FPT ACADEMY INTERNATIONAL

FPT – APTECH COMPUTER EDUCATION

HRM & Task Allocation

Supervisor: *LÊ THANH NHÂN*

Semester: *II*

Batch No: *T5.2306.E1*

Group No: *III*

Order:	**Full name**	**Roll No.**
1.	*LÊ TRỌNG NGHĨA*	*Student1477172*
2.	*NGUYỄN ĐỨC LINH*	*Student1477171*
3.	*TRẦN MINH QUANG*	*Student1477192*

***Month**:04 **Year**:2024*

This is to certify that

Mr. **LÊ TRỌNG NGHĨA**

Mr. **NGUYỄN ĐỨC LINH**

Mr. **TRẦN MINH QUANG**

Have successfully Designed & Developed

HRM & Task Allocation

Submitted by:

Mr. LE THANH NHAN

Date Of Issue:

Authorized Signature:

Content

Content

Acknowledge

Synopsis

Review1 1

Review2 8

Review3 22

Testing Document 30

Final Checklist 31

Task sheet 32

Acknowledge

Receiving support from all sides is a vital part of a successful project, and we cannot express enough gratitude to everyone who contributed to our project.

Our project is not just a learning environment but also a journey of creativity, learning, and experimentation. We've turned an idea from textbooks into reality, from theory into practice, thanks to the dedication and support of our teachers, colleagues, and friends.

In particular, we'd like to extend our sincere thanks to our professor, Mr. Le Thanh Nhan, who shaped and supported us throughout the project. His lessons, encouragement, and guidance not only helped us progress in the project but also stood by us when we faced challenges and difficulties.

Additionally, we'd like to acknowledge all other team members and friends who contributed ideas, time, and effort to support us. Alongside that, we cannot forget the support from APTECH in India, which provided us with the opportunity to practice and learn from industry-leading experts.

Finally, we understand that the project is not just about creating applications and products but also about building skills, teamwork, and courage. We are proud of what we have achieved and will continue to learn and grow in the future.

Thank you sincerely, and we wish everyone health and success.

Best regards,

Project Team 03

Synopsis

Our project aims to provide an engaging and useful desktop application, written in Java programming language and utilizing the JavaFX Framework. The main objective of the project is to apply the learned knowledge into real-life situations, addressing practical issues, and contributing to the improvement of skills and knowledge.

Project Features:

- Hands-on Application: This project offers us a practical hands-on opportunity. Instead of focusing solely on theory, we establish a robust practical environment to help students develop real-world skills.

- Building Larger Applications: By working on this project, we have the chance to develop a larger and more complex desktop application, from user interface design to handling intricate data processing.

- Utilizing JavaFX Framework: We have chosen JavaFX as the primary framework for building the application. This enhances performance and flexibility.

This project is not only an opportunity to apply knowledge into practice but also a significant step in developing programming skills and creativity. We hope that the project will meet the expectations set by the team during research and development.

Review 01

Problem Definition

A company operating in the Media sector with hundreds of employees focuses on creativity and managing digital content. With such a large scale, departmental management and task allocation become more complex than ever. Using management tools like MS Excel and MS Project is no longer suitable for the company. Several issues arise, including consistent data synchronization regarding personnel changes within the company, streamlining the task assignment process, monitoring the actual progress of tasks achieved, as well as analyzing and evaluating the quality of work. The company decides it's necessary to have an application to manage and assign tasks to employees, based on their departments and levels. Based on the needs outlined above, we design an application to provide solutions for the company's management needs. The application we design will provide the following features and functionalities:

1. The application provides different interfaces and functions depending on the user's level (Management functions for managers, task reception, execution, and reporting functions for employees performing tasks).

2. The application can display assigned tasks, as well as overdue tasks for each employee based on the assignment by Departure managers.

3. The application also provides the ability to display work plans for the next phase of each employee, or employees can set their own goals and tasks for the upcoming period for self-execution.

4. The application provides features for Managers to assign tasks to assigned employees, including: assigned tasks, detailed task content, start and completion times of tasks, etc.

5. Evaluation function of task completion level according to KPI, based on completion level, execution time, compliance attitude towards the task, etc.

6. Provide analysis charts of task completion levels for each individual, team, department, based on which, evaluate the achieved and unachieved aspects of personnel as well as the department to devise plans to improve work efficiency.

The Role of User and Admin:

1. Staff by Role:

- Access assigned work tasks and full-fill requirements according to the task schedule.
- Create new tasks for oneself, in addition to assigned work tasks.
- Submit completion reports for tasks.

2. Manager by Role:

- Assign work tasks to employees according to the task schedule.
- Notify of any changes in the execution of assigned tasks, if any.
- Evaluate the completion level of employees' tasks.

3. Administrator

- Top level and manage all system

Customer Requirements Specifications

I. CRS/Requirements Specifications

Client/Project Undertaken:

1. List of inputs to the system
   - *Staff's data.*
   - *List of employees' work tasks.*
   - *Progress of the project being undertaken.*
   - *Employees' workdays and days off.*
2. List of outputs expected from the system
   - *Handling assigned work tasks.*
   - *Proposing and addressing project-related issues.*
   - *Reporting on the progress and results of work tasks.*
3. Overview of processes involved in the system
   - *Displaying work task information.*
   - *Notifying of any new updates related to tasks.*
   - *Evaluating the completion level of tasks.*

Manager/Project Undertaken:

1. List of inputs to the system
   - *Employees' data.*
   - *List of employees' work tasks.*
   - *Progress of the project being undertaken.*
   - *Employees' workdays and days off.*
2. List of outputs expected from the system
   - *Assigning work tasks to employees.*
   - *Evaluating employees' task execution.*
   - *Proposing project-related issues.*
   - *Approving employees' requests.*
3. Overview of processes involved in the system
   - *Displaying work task information.*
   - *Notifying of any new updates related to tasks.*
   - *Conducting evaluations on task completion level.*

Admin/Project Undertaken:

1. List of inputs to the system
   Account role data
2. List of outputs expected from the system
   Process staff's data and Role account
3. Overview of processes involved in the system
   Employee account role information.
   Creating new accounts, handling locked accounts.
   Implementing user permissions for accounts.

Hardware and software required for implementing the project	
1.	*Operating system: Windows 10 higher*
2.	*Hardware: CPU Cores with 2 Gigabytes of RAM or better*
3.	*Font Unicode: Arial, Tahoma, Lucida Console, Times New Roman, etc…*
4.	*Other requirement: A working internet connection*

II. CRS/Customer Acceptance Criteria

S.No	Customer's Acceptance Criteria	
1	Given Staff Role	
	-	When managing personal information of employees, users can view and update certain fields.
	-	When managing tasks, users can view, add, edit, and delete certain fields within tasks.
	-	When performing tasks, users can request necessary resources.
	-	When performing attendance tracking, users can view the number of working days and receive error notifications.
2	Given Manager Role	
	-	When managing personal information of employees, users can view, add, update, and delete certain fields.
	-	When managing tasks, users can view, add, edit, and delete certain fields within tasks.
	-	When requested by employees, users can allocate resources as needed.
	-	When performing attendance tracking, users can view, edit, and update the number of working days.
3	Given Administrator	
	-	When managing roles, users can view, add, edit, and delete employees in the role list.

III. Project Plan

1. Project Details	
+	Name of the Client:
	HRM & Task Allocation
+	Date of Project Plan:
	15/04/2024 – 25/5/2024
+	Project Vision/Objectives:
	Develop a comprehensive software solution to streamline personnel management and task allocation processes.
	Enhance productivity and efficiency within the organization by providing a user-friendly application tailored to the needs of HR managers and employees.
	Improve data synchronization, task assignment, and progress monitoring to overcome existing challenges and barriers in traditional management approaches.
+	Scope:
	The scope of the project involves creating a software application to manage personnel and task allocation within a large-scale company.
+	Our understanding of the client organization:
	The organization's processes involve managing personnel changes, task assignment, monitoring task progress, evaluating performance, and analyzing departmental achievements and shortcomings to improve overall efficiency.
+	Project Organization with Responsibilities and Authorities:
	Project Name: HRM & Task Allocation
+	Role: Team leader, design, dev, tester
2. Project Initiation/Requirement Documents	
	Design Documentation
	Installation guide
	User guide
3. Deliverables	
	Design Documentation
	Installation guide
	User guide
	Source code

	Prepared by (Student)	**Approved by (Faculty)**
	Project Group No: 03	LE THANH NHAN
Signature		
Date		

4. Project Dependencies	
	New technology by Java Fx
5. Major Project Milestones	
	Review 01
	Review 02
	Review 03
6. Quality Plan	
+	Review, Testing, Backup Activities:
	Final review

Review 02

Architecture and design of the Application

I. Application Architecture

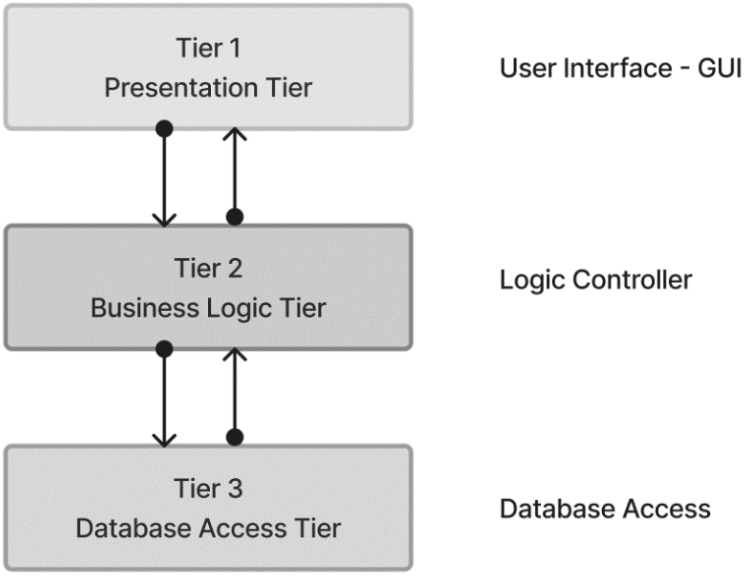


Figure F1: 3 tiers Layer for the Application

II. Data Flow Diagram

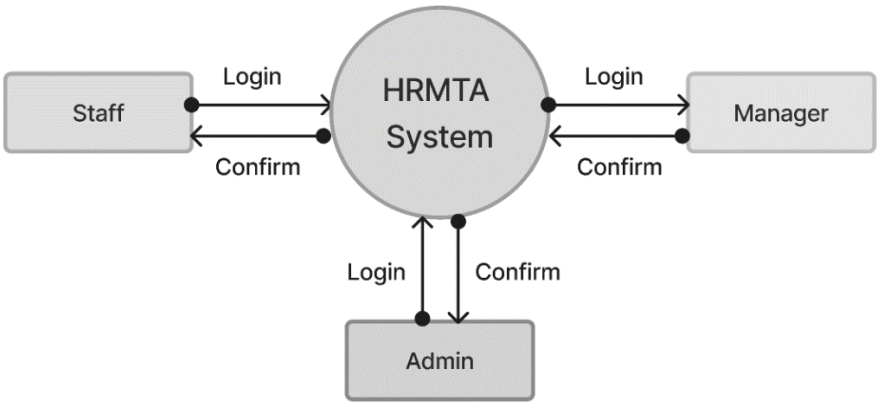


Figure F2: DFD Level 0

Entity Relationship Diagram

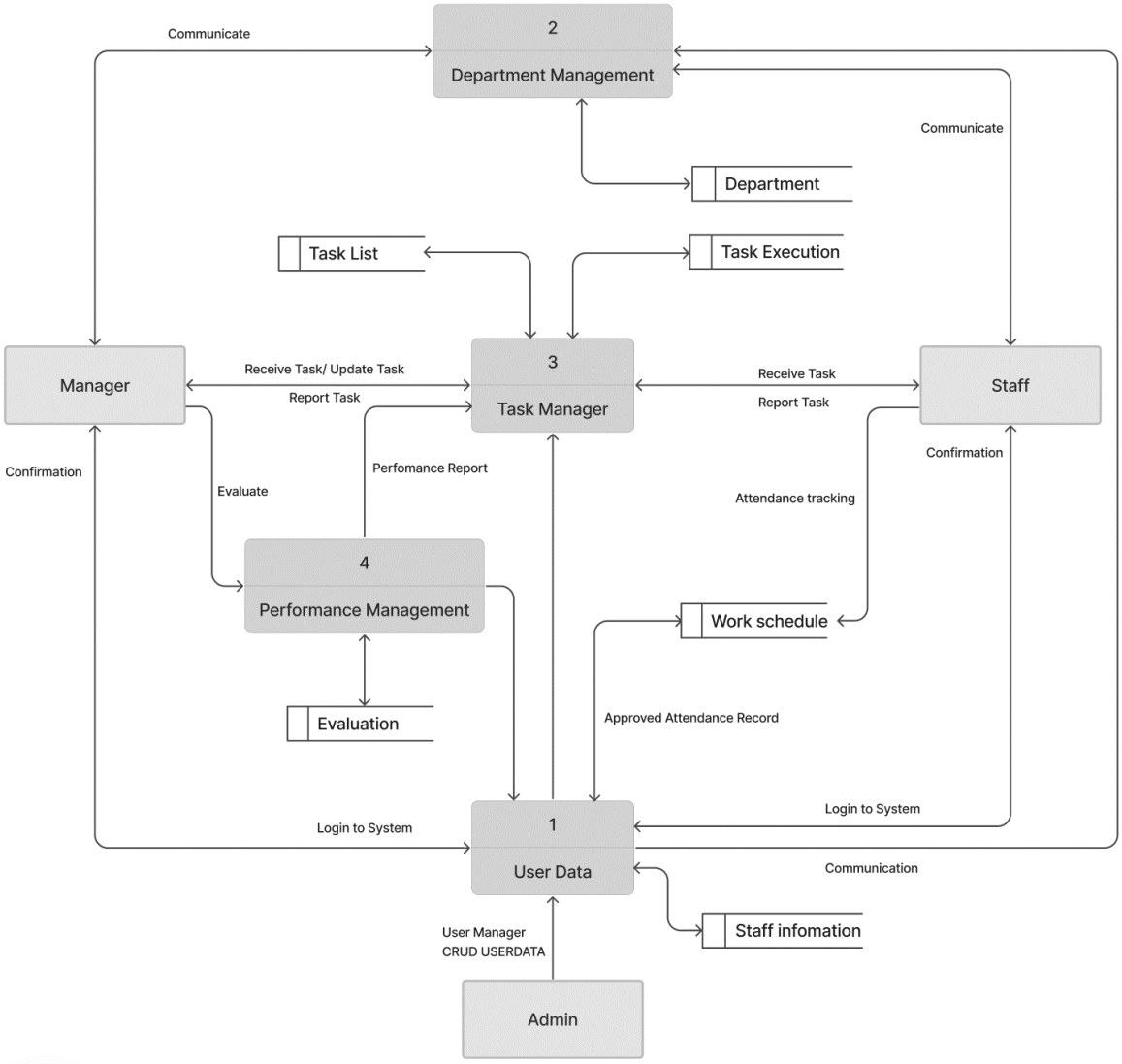
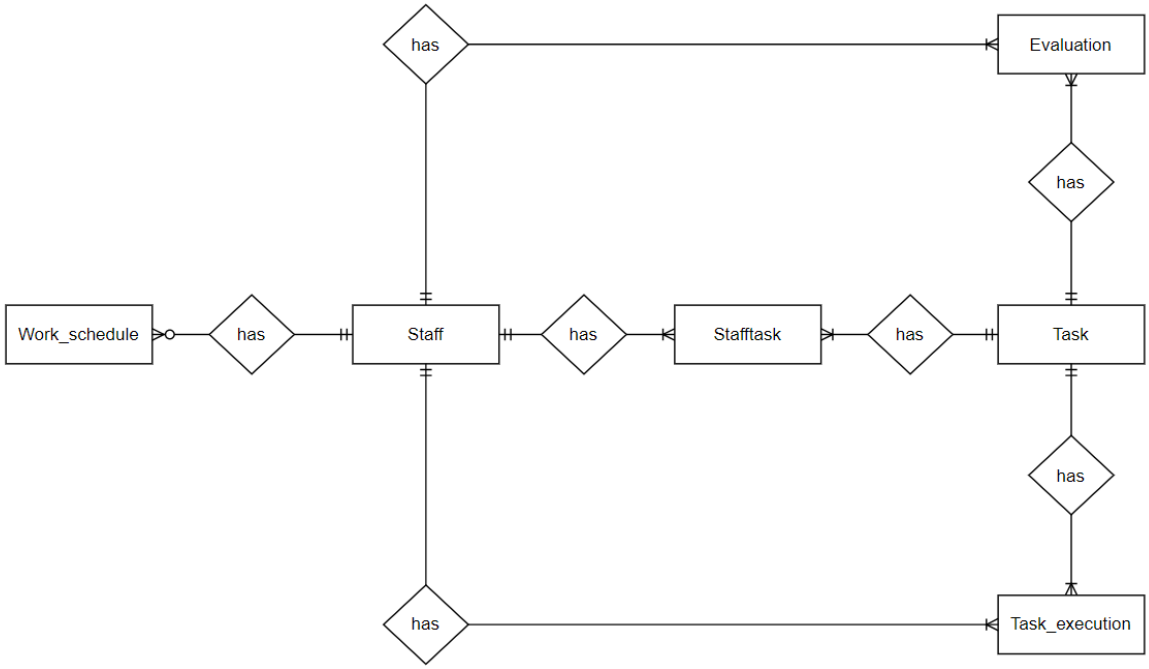
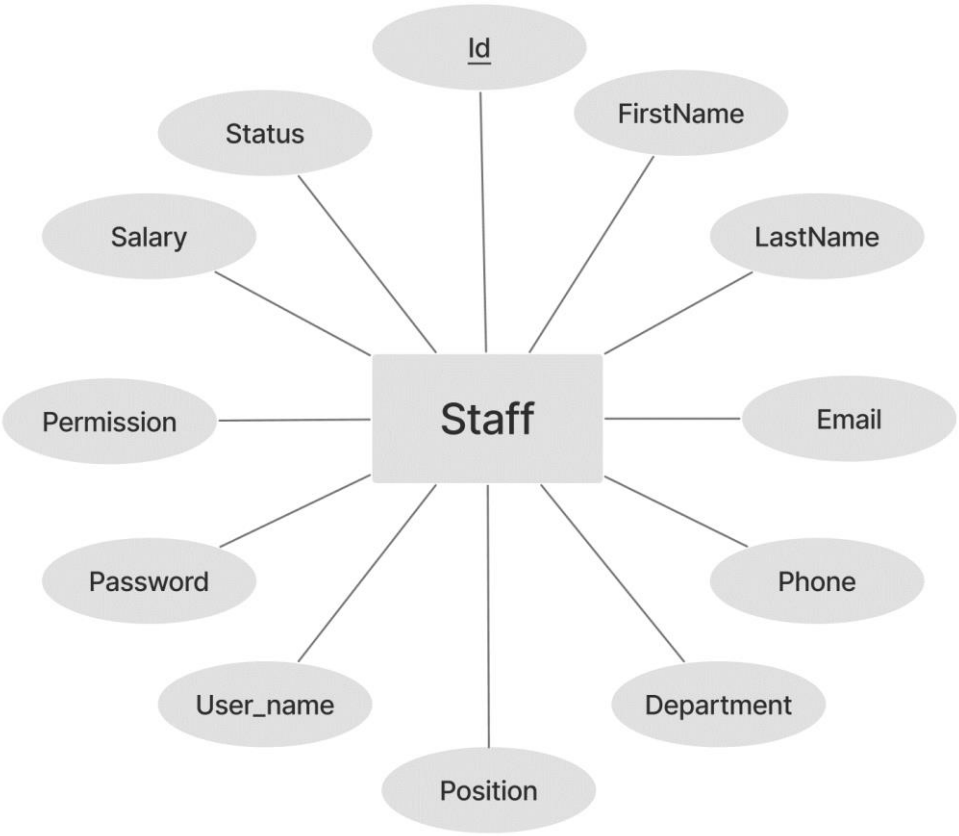


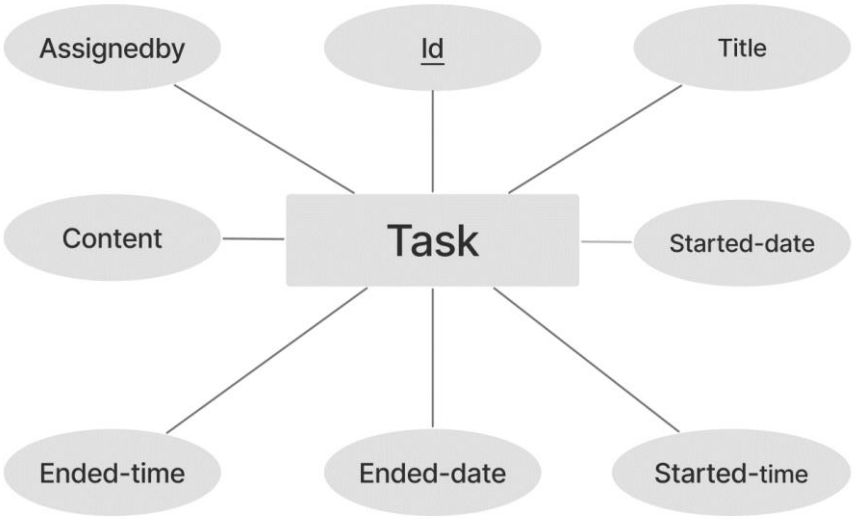
Figure F3: DFD Level 1

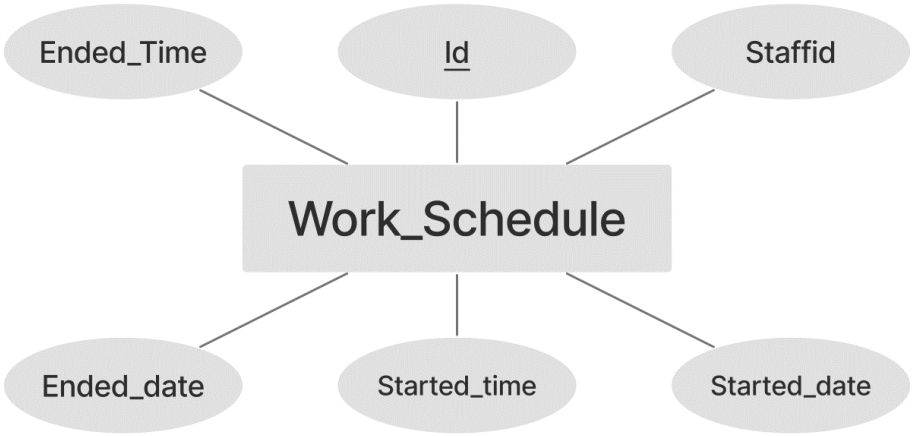
I. ERD


has
Evaluation
has
Work_schedule
has
Staff
has
Stafftask
has
Task
has
has
Task_execution

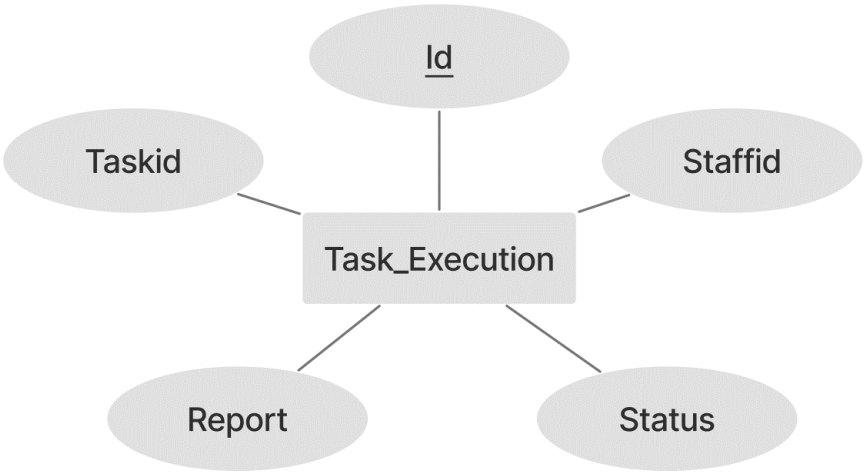
II. ERD Properties




Assignedby
Id
Title
Content
Task
Started-date
Ended-time
Ended-date
Started-time


Ended_Time
Id
Staffid
Work_Schedule
Ended_date
Started_time
Started_date

Staffid
Stafftask
Taskid


Id
Taskid
Staffid
Task_Execution
Report
Status

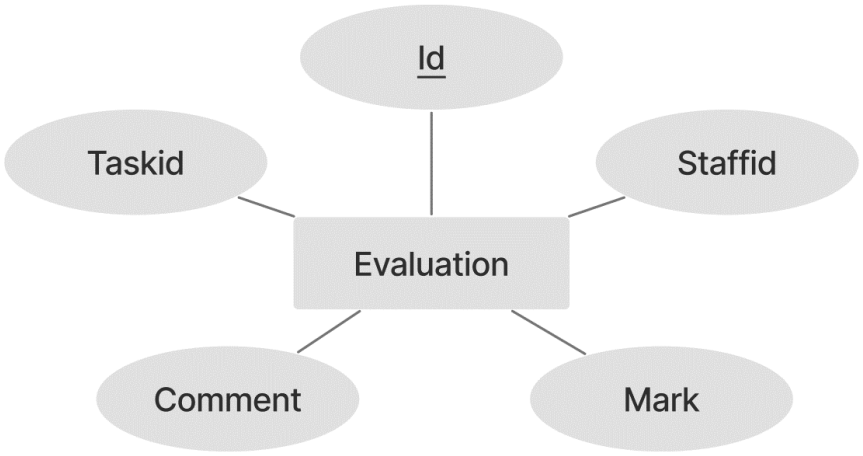

Id
Taskid
Staffid
Evaluation
Comment
Mark

Table Design

I. Table Design

Staff					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Id	Int(11)	Primary key	Not null, Identity	Staff identification
2	FirstName	Varchar (50)		Not null	Staff's first name
3	LastName	Varchar(50)		Not null	Staff's last name
4	Email	Varchar(100)		Not null	Staff's email
5	PhoneNumber	Varchar(15)		Not null	Staff's phone
6	Department	Varchar(50)		Not null	Staff's Department
7	Position	Varchar(50)			Staff's position
8	User_name	Varchar(50)		Not null	Staff's user name
9	Password	Varchar(50)		Not null	Staff's password
10	Permission	Int		Not null	Staff's permission
11	Status	Varchar		Not null	Staff's status
12	Salary	Float			Staff's salary

Task					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Id	Int(11)	Primary key	Not null, Identity	Task identification
2	Title	Varchar (50)		Not null	Task's title
3	Started_date	DATE		Not null	Task's start date
4	Started_time	TIME		Not null	Task's start time
5	Ended_date	DATE		Not null	Task's end date
6	Ended_time	TIME		Not null	Task's end time
7	Content	Varbinary(max)			Task's content
8	Assignedby	Int			Staff assign id

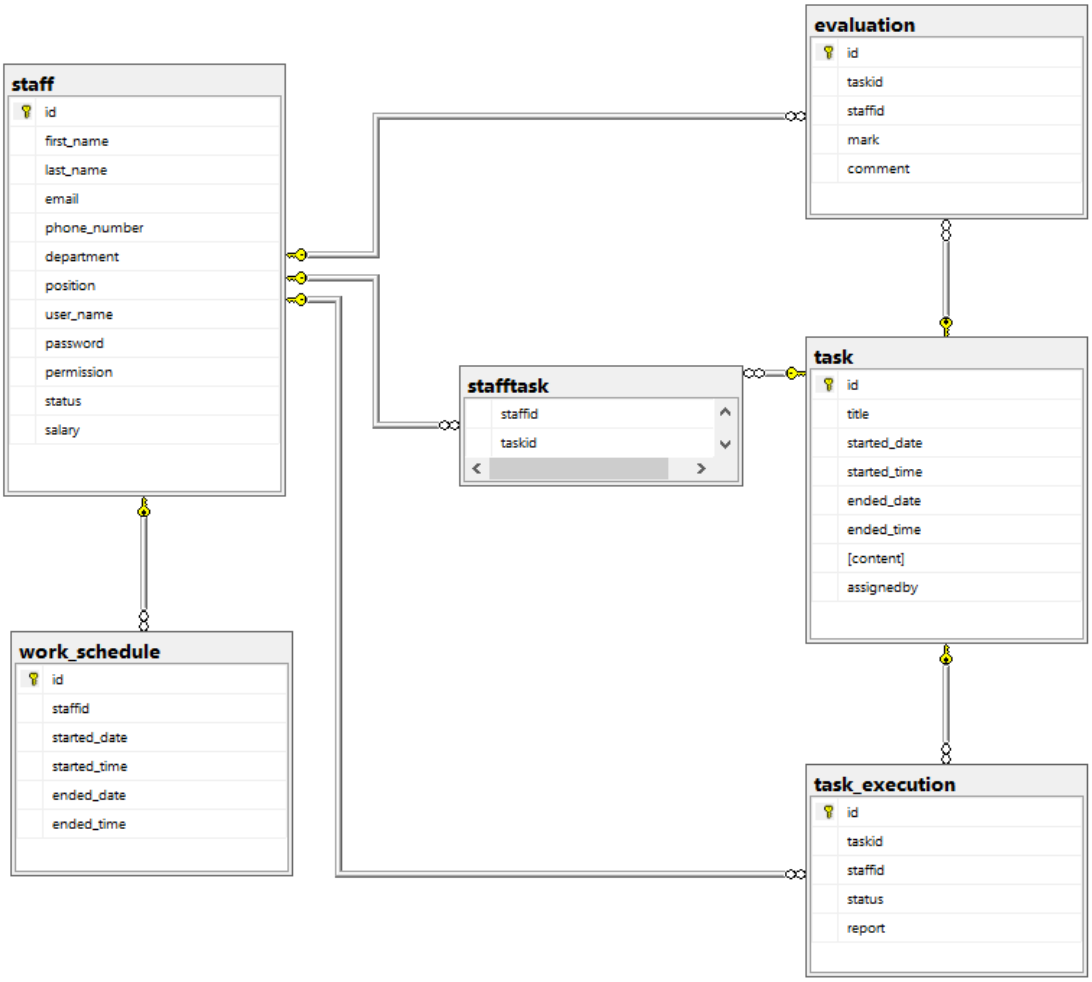
Stafftask					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Staffid	Int(11)	Foreign key	Not null	Staff's id
2	Taskid	Int(11)	Foreign key	Not null	Task's id

Work_Schedule					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Id	Int(11)	Primary key	Not null, Identity	Schedule's id
2	Staffid	Int(11)	Foreign key	Not null	Staff's id
3	Started_date	DATE		Not null	Schedule's start date
4	Started_time	TIME		Not null	Schedule's start time
5	Ended_date	DATE		Not null	Schedule's end date
6	Ended_time	TIME		Not null	Schedule's end time

Task_Execution					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Id	Int(11)	Primary key	Not null, Identity	Task exe's id
2	Staffid	Int(11)	Foreign key	Not null	Staff's id
3	Status	Varchar		Not null	Task's status
4	Report	Varbinary(max)			Task's report
5	Task's id	Int(11)	Foreign key	Not null	Task's id

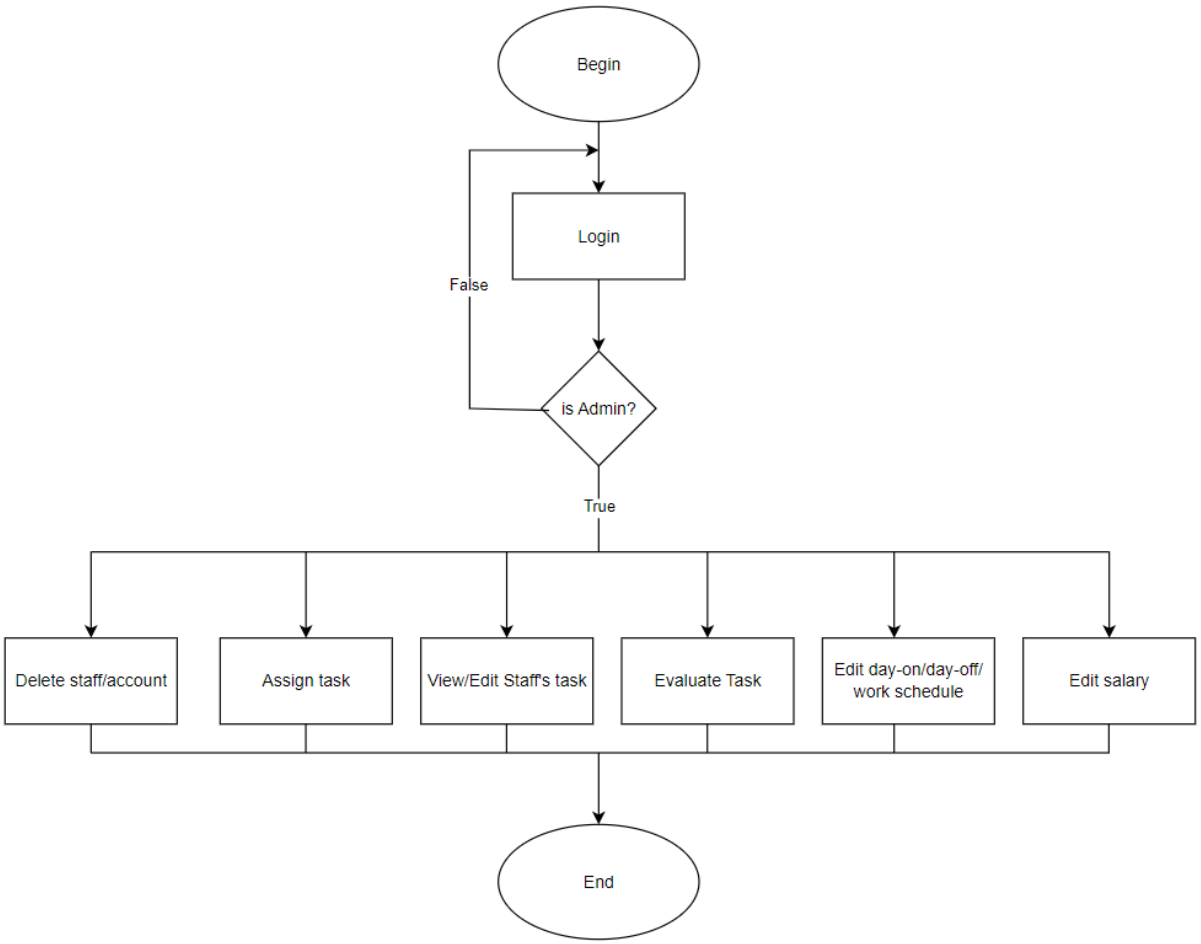
Evaluation					
Serial	**Fields**	**Data type**	**Keys**	**Constrains**	**Description**
1	Id	Int(11)	Primary key	Not null, Identity	Evaluation's id
2	Staffid	Int(11)	Foreign key	Not null	Staff's id
3	Mark	Float		Not null	Task's mark
4	Comment	Varchar(255)			Manager's comment
5	Task's id	Int(11)	Foreign key	Not null	Task's id

II. Relationship Diagram

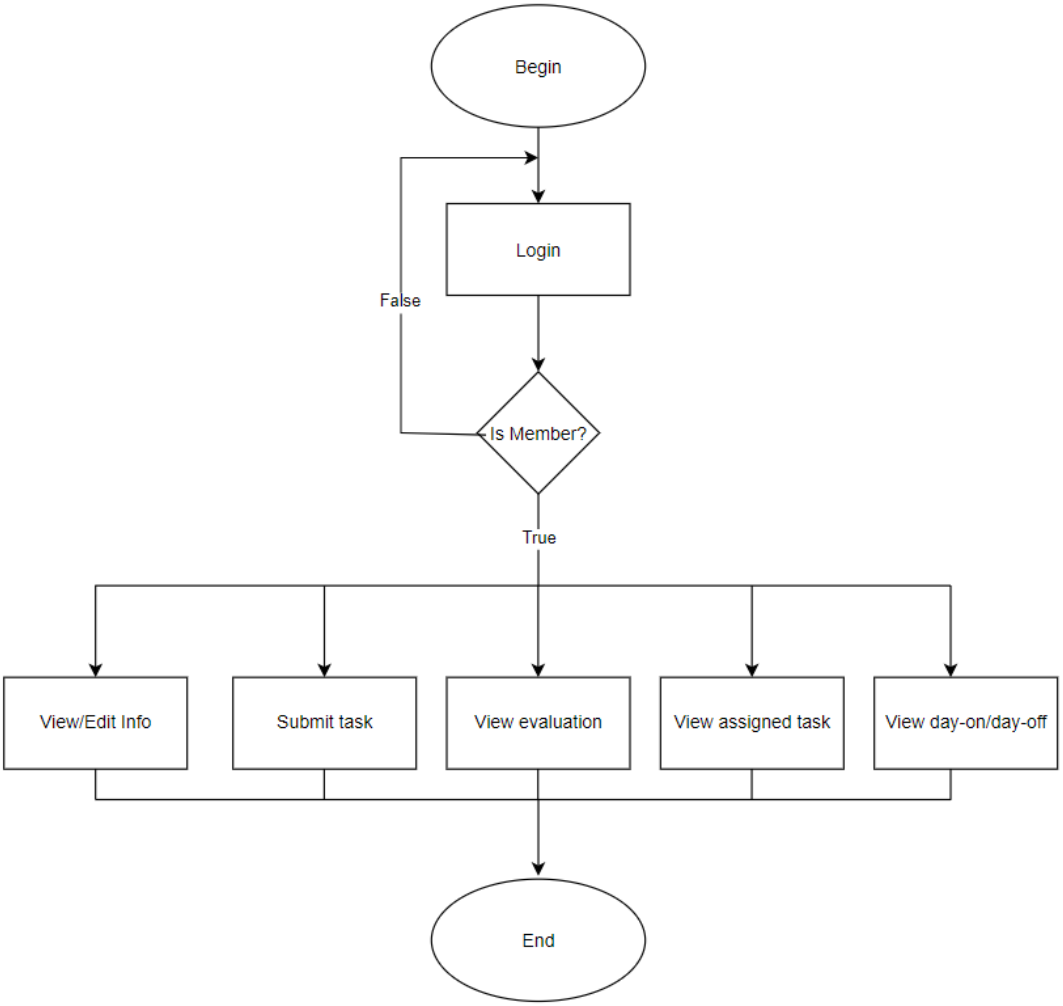

staff
id
first_name
last_name
email
phone_number
department
position
user_name
password
permission
status
salary
evaluation
id
taskid
staffid
mark
comment
stafftask
staffid
taskid
task
id
title
started_date
started_time
ended_date
ended_time
[content]
assignedby
work_schedule
id
staffid
started_date
started_time
ended_date
ended_time
task_execution
id
taskid
staffid
status
report

Algorithm

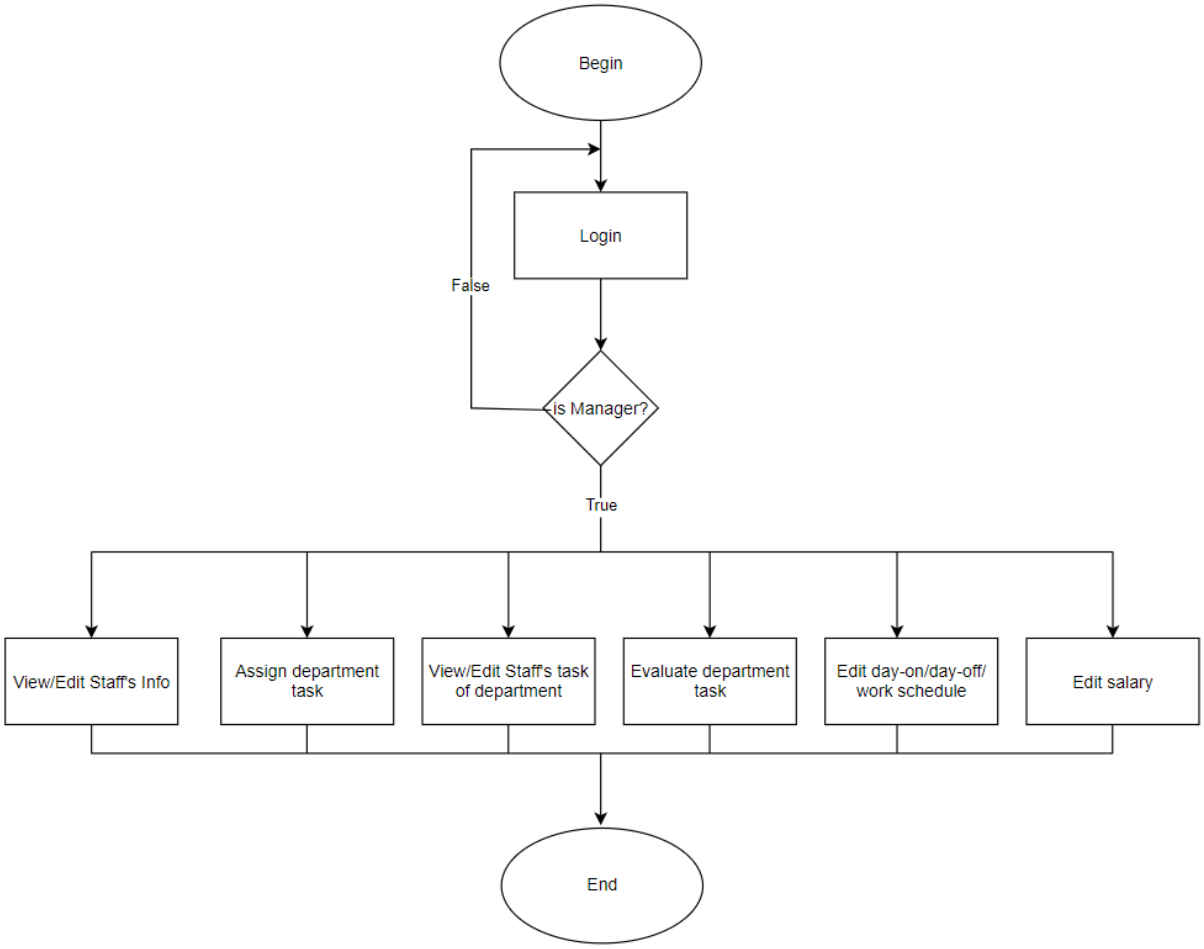
I. Administrator



II. Staff


Begin
Login
False
Is Member?
True
View/Edit Info
Submit task
View evaluation
View assigned task
View day-on/day-off
End

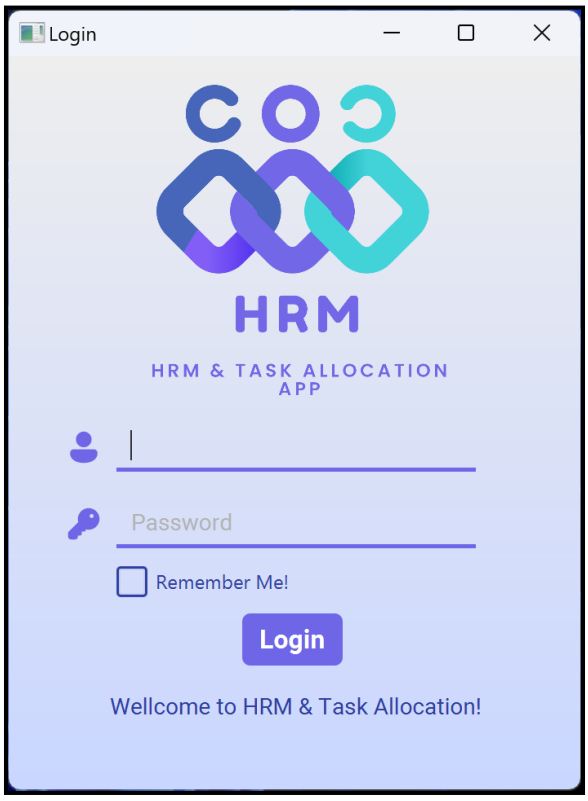
III. Manager


Begin
Login
False
Is Manager?
True
View/Edit Staff's Info
Assign department task
View/Edit Staff's task of department
Evaluate department task
Edit day-on/day-off/ work schedule
Edit salary
End

Review 03

Screen shots

I. System login interface:



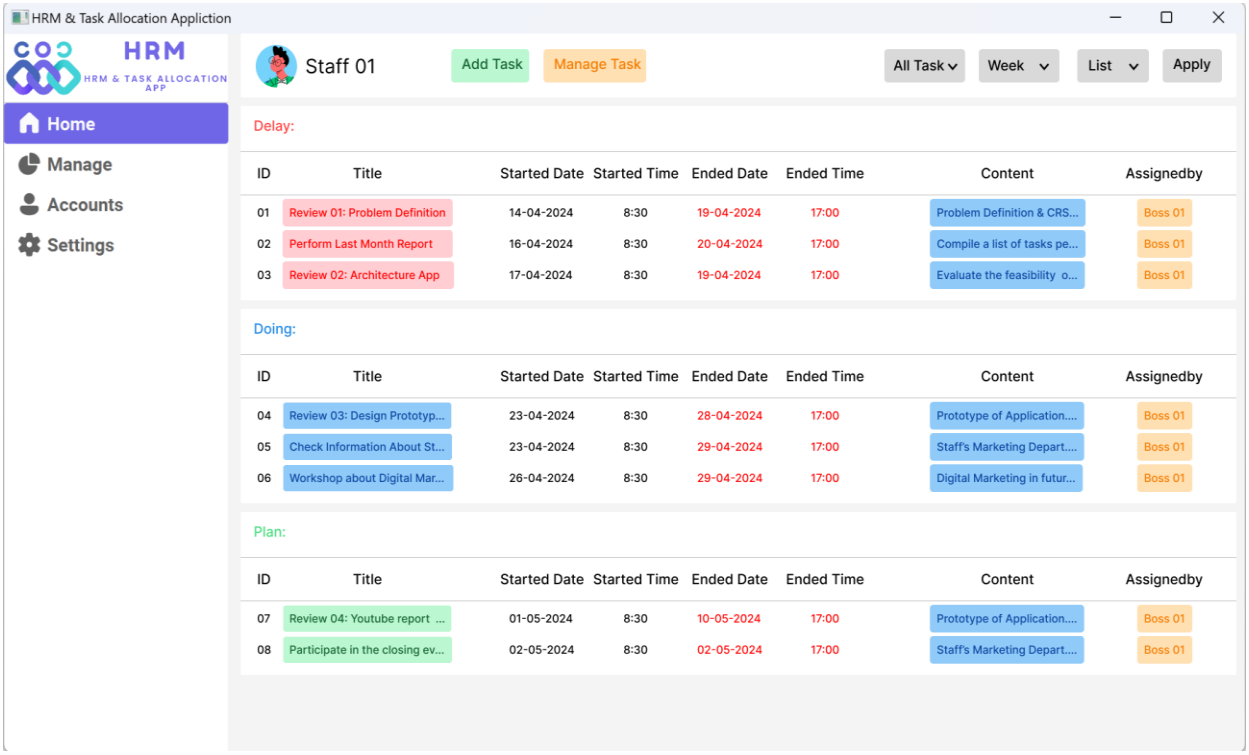
Description: This is the login screen interface, used for users to log in to the HRM system.

From: This screen appears when users start the application to use the system.

To: After the user successfully logs in, the application will redirect the user to the central dashboard

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

II. Home page interface:



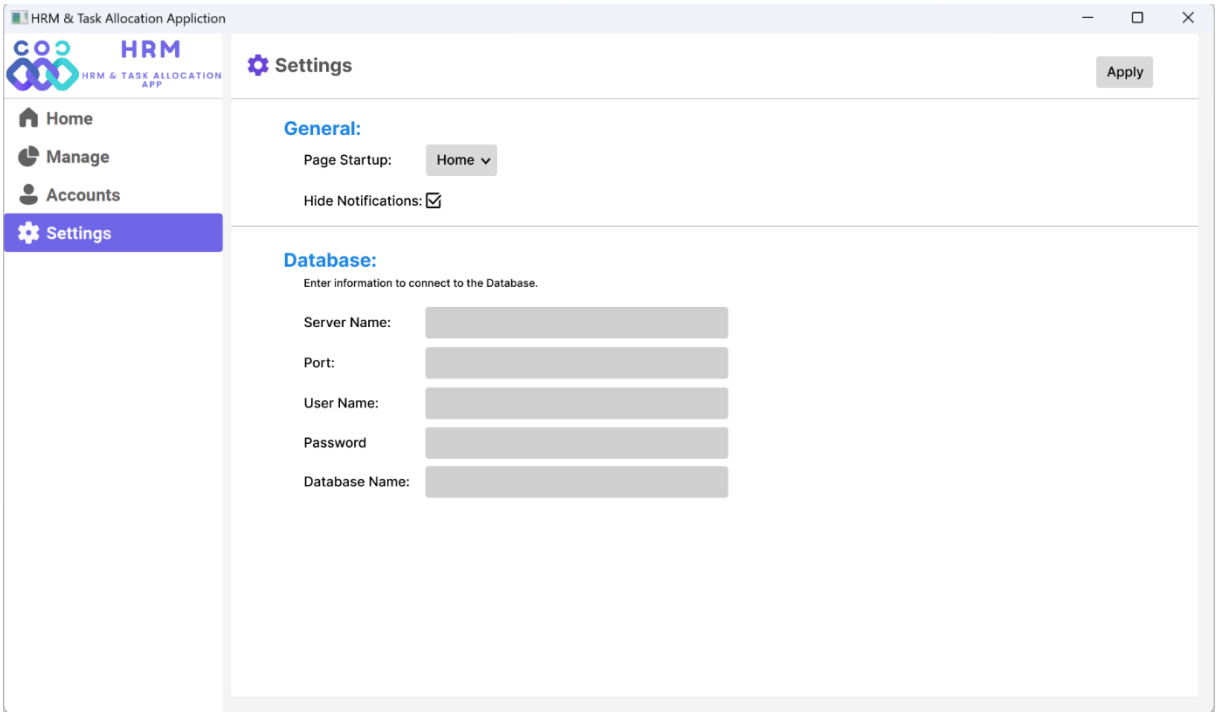
Description: This is the interface of the Home page, used for users to interact with the main functions of the system after logging into the HRM system. The Home page will present contents such as ongoing tasks, overdue tasks, and employee schedules. Users can manage, assign and receive tasks, add new tasks, edit tasks, and report work.

From: This screen appears when the user successfully logs in.

To: Users can navigate to the detailed task page and report results.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

III. Settings page interface.



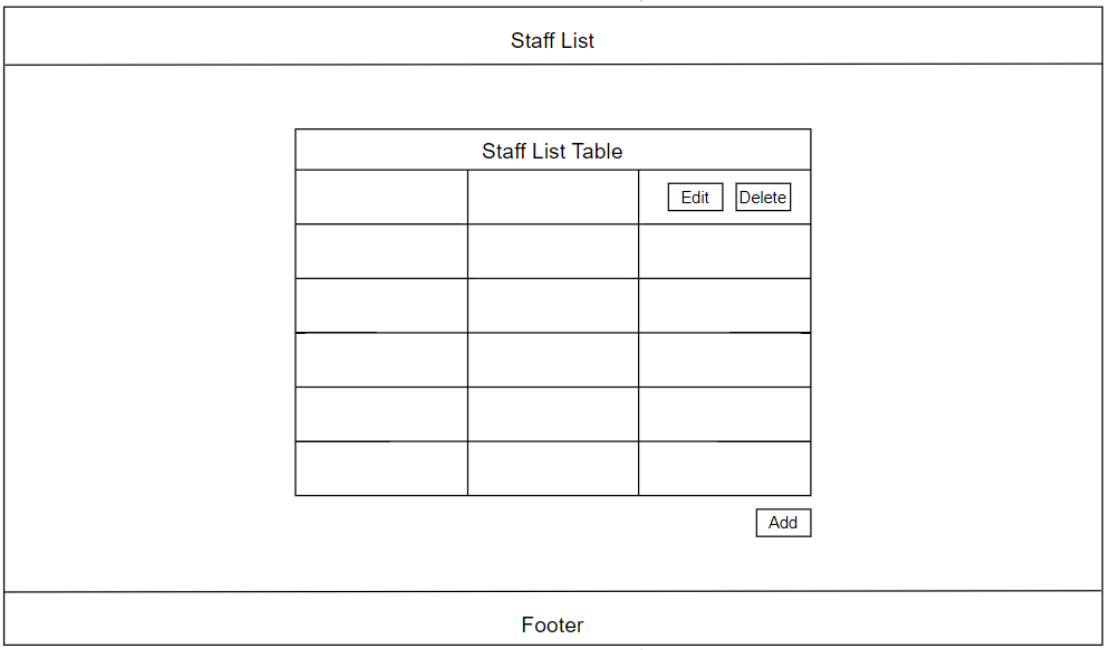
Description: This is the interface of the Settings page, used for users to configure settings for the system such as start page, notifications, and database connection information.

From: This screen appears when the user successfully logs in and selects the Settings section.

To: Users can navigate to other pages such as Home, Manage, Accounts through the Navbar.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

IV. Staff list



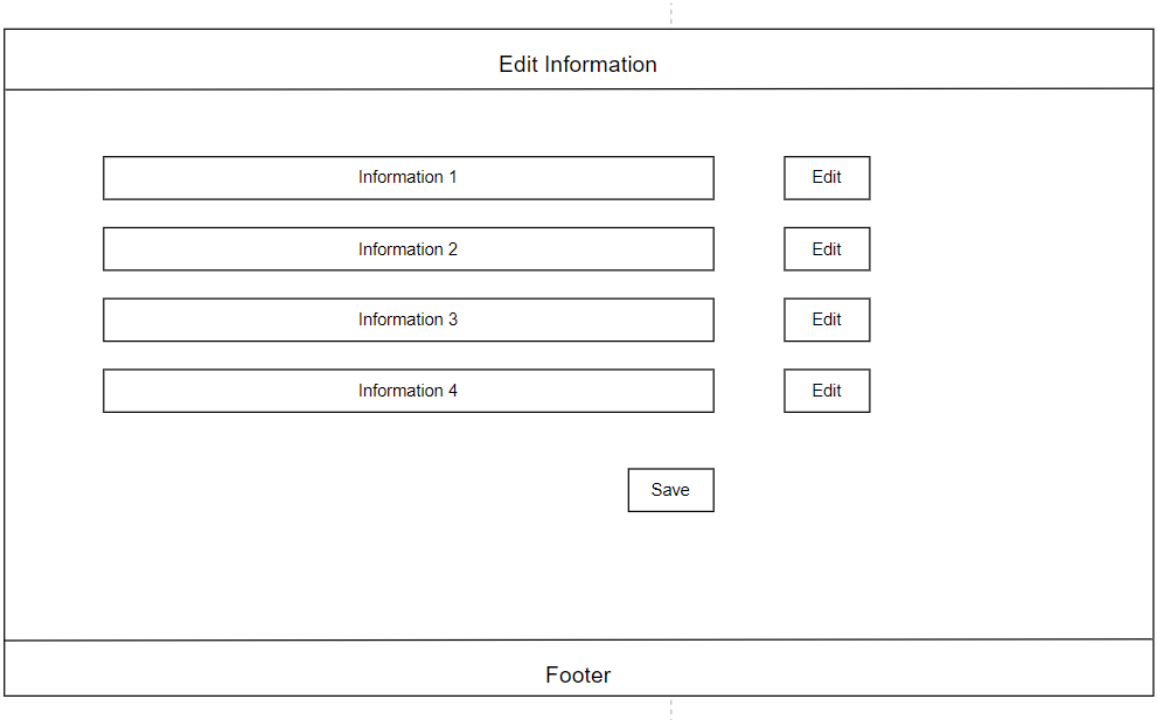
Description: Employee list page, displaying information of all currently working employees from the database (accessible if the user is a manager or admin).

From: This screen appears when the user successfully logs in and selects the Manage Section.

To: Users can navigate to other pages such as Home, Manage, Accounts through the Navbar.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

V. Editing Information



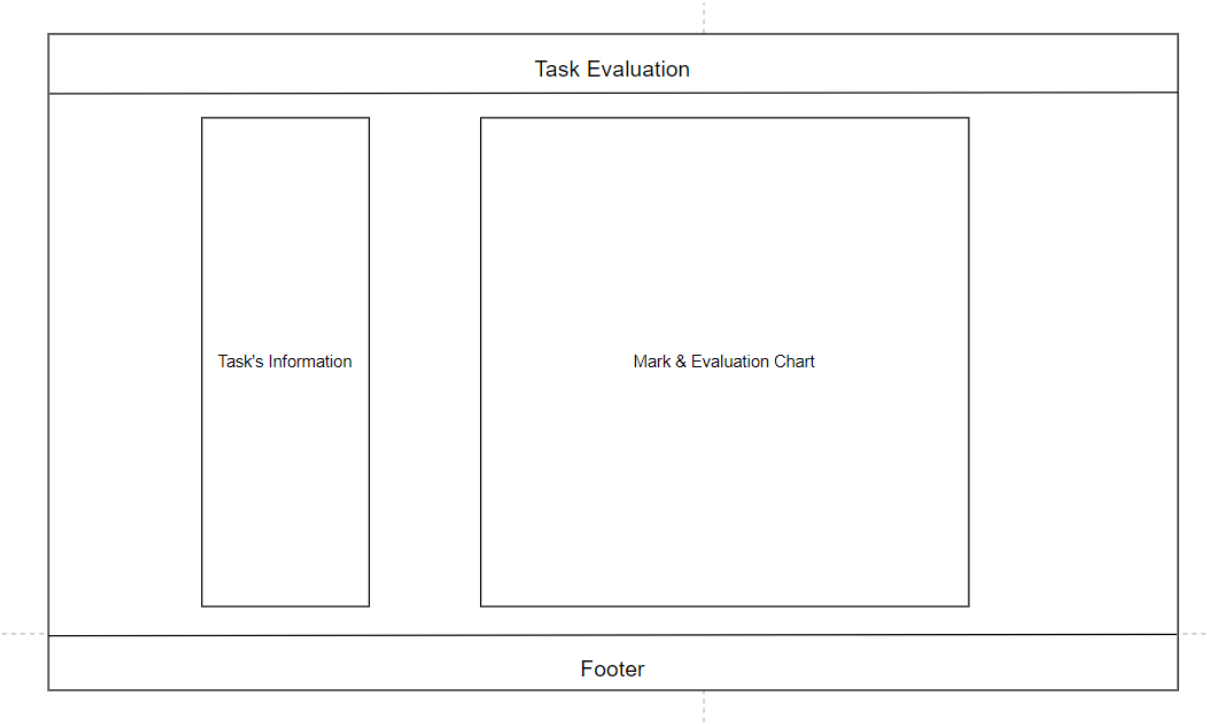
Description: Users can edit their personal information. If the user role is manager or admin, they can edit the information of subordinate employees

From: This screen appears when the user successfully logs in and selects the Account section.

To: Users can add more staff to database and navigate to other pages such as Home, Manage, Accounts through the Navbar.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

VI. Task Evaluation



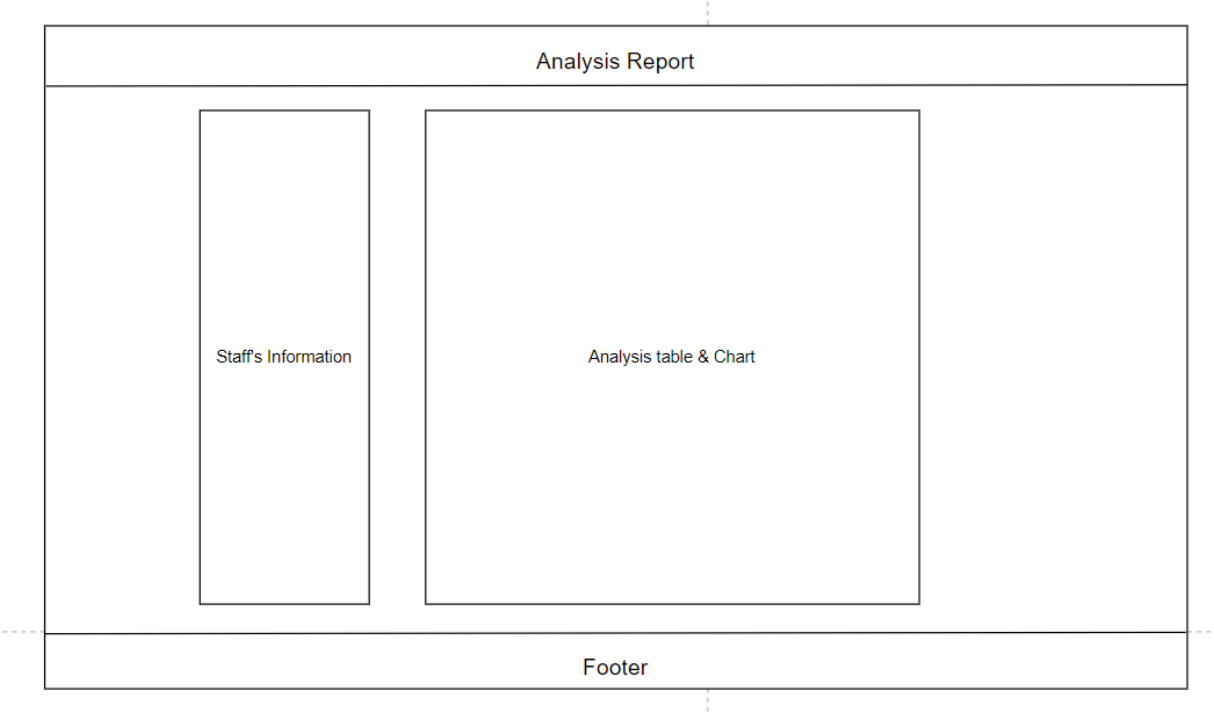
Description: Users can view the evaluated scores

From: This screen appears when the user successfully logs in and selects the Manage section.

To: Users can see more evaluated score or another evaluated task, and also can navigate to other pages such as Home, Manage, Accounts through the Navbar.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

VII. Analysis Report



Description: Users can view the evaluated overall scores, shown through charts

From: This screen appears when the user successfully logs in and selects the Manage section.

To: Users can navigate to other pages such as Home, Manage, Accounts through the Navbar.

Properties	Value
Form - Background color	#c9d6ff, #EEEEEE
Title - Font Size	14
Title - Font Color	Back
Title - Alignment	Left
Background color of Controls on the form	#c9d6ff, #EEEEEE
Button - Color	#6F65E7
Button – Font size	14
Command button - Alignment	Center

Testing document

Sr.No	Features Tested	Remarks
1	Test the login feature for the first time.	x
2	Test the login feature for employees.	x
3	Test the feature displaying tasks of employees.	x
4	Test the feature reporting task performance of employees.	x
5	Test the feature adding tasks for managers.	x
6	Test the feature evaluating task performance of managers.	x
7	Test the feature settings for the application.	x
8	Test add more staff's information	x
9	Test view Staff list	x
10	Test Editing information function	x
11	Test add more evaluation	x
12	Test view analysis report	x
13	Test edit evaluation	x

Final Testlist

Sr.No	Aspected Tested	Suggestion/ Remarks
1	Are all the users able to view the images and links?	x
2	Have all the views, modules and controllers been properly integrated and is the site function as a single page application?	x
3	Are the GUI content devoid of spelling mistakes?	
4	Is the application user-friendly?	x
5	Is the Website launching correctly in all popular browsers?	x
6	Are all the forms validated with proper criteria?	x
7	Do all text links lead to the appropriate website?	x
8	Do all image links lead to the appropriate website?	x
9	Are all the images and links clearly visible on the page?	x
10	Does the Web page work properly in all the tested browsers?	
11	Does the Web page take too long to be loaded fully?	
12	Is the navigation sequences correct through all the Web pages on the site?	
13	Is the JavaScript code working as expected in all click events?	

No	Member	Contents		Table Name	Activity Plan	Date of Preparation of Activity Plan		
					Planed Start Date	Actual Start Date	Actual Days	Status
1	**LÊ TRỌNG NGHĨA**	Admin	*Staffs' information*	User & Evaluate	19/04/2024	25/04/2024	7	OK
2			*View staff's evaluation*		25/04/2024	10/05/2024	7	OK
3		User	*Edit personal information*		25/04/2024	10/05/2024	7	OK
4			*Receive task evaluation*		10/05/2024	22/04/2024	7	OK
1	**NGUYỄN ĐỨC LINH**	Admin	*Task Management*	Task & Task Execution	19/04/2024	25/04/2024	7	OK
2			*Analysis Report*		25/04/2024	10/05/2024	7	OK
3			*Assign Task and Evaluate task*		25/04/2024	10/05/2024	7	OK
4		User	*Task Report*		10/05/2024	22/04/2024	7	OK
1	**TRẦN MINH QUANG**	Admin	*Salary*	Salary & Department	19/04/2024			N/A
2					19/04/2024			N/A
3		User	*Check salary*		19/04/2024			N/A
4			*View plan schedule*		19/04/2024			N/A

	Prepared by (Student)	Approved by (Faculty)
	Project Group No: 03	LE THANH NHAN
Signature		
Date		