

Task Management System

Java Programming
CSCI – 2210 – 01

TEAM WORA



University of
New Haven

TAGLIATELA
COLLEGE OF ENGINEERING

Spring 2021

Team Members & Roles

- **Team Name**

WORA

- **Team Members**

- | | |
|---------------------------|--|
| 1. Ahmed Muntasir Hossain | ahoss1@unh.newhaven.edu (Team Head) |
| 2. Emily R. Carlow | ecarl3@unh.newhaven.edu (Team Member) |
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| 5. Nathan A. Platt | nplat2@unh.newhaven.edu (Team Member) |

- **Roles of Team Members**

Each team member contributed equally towards the following roles:

Programmer, Researcher, UX/UI Designer, Report Writer, Create Task Page, Search for Tasks Page, and Calendar Page

Specific Contributions to the Application

1. Ahmed Muntasir Hossain: Database Administrator, User Menu, Tasks for this Week, New User List
2. Emily R. Carlow: User Sign Up and Log in, Create New Admin Account, Approved User List
3. Anta R. Fall: Admin Sign Up and Log in
4. Jake E. Sullivan: Database Administrator, Exit
5. Nathan A. Platt: Update Admin Account, Error Screen

Introduction

- The Task Management System (TMS) is an application that manages and holds a record of the personal tasks of different users
- TMS displays a calendar for the desired week, month, or year
- Using our application, the users can add, edit, and delete tasks, see their individual calendar data, and update them

The application has two users:

1. Admin
2. General User

Admin

- The admin logs in using their credentials (username and password) through the admin portal.

The admin is displayed a menu consisting of the following options:

1. New User List: Displays the username and password of new users
2. Approved User List: Displays the username and password of approved users
3. Create New Admin Account: Creates an admin account for a new admin
4. Update Admin Account: Updates the personal login information of an admin
5. Log Out: Logs out of the portal and returns the admin to the log in page

Admin Login Flow Chart

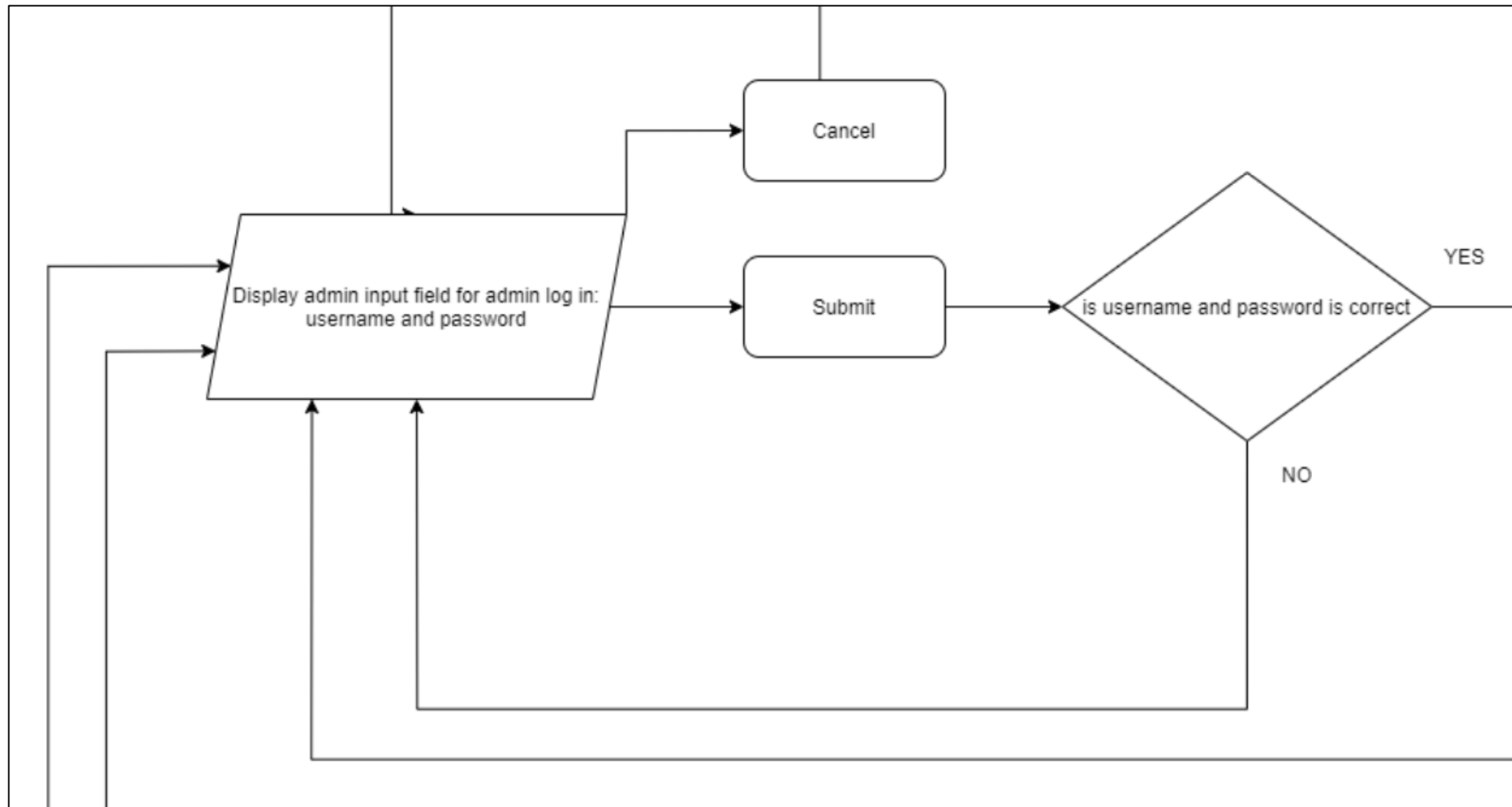


Fig 1: Admin Login Flow Chart

Admin Menu Flow Chart

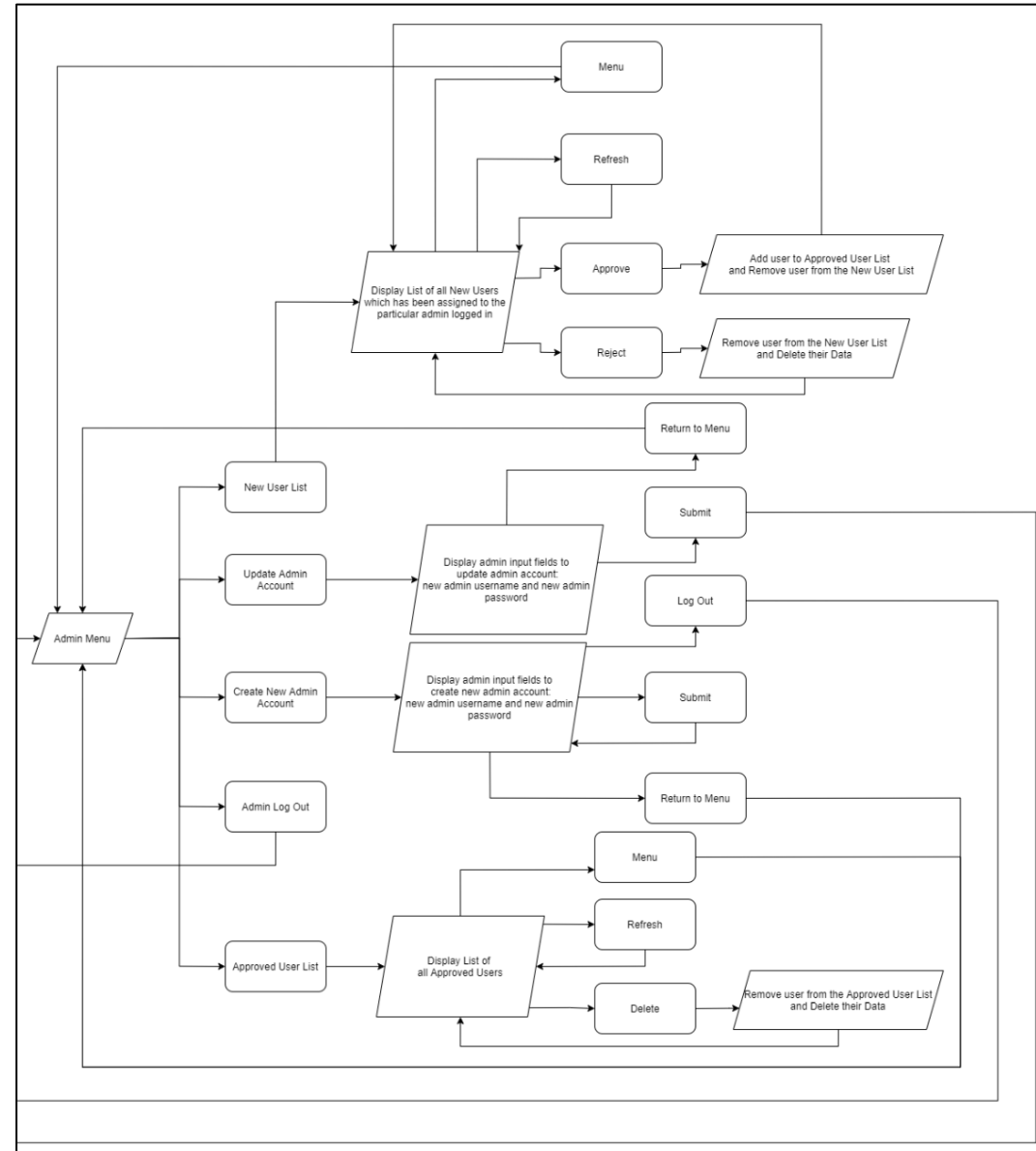
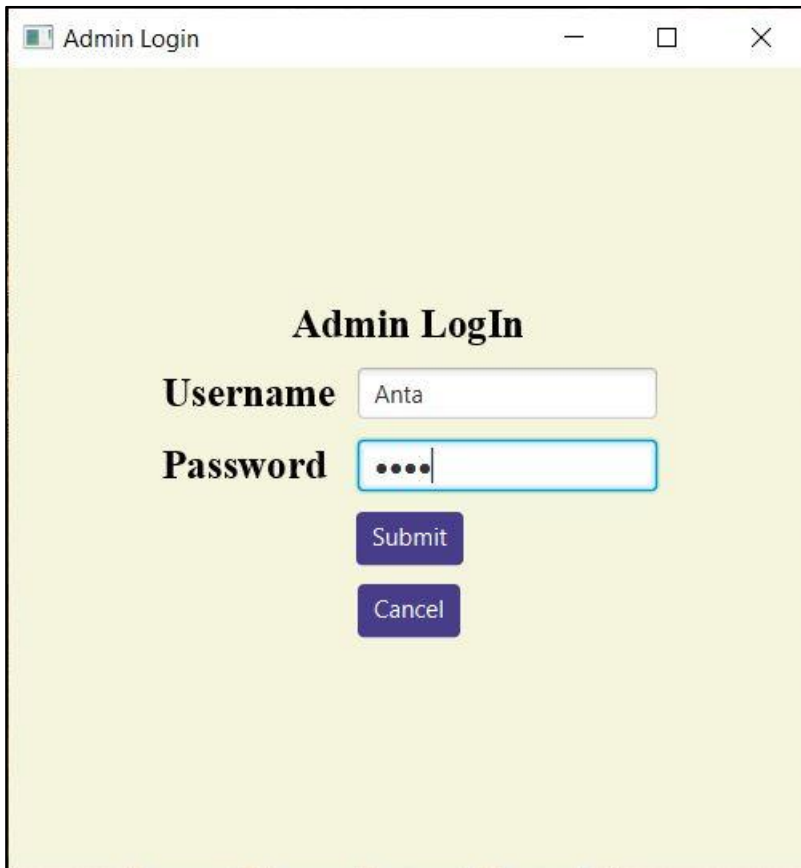


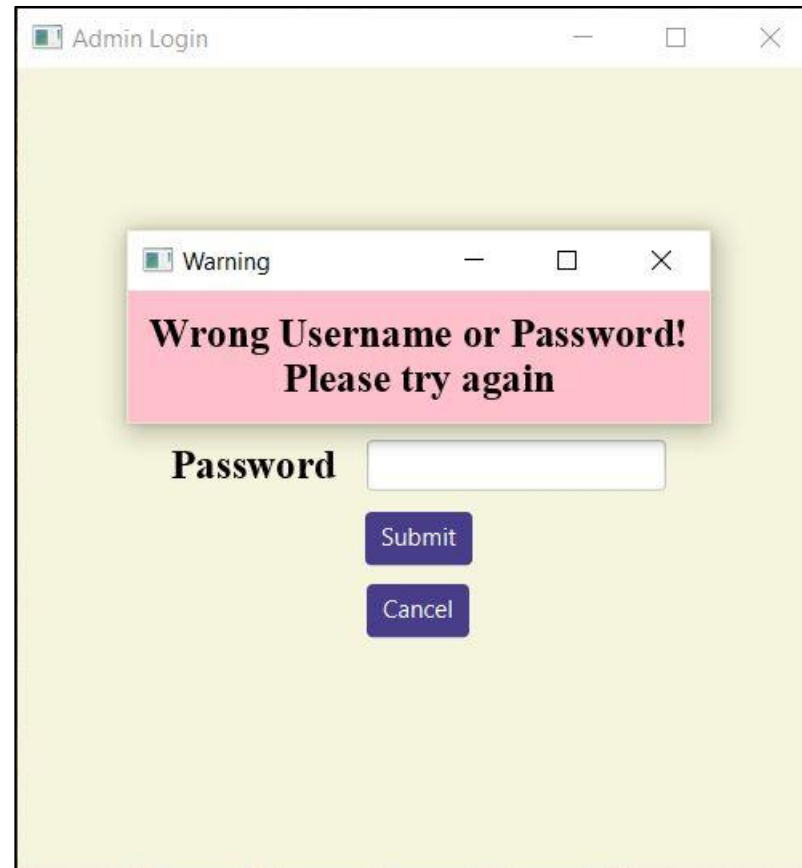
Fig 2: Admin Menu Flow Chart

Admin Login, Warning Message, & Admin Menu



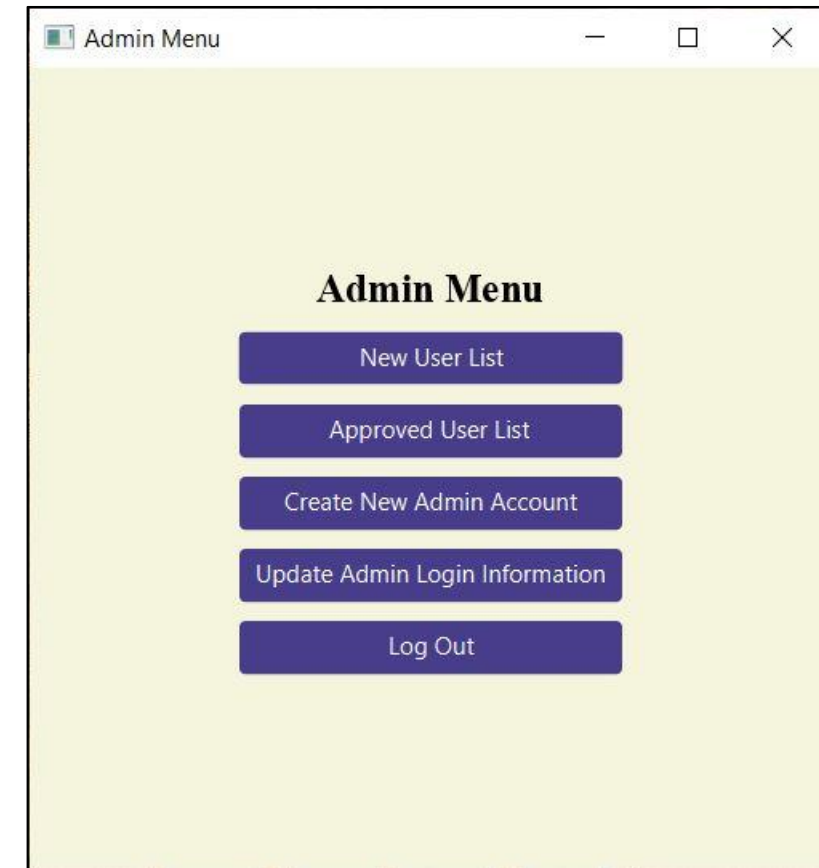
The Admin Login GUI is a window titled "Admin Login" with a light yellow background. It features a title "Admin LogIn" in bold black text. Below the title, there are two input fields: "Username" with the text "Anta" and "Password" with four dots. Below the password field, there are two buttons: "Submit" and "Cancel".

Fig 3: Admin Login GUI



The Warning Message during Admin Login GUI shows a "Warning" dialog box with a pink background. The dialog box contains the text "Wrong Username or Password! Please try again" in bold black text. Below the dialog box, the "Password" input field and the "Submit" and "Cancel" buttons are visible.

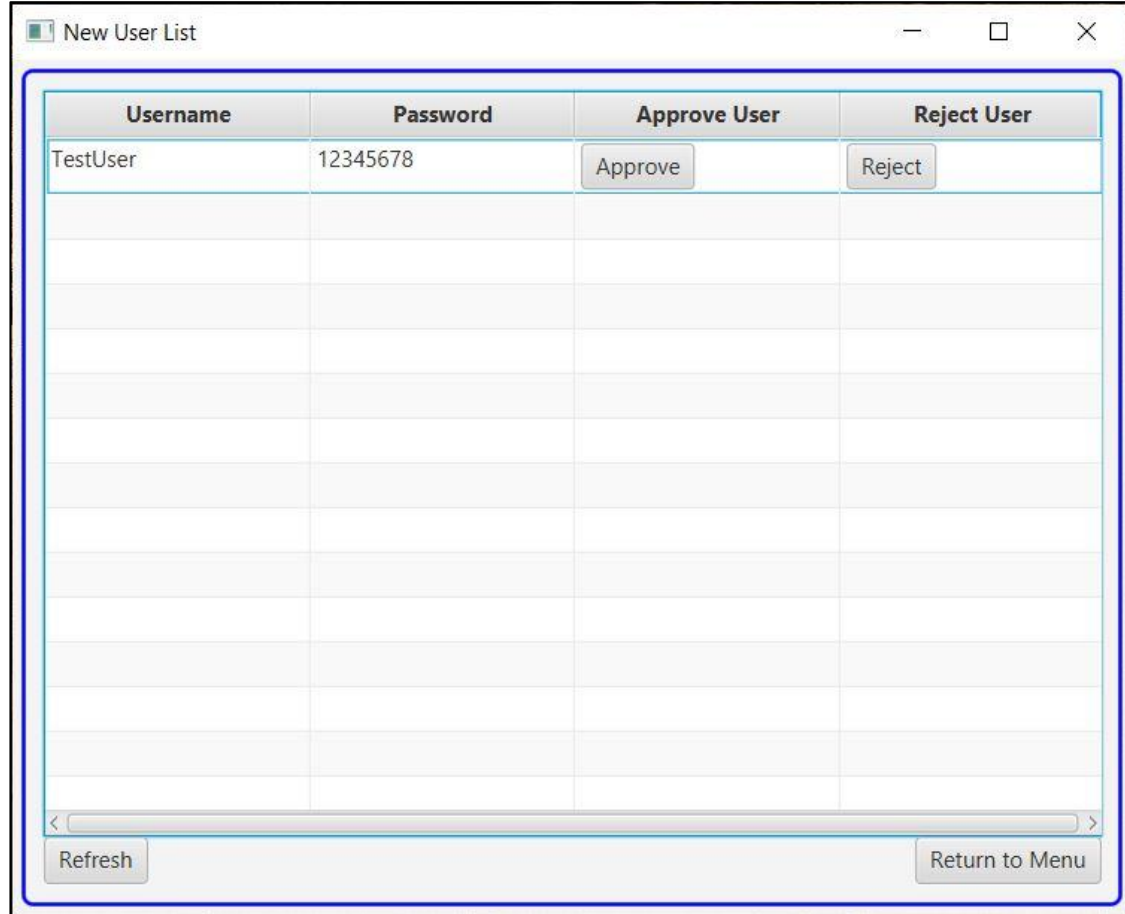
Fig 4: Warning Message during Admin Login GUI



The Admin Menu GUI is a window titled "Admin Menu" with a light yellow background. It features a title "Admin Menu" in bold black text. Below the title, there are five buttons: "New User List", "Approved User List", "Create New Admin Account", "Update Admin Login Information", and "Log Out".

Fig 5: Admin Menu GUI

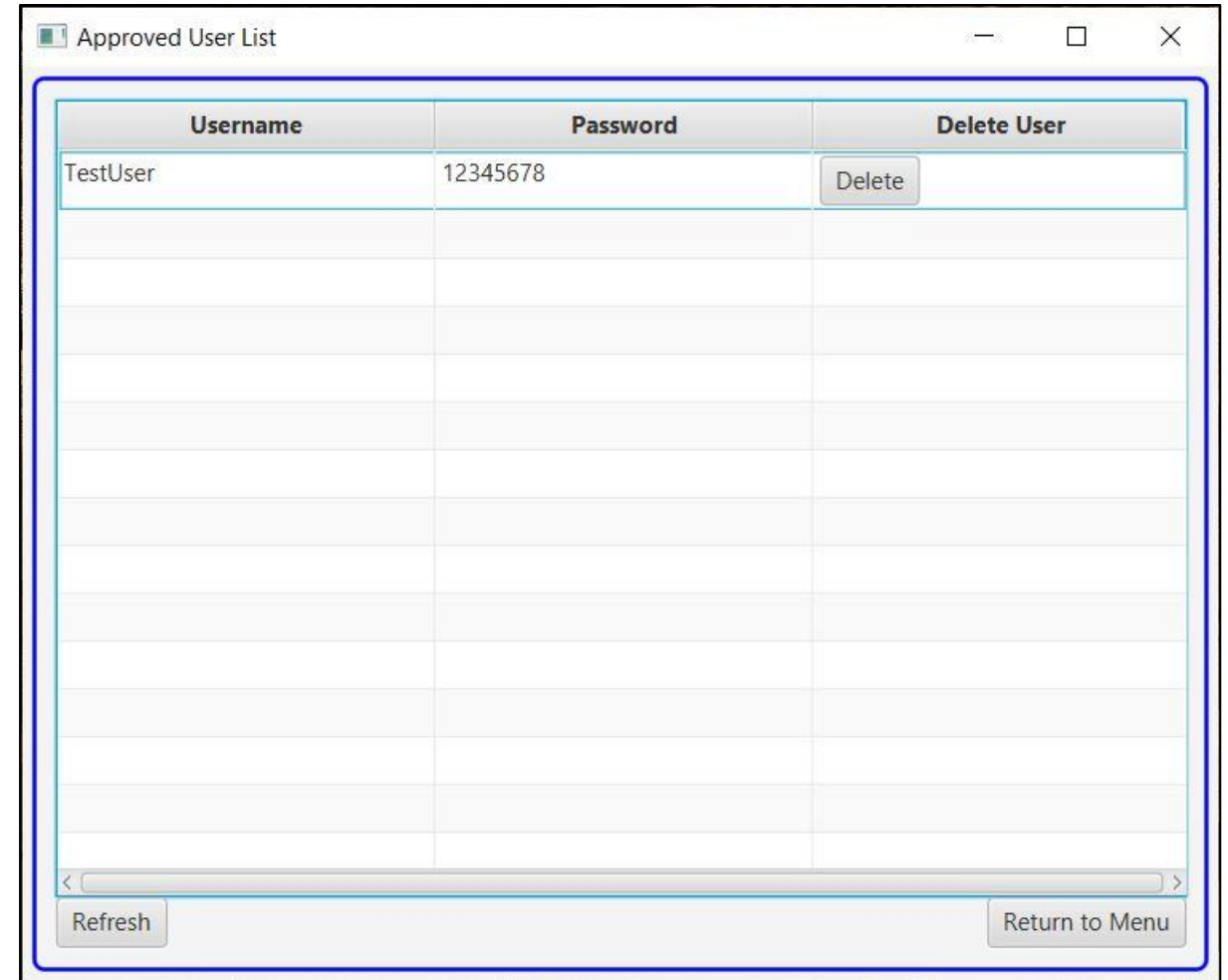
New User List & Approved User List



The 'New User List' window features a table with four columns: 'Username', 'Password', 'Approve User', and 'Reject User'. The first row contains 'TestUser' and '12345678', with 'Approve' and 'Reject' buttons in the respective action columns. The table has 11 rows in total. At the bottom, there are 'Refresh' and 'Return to Menu' buttons.

Username	Password	Approve User	Reject User
TestUser	12345678	Approve	Reject

Fig 6: New User List GUI

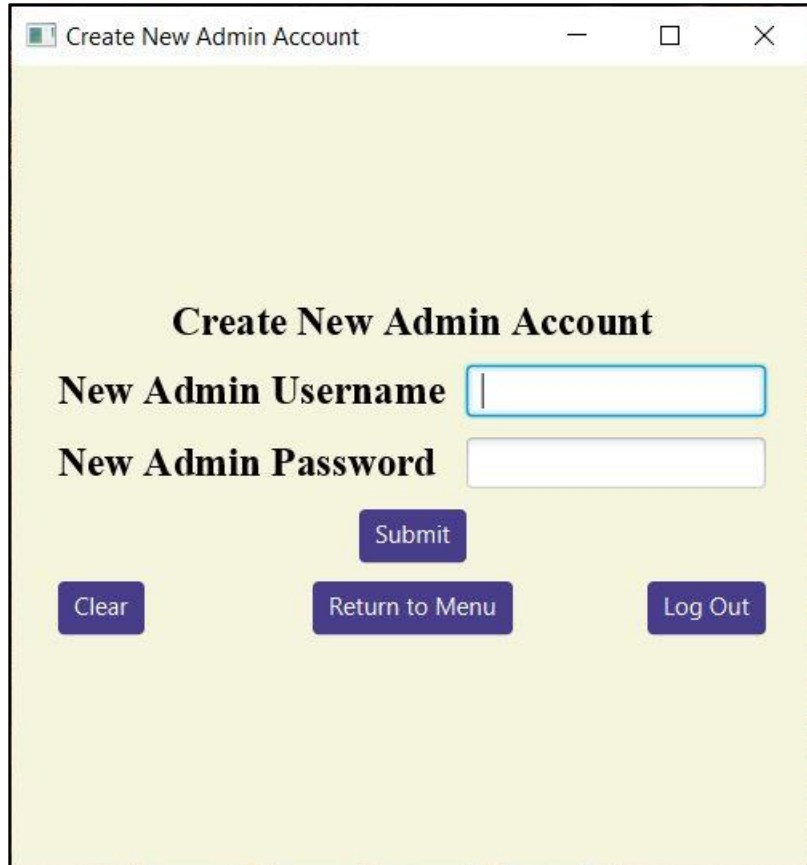


The 'Approved User List' window features a table with three columns: 'Username', 'Password', and 'Delete User'. The first row contains 'TestUser' and '12345678', with a 'Delete' button in the 'Delete User' column. The table has 11 rows in total. At the bottom, there are 'Refresh' and 'Return to Menu' buttons.

Username	Password	Delete User
TestUser	12345678	Delete

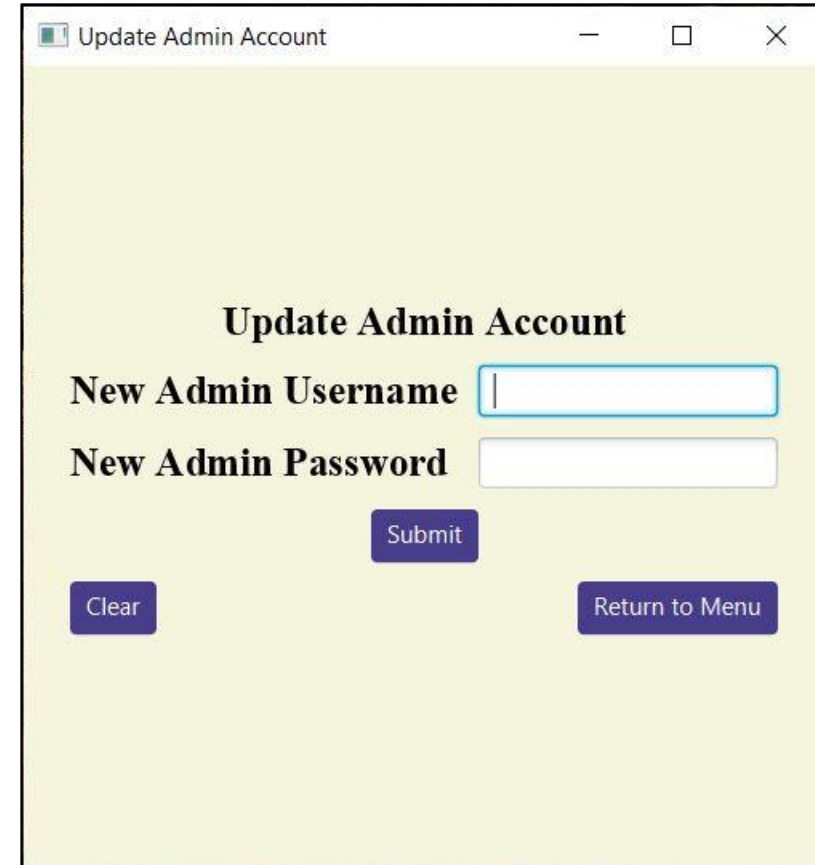
Fig 7: Approved User List GUI

Create New Admin & Update Admin Pages



The image shows a web browser window titled "Create New Admin Account". The page has a light yellow background. At the top center, the title "Create New Admin Account" is displayed in bold black text. Below the title, there are two input fields: "New Admin Username" and "New Admin Password". The "New Admin Username" field is a text input with a blue border, and the "New Admin Password" field is a password input with a white background and a blue border. Below the input fields, there are three buttons: "Submit" (purple), "Clear" (purple), and "Return to Menu" (purple). The "Log Out" button is also present at the bottom right.

Fig 8: Create New Admin Account GUI



The image shows a web browser window titled "Update Admin Account". The page has a light yellow background. At the top center, the title "Update Admin Account" is displayed in bold black text. Below the title, there are two input fields: "New Admin Username" and "New Admin Password". The "New Admin Username" field is a text input with a blue border, and the "New Admin Password" field is a password input with a white background and a blue border. Below the input fields, there are three buttons: "Submit" (purple), "Clear" (purple), and "Return to Menu" (purple).

Fig 9: Update Admin Account GUI

General User

- The general user creates a new account
- The new user is unable to log into TMS until they are approved by the admin
- After an admin approves their account, from the new user list in the Admin Portal, the user logs into TMS.

The user is displayed a menu consisting of the following options:

1. Calendar:

- Displays the current date, month, and year in a calendar format.
- The user has the option to search for a particular month and year
- The search will output a calendar of the month and year inputted by the user.

2. Tasks for this Week:

- Displays a table listing all the tasks that the user has for this week (7 days) starting from the current local date

General User (cont.)

3. Create New Task:

- The user inputs the details for a task and adds the task to TMS
- Details include title, start date, start time, end date, end time, and description

4. Search for Task:

- Search for a particular task by inputting data in the following fields: title, start date, start time, end date, end time, duration, and description.
- Based on the user's input, TMS outputs all the tasks that match with the user's request in a tabular form.

5. Delete User:

- Removes their username, password, and corresponding recorded data from TMS

6. Log Out:

- Logs Out of the portal and returns the user to the user login page.

7. Exit:

- Thanks, the user for using TMS and closes the application

User Login & Create New User Flow Chart

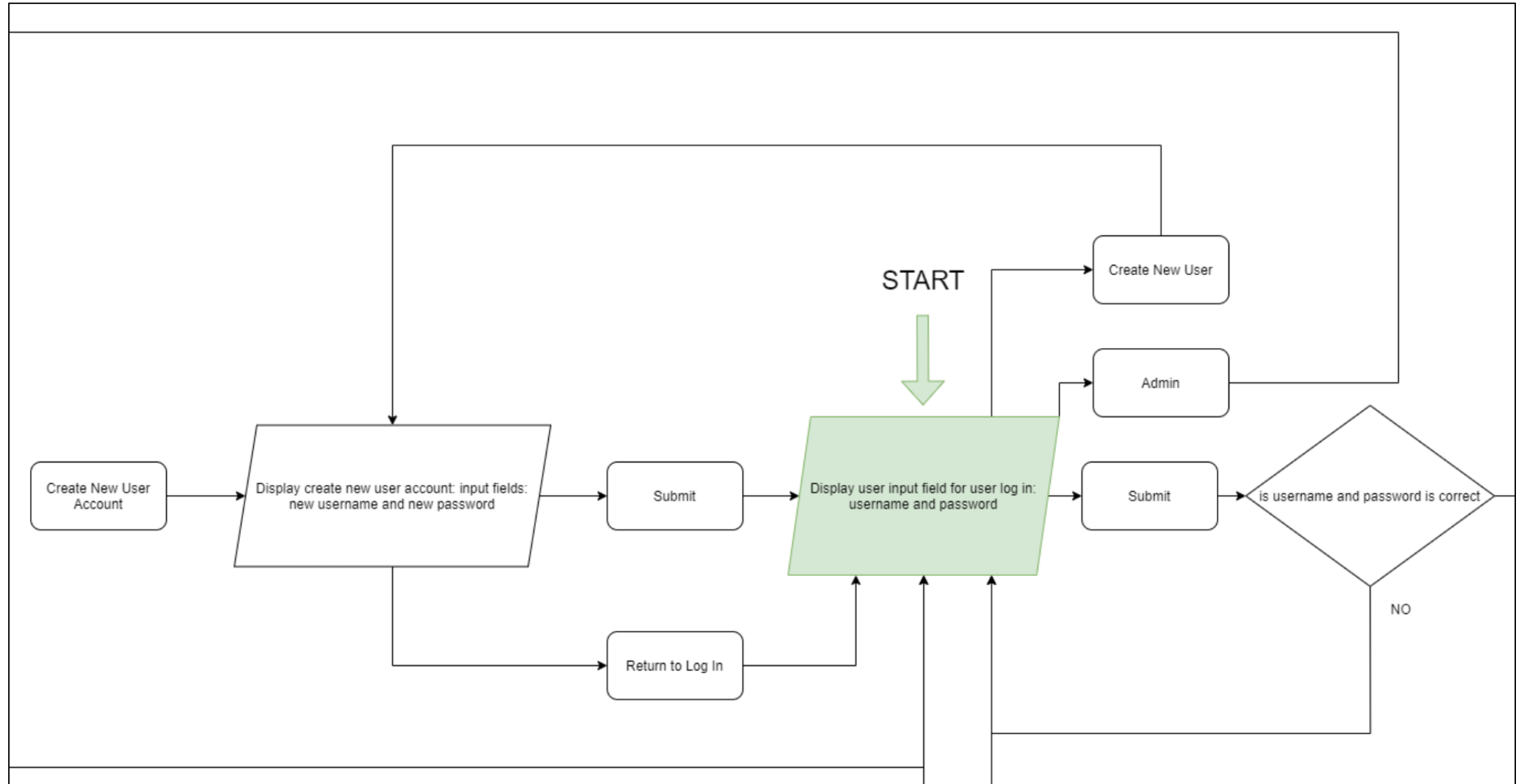


Fig 10: User Login & Create New User Flow Chart

User Menu Flow Chart

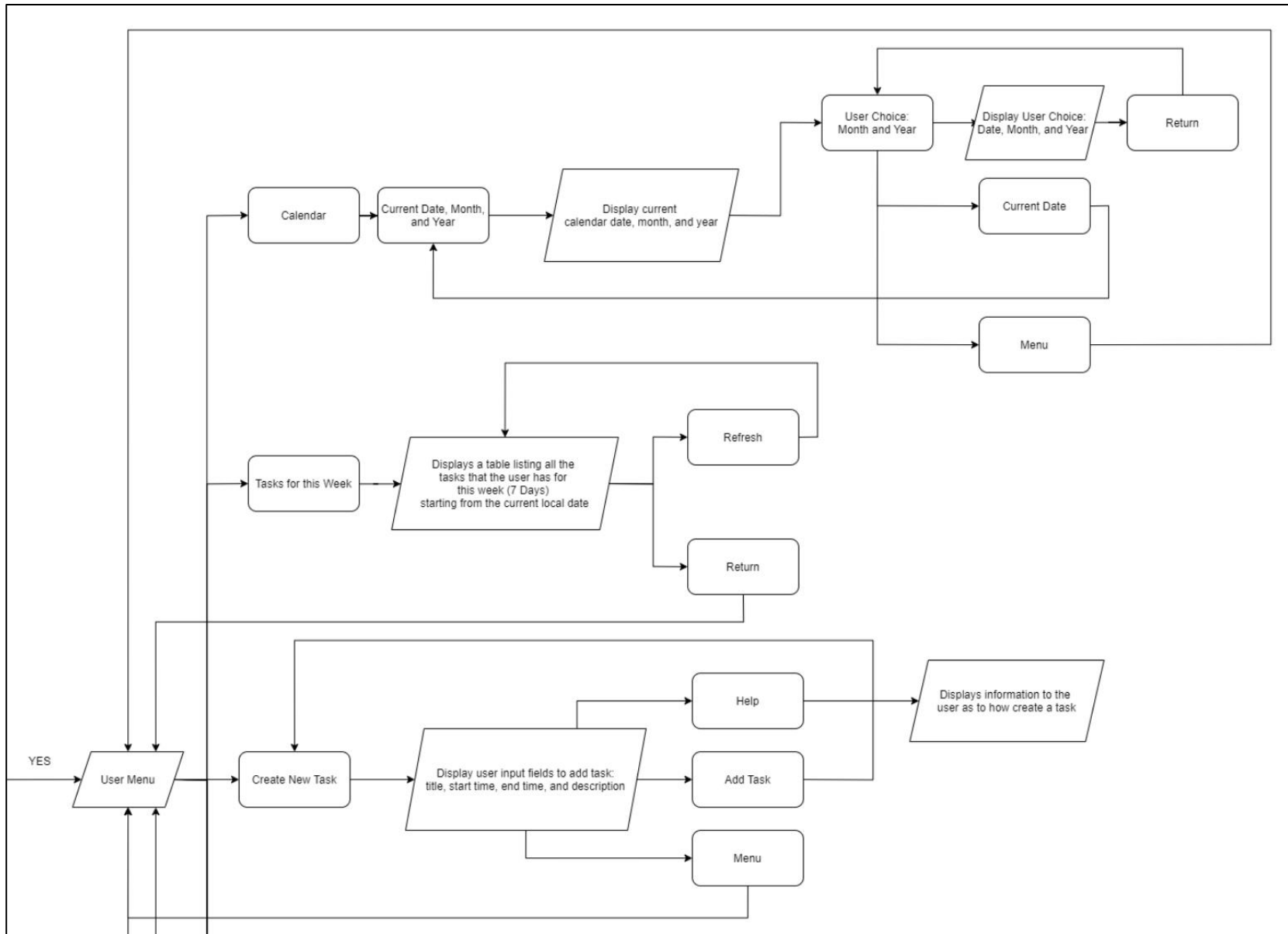


Fig 11: User Menu Flow Chart

User Menu Flow Chart (cont.)

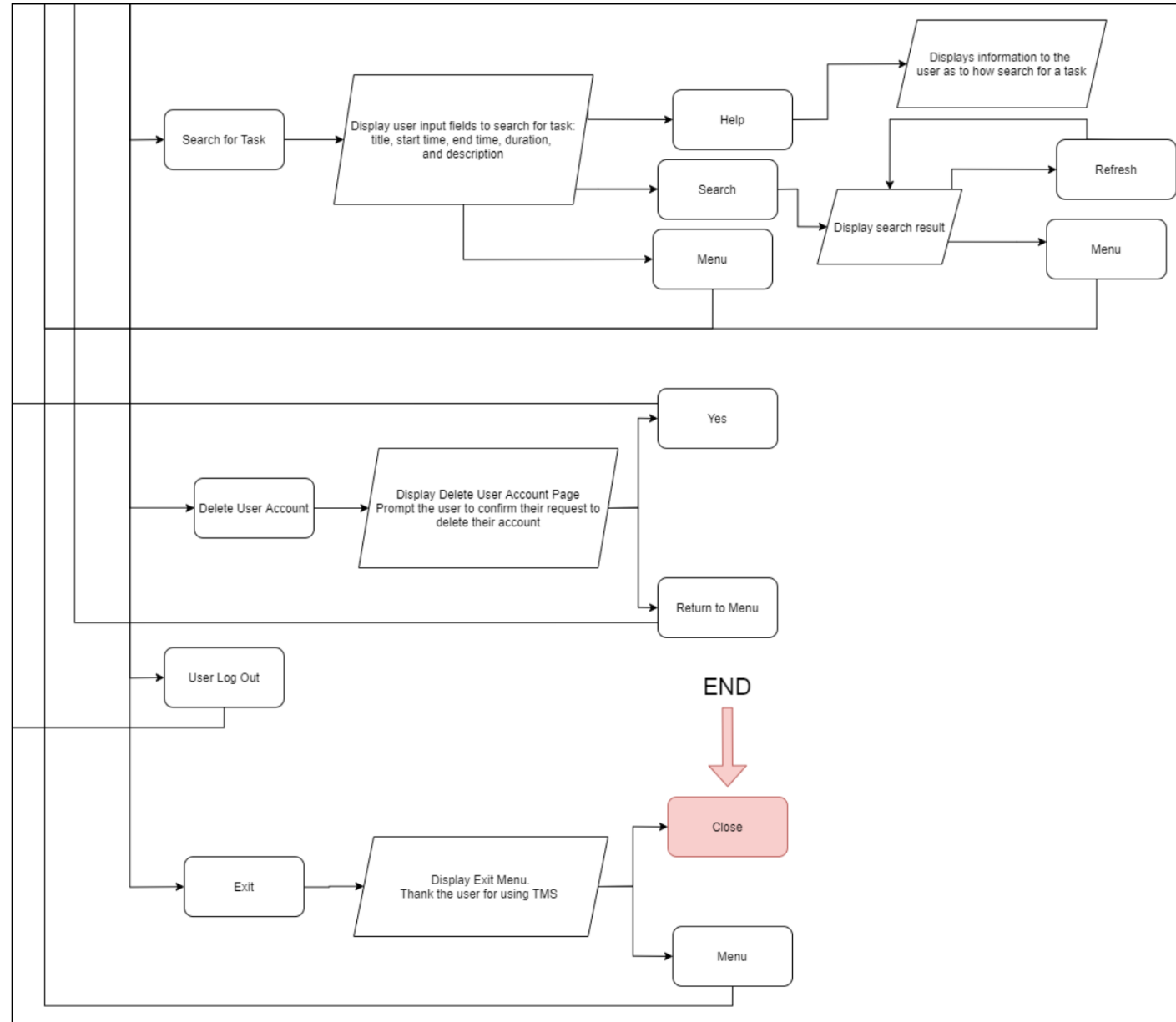
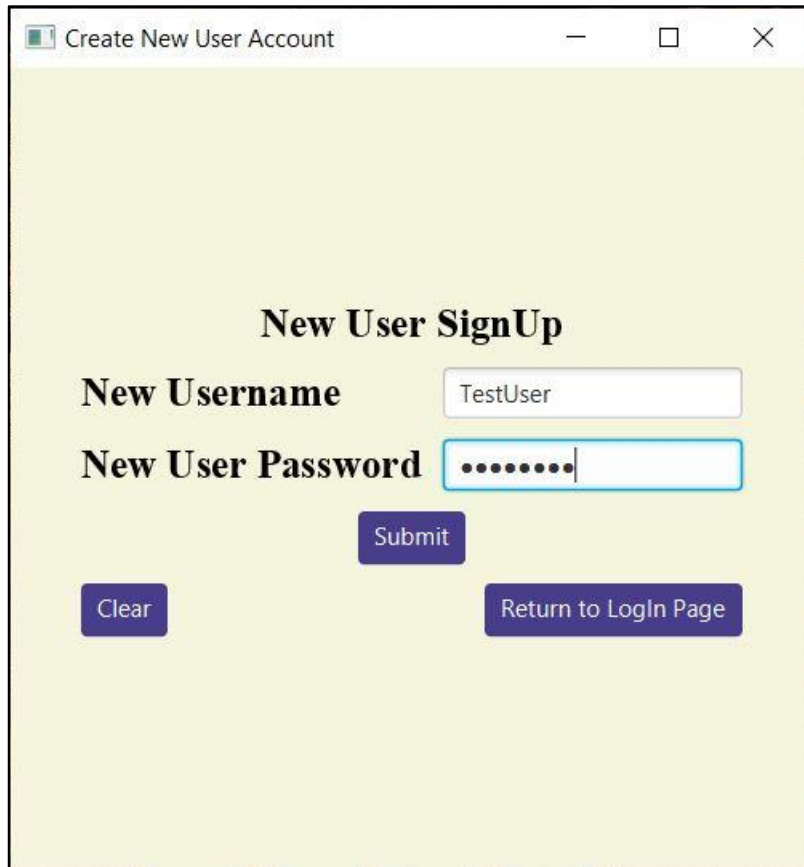


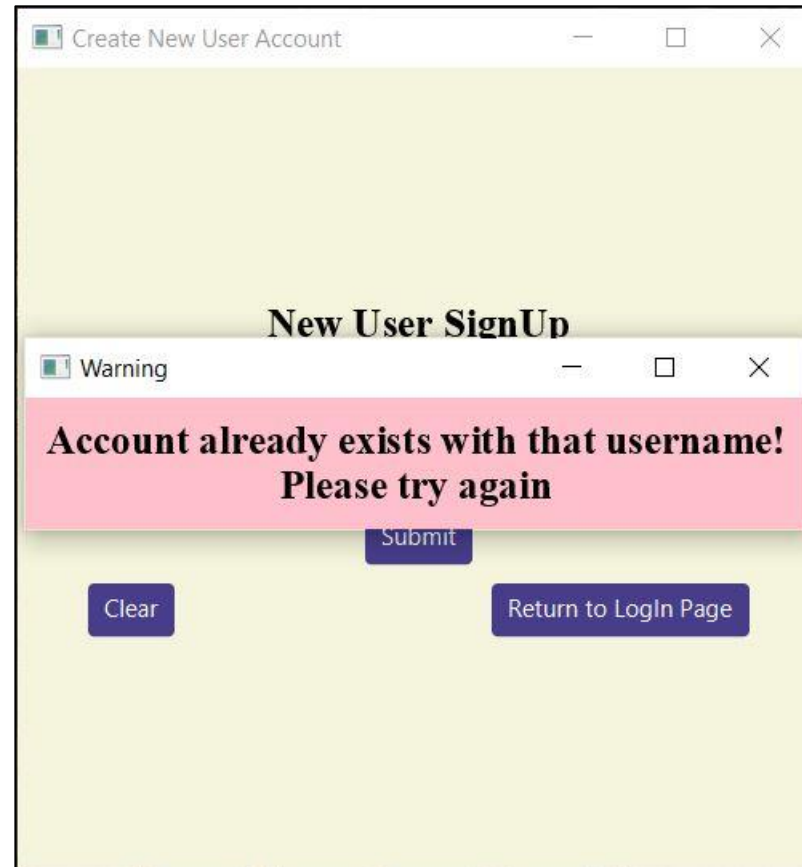
Fig 12: User Menu Flow Chart

New User Sign Up & Warning Messages



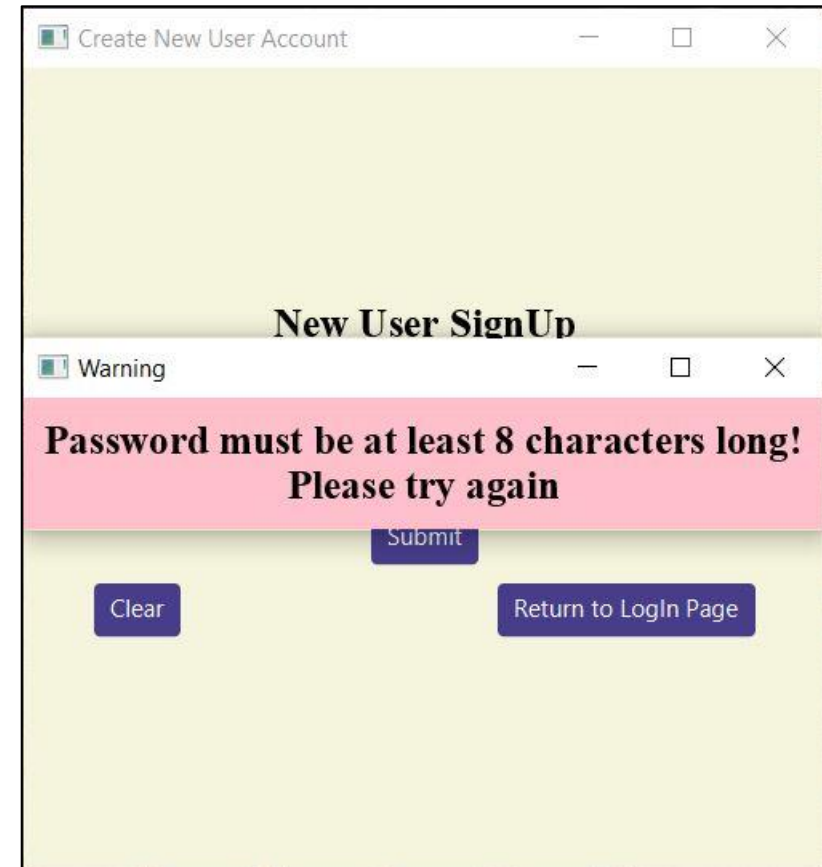
The screenshot shows a window titled "Create New User Account". Inside, the heading "New User SignUp" is centered. Below it, there are two input fields: "New Username" with the text "TestUser" and "New User Password" with masked characters ".....". To the right of the password field is a "Submit" button. At the bottom left is a "Clear" button, and at the bottom right is a "Return to Login Page" button.

Fig 13: New User Sign Up GUI



The screenshot shows the same "Create New User Account" window as Fig 13, but with a "Warning" dialog box overlaid. The dialog box has a pink background and contains the text: "Account already exists with that username! Please try again". The "Warning" dialog box has its own title bar with a close button. The "Submit" button is visible behind the dialog box.

Fig 14: Account Exists Warning Message during New User Sign Up GUI



The screenshot shows the same "Create New User Account" window as Fig 13, but with a "Warning" dialog box overlaid. The dialog box has a pink background and contains the text: "Password must be at least 8 characters long! Please try again". The "Warning" dialog box has its own title bar with a close button. The "Submit" button is visible behind the dialog box.

Fig 15: Password Length not met Warning Screen GUI

User Login, Warning Message, & User Menu

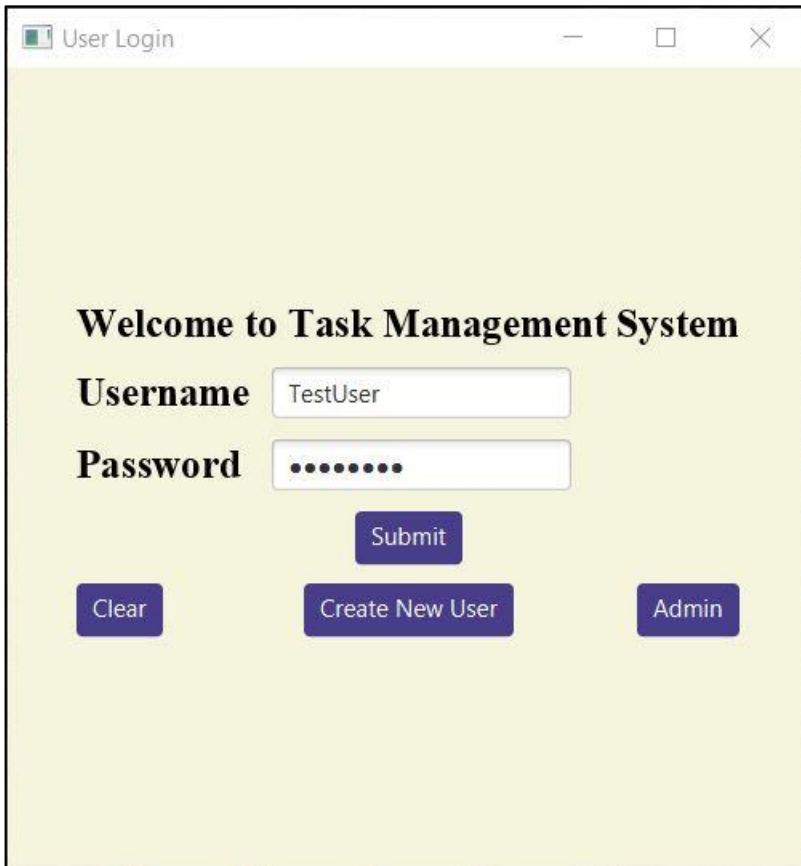


Fig 16: User Login GUI

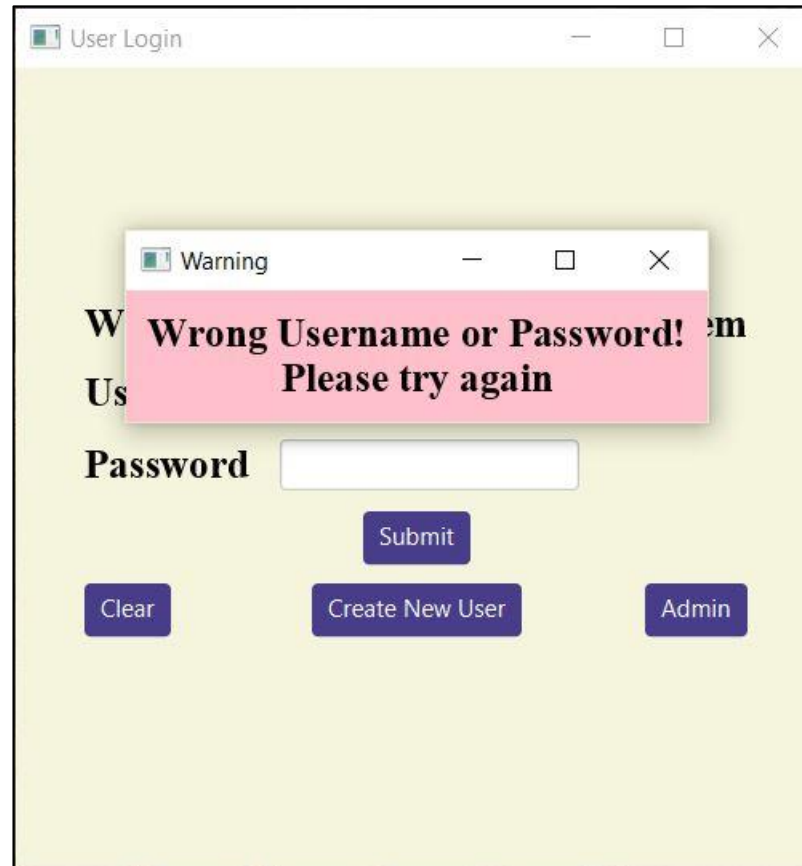


Fig 17: Wrong Username or Password Warning Screen GUI

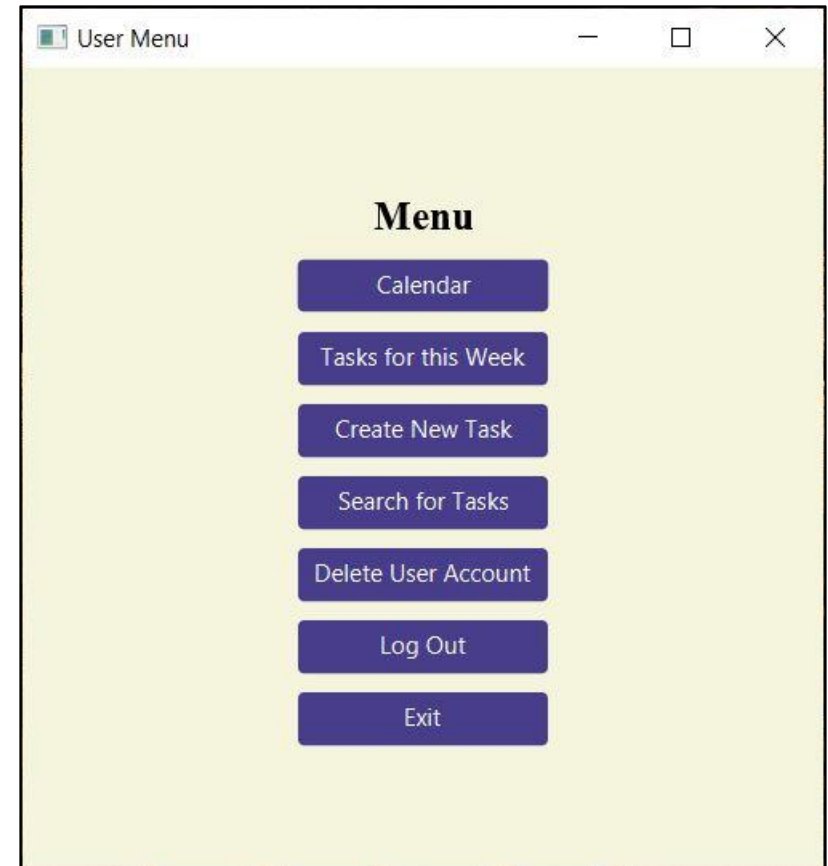


Fig 18: User Menu GUI

Calendar, Month & Year Search w/ Result

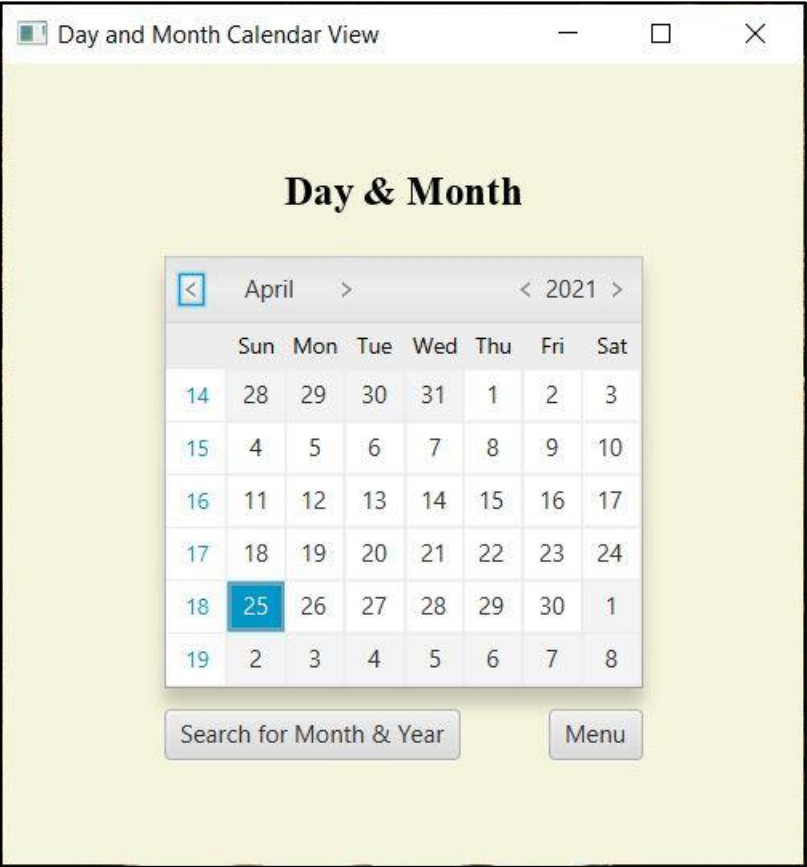


Fig 19: Day and Month Calendar View GUI

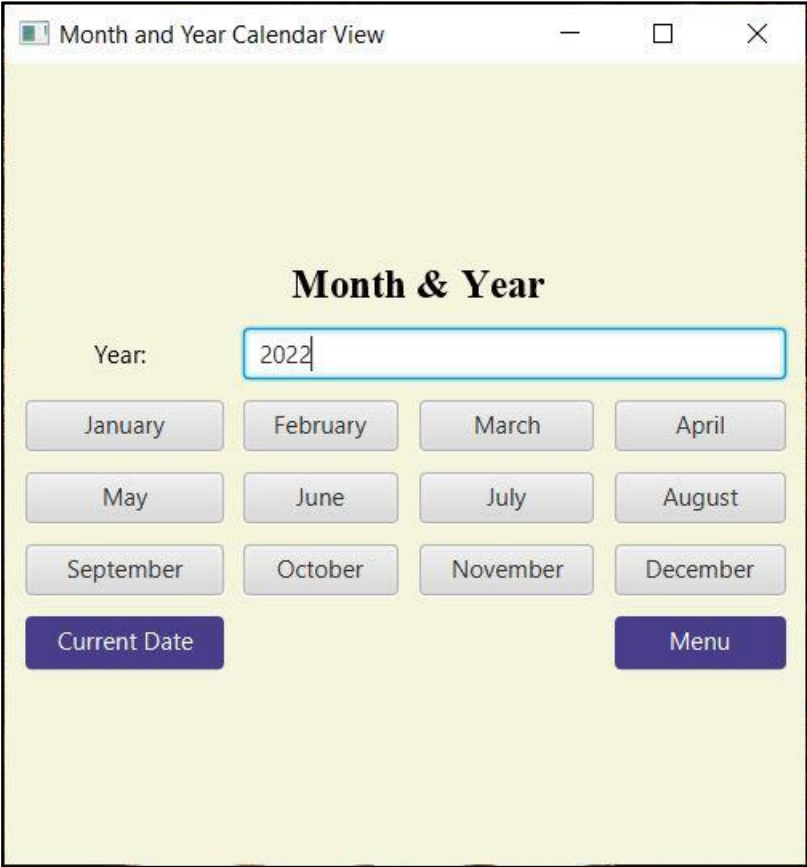


Fig 20: Search for Month & Year GUI

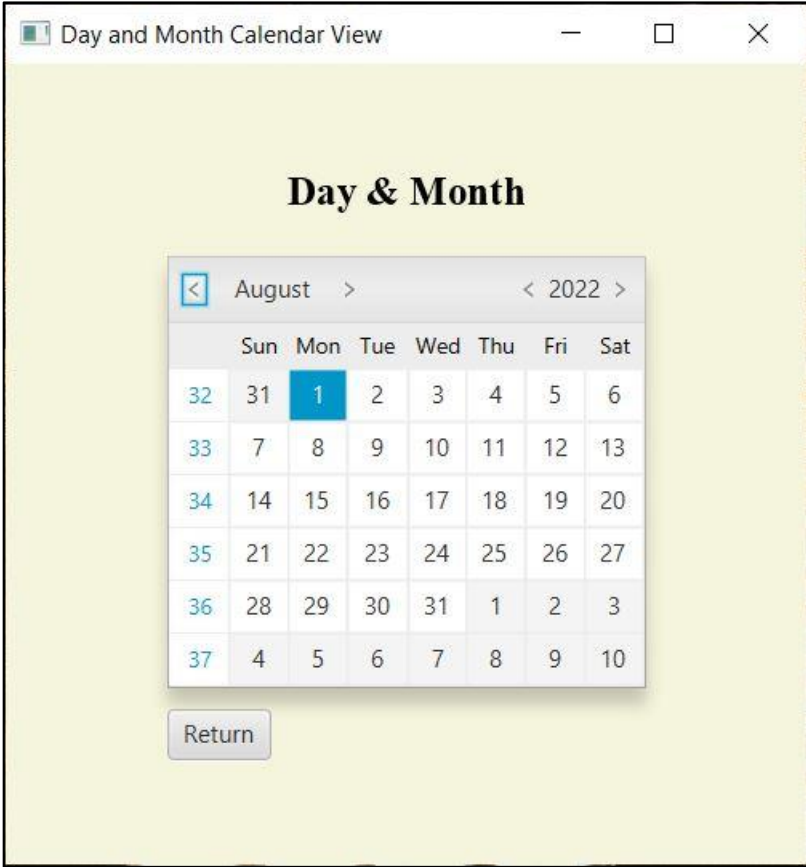
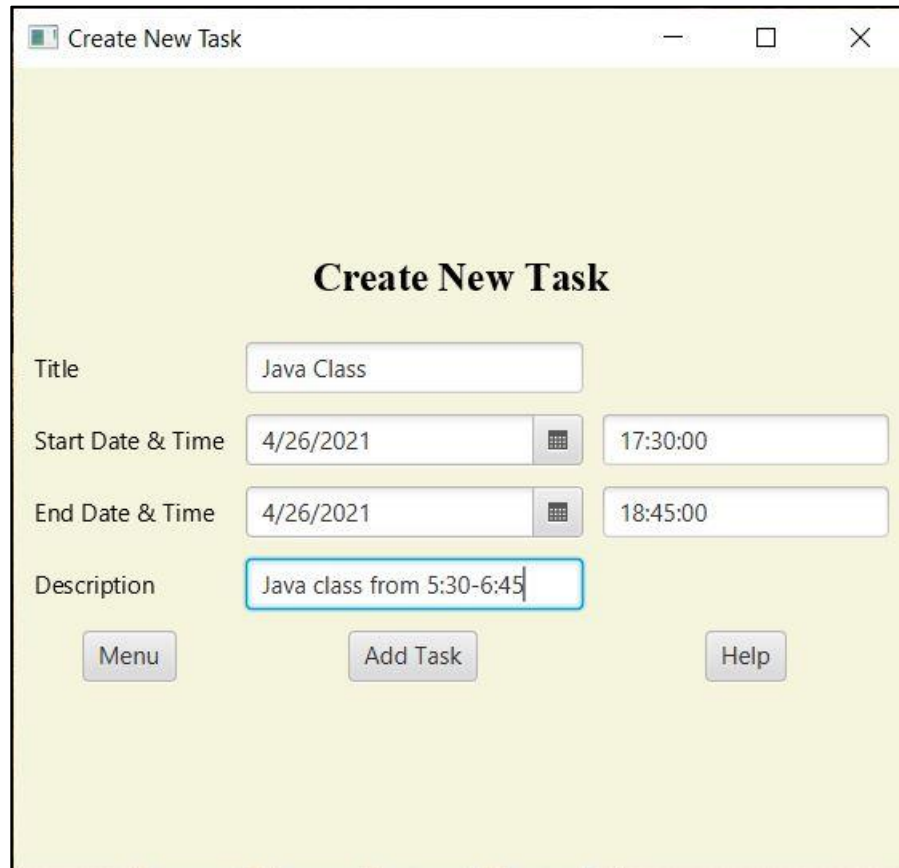


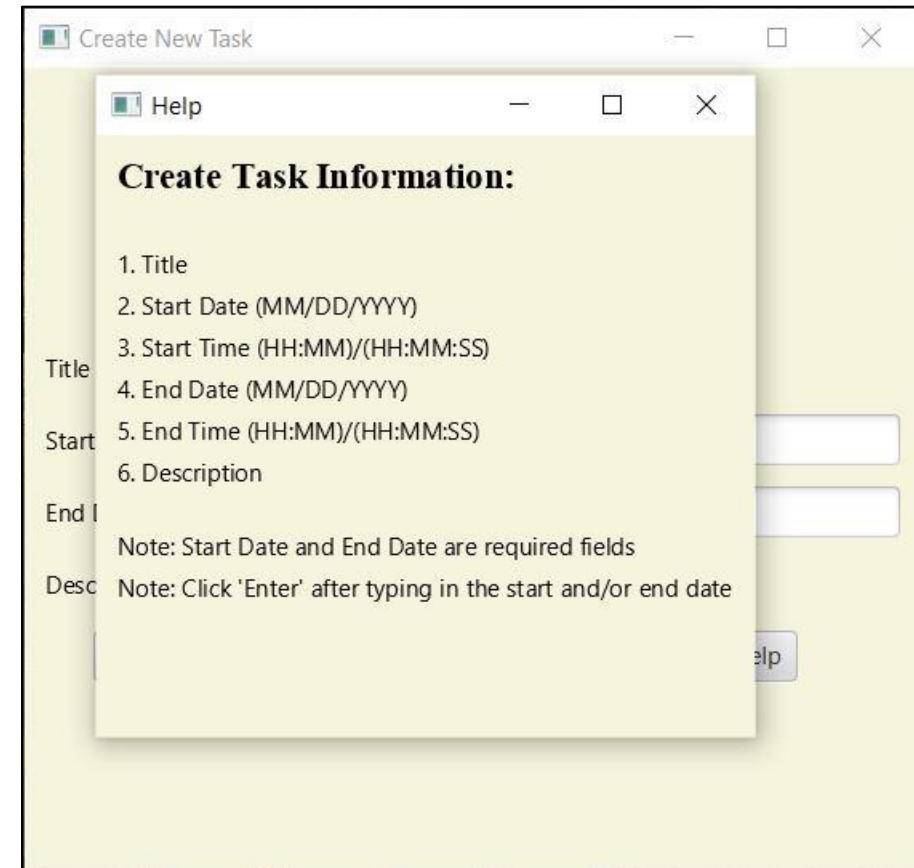
Fig 21: Result of the Month & Year Search GUI

Create New Task Page with Help Menu



The screenshot shows a window titled "Create New Task" with a light yellow background. At the top center, the text "Create New Task" is displayed in bold. Below this, there are four input fields arranged in two rows. The first row contains a "Title" field with the text "Java Class". The second row contains "Start Date & Time" and "End Date & Time" fields, both with the date "4/26/2021" and a calendar icon. To the right of these date fields are two time input fields: "17:30:00" for start time and "18:45:00" for end time. Below the input fields is a "Description" field containing the text "Java class from 5:30-6:45". At the bottom of the window, there are three buttons: "Menu", "Add Task", and "Help".

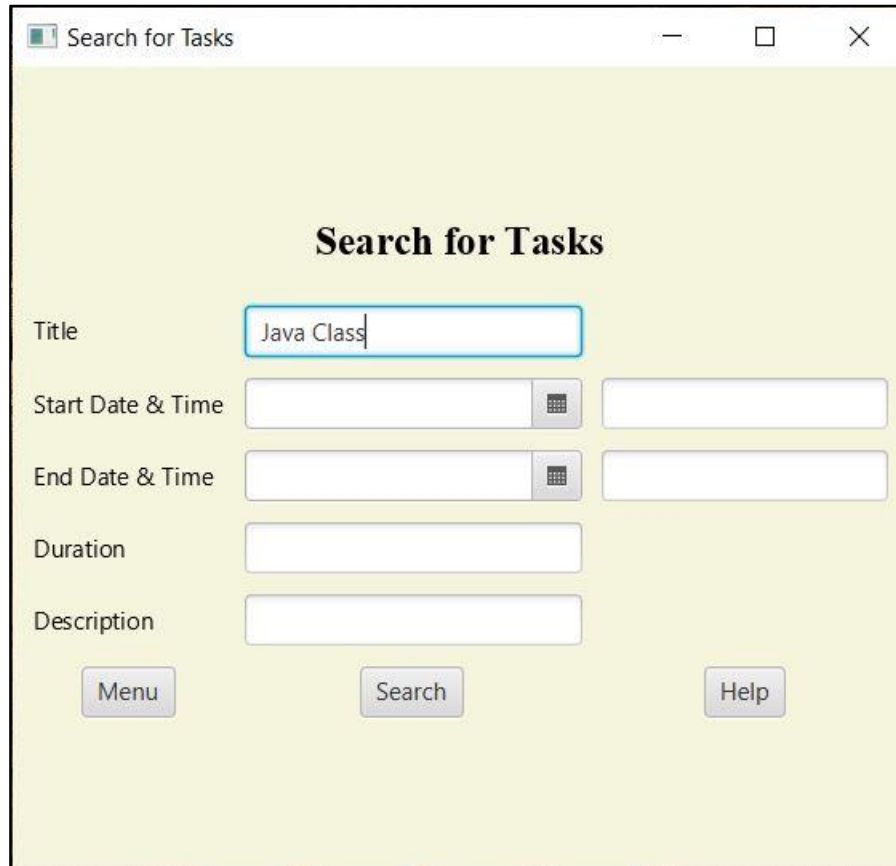
Fig 22: Create New Task GUI



The screenshot shows the same "Create New Task" window as in Fig 22, but with a "Help" dialog box open over it. The dialog box has a title bar "Help" and a list of instructions under the heading "Create Task Information:". The list includes: 1. Title, 2. Start Date (MM/DD/YYYY), 3. Start Time (HH:MM)/(HH:MM:SS), 4. End Date (MM/DD/YYYY), 5. End Time (HH:MM)/(HH:MM:SS), and 6. Description. Below the list, there are two notes: "Note: Start Date and End Date are required fields" and "Note: Click 'Enter' after typing in the start and/or end date". The dialog box is semi-transparent, allowing the background window to be partially visible.

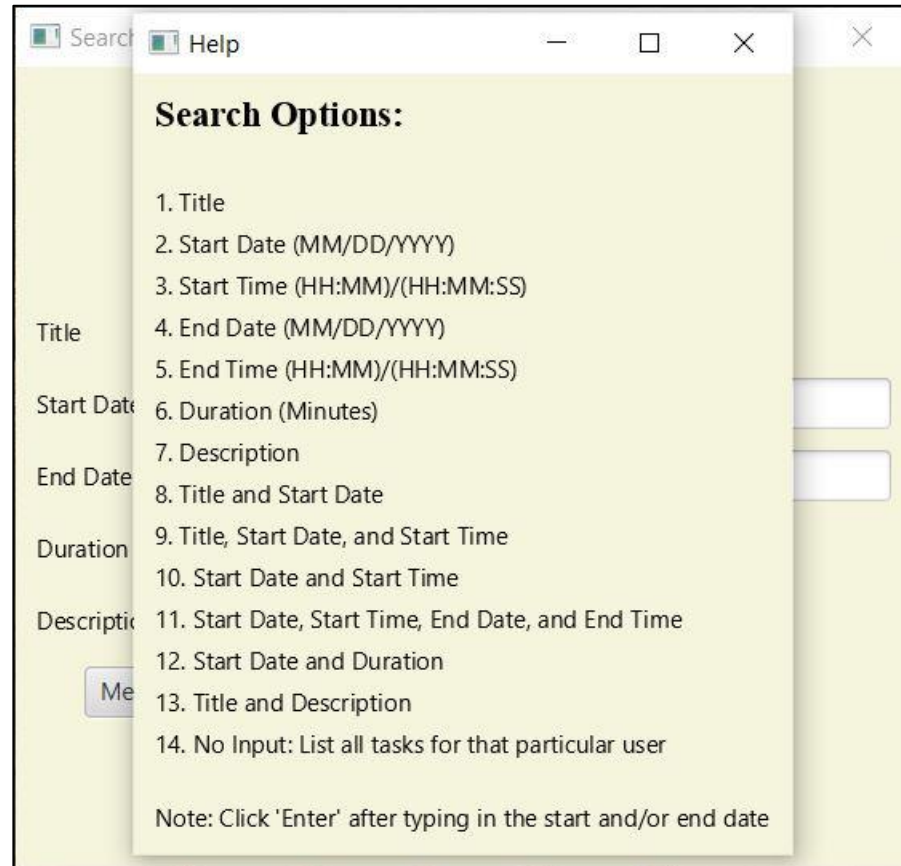
Fig 23: Create Task Information GUI

Search for Task Page with Help Menu



The screenshot shows a window titled "Search for Tasks" with a light yellow background. The title "Search for Tasks" is centered at the top. Below it, there are five input fields: "Title" (containing "Java Class"), "Start Date & Time", "End Date & Time", "Duration", and "Description". Each date field has a small calendar icon to its right. At the bottom, there are three buttons: "Menu", "Search", and "Help".

Fig 24: Search for Tasks GUI



The screenshot shows a window titled "Search Options" with a light yellow background. The title "Search Options:" is centered at the top. Below it, there is a list of 14 search options, each preceded by a number. The options are: 1. Title, 2. Start Date (MM/DD/YYYY), 3. Start Time (HH:MM)/(HH:MM:SS), 4. End Date (MM/DD/YYYY), 5. End Time (HH:MM)/(HH:MM:SS), 6. Duration (Minutes), 7. Description, 8. Title and Start Date, 9. Title, Start Date, and Start Time, 10. Start Date and Start Time, 11. Start Date, Start Time, End Date, and End Time, 12. Start Date and Duration, 13. Title and Description, and 14. No Input: List all tasks for that particular user. At the bottom, there is a note: "Note: Click 'Enter' after typing in the start and/or end date".

Fig 25: Search Options GUI

Tasks for this Week Page

Task List

Title	Start Time (YYYY-MM-DD HH:MM:SS)	End Time (YYYY-MM-DD HH:MM:SS)	Duration (Minutes)	Description of Task	Edit Task	Delete Task
	2021-04-25 15:15:30.0	2021-04-25 15:45:30.0	30		Edit	Delete
Java Class	2021-04-26 12:30:00.0	2021-04-26 13:45:00.0	75	Java class from 12:30-1:45	Edit	Delete
Group meeting	2021-04-27 00:00:00.0	2021-04-27 00:00:00.0	0	Team group meeting	Edit	Delete
Math Class	2021-04-27 09:10:00.0	2021-04-27 10:30:00.0	80	Math class 9:30-10:30	Edit	Delete
	2021-04-28 16:30:00.0	2021-04-28 17:45:00.0	75	Tutoring	Edit	Delete
Bio Test	2021-04-29 12:30:00.0	2021-04-29 13:45:00.0	75	Biology test at 12:30	Edit	Delete

Refresh

Return

Fig 26: Tasks for this Week GUI

Delete Account Page & Exit Program Page

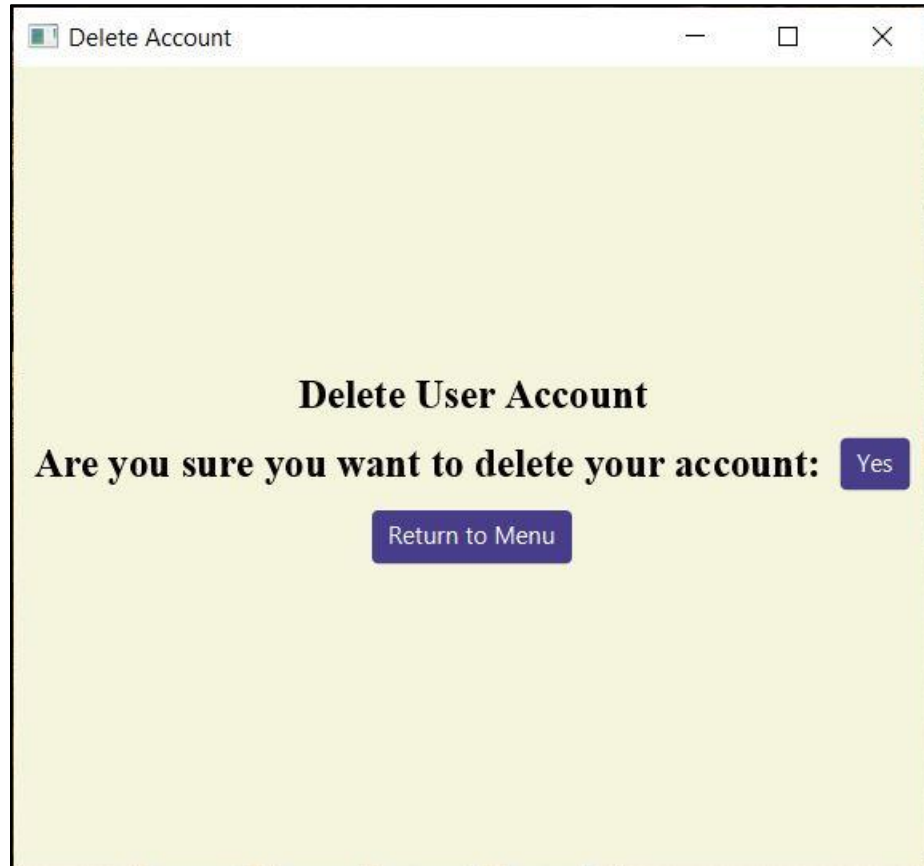


Fig 27: Delete User Account GUI

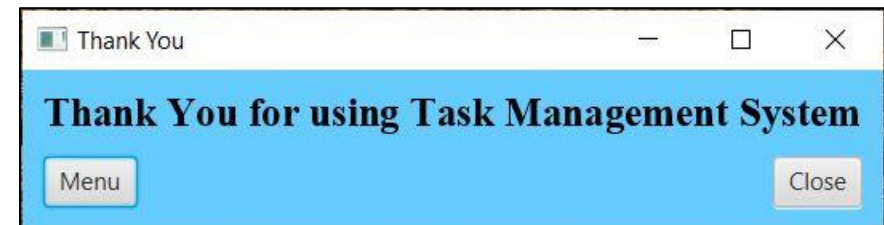


Fig 28: Exit Message GUI

Database

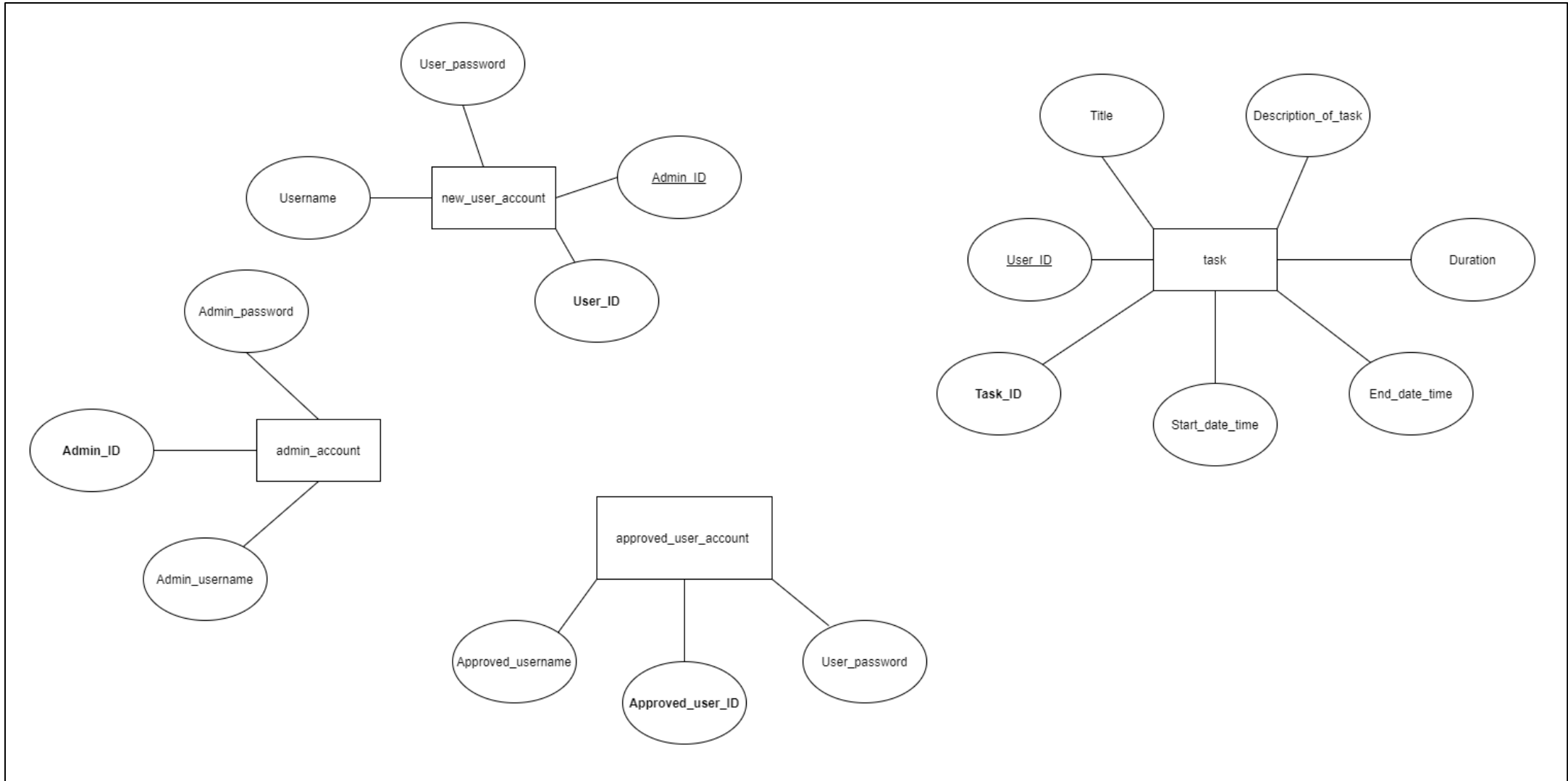


Fig 29: Entity Relationship Diagram

Function Description

- Admin & User Log In
 - Executes a SELECT query with a WHERE condition to determine if the username and password inputted by the user matches exactly (case-sensitive) with one user or admin in their respective table (approved user account or admin account)
- Create New Admin & User Account
 - INSERTs the data collected from user (admin or general) into their appropriate table (admin account or new user account).
- Set Database Connection
 - Connects to a local database by passing in the username, password and JDBC URL to the “DriverManager”

Function Description (cont.)

- Create New Task
 - INSERTs into task table, user inputted values for title, start date and start time, end date and end time, description and duration
- Search for Task
 - SELECTs all the tasks from the task table that matches with the user's input
 - Displays the tasks in a tabular form using TableView
- Converting ResultSet data to Java Object, Observable List & Table View
 - Executes a SELECT query to retrieve data from a table
 - ResultSet of the query is passed to a function that converts each row of the set into an object where the fields are initialized with the data from the row
 - Object is added to an array list to be converted to an ObservableList
 - List is added to the TableView

Function Description (cont.)

- Conflict between Tasks on the User's Calendar
 - Executes a SELECT query on the task table to determine if there exists a task where the start time or end time of the current task is between the start time and end time of another task
 - Displays an error
- DatePickerSkin
 - The class is used to display a calendar
- Edit Task
 - UPDATES task table depending on the specific field (input) being changed by the user

Variable Description

- Stage
 - Current stage (parameter) of an Application is passed to another Application when transitioning between stages
- ResultSet
 - Passed to a function that returns an array list of objects containing data from the ResultSet when creating a Table View
- Username and Password
 - User inputted values for username and password are stored in variables and are used to insert into tables when creating new accounts or are used to query tables when trying to verify the credentials of a user
- User ID & Admin ID
 - IDs are passed when transitioning between stages (such as, Log In to Menu) to ensure that the data retrieved is specific to the user of the account

Variable Description (cont.)

- Title, Start Date Time, End Date Time, Description, Duration
 - User inputted values for the following fields are stored in variables
 - Used to insert into the task table when creating a task
 - Used to query the task table when searching for a task
- Boolean “Check”
 - Passed to the SearchTasksTableViewScreen class
 - If check is false, then Search for Tasks Page is displayed (Fig. 24)
 - If check is true, then the Tasks for this Week Page is displayed (Fig. 26)

References

[1] *GridPane (JavaFX 8)*, 10-Feb2015. [Online].

Available: <https://docs.oracle.com/javase/8/javafx/api/javafx/scene/layout/GridPane.html>.

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https://www.tutorialspoint.com/javafx/layout_gridpane.htm.

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[8] +A. Pomarolli, “JavaFX Table Example: Examples Java Code Geeks - 2021,” *Examples Java Code Geeks*, 29-Jan-2016. [Online]. Available: <https://examples.javacodegeeks.com/desktop-java/javafx-table-example/>.

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- [13] “26 Date Picker,” *26 Date Picker (Release 8)*. [Online]. Available: <https://docs.oracle.com/javase/8/javafx/user-interface-tutorial/date-picker.htm>.
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- [15] “How to Get the Date from a Datetime Column in MySQL,” *LearnSQL.com*. [Online]. Available: <https://learnsql.com/cookbook/how-to-get-the-date-from-a-datetime-column-in-mysql/#:~:text=In%20MySQL%2C%20use%20the%20DATE,of%20the%20timestamp%20data%20type>.

Thank You