Account Manager System

BIT 2025
Programming Foundations Course

Console-Based Application
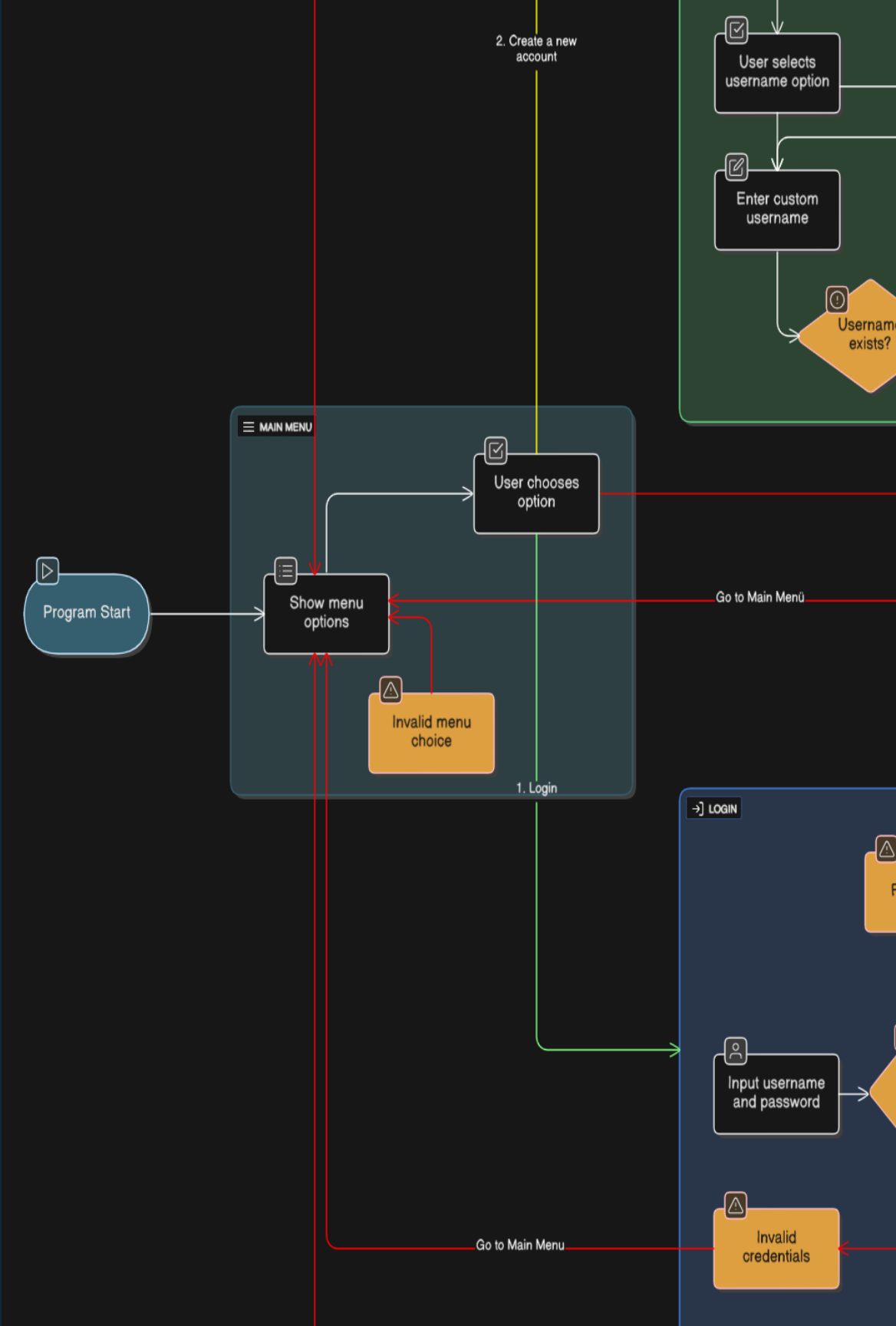
Group 3

Zeljko, Yücel & Aykut

Welcome

1 **Why did we choose this project**

2 **Project purpose and objectives**

3 **How we divided the work**

4 **Live demo of the application**

5 **Questions and answers**

Access Link: https://github.com/y2025i/Password-Generator---BIT2025.git

Why This Project?

The growing threat of cyberattacks makes password management critical for digital safety.

Password Reuse Risk

Using the same password across multiple online accounts creates a single point of failure, making you highly vulnerable to breaches.

The Need for Strong Passwords

Effective passwords require a mix of letters, numbers, and symbols to be truly secure, making them complex and hard to guess.

Memory Overload

With an average user managing 100+ online accounts, remembering a unique, strong password for each one is practically impossible.

```
=== Welcome to Account Management System! ===

Please make a choice
1. Login
2. Create New Account
3. Exit

Choose (1/2/3):
```

Our Solution: A Robust Password Manager

We've developed a multi-user password management system designed to simplify credential storage and access, functioning much like a personal database for your login information. While this beginner project focuses on core functionality, it's a foundational step towards more sophisticated security tools.

1 **Multi-User System**

Supports multiple users, each with their own secure set of credentials.

2 **Database-Like Storage**

Stores account credentials efficiently, akin to a simplified database.

3 **Inspired by Industry Leaders**

A distilled version of concepts found in tools like Google Password Manager.

4 **Beginner-Friendly Scope**

Note: This foundational project does not include encryption, focusing on core logic.

?

WHO HAS GOOGLE ACCOUNT HERE?

Sign in

with your Google Account. This account will be available to other Google apps in the browser.

Email or phone

Forgot email?

Not your computer? Use Guest mode to sign in privately.
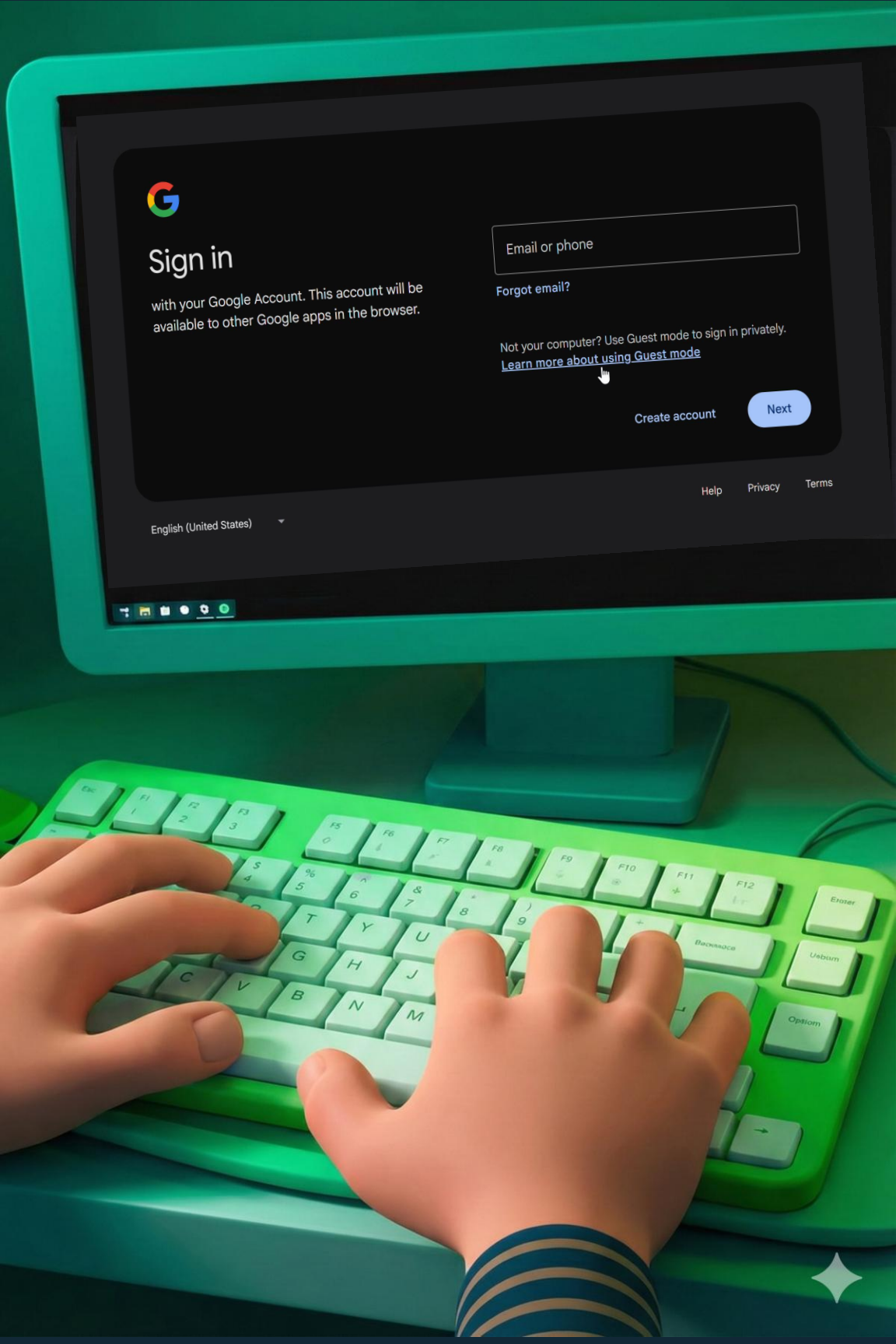Learn more about using Guest mode

Create account

Next

English (United States)

Real-Life Example: Emulating Gmail Sign-Up

Our application mirrors the streamlined account creation process seen in major platforms like Google, adapted for a console environment.

1 **User Information Collection**

Collects essential details such as name, surname,.

2 **Smart Password Suggestions**

Intelligently suggests strong, unique passwords to enhance security.

3 **Integrated Credential Storage**

Seamlessly stores newly created passwords, similar to an integrated Password Manager.

4 **Console-Based Interaction**

Our application delivers this functionality through a user-friendly console interface.

Application Flow: The Main Menu

Upon launching the application, users are greeted with a clear and intuitive main menu, guiding them through the initial interaction options.

Login to Existing Account

Access your stored credentials by logging into your established profile.

Create a New Account

Register as a new user to begin securely managing your passwords.

Exit the Program

Gracefully close the application when your session is complete.

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Account Creation:

The first step in creating a new account involves gathering basic personal information and generating unique usernames.

Users are prompted to input their first name and surname. To ensure system compatibility and consistency, any non-ASCII characters are automatically converted to their ASCII equivalents and set to lowercase.

- Input: **First name** and **surname**

- Non-ASCII characters are converted to **ASCII lowercase**

- System suggests **two unique usernames** based on input

- Option for user to create **one custom username**

- Invalid input prompts a **warning message** to guide the user

Account Creation:

Securing the new account involves either generating a robust password or creating one that meets stringent security criteria.

Auto-Generate Password

The system can automatically create a strong, complex password for enhanced security.

Custom Password Creation

Users have the flexibility to create their own password, which will then undergo rigorous validation.
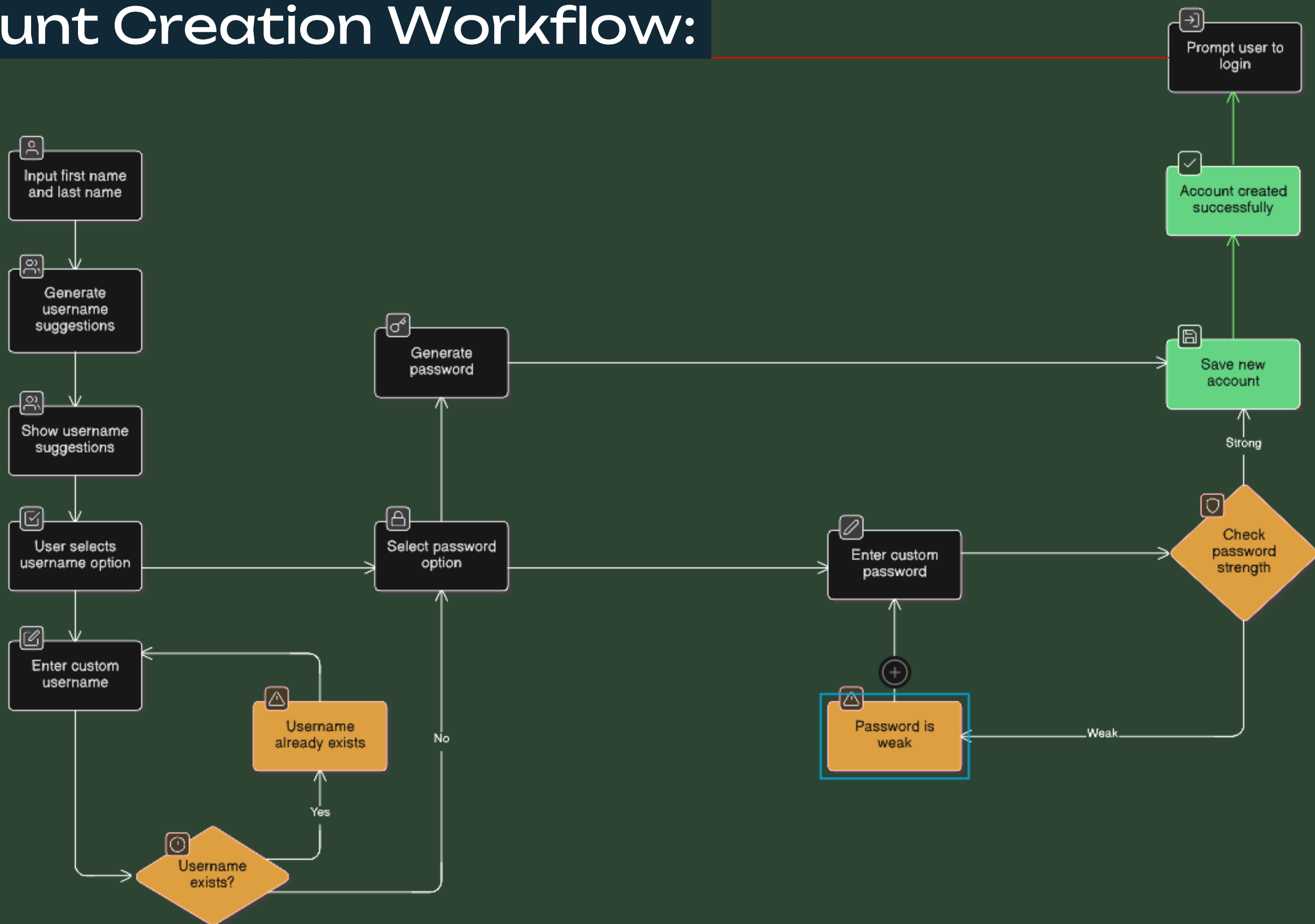
Strong Password Requirement

Only passwords meeting predefined strength criteria will allow the user to proceed with account finalization.

Weak Password Warning

If a custom password is too weak, a warning is issued, and account creation is blocked until a stronger one is provided.

Account Creation Workflow:

```
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Choose (1/2/3):
```
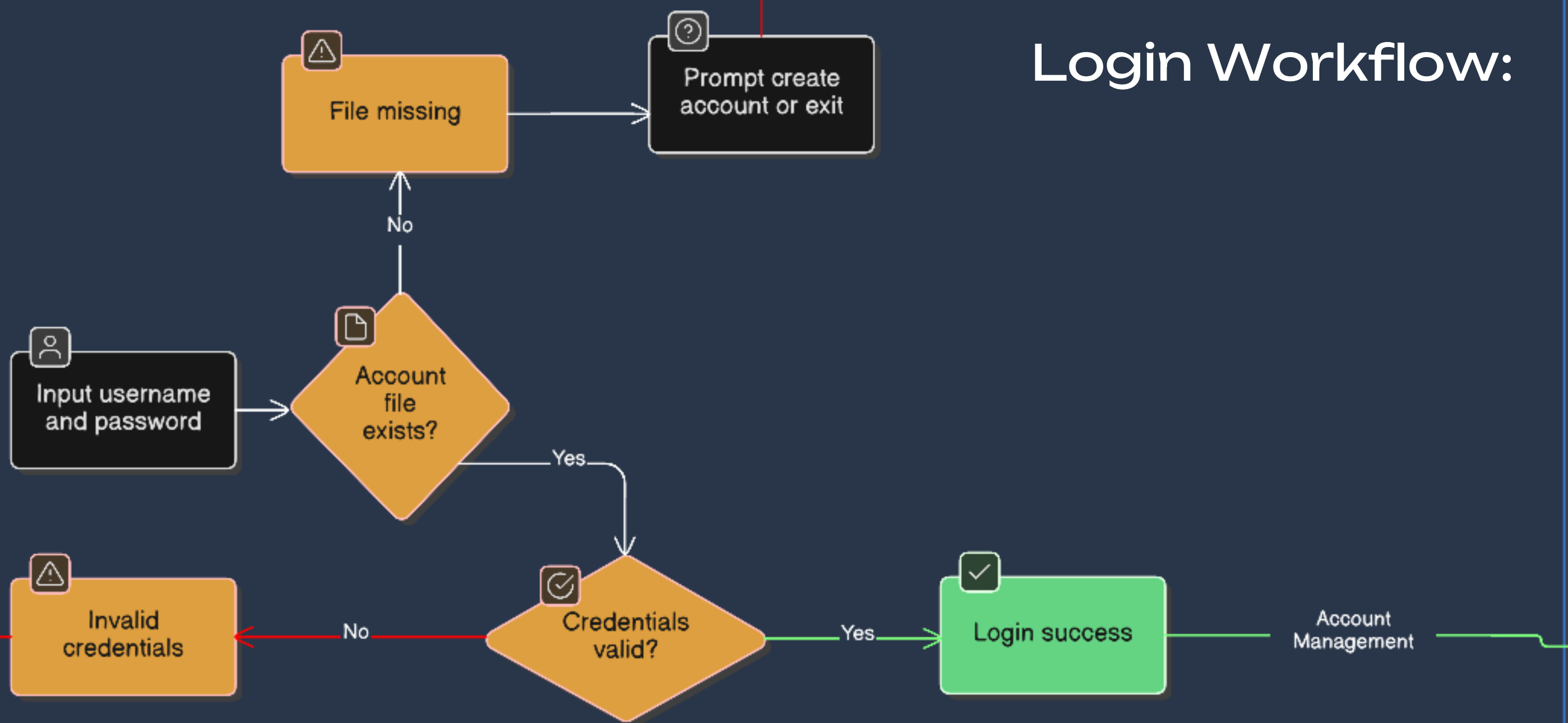
Login and Data Validation

Access to stored accounts is granted only after a thorough verification of user credentials against the `accounts.txt` file.

To log in, users must provide their registered username and password. The system then cross-references these inputs with the data stored in the `accounts.txt` file.

- **Username** and **password** input are mandatory.

- Credentials are verified against the `accounts.txt` file.

- If `accounts.txt` is not found, the user is notified and returned to the main menu.

- Entering **correct credentials** results in a successful login and access to account management.

Login Workflow:

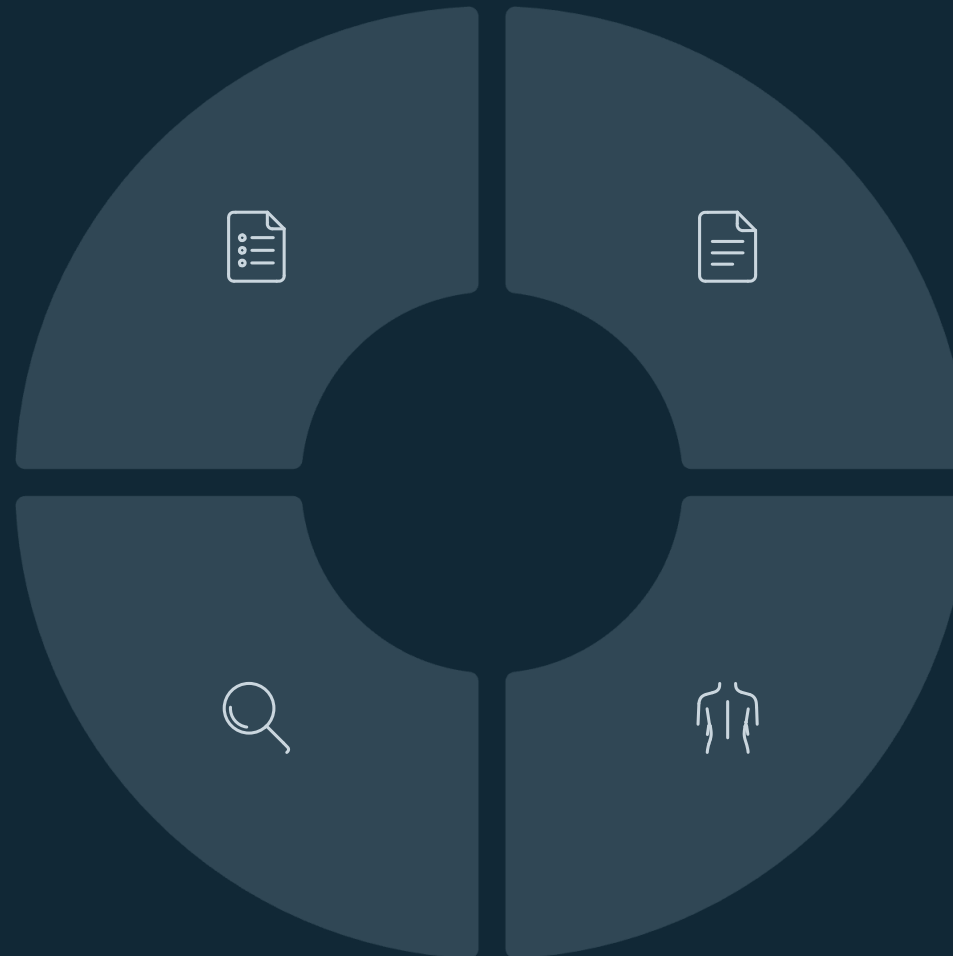# After Login: Account Management

Once successfully logged in, users gain access to a dedicated interface for managing all their saved credentials.

View Saved Accounts

A clear list of all stored accounts, each assigned an index number for easy reference.

Add New Account

Press 'a' to seamlessly integrate new online account credentials into your manager.

Account Details & Date

Review comprehensive details for each saved account, including its creation date.

Return to Previous Menu
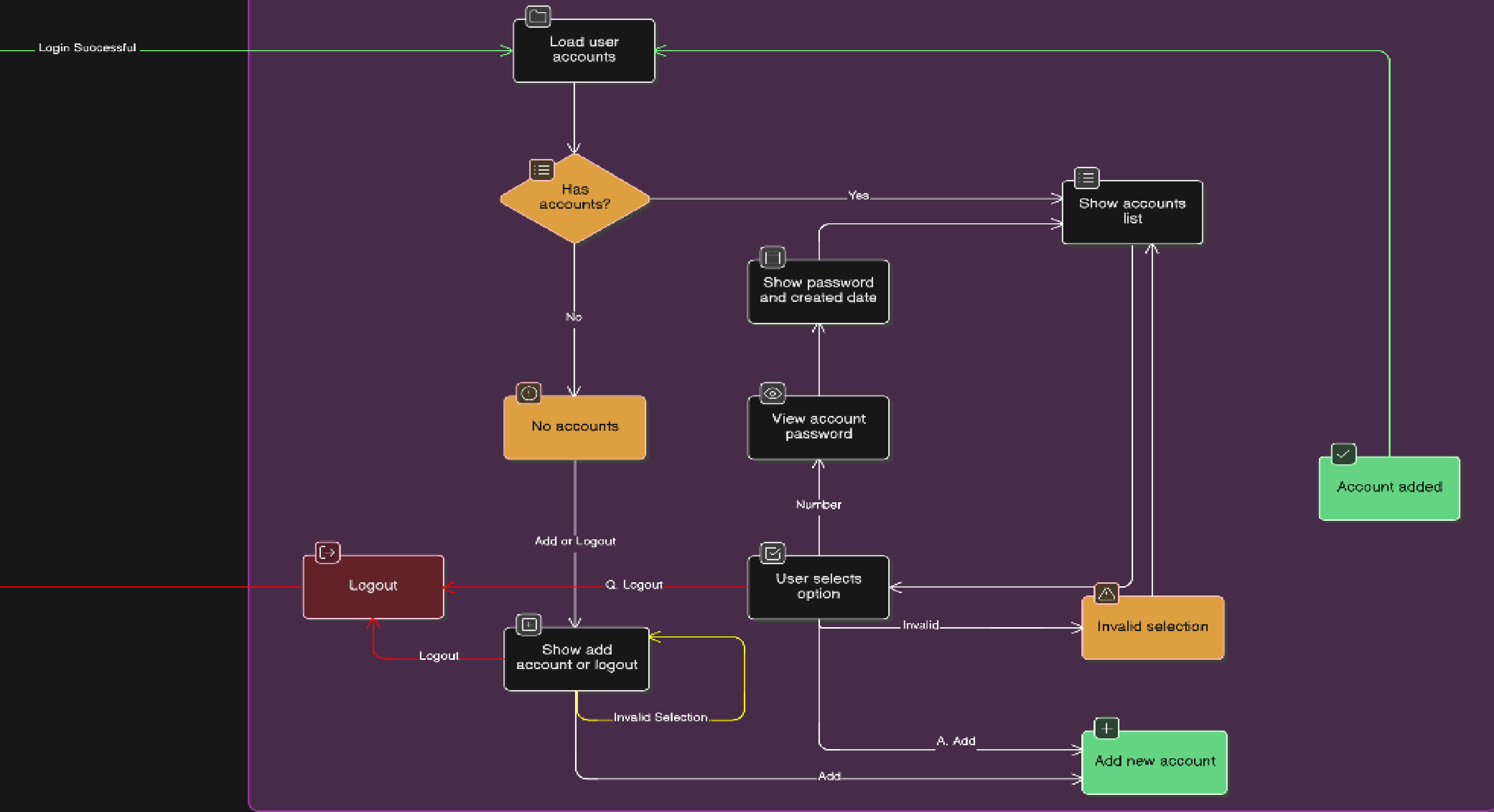
Press 'q' to navigate back to the main application menu.

Project Division of Labor

Our team leveraged individual strengths to build a cohesive and functional password management system.

Aykut

Developed the account management features, focused on user experience enhancements, and refined the overall interface.

Yücel

Designed the secure login system, main menu navigation, efficient file I/O operations, and comprehensive data validation.

Željko

Account creation logic, sophisticated password suggestion algorithms, and robust generation functions.

Key Features of Our Password Manager

Our application delivers essential functionalities for effective and secure password management in a user-friendly console environment.

1 Multi-User Account System

Supports individual profiles with secure login capabilities, ensuring personalized credential management.

2 Password Strength & Generation

Features robust validation for custom passwords and can generate strong, unique passwords automatically.
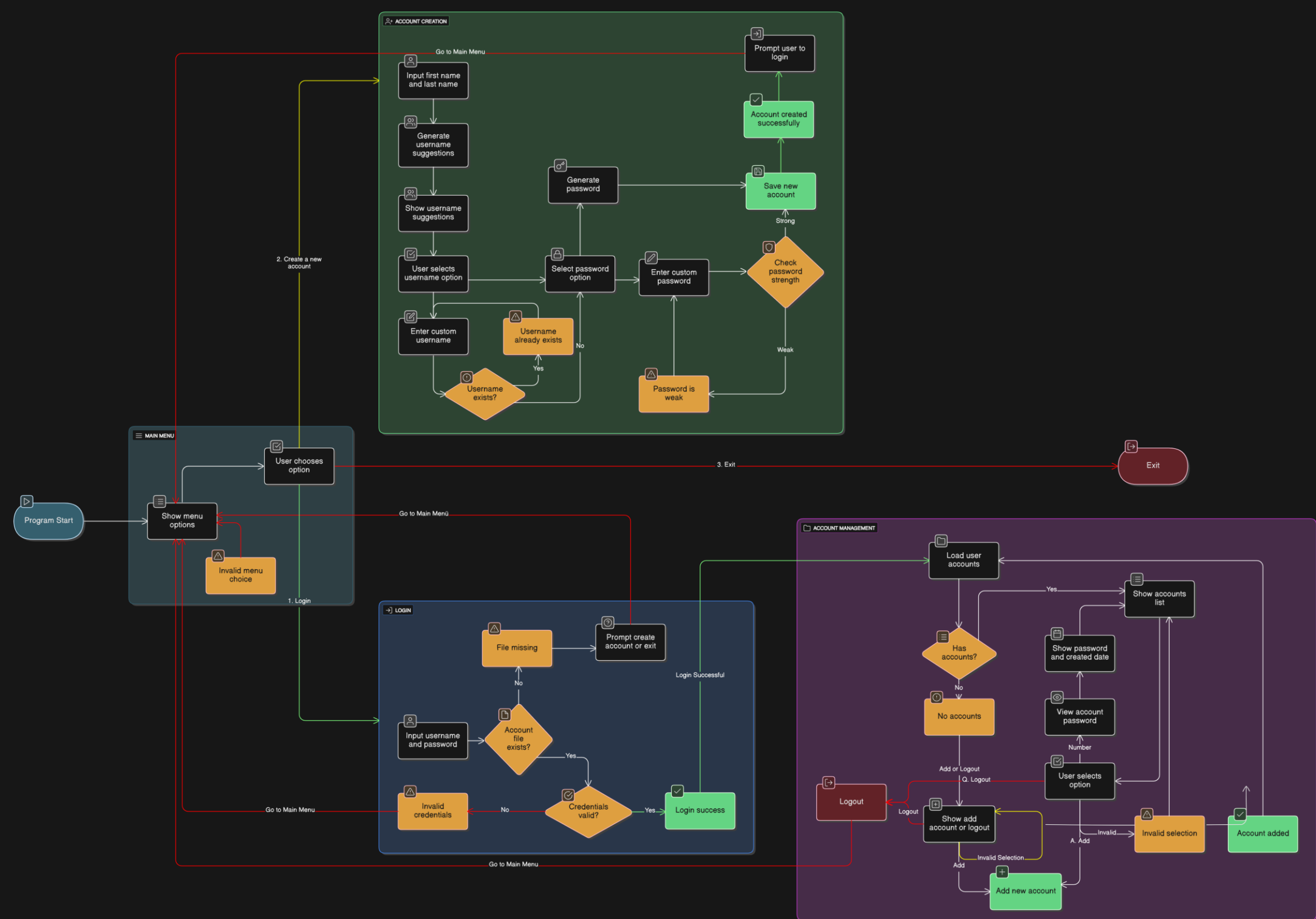
3 Credential Storage & Management

Provides a structured way to store, view, and organize all your saved account credentials.

4 User-Friendly Console Interface

Designed for intuitive interaction through a clear and responsive command-line interface.

Access Link: https://github.com/y2025i/Password-Generator---BIT2025.git

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Thank You!

Questions & Live Demo