



**LKS Kota Tangerang 2024 – IT Software Solutions for Business (Desktop)**

# **EsemkaHRSystem**

## Introduction

**EsemkaHRSystem** is a comprehensive application tailored for efficient management of human resources within organizations. Specifically designed to streamline employee management processes, **EsemkaHRSystem** incorporates advanced features to facilitate employee scheduling, register new employee, and checking employee status.

Imagine a bustling workplace where employee schedules need to be meticulously managed to ensure smooth operations. EsemkaHRSystem steps in as the ultimate solution, offering a user-friendly interface for both administrators and employees.

As a developer tasked with developing **EsemkaHRSystem**, you will create a **Windows Desktop application** to create powerful and efficient applications tailored to meet the unique needs of modern organizations. By leveraging the flexibility and scalability of C#, you will ensure that EsemkaHRSystem provides a seamless user experience while providing comprehensive functionality for administrators and employees.

## Content

1. EsemkaHRSystem.pdf
2. Database-EsemkaEsemkaHRSystem.sql
3. UI Folder

## Instructions for Competitors

### 1. Import Database

Import the database from the database script (.sql) that is already provided to you. This is the only database that will connect to your application. **You are prohibited to perform any changes on the database schema.**

## Responsibilities

Description	Tasks
Project criteria	<ul style="list-style-type: none"> <li>✓ The project name must be in format “<b>Desktop_[XX]</b>” where XX is your PC number.</li> <li>✓ Time management is a crucial thing for this project. So, manage the given time wisely and submit all your works on time.</li> </ul>
Application User Interface	<ul style="list-style-type: none"> <li>✓ You are allowed to change some components as long as it doesn't interfere the business logic and flow.</li> <li>✓ There are no bonus marks for design (features &gt; design).</li> <li>✓ Provides scrollbar to user when the contents shown doesn't conveniently fit to the application</li> <li>✓ You must follow all existing components as designed and <b>without missing a single thing</b>, whether it's labels, buttons or images.</li> <li>✓ There will be a point deduction if any column in the grid is <b>missing</b> or <b>incorrect</b>.</li> </ul>
Validation and error messages	<ul style="list-style-type: none"> <li>✓ The application must runs well without any crashes. Display useful error message to the users when needed.</li> <li>✓ Validation for every input process is a must.</li> <li>✓ Analyze the required validation that is needed in the application. Especially the validations that are not explicitly stated in this project description. This is one of the marking criteria for your analysis result.</li> <li>✓ Specific validation will be included in the project description.</li> </ul>



# 1. Login Form

Figure 1. Login Form

This is the first page that users will see when they visit your form. On this page, users can enter their **email address or username and password** to log in to their account. There is a show password checkbox to see the password in the password textbox. New employees can also register for an account by clicking on the **"Join Now"** button.

- **When the user presses the "Login" button, the following will happen:**
  - If the credentials are invalid, you will see an error message **"Please correct the error and try again"**. The error message will tell you what is wrong with your login credentials.
  - If the user's account is not active, the user will see an error message **"Your account is not active. For more information, please contact the Admin or the HR"**. The error message will tell the user that their account is not active and they need to contact the admin or the HR.
  - If the user's account is active but the join date is later than today's date, the user will see an error message **"Your account has not passed the join date. Your account will be accessible on [User Join Date]. Please wait until then to enter."**. The error message will tell the user that their account is not yet active and they need to wait until the join date before they can log in.
  - If the login is successful, the user will be redirected to the **Admin** or **User** form based on your Role and Job Position.
- **When the user presses the "Join Now" label, the following will happen:**
  - The user will be redirected to the **"Register New Employee Form"** page.

## 2. Register New Employee Form

The screenshot shows a web form titled "EsemkaHRSystem" with the subtitle "Register as a new Employee". The form is organized into two primary sections: "General Information" and "Employee Information".

**General Information Section:**

- Username:** A text input field.
- Id Card Number:** A text input field.
- Address:** A text input field.
- Country:** A dropdown menu.
- Full Name:** A text input field.
- Gender:** A dropdown menu.
- Phone:** A text input field.
- City:** A dropdown menu.
- Email:** A text input field.
- Religion:** A dropdown menu.
- Civil Status:** A dropdown menu.
- Password:** A text input field.
- Date of Birth:** A date picker showing "Tuesday, 20 February 2024".
- Citizenship:** A dropdown menu.
- Photo:** A placeholder box for a profile picture.

**Employee Information Section:**

- Job Title:** A dropdown menu.
- Join Date:** A date picker showing "Tuesday, 20 February 2024".

At the bottom right of the form, there are two buttons: "Register" (in blue) and "Cancel" (in grey).

Figure 2. Register New Employee Form

This is the page where new employees can register for an account. On this form, prospective employees are required to fill in personal data to create a profile.

- **Rules:**
  - o The Gender dropdown contains only for Male and Female.
  - o The Civil Status dropdown contains only for Single and Married.
  - o The Religion dropdown contains only for Islam, Kristen, Katolik, Hindu, Buddha and Konghucu.
  - o The Citizenship contains Countries only.
  - o The Job Title must be below level  $\leq 5$
- **When the user presses the "Register" button, the following will happen:**
  - o **If All fields must be filled** out by the user **except** the Photo. If any field is left empty, an error message will prompt the user to complete all required fields before proceeding.
  - o The Id Card Number & Phone Fields **must be Number only**.
  - o The system will check that the join date and date of birth entered by the user are not in the **past**. If either date is in the past, an error message will be displayed.
  - o Upon selecting a city from the dropdown menu, the system will verify that the chosen city corresponds to the selected country. If the selected city does not belong to the chosen country (**For example**, if the user chooses Indonesia, the city will appear according to the country).
  - o The system will perform a check to ensure that the entered **username** and **email address** are **unique** and **not already** associated with another employee in the system. If the username or email address is found to be already in use, an error message will be displayed.
  - o This form should register the user with the "User" role, not the Admin.
  - o The password length must be 6 characters and the password field must be masked. And the password must be saved by SHA256 to database.
  - o If the register is successful, the user will be redirected to the **Login Form**.
- When the user presses the **"Cancel"** Button, the user will be redirected to the "Login Form".

### 3. Admin Form



Figure 3. Admin Form

For the Admin Form accessible to users **with the "Admin" role** and the **Job Title above level > 5**. It serves for managing various aspects of employee data and schedules. The Form is designed using a **Multiple Document Interface (MDI) Form**, providing a structured layout for displaying and managing multiple child windows within the main form. MDI child forms **should not be duplicated**. For example, when a user has opened an employee form and clicks on the form again, it should not reopen.

Additionally, a Menu Strip is incorporated at the top of the form to offer convenient access to different functionalities. The Menu Strip is divided into several categories to enhance user experience and efficiency.

- **Master Menu:**
  - o **Employee:** Allows administrators to view, add, edit, or delete employee records.
  - o **Job:** Provides options to manage job positions within the organization, including adding, editing, or deleting job titles.
  - o **Country:** Facilitates the management of country and city data, allowing users to add, edit, or delete countries and cities as necessary.
  - o **City:** Facilitates the management of country and city data, allowing users to add, edit, or delete countries and cities as necessary.
- **Generate Employee Schedule**
  - o Offers functionality to generate employee schedules based on predefined criteria.
- **Logout**
  - o Users to securely log out of their accounts. If clicking the Logout button, the user will be redirected to the **Login Form**.

## 4. User Form



Figure 4. User Form

For the user Form accessible to **users with the "User" role** and **below level  $\leq 5$** , the functionality will be focused on viewing schedules and managing personal profiles. To facilitate seamless navigation and organization, the Form is designed using a **Multiple Document Interface (MDI) Form**, providing a structured layout for displaying and managing multiple child windows within the main form. MDI child forms should not be duplicated. For example, when a user has opened my schedule form and clicks on the form again, it should not reopen.

Additionally, a Menu Strip is incorporated at the top of the form to offer convenient access to different functionalities. The Menu Strip is divided into several categories to enhance user experience and efficiency.

- **My Schedule**
  - o This feature will provide users with information regarding their assigned shifts, work locations, workdays, start dates, end dates, and any other relevant details.
- **My Profile**
  - o The users allow to view and manage their personal profile information. Users can review details such as their contact information, address, role, salary and any other relevant data stored in their profile. Additionally, users can update their profile information if needed, ensuring that their records are accurate and up to date.
- **Logout**
  - o Users to securely log out of their accounts. If clicking the Logout button, the user will be redirected to the **Login Form**.



## 5. Admin Master Employee Form

Figure 5. Admin Master Employee Form

The Master Employee Form is used to manage employee data. It features a user-friendly interface with a grid layout that displays important information about each employee. The data is Only **employees** whose role is **user** and **below level <= 5**. The grid includes the following columns as per the image above.

- Rules:
  - o Validation:
    - All form fields must be validated and the Grid Date must be correct Format (dd MMM YYYY).
    - The Start Date must be less than End Date field.
  - o When the Admin clicking the Edit button and click the Save button, the system will be edited the data.
  - o This form only for editing the Employees.
  - o Give a different row color for non-active Employees.
  - o The Users can search by Full Name.
- Actions:
  - o When the admin clicks the "Edit" button, a form will appear displaying the selected employee's data. However, the admin will only be able to modify specific fields, including:
    - **Salary:** The admin can input the updated salary for the employee.
    - **Employee:** The employee full Name.
    - **Department:** The admin can access and modify various details related to an employee's departmental information.
    - **Employee Status:** The admin can change the status of the employee.
    - **Start Date and End Date:** The admin can select the Start Date and End Date for the Employee Status.
    - **Active:** For the Employee Active Status.
  - o The Cancel Button will be clear the form.

## 6. Admin Master Job Form

The screenshot shows a web application window titled 'MainForm' with a menu bar containing 'Master', 'Generate Employee Schedule', and 'Logout'. The main content area displays a 'Master Job' form. The form has a title bar and a close button. It contains two main sections: 'Job Position' and 'Job Title'.

The 'Job Position' section has a list with the following items: 'Name', 'Entry Level', 'Management' (selected), and 'Professional'.

The 'Job Title' section displays a table of job titles associated with the selected position. The table has the following columns: 'Name', 'Level', 'JobPosition', 'Edit', and 'Delete'.

Name	Level	JobPosition	Edit	Delete
CEO	10	Management	Edit	Delete
CFO	9	Management	Edit	Delete
COO	9	Management	Edit	Delete
Vice President	8	Management	Edit	Delete
Director	7	Management	Edit	Delete
Manager	6	Management	Edit	Delete
Job	6	Management	Edit	Delete

Below the table, there are input fields for 'Name' and 'Level' (with a dropdown menu showing '0'). At the bottom, there are 'Save' and 'Cancel' buttons.

Figure 6. Admin Master Job Form

In the form, there are two grids available. When the admin selects a job position from the first grid, corresponding job titles associated with that job position will dynamically appear in the second grid.

This feature streamlines the process of managing job positions and their respective titles. Admins can easily navigate through the available Job Positions and view the related job titles without the need for manual searches or additional input.

- Save and Rules:
  - o Validation:
    - All form fields must be validated. Duplicate entries for the "Name" in All Job Title includes different Job Position field are not allowed and show the error messages.
  - o When the Admin clicking the Edit button and click the Save button, the system will be edited the data.
  - o If the Admin does not press 'Edit Button' and fill out the form, then save, the system will create new data Job Title.
  - o The admin can only insert, edit and delete the Job Title.
- Actions:
  - o Edit Button:
    - Clicking the "Edit" button enables users to modify the information of the selected job title.
    - Users can update the name and level of the job title as needed.
  - o Delete Button:
    - Clicking the "Delete" button allows users to remove the selected job title from the system. Before deleting, a yes or no choice message appears.
    - If an error occurs due to the data being in use elsewhere, a message will be displayed to inform the user. Otherwise, the country data will be deleted.
  - o The Cancel Button will be clear the form.

## 7. Admin Master Country Form

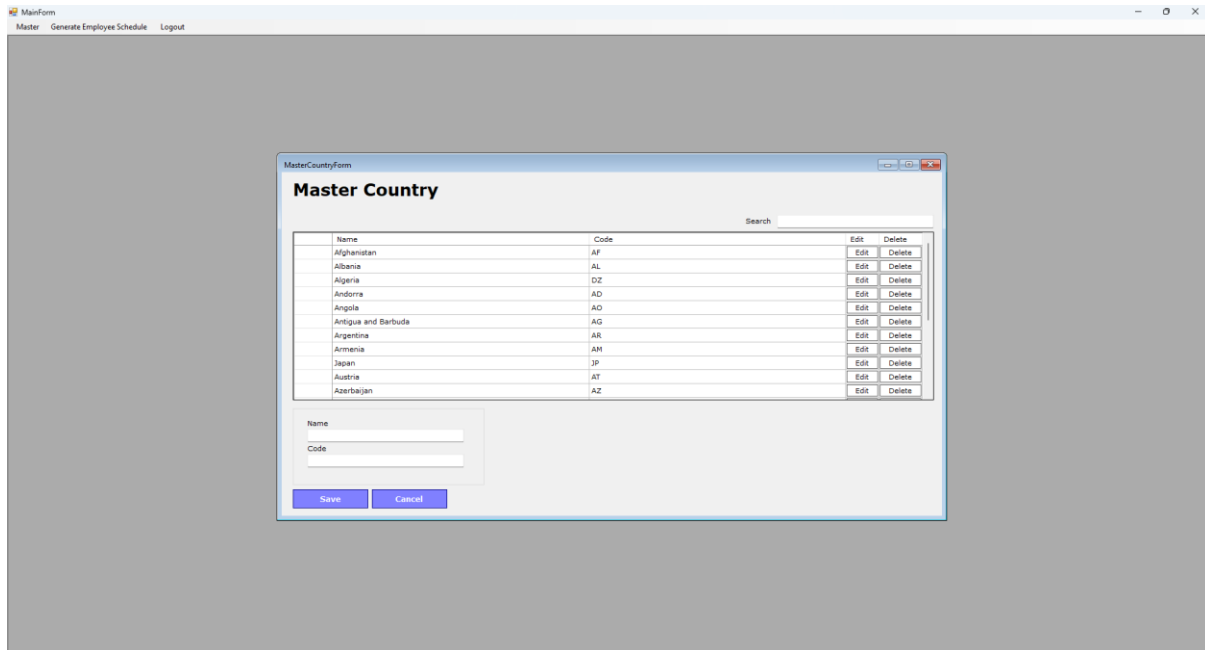


Figure 7. Admin Master Country Form

The Master Country Form provides a centralized interface for managing country data within the system. It features a single grid displaying the following columns:

- Name: The name of the country.
  - Code: The country codes.
  - Edit Button: Allows Admins to edit the selected country's information.
  - Delete Button: Enables Admins to delete the selected country's data.
- Save and Rules:
    - o Validation:
      - All form fields must be validated. Duplicate entries for the "Name" field are not allowed and show the error messages.
    - o When the Admin clicking the Edit button and click the Save button, the system will be edited the data.
    - o If the Admin does not press 'Edit Button' and fill out the form, then save, the system will create new data.
    - o The Users can search by Name and Code.
  - Actions:
    - o Edit Button:
      - Clicking the "Edit" button enables users to modify the information of the selected country.
      - Users can update the name and code of the country as needed.
    - o Delete Button:
      - Clicking the "Delete" button allows users to remove the selected country from the system. Before deleting, a yes or no choice message appears
      - If an error occurs due to the data being in use elsewhere, a message will be displayed to inform the user. Otherwise, the country data will be deleted.

## 8. Admin Master City Form

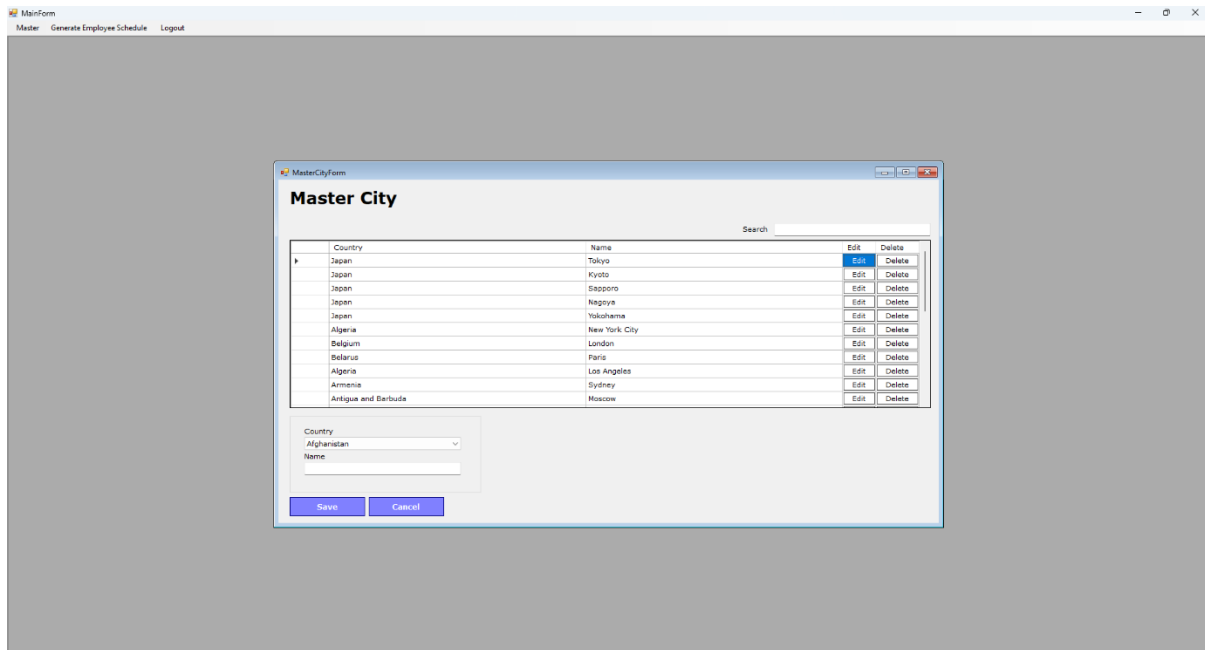


Figure 8. Admin Master City Form

The Master City Form functions to managing city data within the system. It comprises a single grid containing the following columns:

- Name: The name of the city.
- Country: The Country to which the city belongs.
- Edit Button: Allows users to edit the selected city's information.
- Delete Button: Enables users to delete the selected city's data.
- Save and Rules:
  - o Validation:
    - All form fields must be validated. Duplicate entries for the "Name and Country" field are not allowed and show the error messages.
  - o When the Admin clicking the Edit button and click the Save button, the system will be edited the data.
  - o If the Admin does not press 'Edit Button' and fill out the form, then save, the system will create new data.
  - o The Users can search by Name and Country.
- Actions:
  - o Edit Button:
    - Clicking the "Edit" button enables users to modify the information of the selected city.
    - Users can update the Name and Country as required.
  - o Delete Button:
    - Clicking the "Delete" button allows users to remove the selected city from the system. Before deleting, a yes or no choice message appears
    - If an error arises due to the data being utilized elsewhere, a notification will be presented to the user. Otherwise, the city data will be successfully deleted.

## 9. Admin Generate Employee Schedule Form

Figure 9. Admin Generate Employee Schedule Form

The "Generate Employee Schedule" Admins have the capability to select the employee, work day, work location, workday, start date, end date and etc to generate a tailored schedule:

- Validation:
  - o All fields in the form must be filled out to proceed with schedule generation.
  - o Ensure the Employees Combo box is Active, Joining Date  $\leq$  Date Now, Role is User, and JobTitle Level  $\leq$  5.
  - o Ensures that the selected start date cannot be later than the end date.
- When the user presses the **"Generate Schedule"** Button, the following will happen:
 

The system dynamically generates schedules based on the selected employee, workday, start date, and end date. For example, if the admin selects Monday as the workday and sets the start date to 1 February 2024, and the end date to 29 February 2024, the system will generate schedules for all Mondays within that timeframe. In this scenario, the system would generate schedules for February 5, 12, 19, and 26, aligning with the specified workday.
- Clicking the "Delete" button allows users to remove the selected city from the system. Before deleting, a yes or no choice message appears.

## 10. My Schedule Form

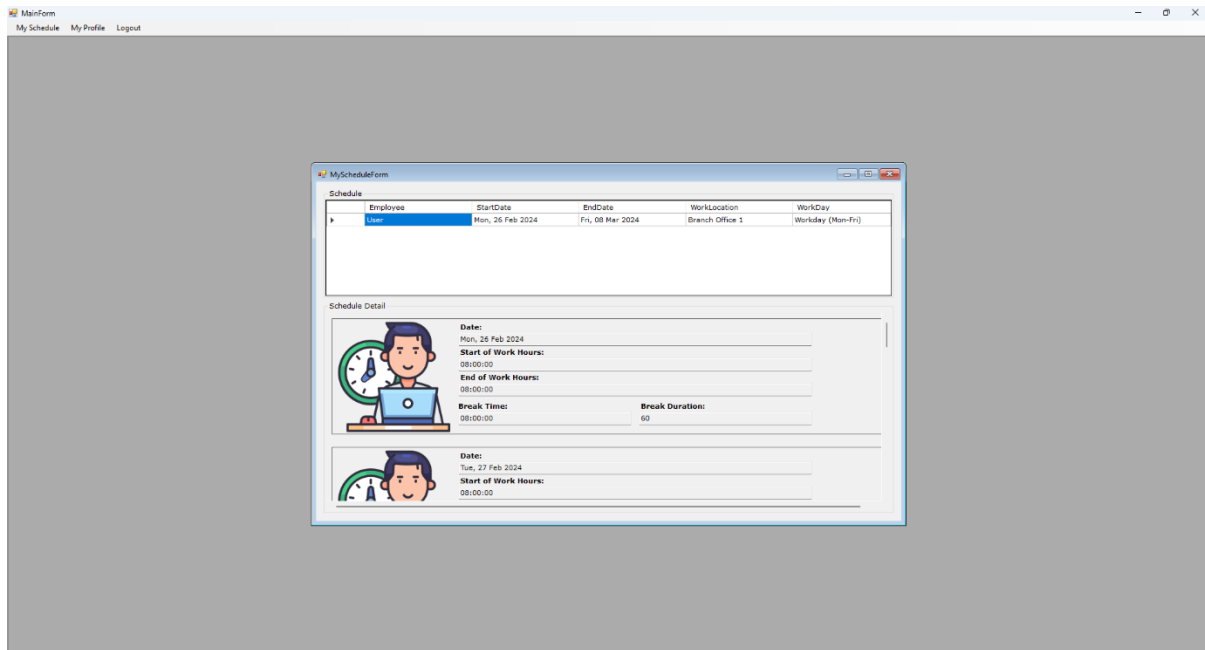


Figure 10. User My Schedule Form (1)

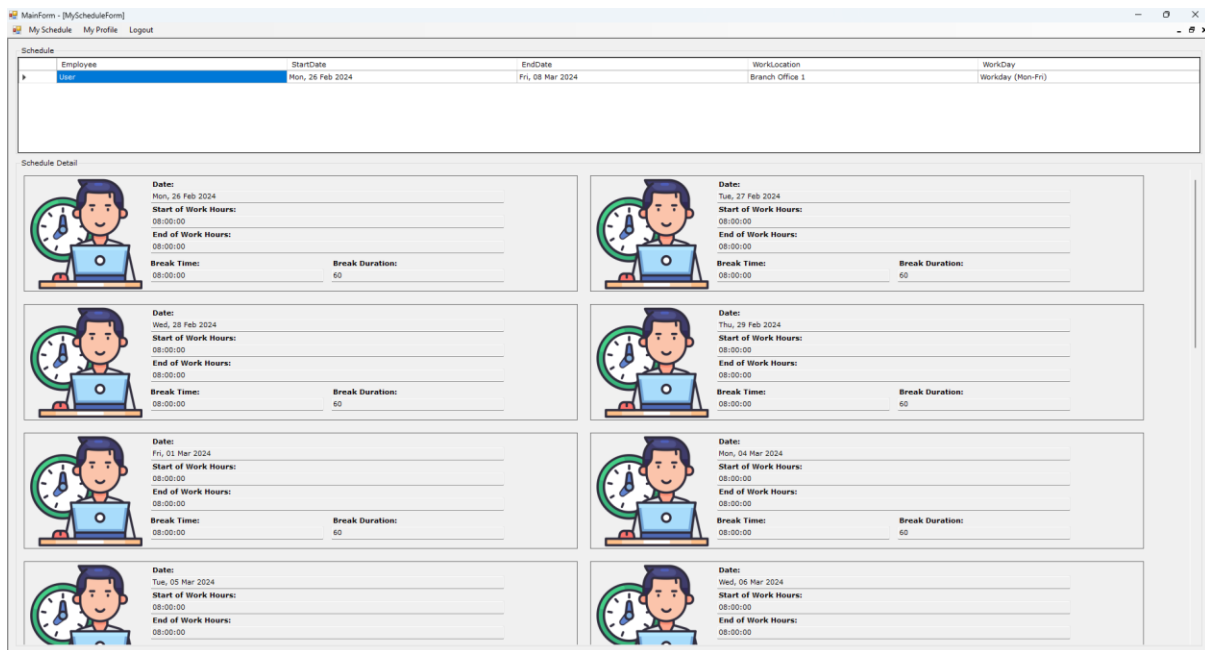


Figure 11. User My Schedule Form (2)

The MySchedule Form provides a user-friendly interface for users to view and manage their schedules. This form is built using User Controls to create a flexible and visually appealing layout, without utilizing a grid:

- Features:
  - o When the user selects a schedule, the schedule details will appear and a display will appear as shown in pictures (**Figure 11**).

## 11. My Profile Form

**EsemkaHRSystem**  
Register as a new Employee

**General Information**

Username	Id Card Number	Address	Country
user	2	Jakarta	Indonesia
Full Name	Gender	Phone	City
User	Male	0817625361253	Tangerang
Email	Religion	Civil Status	Photo
user@email.com	Islam	Single	
Password	Date of Birth	Citizenship	
***	Tuesday, 20 February 2024	Indonesia	

**Employee Information**

Salary	Status
5000000,0000	Full-time
Job Title	Department
Designer	Engineering
Start Date	Join Date
Tuesday, 20 February 2024	Wednesday, 21 February 2024
End Date	
Wednesday, 08 May 2024	

**Save**

Figure 12. My Profile Form

The My Profile Form allows users to edit their profile information user login, including personal details, employee information and more.

- Rules:
  - o When clicking the Save Button the forms fields must be validated.
  - o The fields Username, Id Card Number, Salary, Job Title, Department, Status, Join Date, Start Date and End Date are disabled fields.