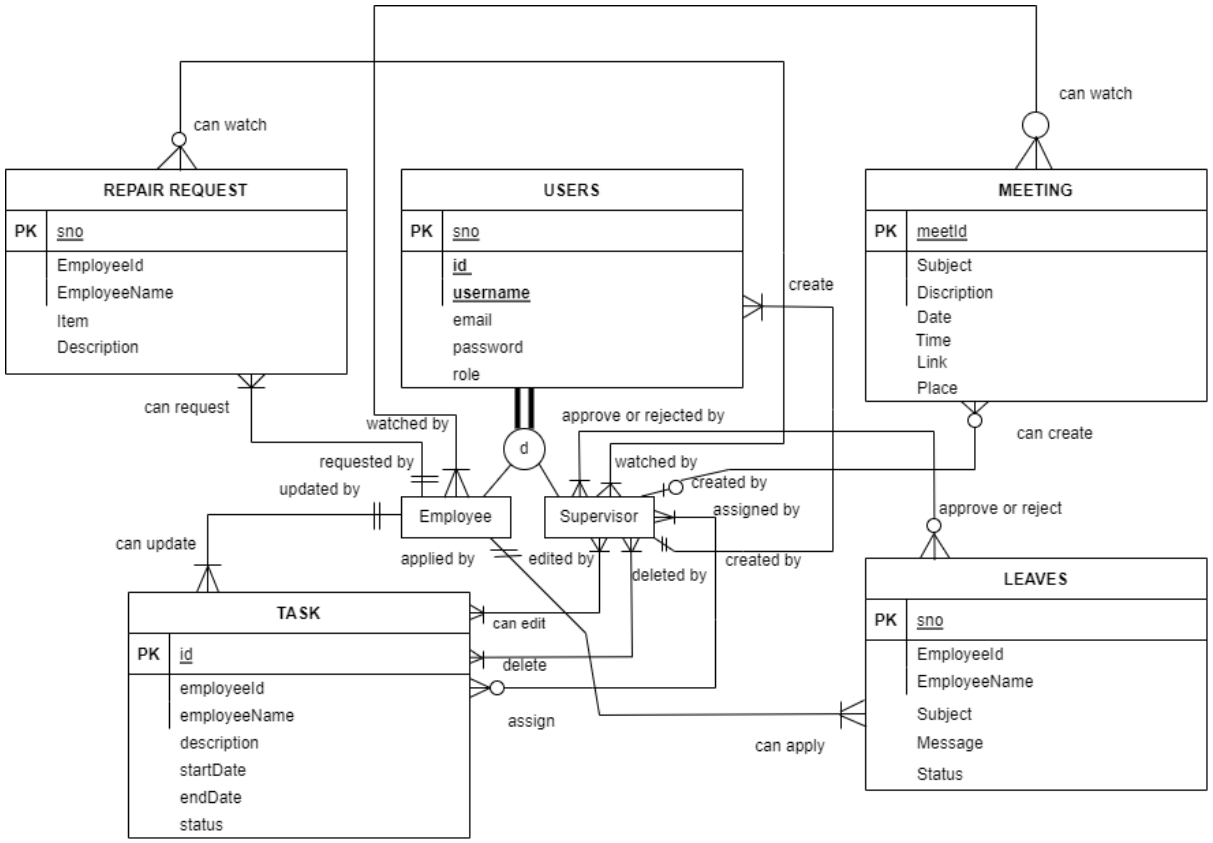


Figure 5.3: ER Diagram

Activity Diagram:

An activity diagram is used by developers to understand the high-level flow of programs.

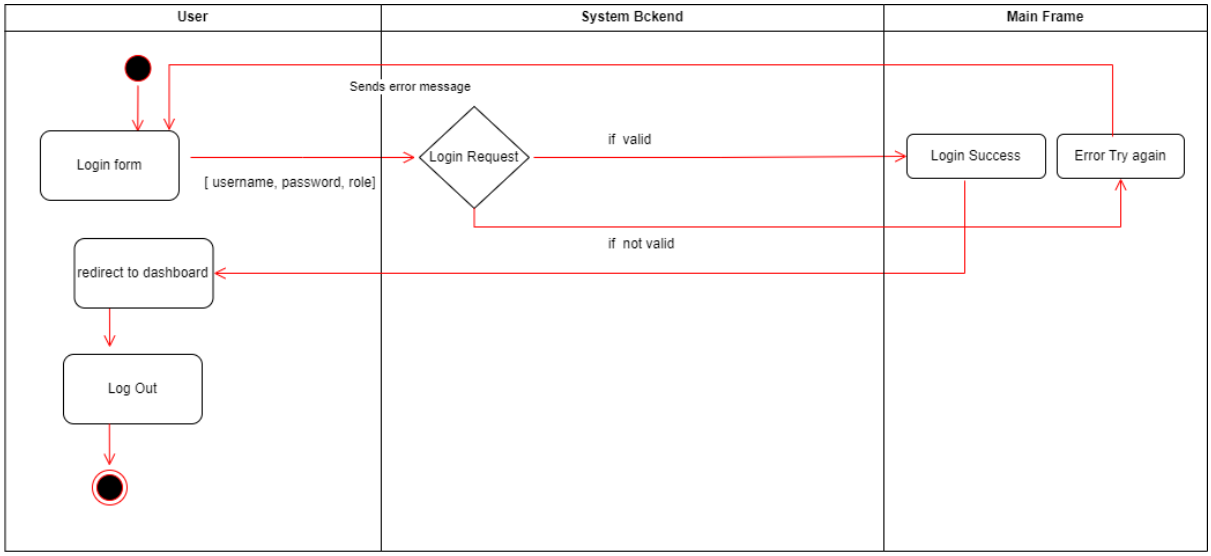


Figure 5.4: User Login to the system

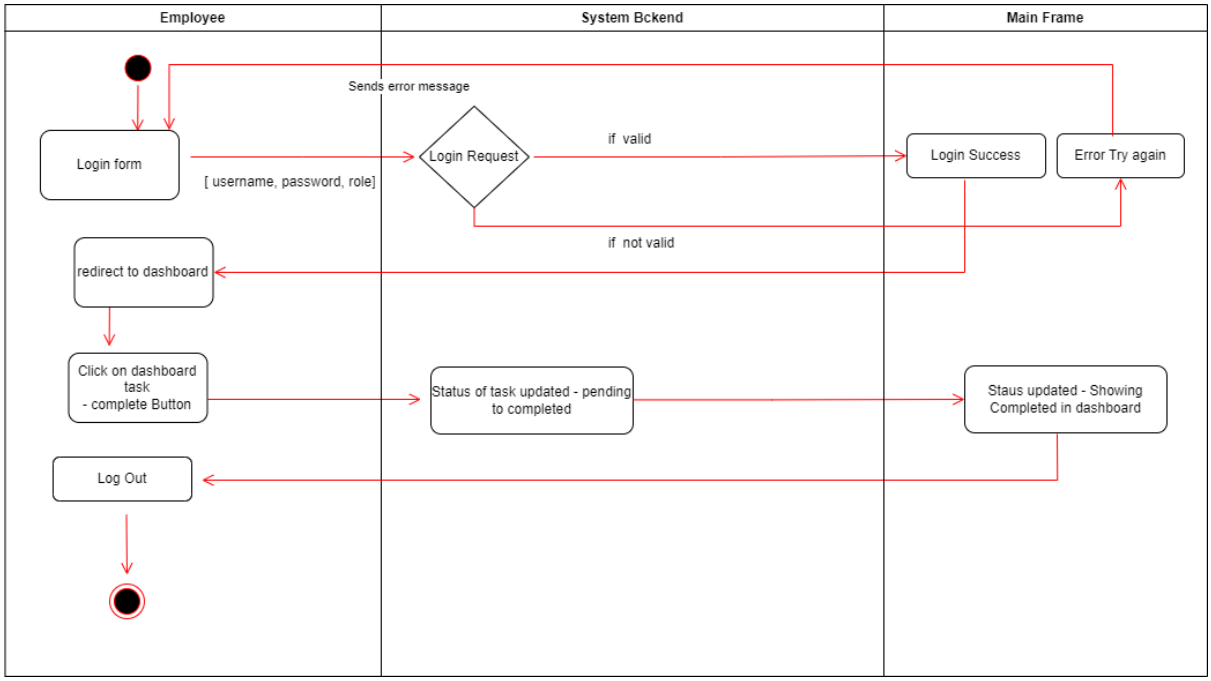


Figure 5.5: Employee Task Updation

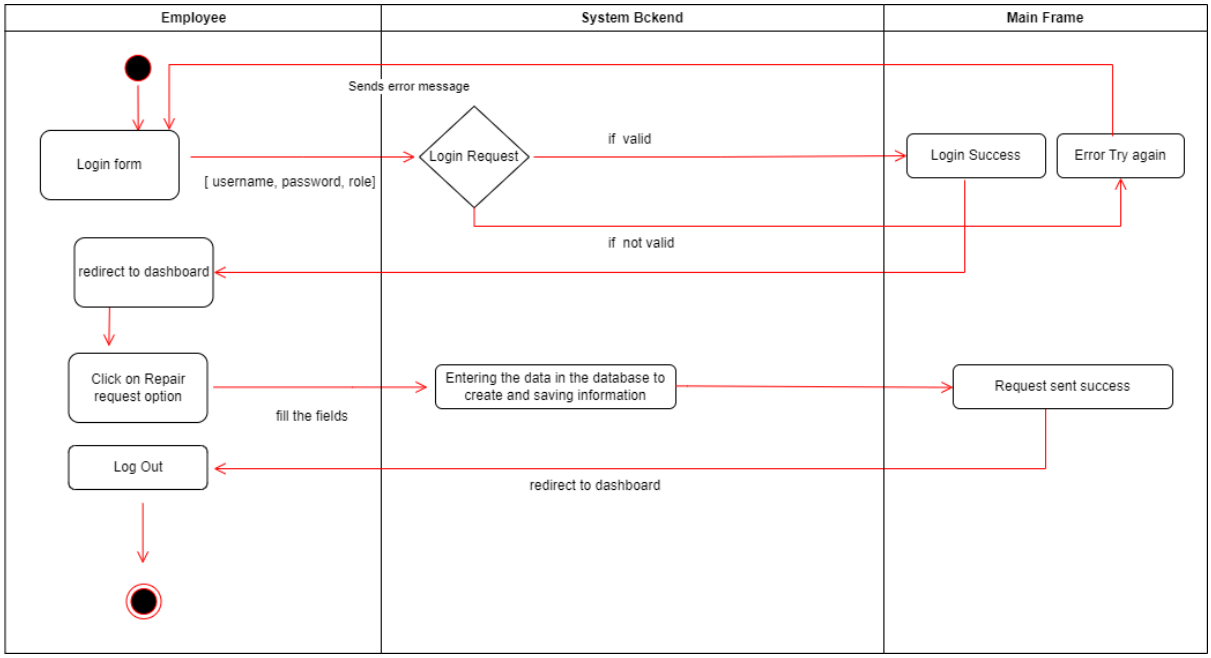


Figure 5.6: Employee Repair Request

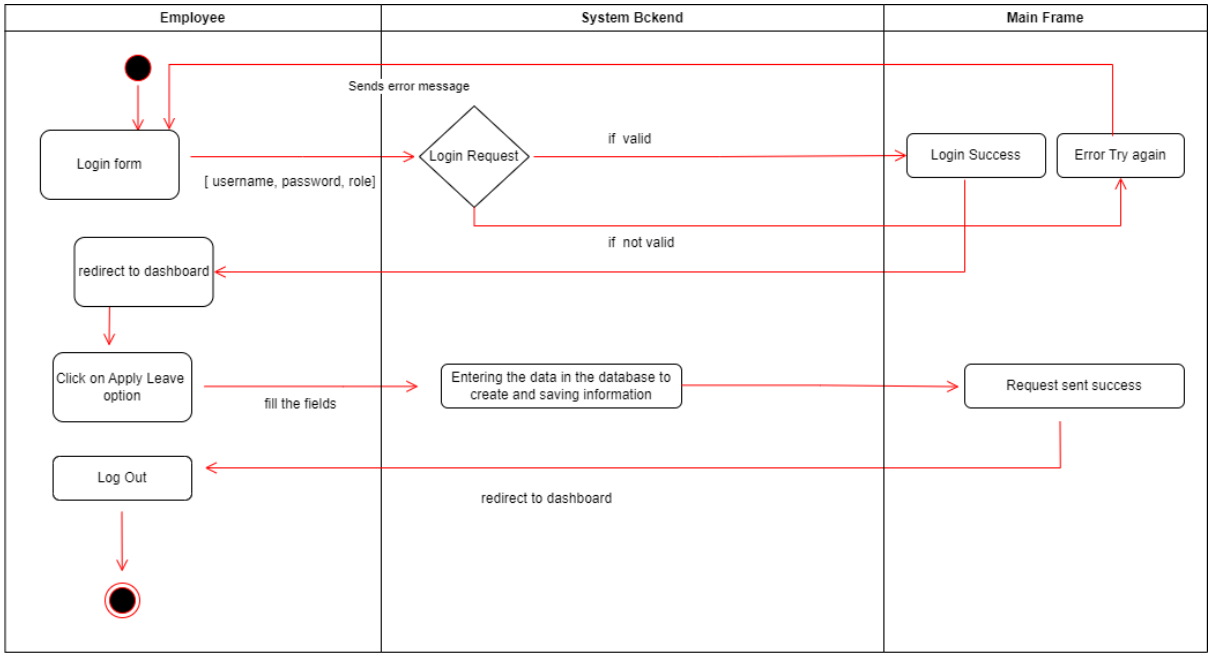


Figure 5.7: Employee Apply for Leave

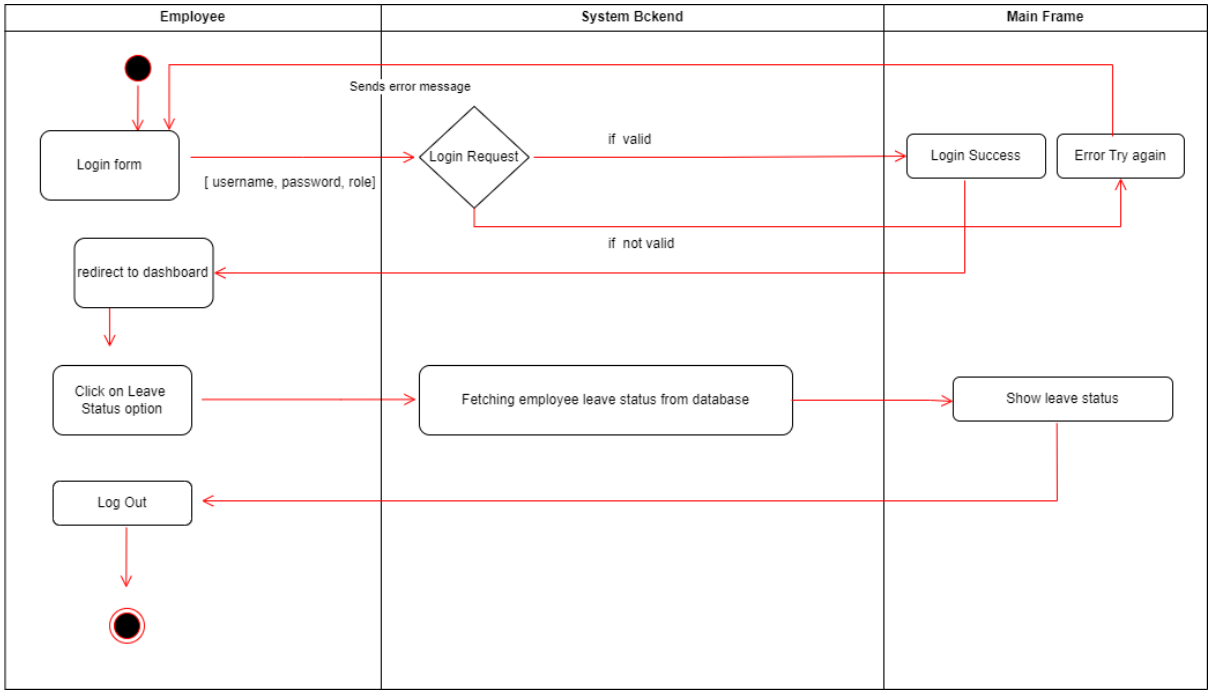


Figure 5.8: Employee Leave Status

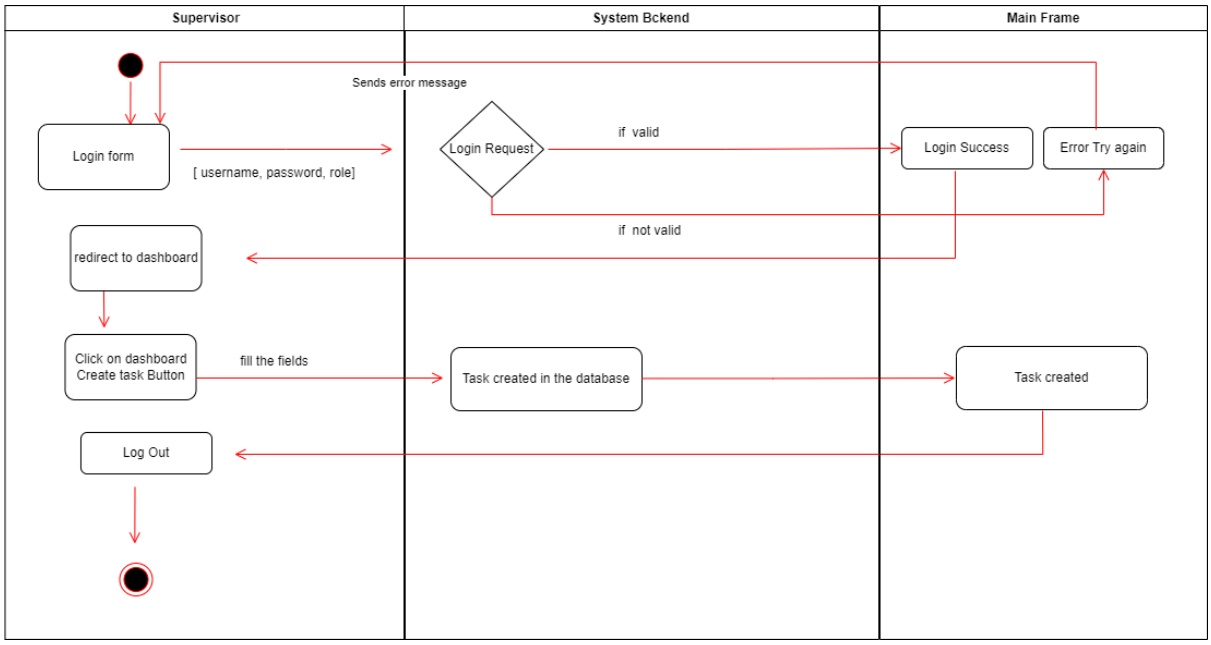


Figure 5.9: Supervisor Task Creation

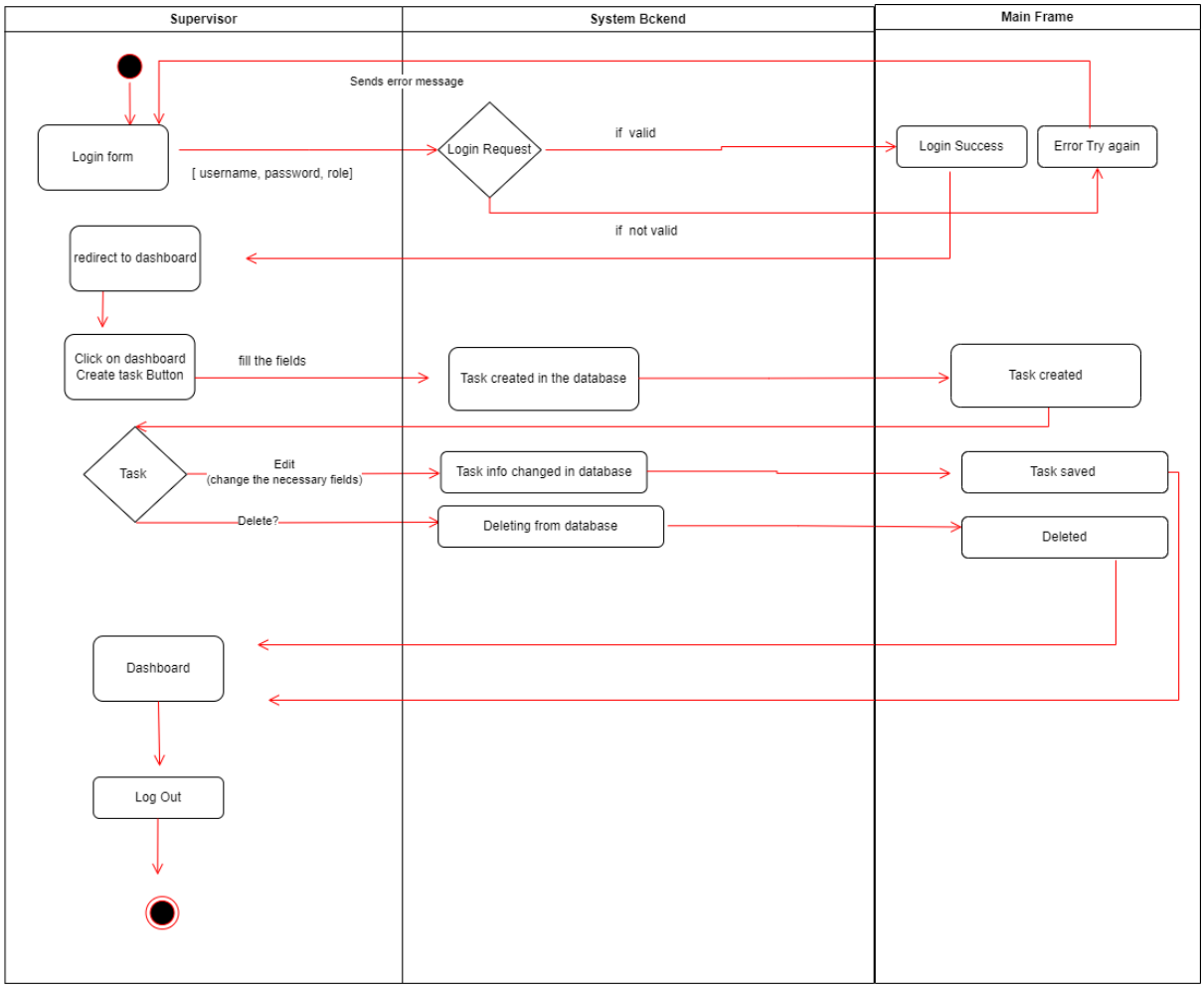


Figure 5.10: Supervisor Task Edit & Delete

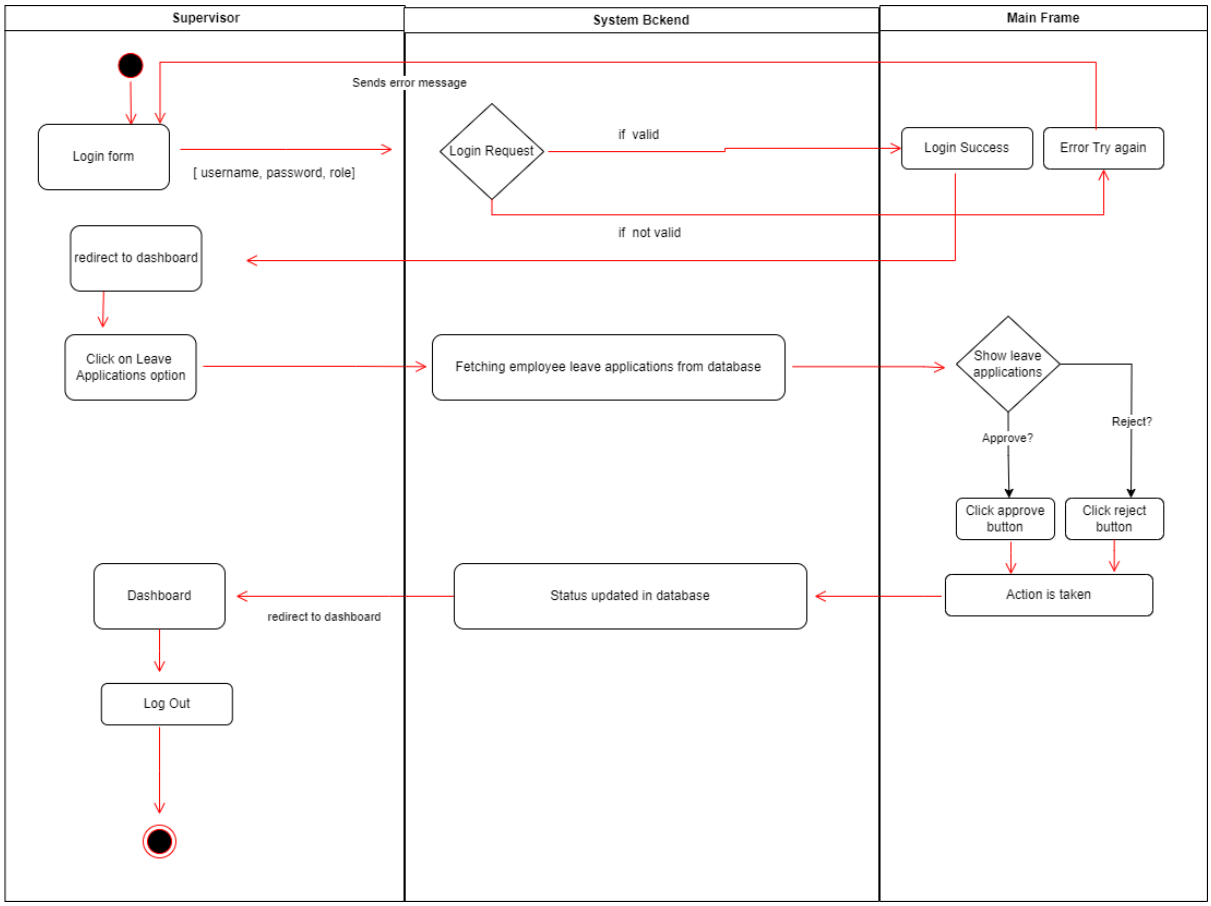


Figure 5.11: Supervisor Approve/Reject Leave Applications

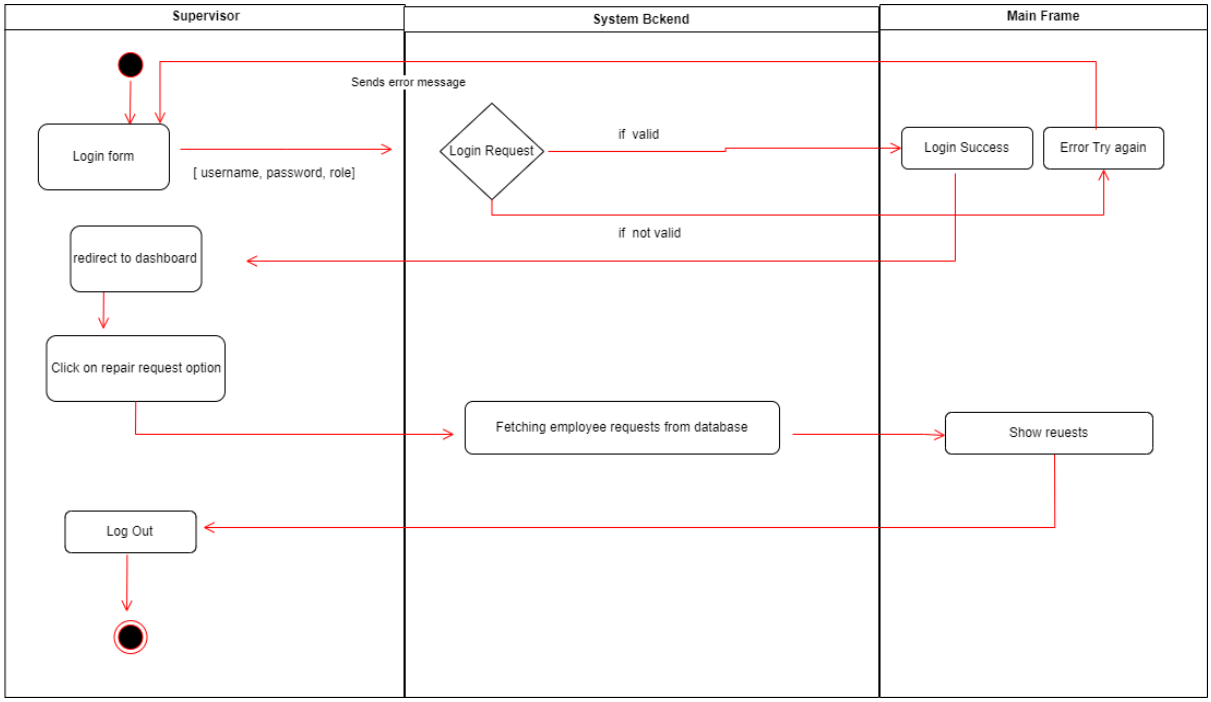


Figure 5.12: Supervisor Review Repair Requests Application

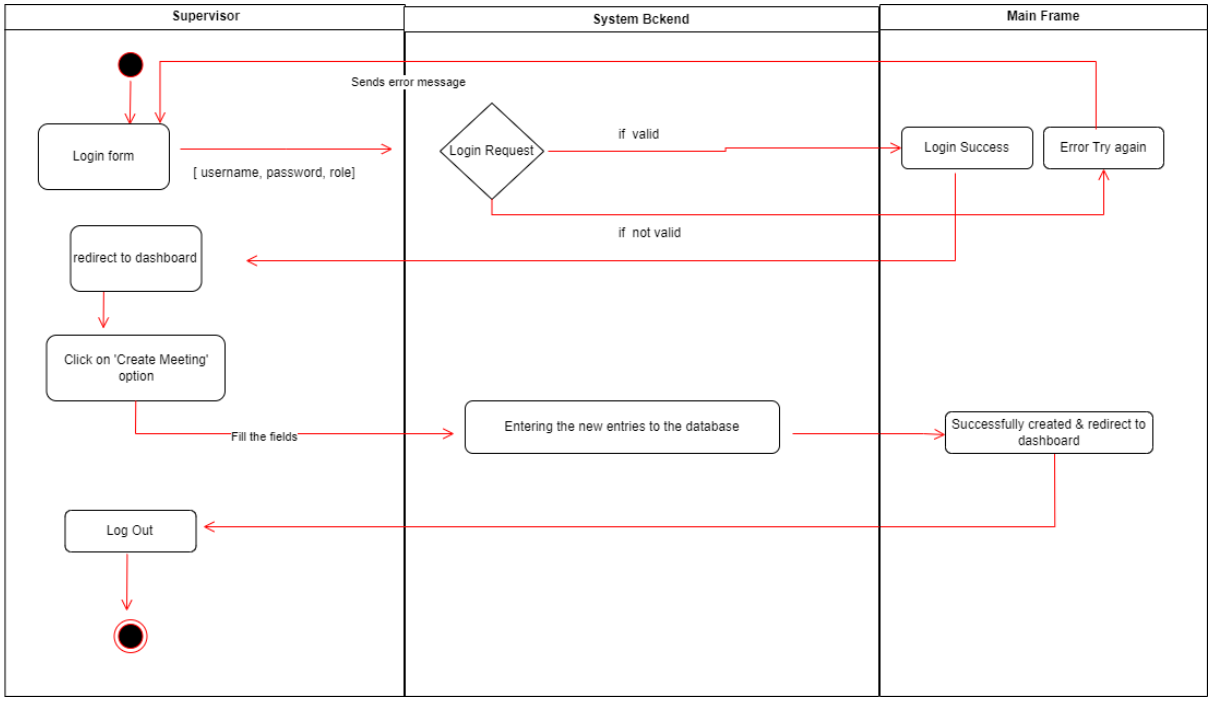


Figure 5.13: Supervisor Meeting Creation

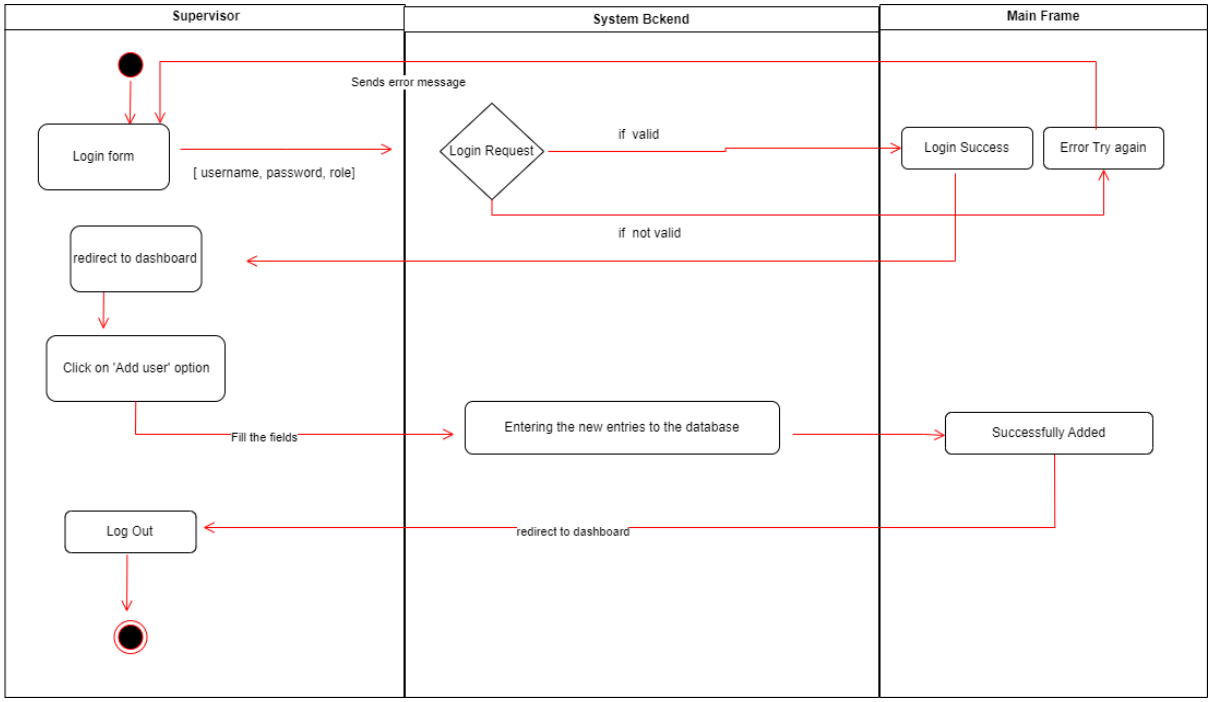
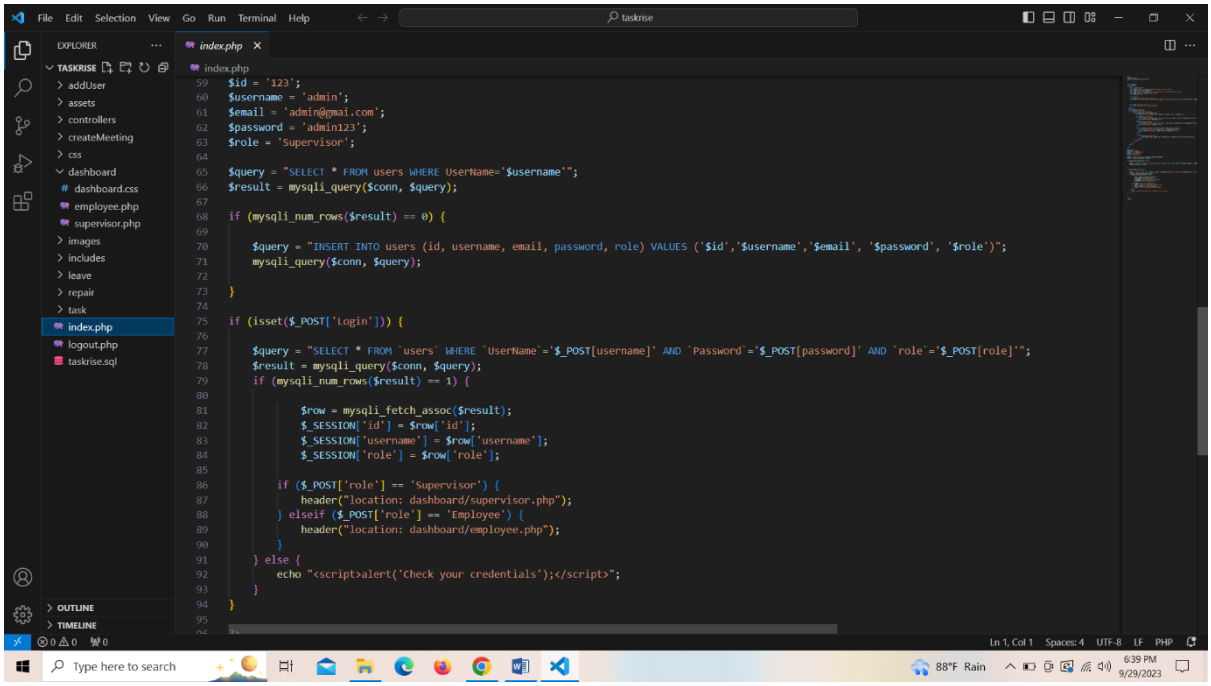


Figure 5.14: Supervisor Add user to the system

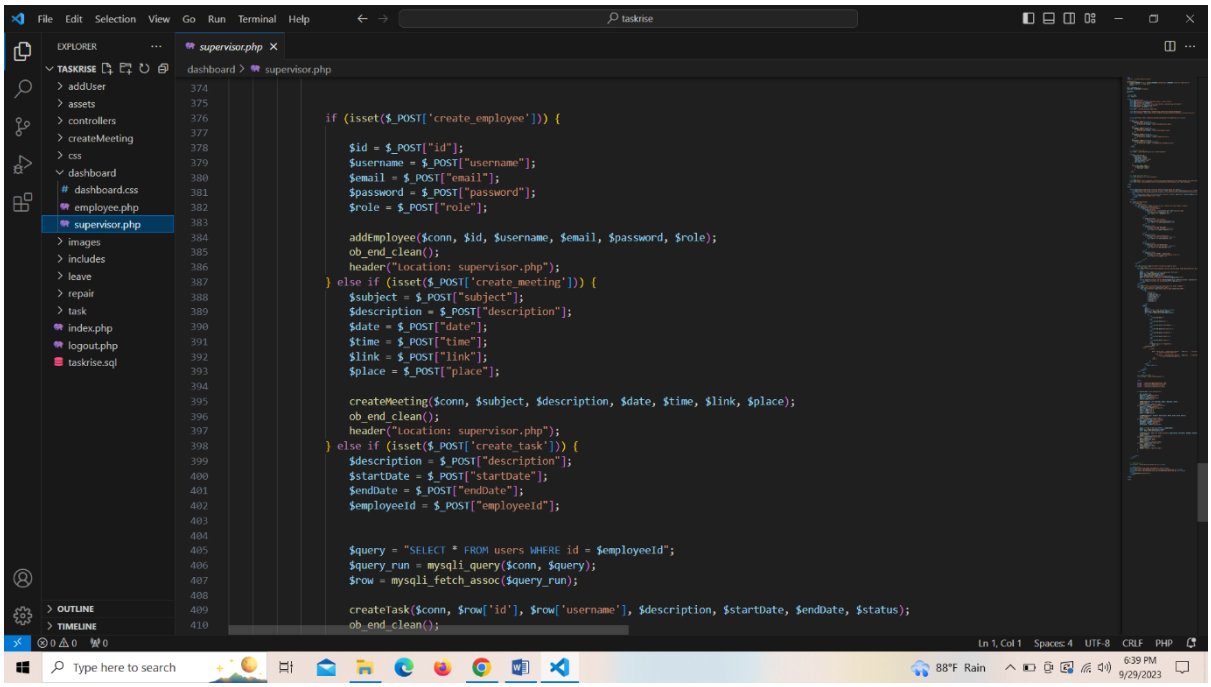
5.4.2 Architecture

HTML, CSS, Bootstrap, JQuery, PHP, MySql will be use to develop our project. PHP, is a runtime server-side application and used for developing dynamic websites. MySql that stores data into a database. Using PHP we can use CRUD operation and storing data into databases with MySql. JavaScript library is also used for building user interfaces for client-side applications. Also Various libraries can be used for web application further development.

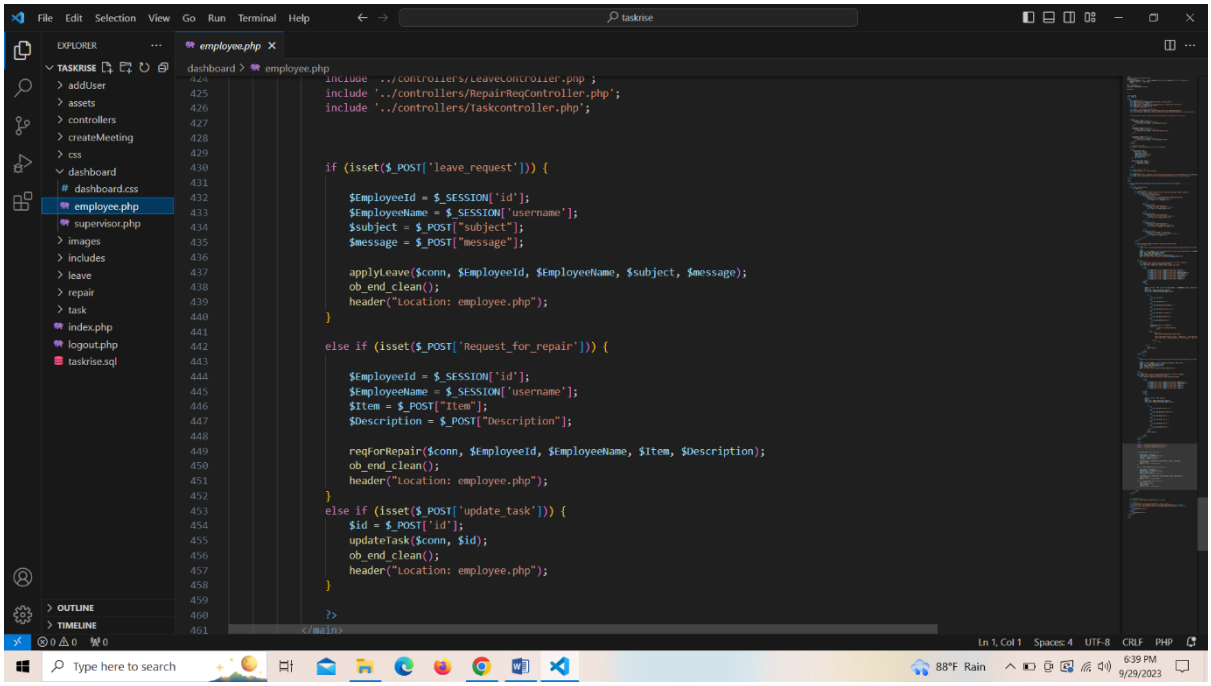
5.5 Implementation

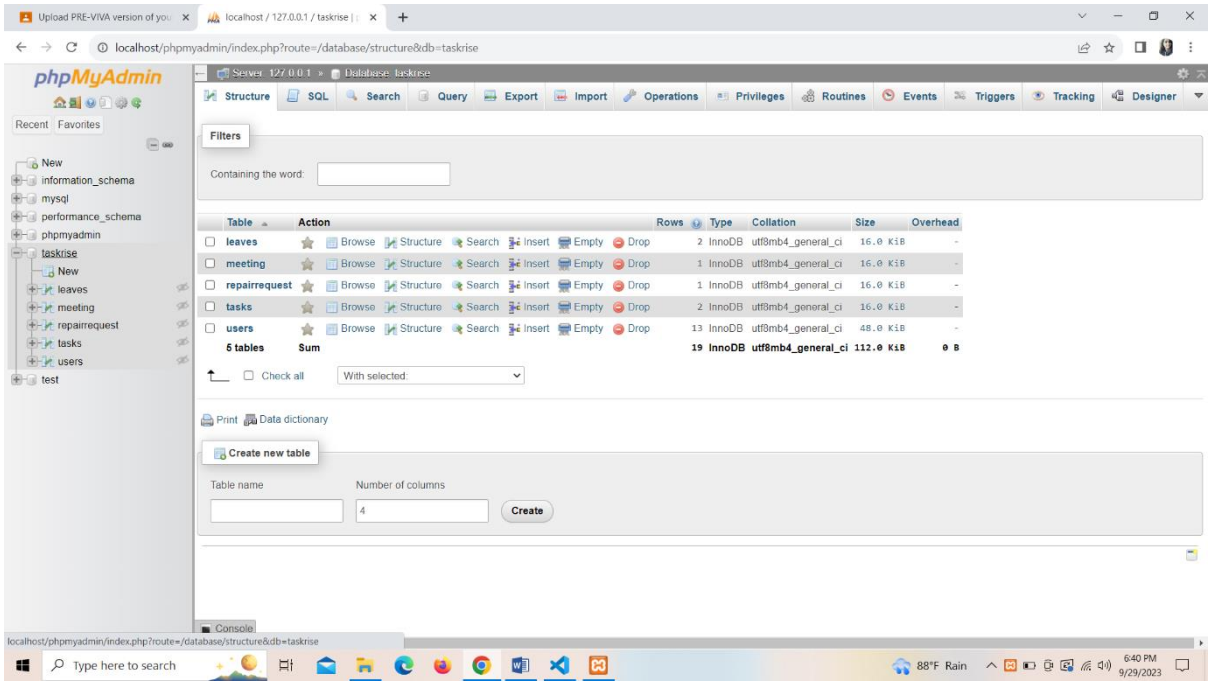


```php
$id = '123';
$username = 'admin';
$email = 'admin@gmai.com';
$password = 'admin123';
$role = 'Supervisor';

$query = "SELECT * FROM users WHERE UserName='$username'";
$result = mysqli_query($conn, $query);

if (mysqli_num_rows($result) == 0) {

    $query = "INSERT INTO users (id, username, email, password, role) VALUES ('$id','$username','$email', '$password', '$role')";
    mysqli_query($conn, $query);

}

if (isset($_POST['Login'])) {

    $query = "SELECT * FROM `users` WHERE `UserName`='$_POST[username]' AND `Password`='$_POST[password]' AND `role`='$_POST[role]'";
    $result = mysqli_query($conn, $query);
    if (mysqli_num_rows($result) == 1) {

            $row = mysqli_fetch_assoc($result);
            $_SESSION['id'] = $row['id'];
            $_SESSION['username'] = $row['username'];
            $_SESSION['role'] = $row['role'];

        if ($_POST['role'] == 'Supervisor') {
            header("location: dashboard/supervisor.php");
        } elseif ($_POST['role'] == 'Employee') {
            header("location: dashboard/employee.php");
        }
    } else {
        echo "<script>alert('Check your credentials');</script>";
    }
}
```



```php
if (isset($_POST['create_employee'])) {

    $id = $_POST["id"];
    $username = $_POST["username"];
    $email = $_POST["email"];
    $password = $_POST["password"];
    $role = $_POST["role"];

    addEmployee($conn, $id, $username, $email, $password, $role);
    ob_end_clean();
    header("Location: supervisor.php");
} else if (isset($_POST['create_meeting'])) {
    $subject = $_POST["subject"];
    $description = $_POST["description"];
    $date = $_POST["date"];
    $time = $_POST["time"];
    $link = $_POST["link"];
    $place = $_POST["place"];

    createMeeting($conn, $subject, $description, $date, $time, $link, $place);
    ob_end_clean();
    header("Location: supervisor.php");
} else if (isset($_POST['create_task'])) {
    $description = $_POST["description"];
    $startDate = $_POST["startDate"];
    $endDate = $_POST["endDate"];
    $employeeId = $_POST["employeeId"];


    $query = "SELECT * FROM users WHERE id = $employeeId";
    $query_run = mysqli_query($conn, $query);
    $row = mysqli_fetch_assoc($query_run);

    createTask($conn, $row['id'], $row['username'], $description, $startDate, $endDate, $status);
    ob_end_clean();
```


File Edit Selection View Go Run Terminal Help
taskrise
EXPLORER
employee.php
TASKRISE
addUser
assets
controllers
createMeeting
css
dashboard
dashboard.css
employee.php
supervisor.php
images
includes
leave
repair
task
index.php
logout.php
taskrise.sql
OUTLINE
TIMELINE
dashboard > employee.php
include '../controllers/RepairReqController.php';
include '../controllers/Taskcontroller.php';
if (isset($_POST['leave_request'])) {
$EmployeeId = $_SESSION['id'];
$EmployeeName = $_SESSION['username'];
$subject = $_POST["subject"];
$message = $_POST["message"];
applyLeave($conn, $EmployeeId, $EmployeeName, $subject, $message);
ob_end_clean();
header("Location: employee.php");
}
else if (isset($_POST['Request_for_repair'])) {
$EmployeeId = $_SESSION['id'];
$EmployeeName = $_SESSION['username'];
$Item = $_POST["Item"];
$Description = $_POST["Description"];
reqForRepair($conn, $EmployeeId, $EmployeeName, $Item, $Description);
ob_end_clean();
header("Location: employee.php");
}
else if (isset($_POST['update_task'])) {
$id = $_POST['id'];
updateTask($conn, $id);
ob_end_clean();
header("Location: employee.php");
}
?>
</main>
Ln 1, Col 1 Spaces: 4 UTF-8 CRLF PHP
Type here to search
88°F Rain
6:39 PM
9/29/2023


Upload PRE-VIVA version of you
localhost / 127.0.0.1 / taskrise
localhost/phpmyadmin/index.php?route=/database/structure&db=taskrise
phpMyAdmin
Recent Favorites
New
information_schema
mysql
performance_schema
phpmyadmin
taskrise
New
leaves
meeting
repairrequest
tasks
users
test
Server: 127.0.0.1 » Database: taskrise
Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Tracking Designer
Filters
Containing the word:
Table Action Rows Type Collation Size Overhead
leaves Browse Structure Search Insert Empty Drop 2 InnoDB utf8mb4_general_ci 16.0 KiB -
meeting Browse Structure Search Insert Empty Drop 1 InnoDB utf8mb4_general_ci 16.0 KiB -
repairrequest Browse Structure Search Insert Empty Drop 1 InnoDB utf8mb4_general_ci 16.0 KiB -
tasks Browse Structure Search Insert Empty Drop 2 InnoDB utf8mb4_general_ci 16.0 KiB -
users Browse Structure Search Insert Empty Drop 13 InnoDB utf8mb4_general_ci 48.0 KiB -
5 tables Sum 19 InnoDB utf8mb4_general_ci 112.0 KiB 0 B
Check all With selected:
Print Data dictionary
Create new table
Table name
Number of columns
4
Create
Console
Type here to search
88°F Rain
6:40 PM
9/29/2023

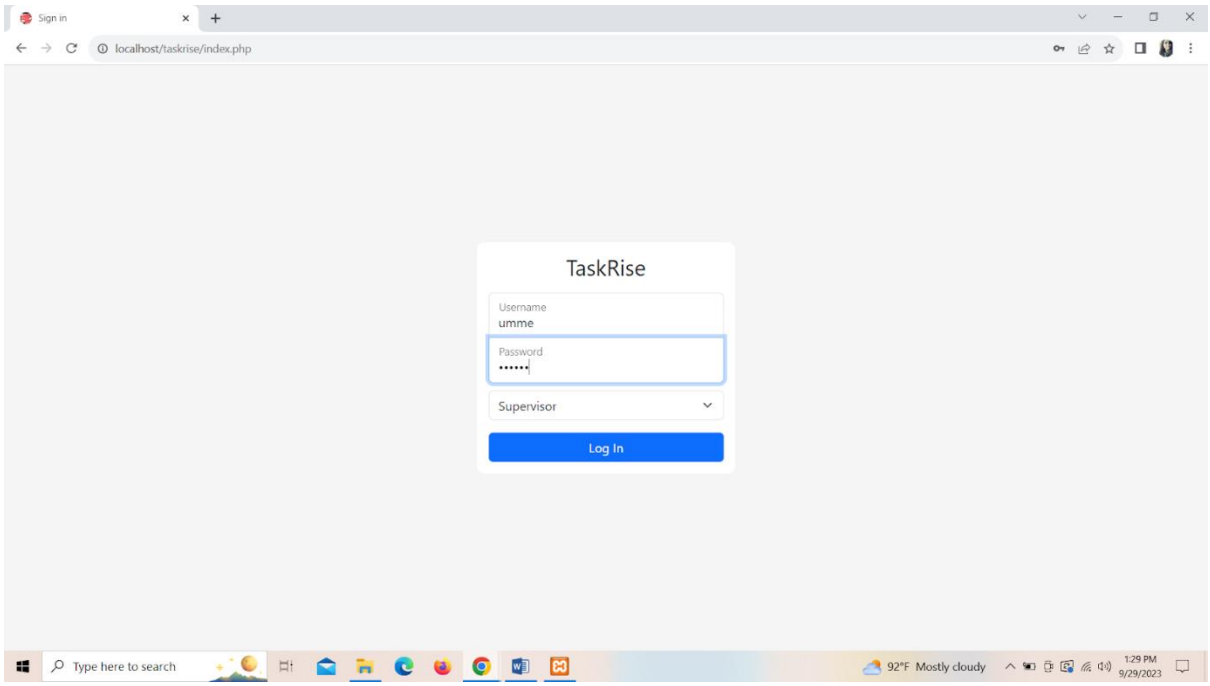
5.6 Testing

The practice of evaluating and verifying that a software application or product operates as intended is known as software testing. Bug prevention, decreased development costs, and improved performance are just a few benefits of testing.

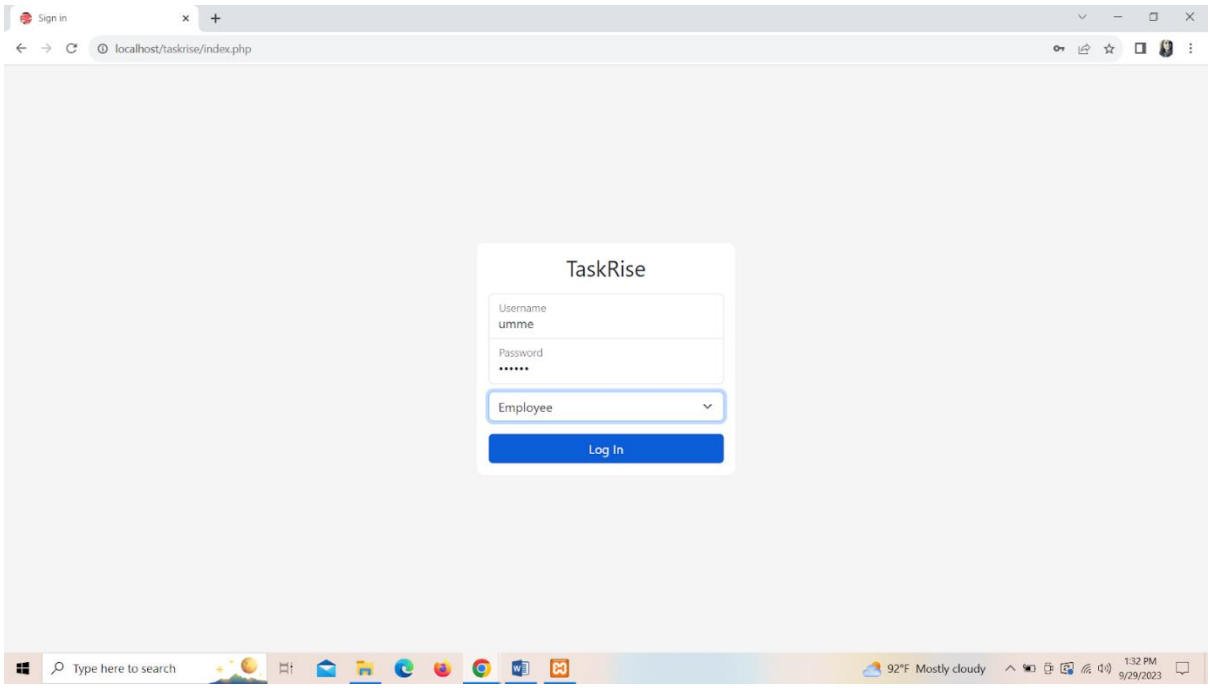
5.6.1 Input

Test Case Id	Test Scenario	Test Input
401	Login the verified user to the system	User credentials (username - umme password - umme123 role - employee)
402	Login the verified user to the system	User credentials (username - umme password - umme12 role - employee)
406	Employees apply for leave	Subject
407	Employees apply for leave	Subject, Message

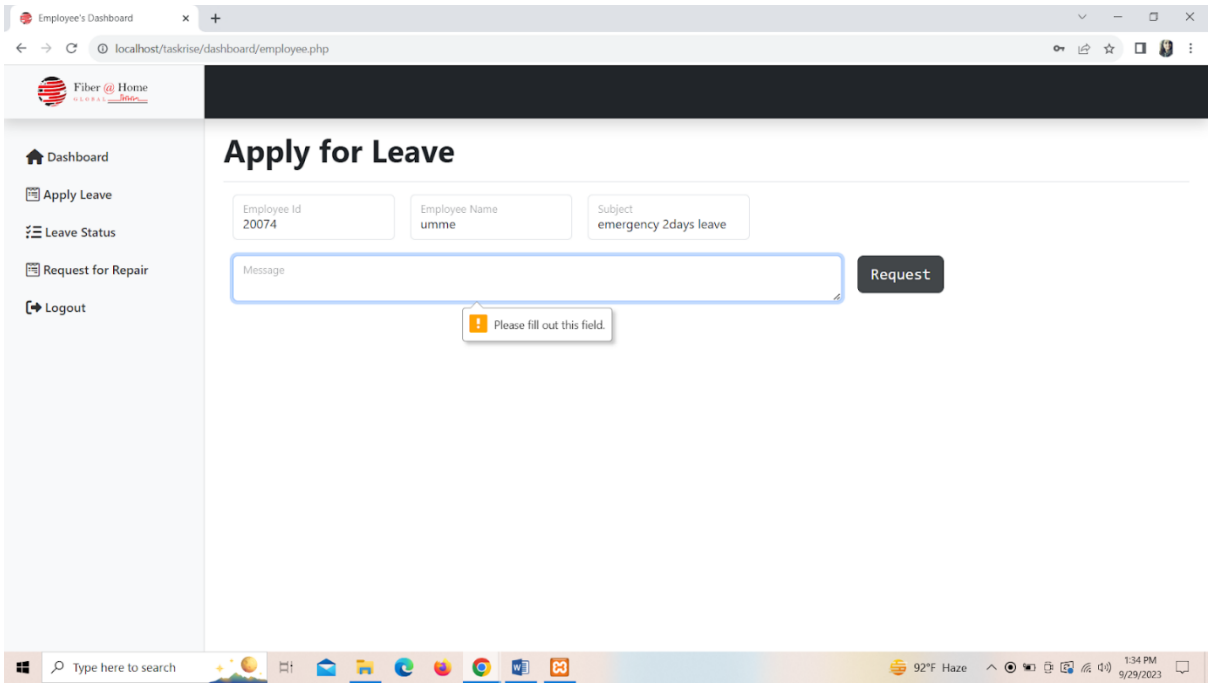
401



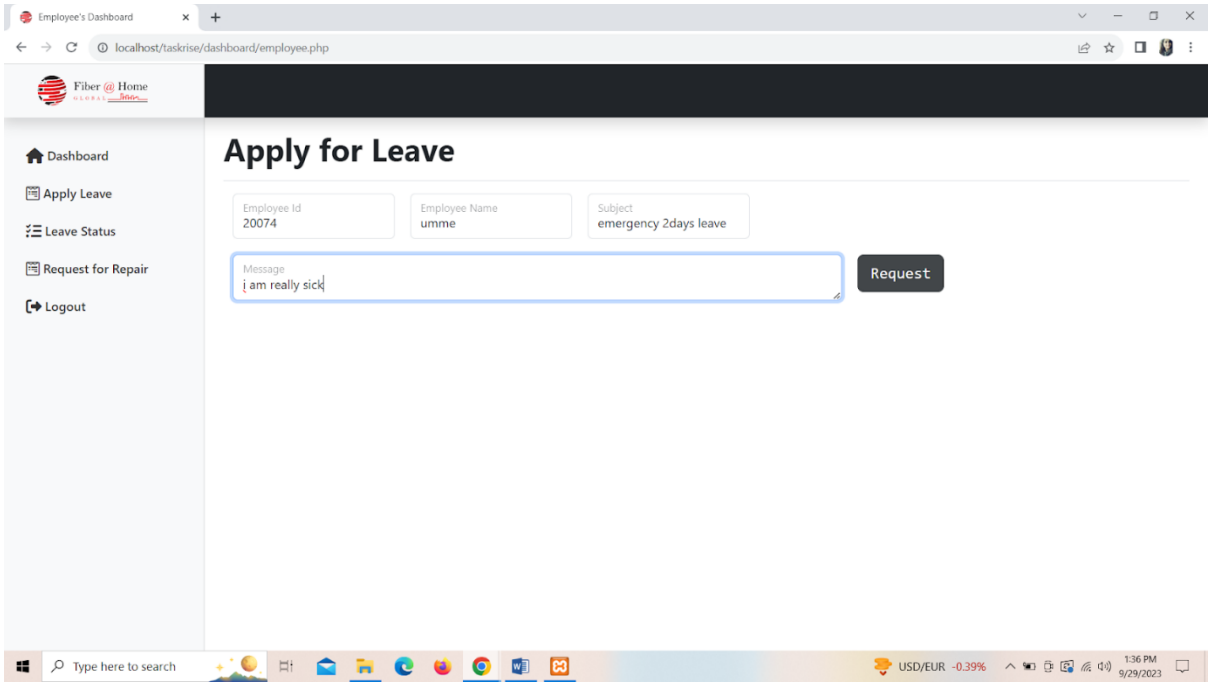
402


Sign in
localhost/taskrise/index.php
TaskRise
Username
umme
Password
Employee
Log In
Type here to search
92°F Mostly cloudy
1:32 PM
9/29/2023

406


Employee's Dashboard
localhost/taskrise/dashboard/employee.php
Fiber @ Home
Dashboard
Apply Leave
Leave Status
Request for Repair
Logout
Apply for Leave
Employee Id
20074
Employee Name
umme
Subject
emergency 2days leave
Message
Request
Please fill out this field.
Type here to search
92°F Haze
1:34 PM
9/29/2023

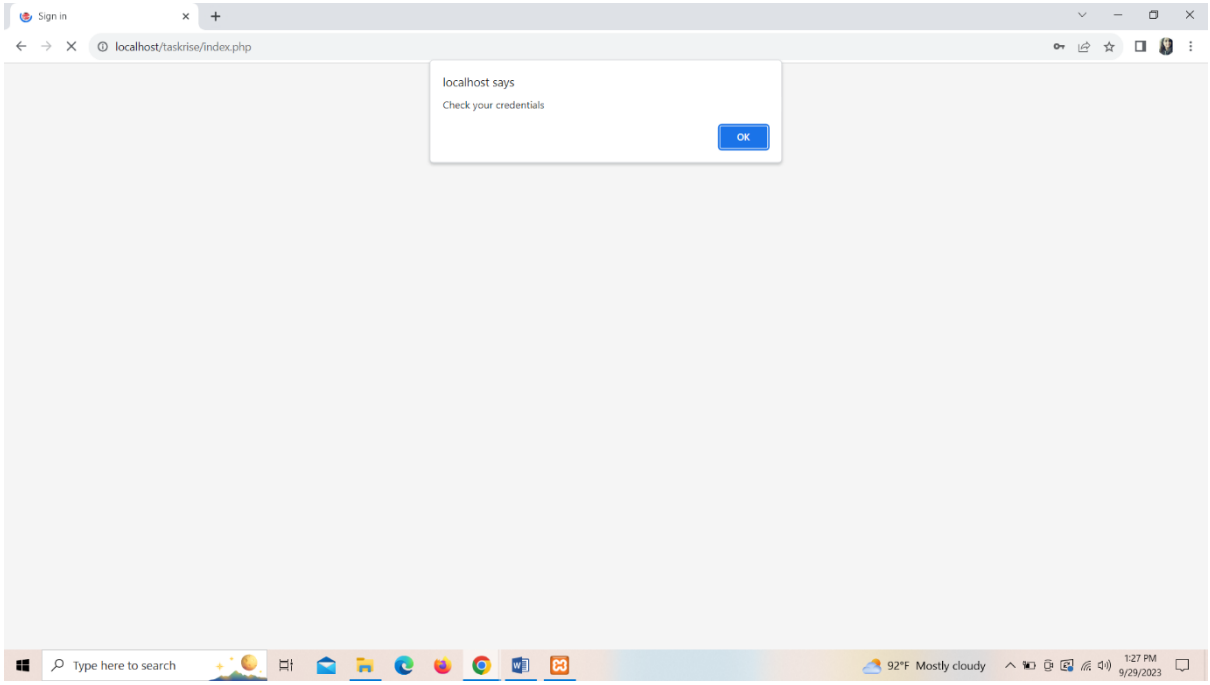
407



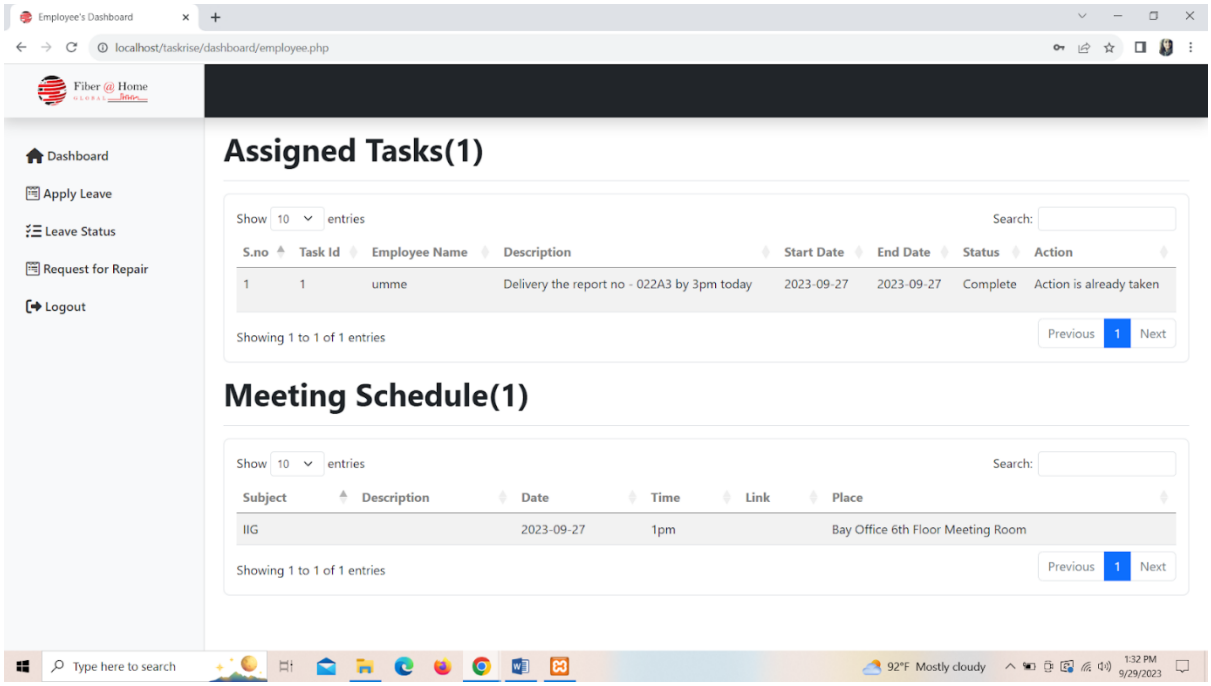
5.6.2 Output

Test Case Id	Test Scenario	Test Output
401	Login the verified user to the system	Fail (Check credentials)
402	Login the verified user to the system	Success (redirect to employees dashboard)
406	Employees apply for leave	Fail (fill the required boxes)
407	Employees apply for leave	Success (redirect to employees dashboard)

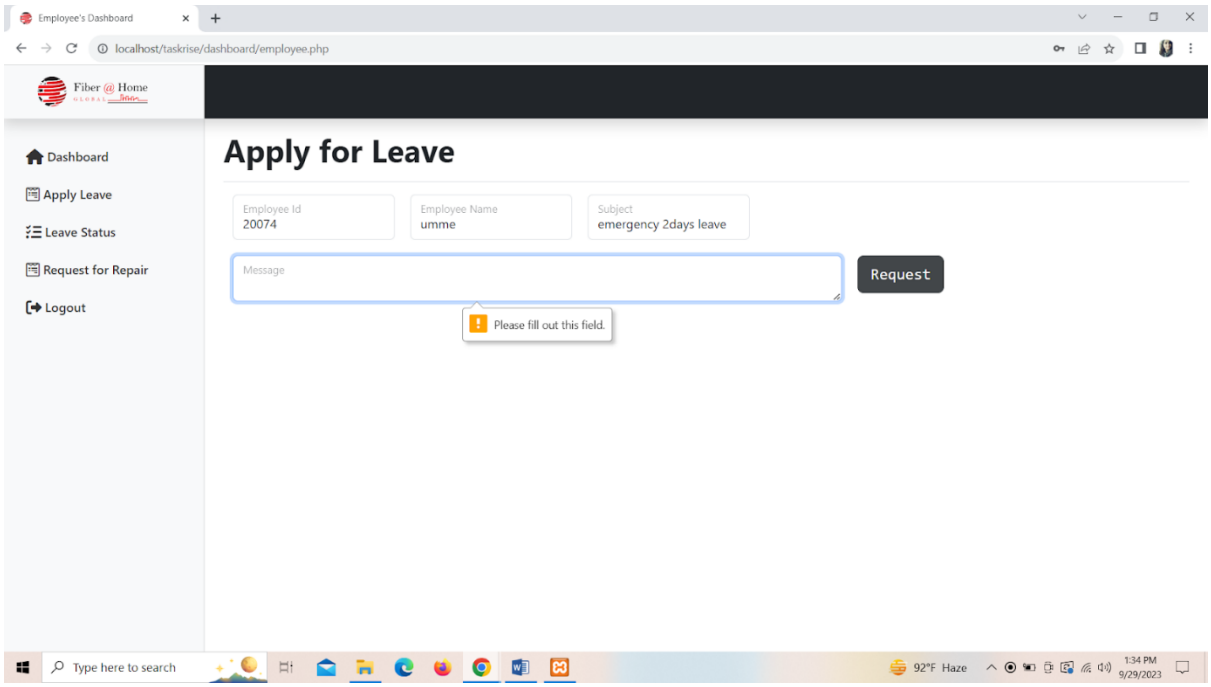
401


Sign in
localhost/taskrise/index.php
localhost says
Check your credentials
OK
Type here to search
92°F Mostly cloudy
1:27 PM
9/29/2023

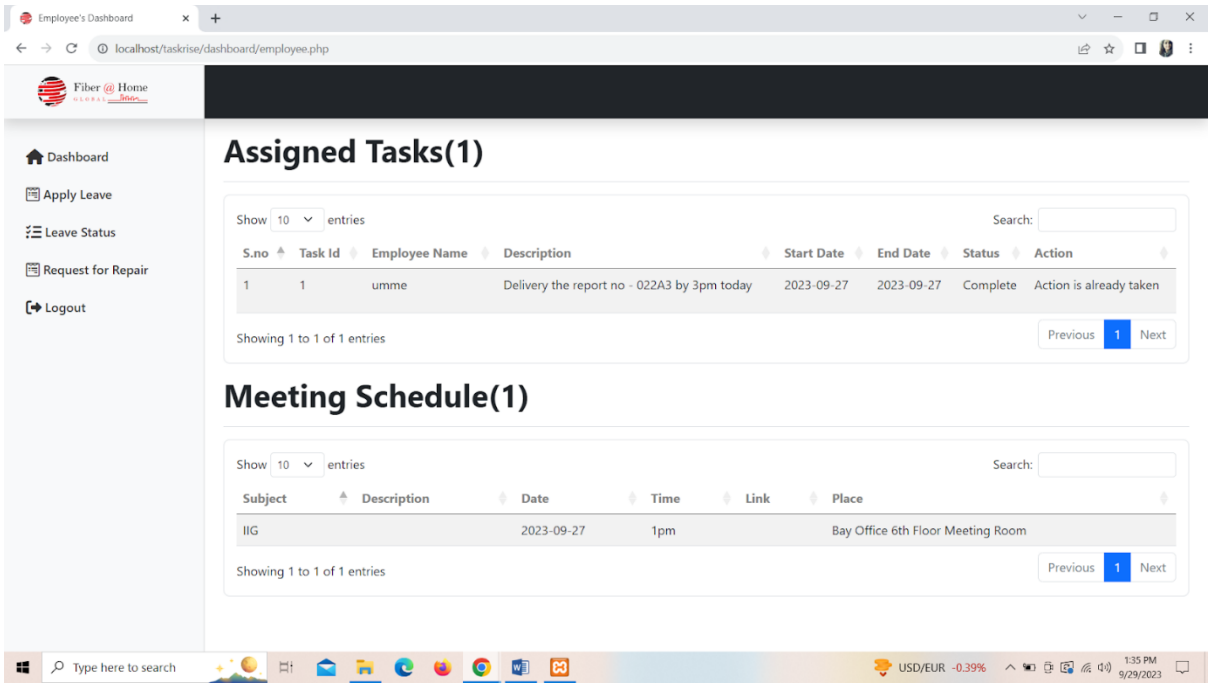
402


Employee's Dashboard
localhost/taskrise/dashboard/employee.php
Fiber @ Home
Dashboard
Apply Leave
Leave Status
Request for Repair
Logout
Assigned Tasks(1)
Show 10 entries
Search:
S.no
Task Id
Employee Name
Description
Start Date
End Date
Status
Action
1
1
umme
Delivery the report no - 022A3 by 3pm today
2023-09-27
2023-09-27
Complete
Action is already taken
Showing 1 to 1 of 1 entries
Previous
1
Next
Meeting Schedule(1)
Show 10 entries
Search:
Subject
Description
Date
Time
Link
Place
IIG
2023-09-27
1pm
Bay Office 6th Floor Meeting Room
Showing 1 to 1 of 1 entries
Previous
1
Next
Type here to search
92°F Mostly cloudy
1:32 PM
9/29/2023

406


Employee's Dashboard
localhost/taskrise/dashboard/employee.php
Fiber @ Home
Dashboard
Apply Leave
Leave Status
Request for Repair
Logout
Apply for Leave
Employee Id
20074
Employee Name
umme
Subject
emergency 2days leave
Message
Request
Please fill out this field.
Type here to search
92°F Haze
1:34 PM
9/29/2023

407


Employee's Dashboard
localhost/taskrise/dashboard/employee.php
Fiber @ Home
Dashboard
Apply Leave
Leave Status
Request for Repair
Logout
Assigned Tasks(1)
Show 10 entries
Search:
S.no
Task Id
Employee Name
Description
Start Date
End Date
Status
Action
1
1
umme
Delivery the report no - 022A3 by 3pm today
2023-09-27
2023-09-27
Complete
Action is already taken
Showing 1 to 1 of 1 entries
Previous
1
Next
Meeting Schedule(1)
Show 10 entries
Search:
Subject
Description
Date
Time
Link
Place
IIG
2023-09-27
1pm
Bay Office 6th Floor Meeting Room
Showing 1 to 1 of 1 entries
Previous
1
Next
Type here to search
USD/EUR -0.39%
1:35 PM
9/29/2023

5.6.3 Designing Test Cases

Sl	Test case id	Test case Title	Pre-condition/Test data	Test Steps	Excepted Result	Actual result	Test Case Status	Data used/input data	Comments
1	401	Login the verified user to the system	The user must have account to the system	1.Give user name,password and choose role 2.Click on the "Log In" Button 3.Upon clicking the 'Log In ' button it should allow the user to log in to system if the credentials are correct	Log in success	Not allowing to log in , showing a message " Check the given credentials "	Fail	username - umme password - umme123 role- employee	
2	402	Login the verified user to the system	The user must have account to the system	1.Give user name,password and choose role 2.Click on the "Log In" Button 3.Upon clicking the 'Log In ' button it should allow the user to log in to system if the credentials are correct	Log in success	Login success	success	username - umme password - umme12 role- employee	
3	403	Login the verified user to the system	The user must have account to the system	1.Give user name,password and choose role 2.Click on the "Log In" Button 3.Upon clicking the 'Log In ' button it should allow the user to log in to system if the	Log in success	Login success	success	username- admin password- admin123 role - supervisor	
4	404	Assign Task to employee	Supervisor must be logged in to the system to perform the action	1. Select Employee name, write descripiton,start date and end date of a task 2.Click on the "Assign task" button	Task creation success	Task created success	success	employee name,description,start date,end date	
5	405	Update Task	Employee must be logged in to the system to perform the action	1. Employee will click on the 'complete' button and status will be updated	Task updation success	Task updation success	success	click on the "Complete" button	
6	406	Apply leave	Employee must be logged in to the system to perform the action	1. click on the apply leave option 2. Fill the box 'subject ' 3.click on request button	Leave application submitted success	fill the description box	Fail	subject	
7	407	Apply leave	Employee must be logged in to the system to perform the action	1. click on the apply leave option 2. Fill the box 'subject' , 'message' 3.click on request button	Leave application submitted success	Leave application submitted success	success	subject,message	
8	408	Repair Request	Employee must be logged in to the system to perform the action	1. click on the Request for repair option 2. Fill the box 'Item' , 'description' 3.click on request button	Application submitted success	Application submitted success	success	item,description	
9	409	Approve/Reject Leave	Supervisor must be logged in to the system to perform the action	1.Click on the "Approve" button for approval 2. Reject button for reject	Approve / rejected success	Approve/ rejected success	success	click on "approve" or "reject" button	
10	410	Edit/Delete Task	Supervisor must be logged in to the system to perform the action	1.Click on the "Edit" button for edit 2. Delete button for deletion	Edit /Delete success	Edit /Delete success	success	click on "edit" button for edit or "delete" button for deletion	

5.6.4 Test Results

We can observe the test cases input, output, and outcomes from the table. If the inputs are provided appropriately, the test cases will succeed; otherwise, they will fail. Each test case has a specific identifier called a "test case id". Expected output is what you anticipate, and actual output is what the testcase's output was. If the test result matches the anticipated outcome, it will pass; otherwise, it will fail.

Chapter 6

Results & Analysis

Taskrise is such a system where everyone in the company can use it if they have an account. It's user friendly. Users can easily perform actions even if they don't have any idea about coding.

Here are some of the pictures of the website -

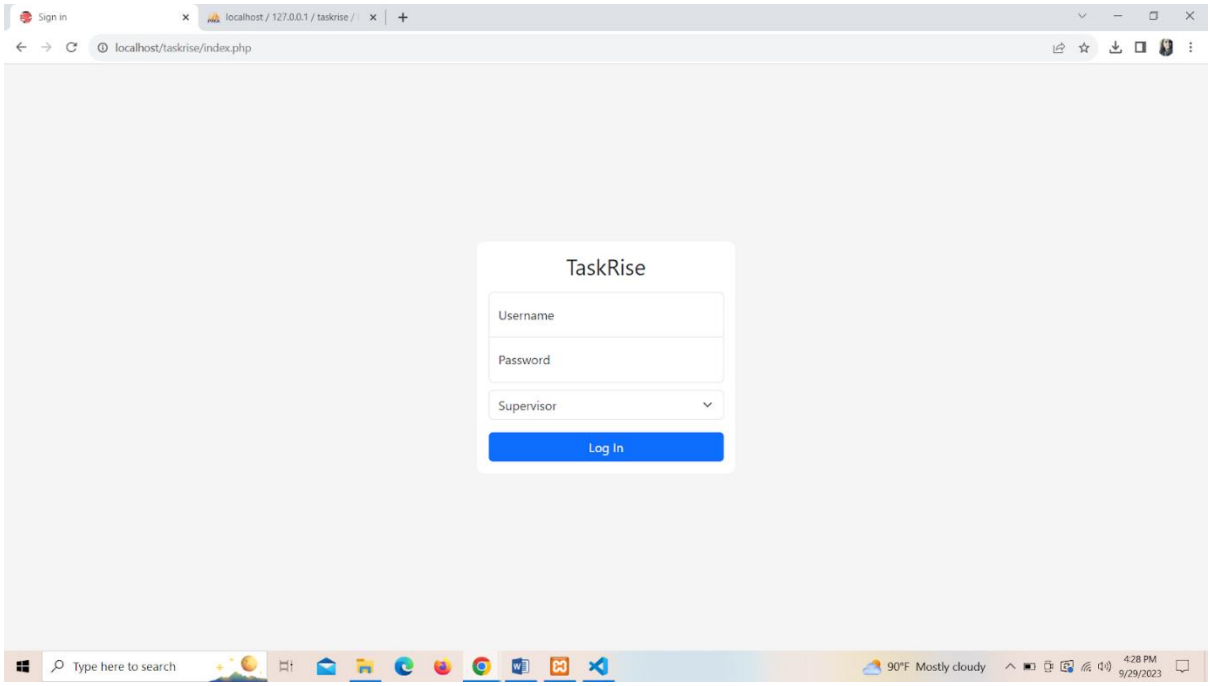


Figure 6.1: User Sign in Page

Supervisor Panel -

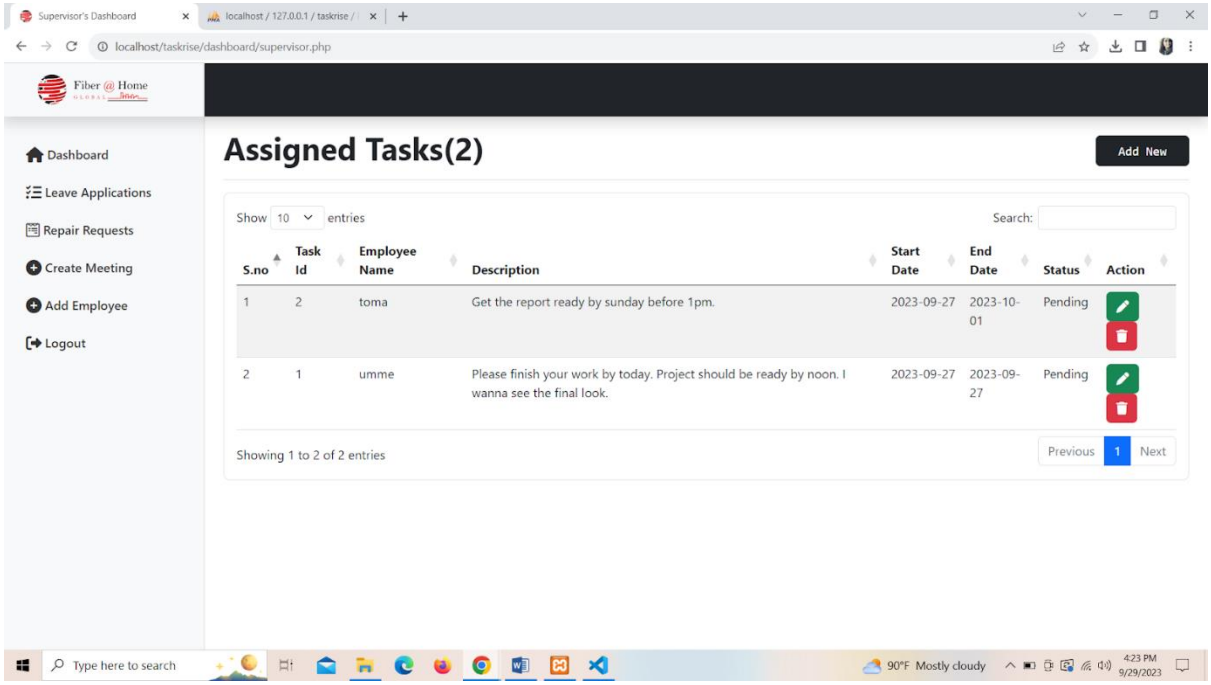


Figure 6.2: Supervisor Dashboard

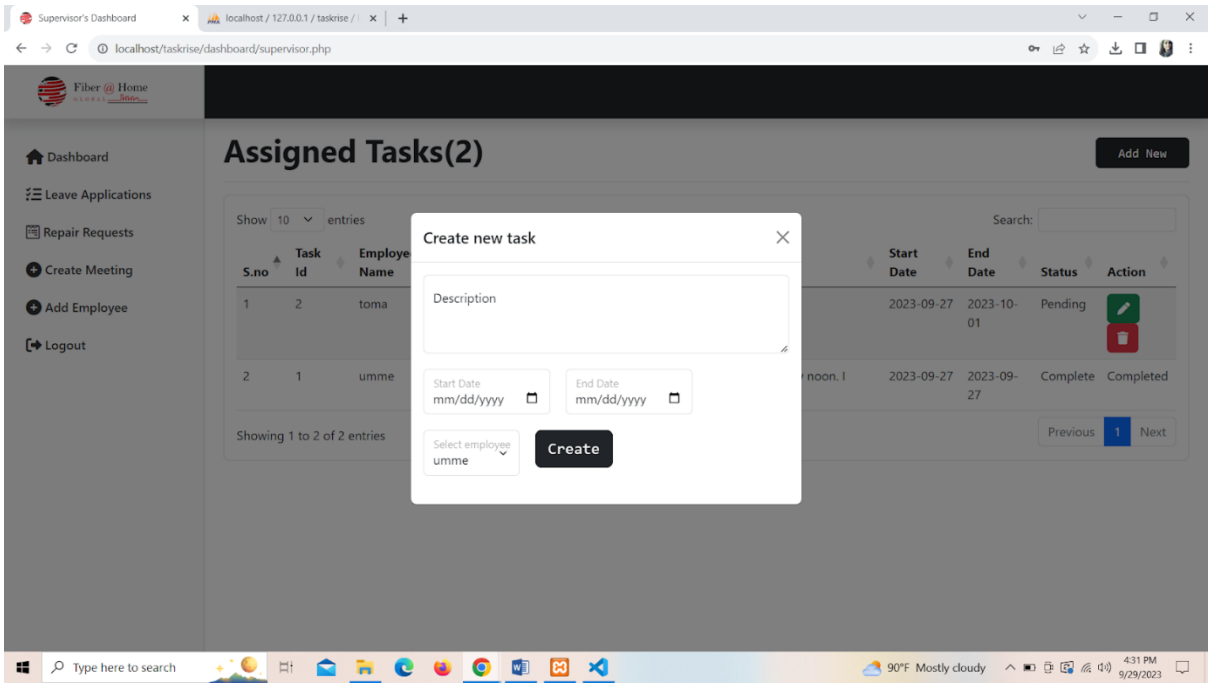


Figure 6.3: Create Task

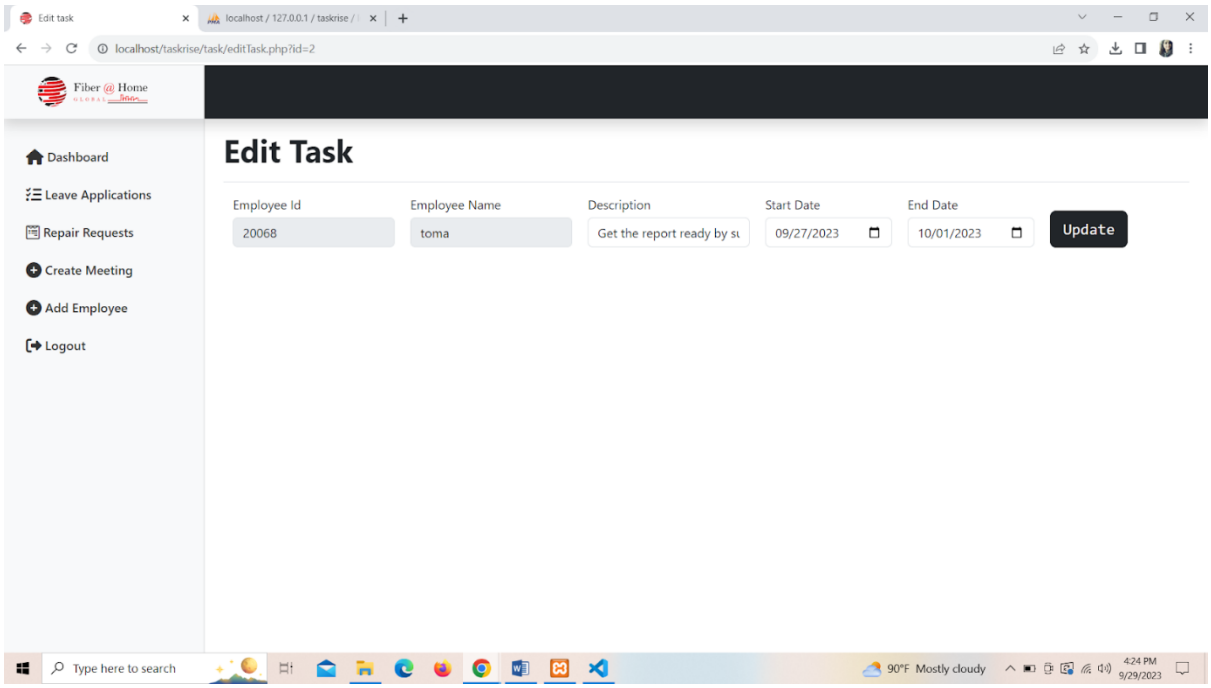


Figure 6.4: Edit Task

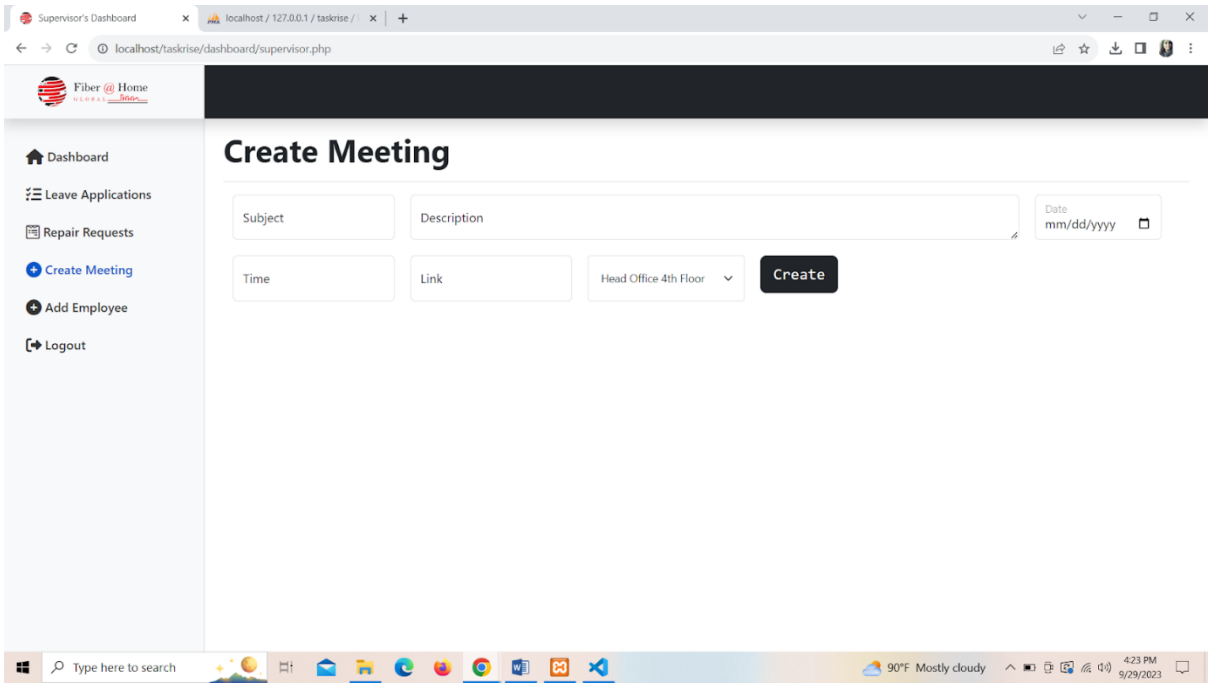


Figure 6.5: Create Meeting

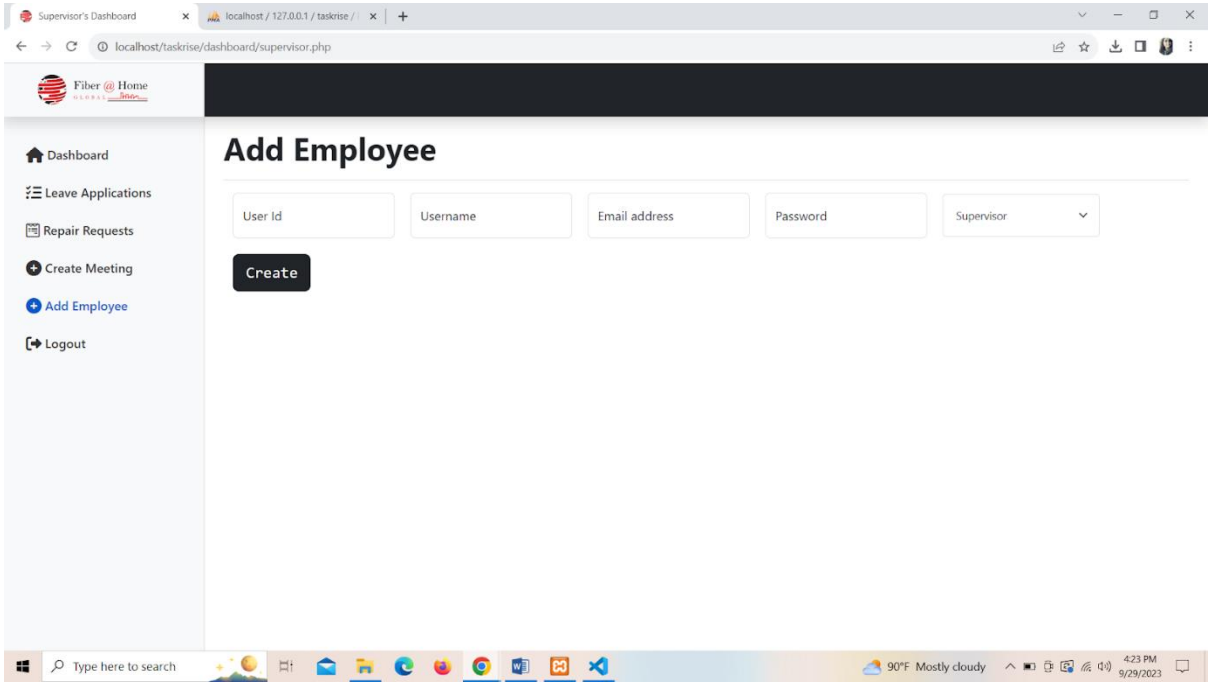


Figure 6.6: Add user to the system

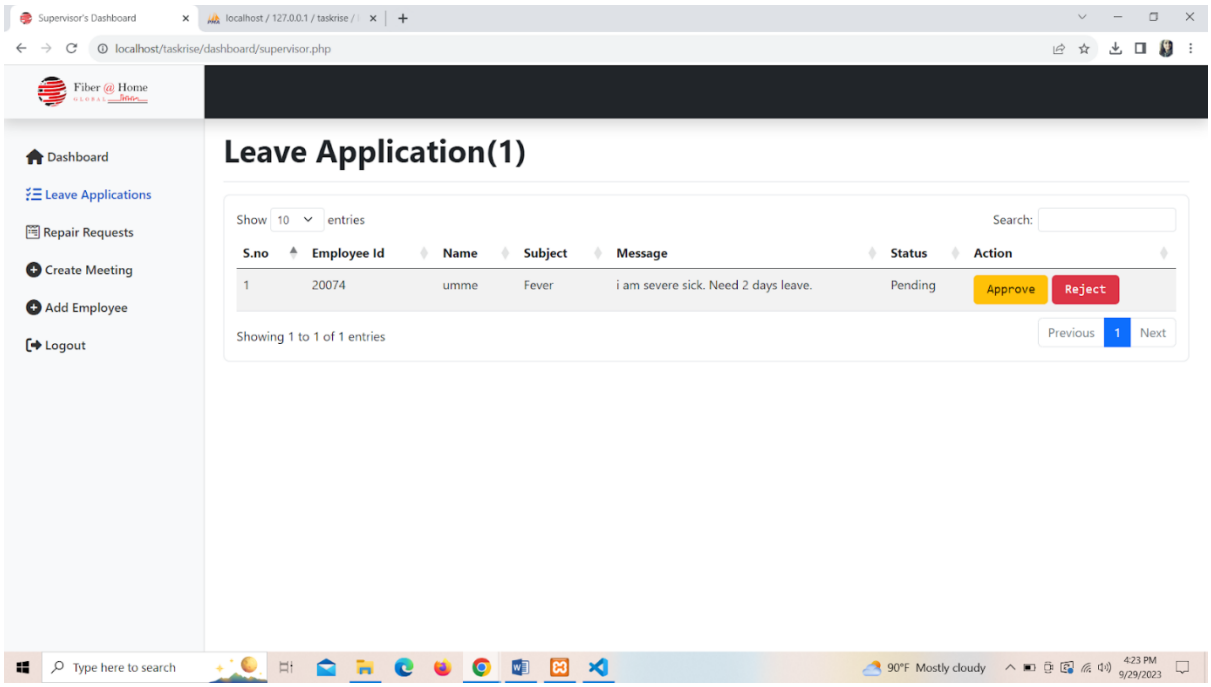


Figure 6.7: Leave Applications

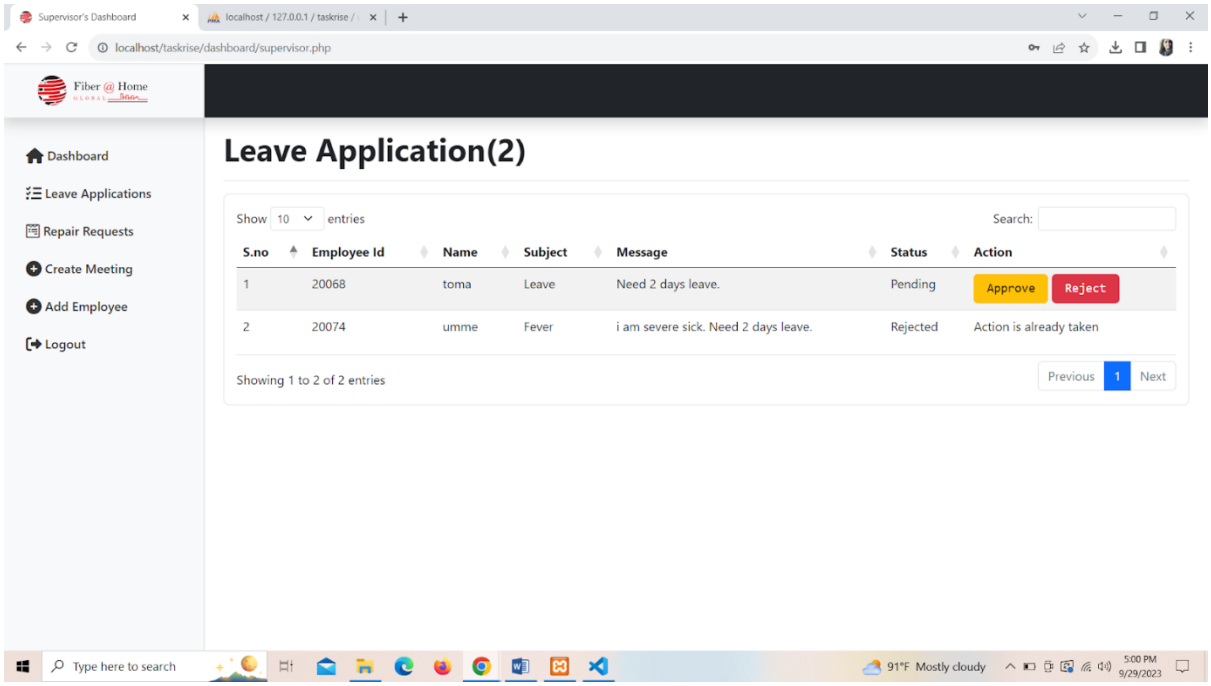


Figure 6.8: Leave application after Action taken

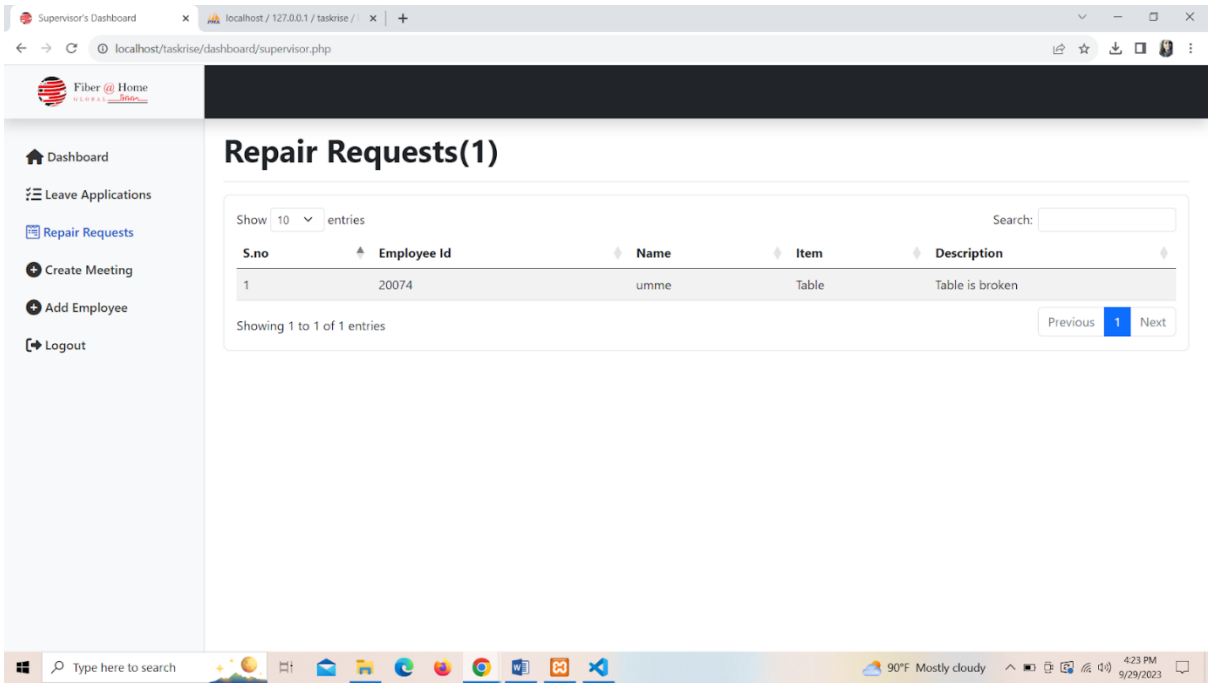


Figure 6.9: Repair Request Applications

Employee Panel -

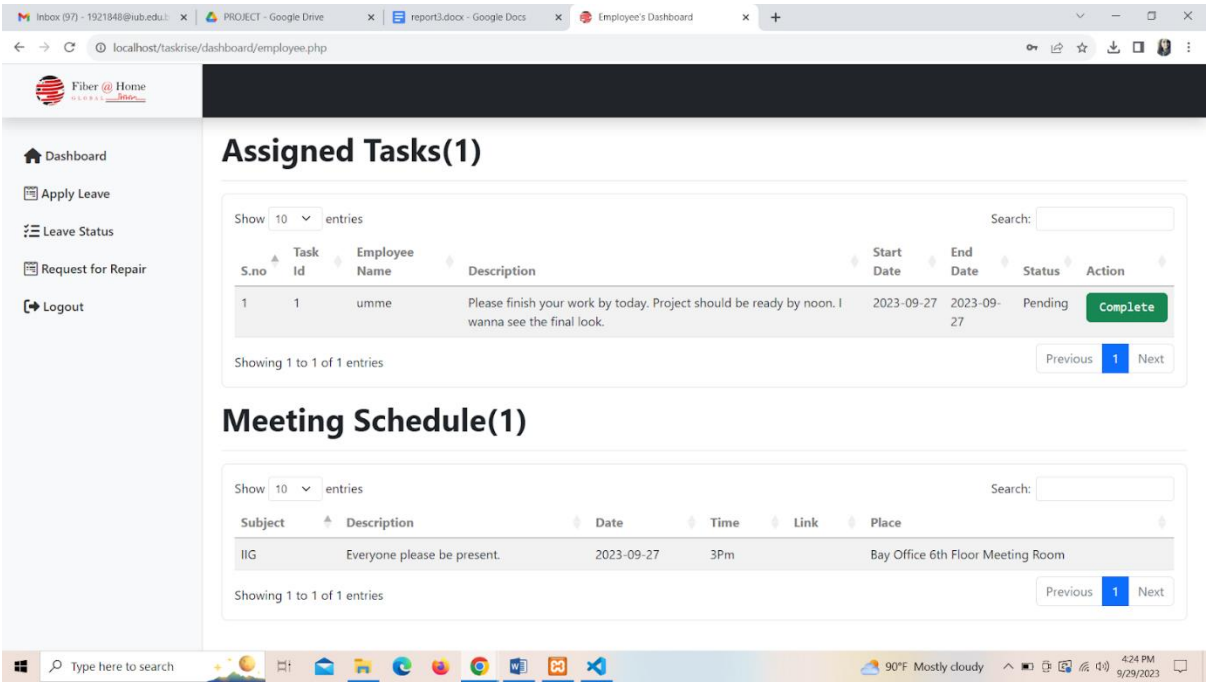


Figure 6.10.1: Employee Dashboard

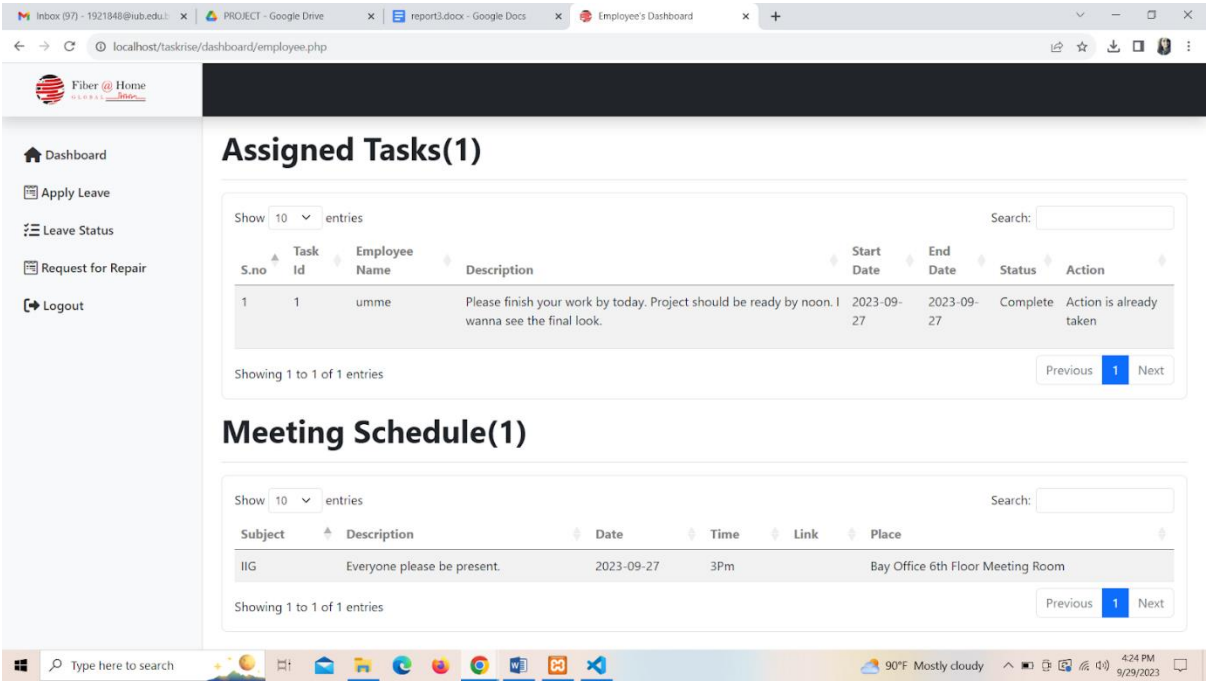


Figure 6.10.2: Employee Dashboard

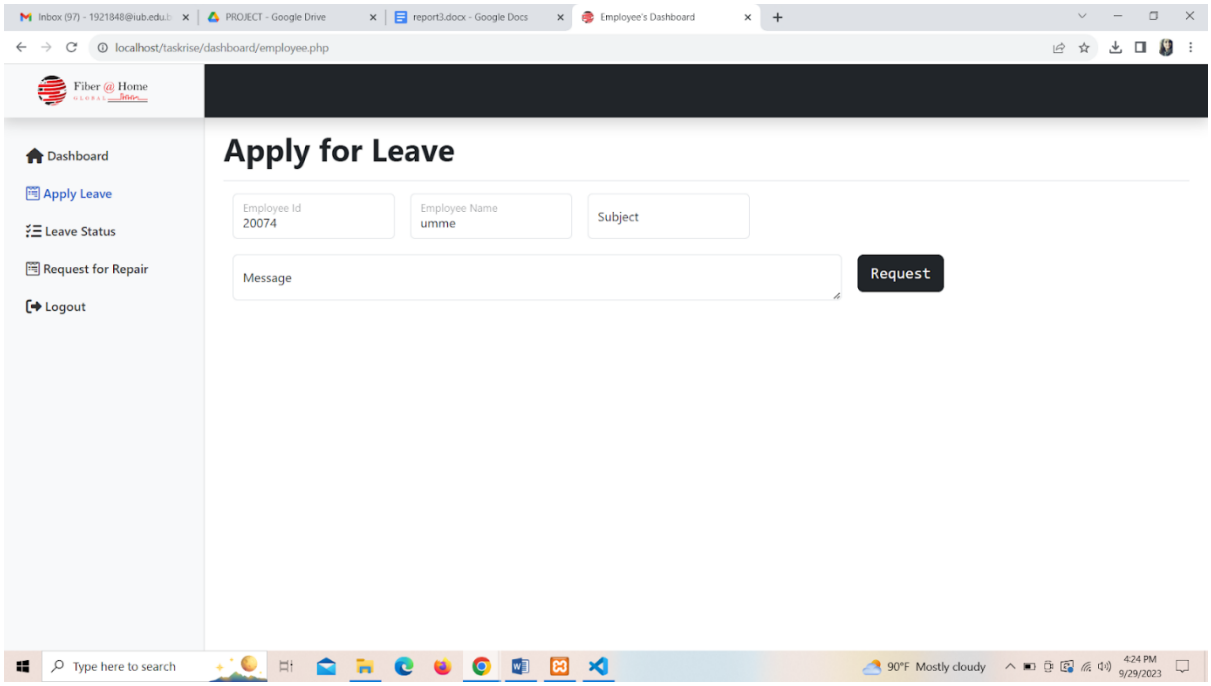


Figure 6.11 : Leave Form

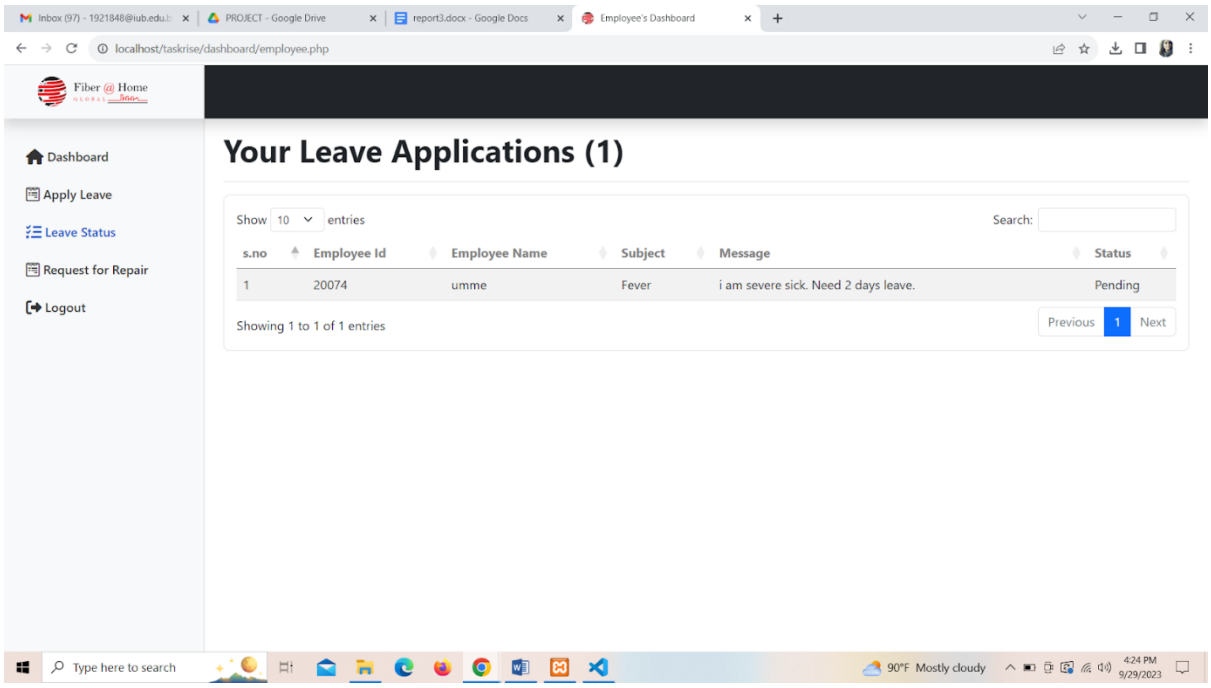


Figure 6.12 : Leave Applications

Chapter 7

Project as Engineering Problem Analysis

Project as Engineering problem analysis is a process that involves breaking down the problem into smaller, more manageable, requirements of work, an effective plan to solve the problem and identifying the limitations. This Engineering Problem Analysis helps ensure that projects are completed effectively and efficiently.

Several steps for problem analysis –

1. Gather information - Collect all the necessary information about the problem
2. Identify Problem - Think, do research, identify what is the problem & how it needs to be solved
3. Solutions - Think of the multiple solutions and check what meets with the needs best
4. Limitations - There are some limitations such as time, budget, resource
5. Implement - Work with the best solution for the problem of the project, monitor its progress, ensure effectiveness & ensure if it meets the criteria of project goals.

7.1 Sustainability of the Project/Work

The creation of software solutions that can satisfy current needs as well as those of future generations is known as sustainably developed software. A software project is sustainable if it can continue to provide value to its consumer for a long time without requiring a lot of maintenance or regular upgrades. A software engineering project's sustainability can be improved with -

Continuous delivery helps to ensure that the project is continuously taking feedback from clients which means continuous updation and improvement.

Quality of code also helps to improve the sustainability of the project.

Collaboration within the team and stakeholders ensures that clients needs are fulfilled.

7.2 Social and Environmental Effects and Analysis

- Convenient for both employees and supervisors of the company - With the help of this system users can actively perform and update the tasks.
- Track of meeting, leave applications - Several times it slips out of employees mind about meeting. So with the help of this system when it will show on the user dashboard - it will work as a reminder for them.
  Moreover, Previously they had to go to their supervisor in-person, need to take a form and apply for leave. With this system users can directly apply for leave and supervisors will approve or reject. Also, with the help of this system supervisor can see the total leave applications of specific employees by searching his/ her name.

- Repair request - Previously, when the team member encountered any issues such as broken equipment or malfunctioning laptops, they needed to reach their supervisors. Supervisors would need to verify the problem before any action could be taken. This would take time and become a lengthy process.
  We are delighted to announce a significant improvement in this case – the intro of a Repair Request option. Using this feature both of them will experience a hassle free process while addressing the issues altogether.

- Availability of a system yet customized one is needed - There are already many task management web applications available on the internet. But they are not customized according to the FGL needs. This system is specifically designed according to the needs of Fiber@Home Global Limited.

- Environmental benefits: This system can also have environmental benefits such as reducing the hassle of the workplace. Supervisors don't need to come frequently to ask for updates of the work. Phone calls are not needed even if someone is sick and working from home, by simply updating & tracking the task on the system it will be beneficial for everyone.

7.3 Addressing Ethics and Ethical Issues

Every endeavor should take ethics and ethical considerations into account. Key ethical considerations that could come up in a project for a web app include:

1. Data Confidential: Different users have different accounts according to their role. It's important to handle all sensitive personal information including passwords which must be protected.
2. User experience: This system prioritizes the user experience and ensures that they are user-friendly.
3. Security: Any outsider who is not a part of FGL, won’t have any access to the system.

Software developers working on these projects should make sure they are knowledgeable about pertinent laws and regulations, such as data protection laws, to address these ethical challenges. They must also be aware of moral principles, such as respecting consumers' privacy and acting in their best interests.

Chapter 8

Lesson Learned

During my internship at Fiber@Home Global Limited, I had the opportunity to learn so many things working with the software team. I got the chance to gain valuable knowledge and skills.

- How can I learn new skills and technologies quickly and independently using online resources and tutorials.

- I learned how the software can be developed from scratch, what should be the procedure and how to use agile methodology to work on different tasks.

- I got to learn about work culture, team work, how to communicate effectively, provide and receive continuous feedback.

- On the other hand, I learnt PHP, JavaScript, Jquery and how I should implement them in developing web applications.

- Besides all of these, I learned how to manage my time effectively and how to adjust from university culture to work environment.

8.1 Problems Faced During this Period

Difficulties I encountered while interning were -

- At first I worked on a different project that is Website launch & single sign on and the work was going pretty well. But then they told me they will work on single sign on after 3 or 4 months. And their multiple websites will be connected with that. Then they assigned me to a different project. It became a little hassle for me and I had to work on it from scratch.

- As an intern with little experience in software development, it became challenging for me to understand the concepts, technologies & methodologies that are involved.

- I had little knowledge about php and no knowledge about javascript, jquery. So I struggled at first and needed to learn quickly & independently.

- At first working with a team was a little bit difficult for me, as I am new to this industry. And I don't know how I am supposed to present my thoughts & ideas.

- Managing my time effectively was a great challenge for me. Staying present at the office in time, working on multiple tasks together with tight deadlines.

- Working in a new environment and coping up with work culture was a bit difficult as it was my first time. I had the opportunity to learn about company policies and work ethics.

8.2 Solution of those Problems

- At first when I was assigned to this new project, I cleared out what the requirements were. Is this project NDA or not?

- When i was not sure what to do or how to do it, i seek for guidance and took help from my colleagues(who is more experienced and knowledgeable)

- When i don't know certain things i asked them questions

- To overcome communication barriers with my seniors, I used to communicate clearly and ask for help whenever needed. Through this I created a friendly relationship with them which helps me to ask questions and take feedback.

- Managing my time according to task priorities. I asked them which one I should do first, asking them when they expect me to finish the task & asking for deadlines.

- To adapt with the new environment and cope with work culture - I observe behavior, learn about work ethics, company policies and work pattern - how things were done.

Chapter 9

Future Work & Conclusion

9.1 Future Works

Our system has not been released yet, it will feature all the functionalities that are implemented and will be available for the members of FGL. Although we are aware there are few things left to expand and improve in future. We are dedicated to updating and improving the quality of the system for better user experience. Here are some of the functionalities we are intended to develop in the future -

- Integration with their official website - Previously I have worked on their official website development. They have a plan to implement single sign on to their official website. Then they will integrate all their other websites with this official website. So, there is a plan to integrate this website with the official website. This will improve efficiency and give better user experience to users of the system.

- Updation and Improvement of existing system - There might be ways to enhance the current system's functionality or user experience by addressing issues, enhancing performance or adding new features. Redesigning certain features or procedures may be necessary. The system would offer its consumers a top-notch experience by continuously upgrading the system.

- Increasing security and privacy - For any web application, security and privacy are crucial. We might have the chance to enhance the system's security safeguards or put new privacy restrictions in place.

9.2 Conclusion

During my internship, I got the opportunity to learn and gain hands-on experience on how to develop a system from scratch. In this report, I have written about my internship experience at Fiber@Home Global limited, the tasks that they have given me and the outcome of it.

My internship experience has been a fantastic chance for me to advance both my personal and professional developments as it gave me the chance to use the theoretical knowledge I've learned in my CSE courses to address issues and circumstances that arise in the real world. For FGL, I created a full stack web application that manages tasks and has more features than a task system alone.
I am grateful for the chance that FGL gave me. Having the chance to work on and contribute to an ongoing project is a significant perk for interns. I appreciate my colleagues and the business giving me this significant responsibility. The people I met at FGL, I hope to keep in touch with them.

The difficulties I encountered throughout my internship taught me how to seek help from seniors as well as how to become a self- learner. I want to express my gratitude to Mr. Sajed Sir (my university supervisor) and Mr. Sazal Sir (my official supervisor) for their advice and assistance during my internship. Words won't be enough to express how grateful I am towards them.

Finally, I want to thank my institution for teaching me how to use real-world code. 'TaskRise' was my project, I was able to create with the proper implementation knowledge.

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An Undergraduate Internship/Project on TaskRise

By

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Summer, 2023

Consent from Supervisor

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during and/or before final viva, and the department can use this version for archiving as well as the OBE course material for CSE499.

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