

# Login Project

This project is a complete web platform for user, account, and data management, focused on security, role-based access control (RBAC), and a clean and sustainable software architecture.

Front-end Repository: <https://github.com/felipebabel/login>

Back-End Repository: <https://github.com/felipebabel/login-backend>

## 1. Architecture and Technology

The project adopts a Clean Architecture with a focus on **Hexagonal Architecture** (Ports and Adapters) in the back-end.

### Architecture:

**Hexagonal (Ports and Adapters):** Clean code is prioritized, with interfaces and separation of responsibilities to ensure that domain logic is independent of technical details (such as database or frameworks). The design focuses on Ports (interfaces) and Adapters (implementations) to isolate business rules.

### Security:

**Authentication/Authorization:** Uses JSON Web Tokens (JWT) for access control. The system implements JWT and Refresh Token (valid for 24 hours), ensuring that when the JWT expires, a new one is requested by the user.

**Encryption:** Passwords are securely stored using **Bcrypt** for encryption and verification.

**Access Control (RBAC):** Endpoints are protected by specific roles, ensuring that each user can only perform actions allowed by their access level.

### Swagger Documentation:

All API endpoints have interactive documentation via Swagger, facilitating development and maintenance.

### Scheduler (Scheduled Tasks):

A task scheduler executes daily routines at 6 AM for system maintenance:

**Log Cleanup:** Deletes logs older than 180 days.

**Account Inactivation:** Accounts without access in the last 30 days are inactivated.

**Token Cleanup:** Deletes expired 6-digit password reset tokens.

### Notes

The back-end is deployed on the **Render** platform. Due to the hosting plan, if the service is in idle mode, the first request may take approximately **one minute** to be processed until the server is reactivated (cold start).

The sending of emails for account activation and password recovery is handled through **Brevo** (formerly Sendinblue). The service operates under the free plan, with a limit of **300 emails per day**.

## 2. User Roles

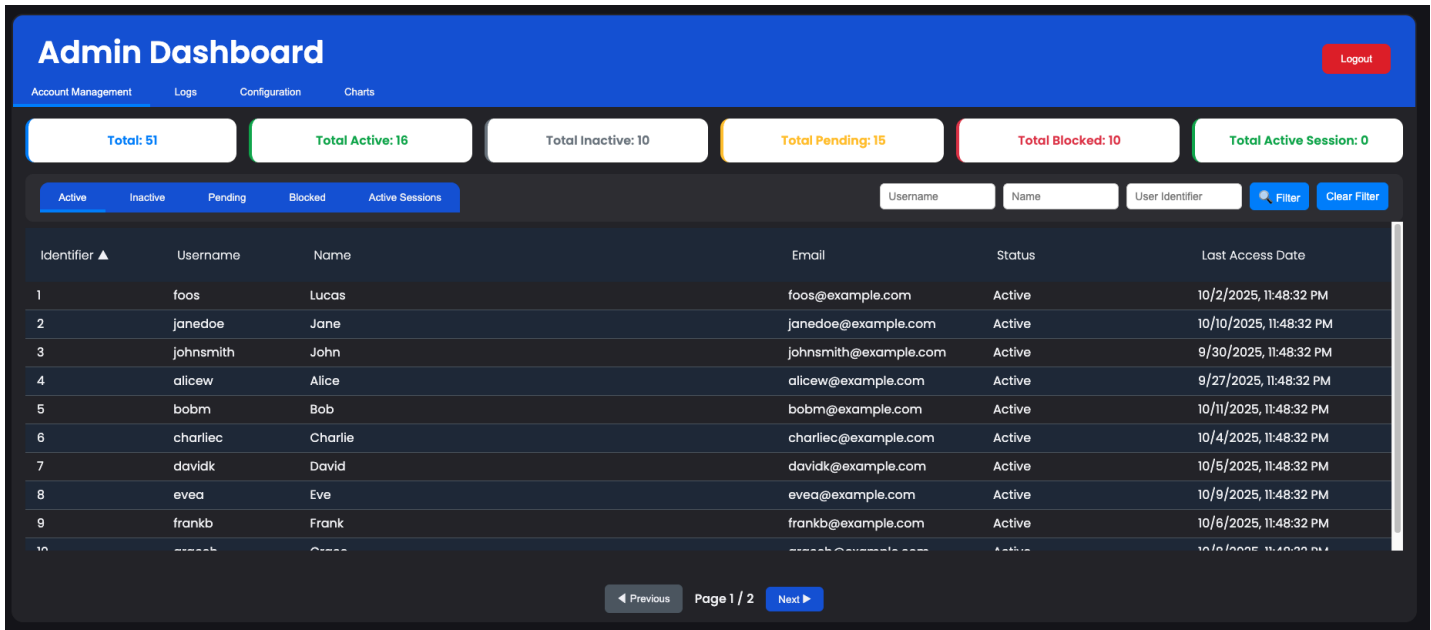
The platform supports three access levels, each with specific permissions:

- ADMIN:** Full access to the Administrative Dashboard and settings.
- ANALYST:** Read-only access to the Dashboard, with restricted permissions, including the option to access their own profile.
- USER:** Access to their own profile and account activity logs.

## 3. Admin Dashboard Features

The main Dashboard has 4 tabs, offering granular system control:

### 3.1 Account Management



Displays total accounts (Active, Inactive, Pending, Blocked, Active Sessions).

Has 5 sub-tabs for individual list viewing and management.

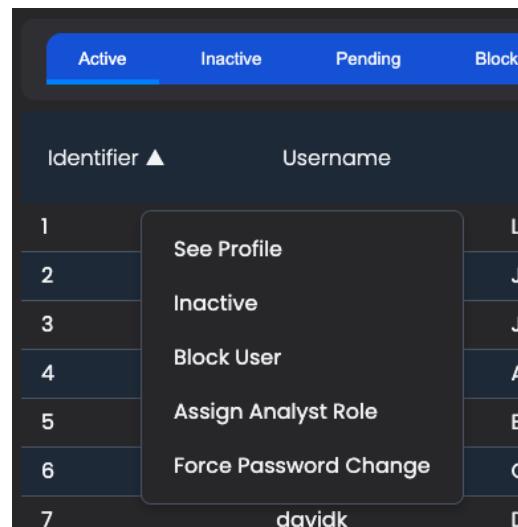
- **Active:** Filter for active accounts.
- **Inactive:** Filter for inactive accounts; an account can become inactive via the ADMIN dashboard or after 30 days of inactivity.
- **Pending:** Filter for pending accounts; a pending account is one that has not yet activated the account via the email token.

- **Blocked:** Filter for blocked accounts.
- **Active Sessions:** Filter for active users; an active user is someone who performed any account action in the last 10 minutes.

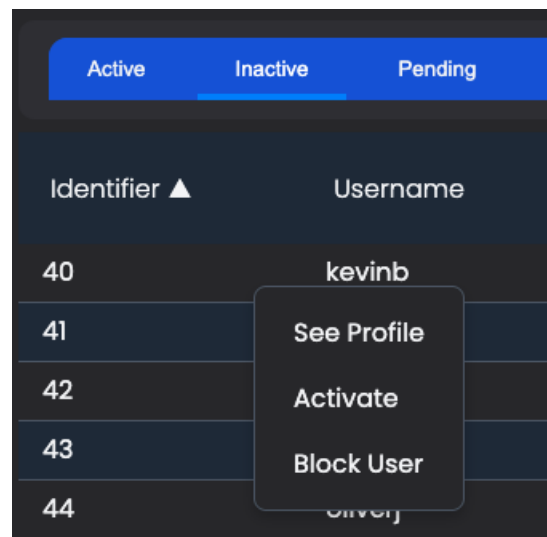
Sub-tabs include pagination (10 records) and ASC/DESC sorting. There is a search option by Username, Name, or User Identifier.

Right-clicking on a record in the sub-tabs shows options:

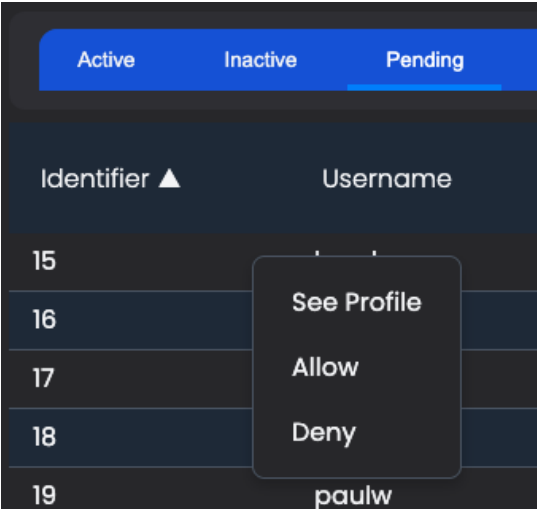
**Active Tab:** Option to Inactivate, Block, Grant Analyst Privilege, and Force Password Change.



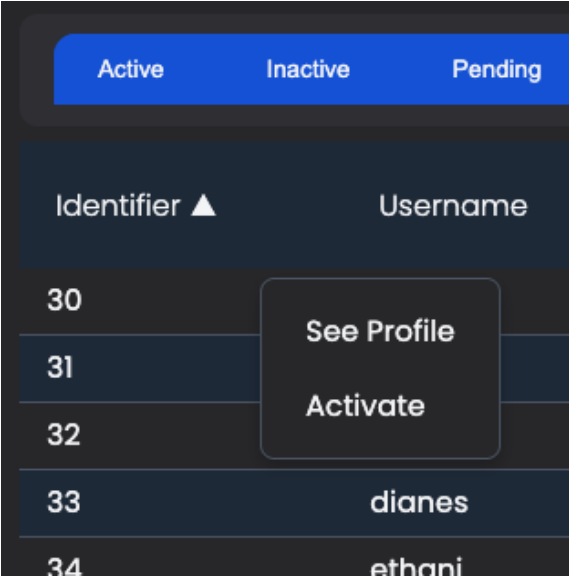
**Inactive Tab:** Option to Activate or Block account.



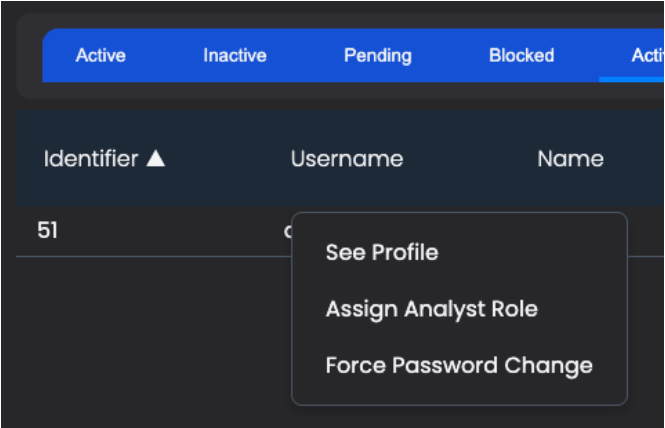
**Pending Tab:** Option to Approve or Decline account (deletes the record).



**Blocked:** Option to Activate account.



**Active Session:** Option to Grant Analyst Privilege and Force Password Change.



**Note:** The "See Profile" option to view all detailed information of an account is available in all sub-tabs.

### 3.2 Logs

Admin Dashboard

Account Management

Logs

Configuration

Charts

Username

User Identifier

Filter

User Identifier	Username	Description	Action	IP Address	Date
50	user		LOGIN ACCOUNT	192.168.65.1	10/13/2025, 12:35:21 AM
50	user	Updated login date: 2025-10-13T00:35:21.741956965. And login attempt: 0	UPDATED LOGIN INFORMATION		10/13/2025, 12:35:21 AM
50	user	Login attempt: 0	LOGIN ATTEMPT OK		10/13/2025, 12:35:21 AM
50	user	Login attempt: 1	LOGIN ATTEMPT FAILED		10/13/2025, 12:35:18 AM
50	user		LOGIN ACCOUNT	192.168.65.1	10/13/2025, 12:32:16 AM
50	user	Updated login date: 2025-10-13T00:32:16.644252338. And login attempt: 0	UPDATED LOGIN INFORMATION		10/13/2025, 12:32:16 AM
50	user	Login attempt: 0	LOGIN ATTEMPT OK		10/13/2025, 12:32:16 AM
50	user	Login attempt: 1	LOGIN ATTEMPT FAILED		10/13/2025, 12:32:06 AM
50	user		LOGIN ACCOUNT	192.168.65.1	10/13/2025, 12:15:48 AM
50	user	Updated login date: 2025-10-13T00:15:48.665085714. And login attempt: 0	UPDATED LOGIN INFORMATION		10/13/2025, 12:15:48 AM

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View activity logs of all accounts. Filters: By Username and User Identifier. General: Pagination (10 records) and sorting.

### 3.3 Configuration

Admin Dashboard

Account Management

Logs

Configuration

Charts

Logout

Security Configuration

Password Expiry (Days):

90

Save

Token Session Expiration (Minutes):

10

Save

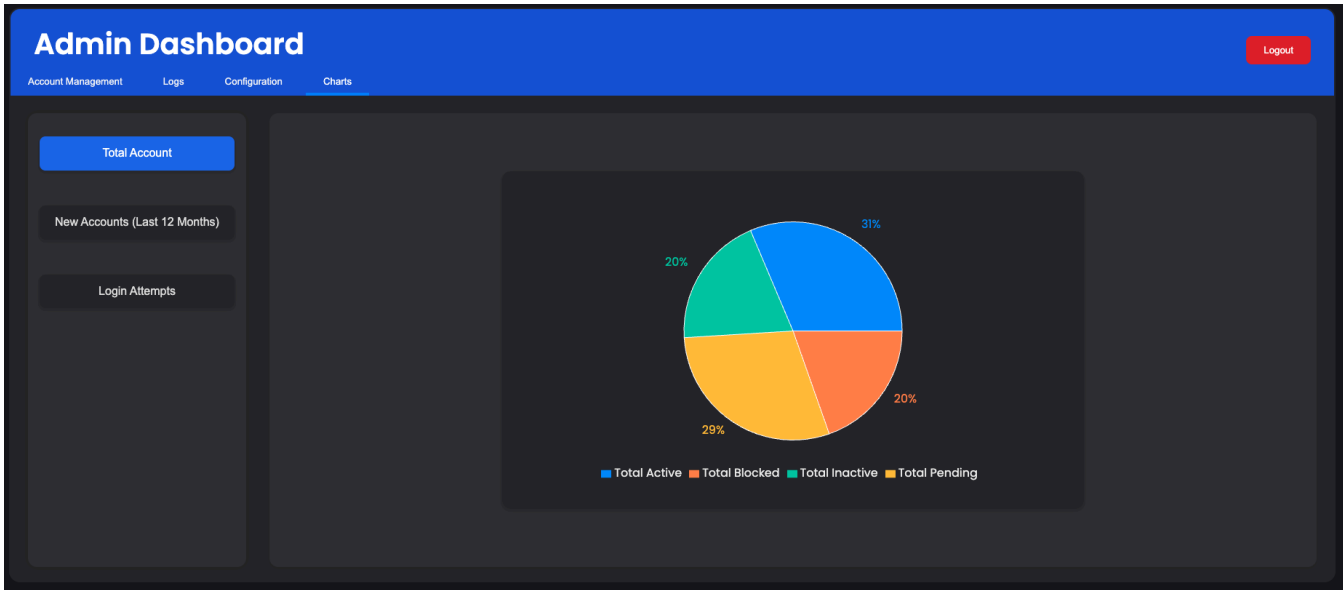
Allows modifying global settings:

- Password Expiration (default 90 days).
- JWT Token Expiration in minutes (Refresh Token is fixed at 24h).

### 3.4 Charts

Displays 3 types of analytical charts:

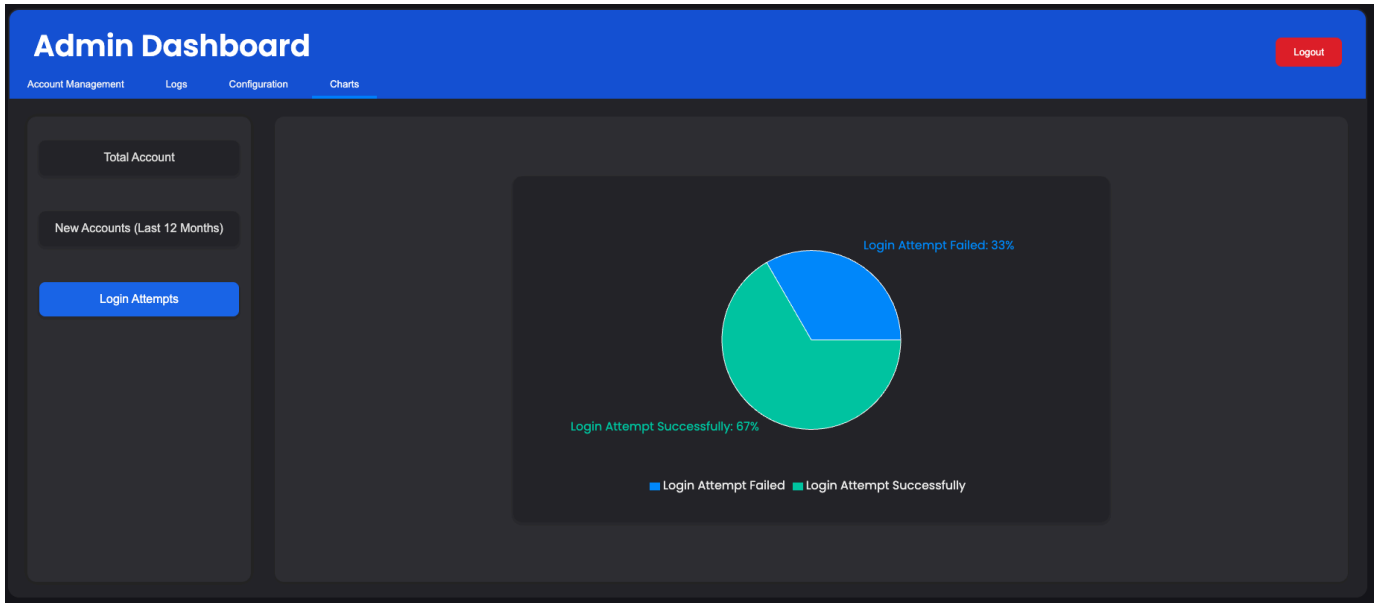
- Pie Chart: Total accounts (Active, Inactive, Pending, Blocked, Active Sessions).



- Bar Chart: New accounts in the last 12 months.



- Pie Chart: Successful Login vs. Failed Login ratio.



4. Analyst Dashboard Features

The Analyst has a dashboard similar to the admin but with read-only permissions: the only action available in the Account Management tab is "See My Profile," and the Configuration tab is view-only. The Analyst Dashboard includes an additional feature: a button that directs them to their own user profile, accessing User Dashboard functionalities.

Analyst Dashboard

Account Management

Logs

Configuration

Charts

Total: 51

Total Active: 16

Active

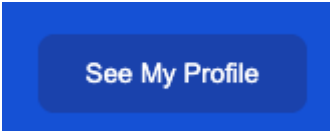
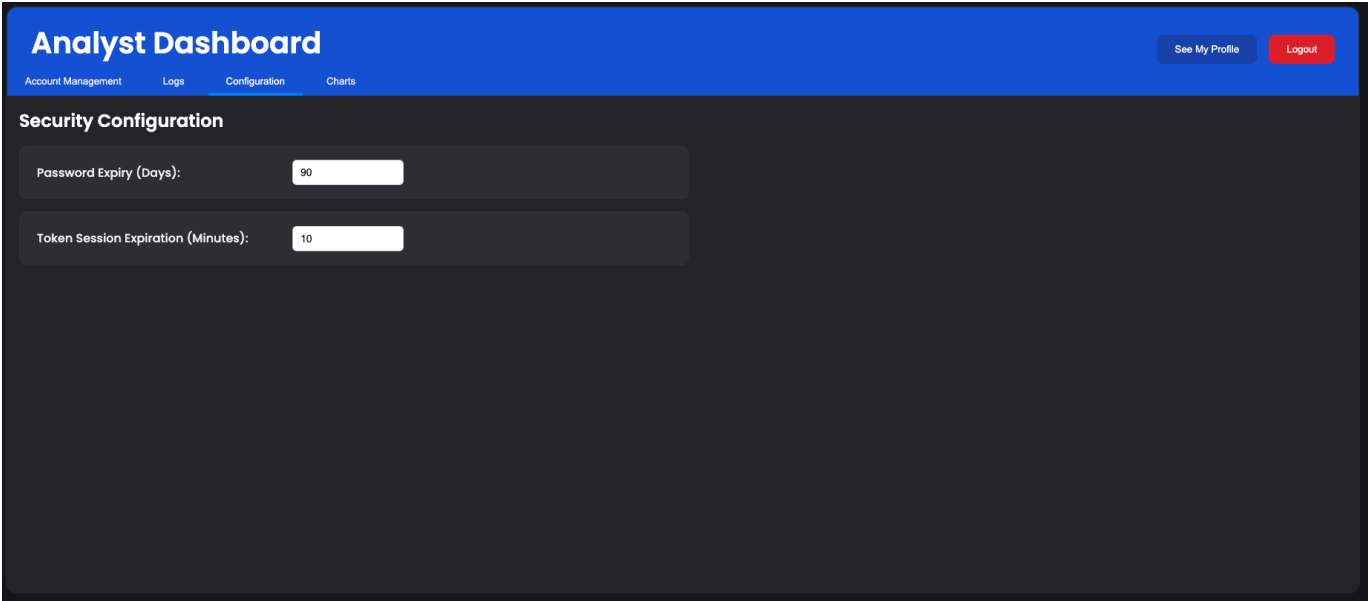
Inactive

Pending

Blocked

Active Session

Identifier ▲	Username	Name
1		Lucas
2	doe	Jane
3	johnsmith	John
4	alicew	Alice
5	bobm	Bob



5. User Dashboard Features

Standard users have access to a personal dashboard focused on their account and security:

Tab	Features
Account Management	View: All profile data (username, name, phone, address, etc.). Edit: Can update most fields except "User Created On" and "Email". Username: Can be changed, subject to uniqueness validation.
Security Settings	Change Password: Form to update password (New Password and Confirmation) Delete Account: Irreversible action to delete the account.
Activity Log	View own account activity, with pagination and sorting.



U

Hello, User!

Logout

Account Management

Security Settings

Activity Log

Username

user

User Created On

10/12/2025

Gender

Male

City

City

Address

My address

ZIP Code

999999

Country

Brazil

Name

User

Phone

+55 (99) 99999-9999

Birth Date

01/01/2000

State

SC

Address Complement

Complement

Email

dsadas@gmail.com

Language

English

Save Changes

U

Hello, User!

Logout

Account Management

Security Settings

Activity Log

Change Password

Update your password to keep your account secure.

Change Password

Delete Account

This action is irreversible.

Delete My Account

U

Hello, User!

Logout

Account Management

Security Settings

Activity Log

Action	IP Address	adminDashboard.deviceName	Description	Date ▼
LOGIN ACCOUNT	192.168.65.1	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko...		10/13/2025, 2:14:01 AM
UPDATED LOGIN INFO...			Updated login date: 2025-10-13T0...	10/13/2025, 2:14:01 AM
LOGIN ATTEMPT OK			Login attempt: 0	10/13/2025, 2:14:01 AM
PASSWORD RESET			Password reset successfully.	10/13/2025, 2:13:56 AM
LOGIN ACCOUNT	192.168.65.1	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko...		10/13/2025, 12:35:21 AM
UPDATED LOGIN INFO...			Updated login date: 2025-10-13T0...	10/13/2025, 12:35:21 AM
LOGIN ATTEMPT OK			Login attempt: 0	10/13/2025, 12:35:21 AM
LOGIN ATTEMPT FAILED			Login attempt: 1	10/13/2025, 12:35:18 AM
LOGIN ACCOUNT	192.168.65.1	Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko...		10/13/2025, 12:32:16 AM
UPDATED LOGIN INFO...			Updated login date: 2025-10-13T0...	10/13/2025, 12:32:16 AM

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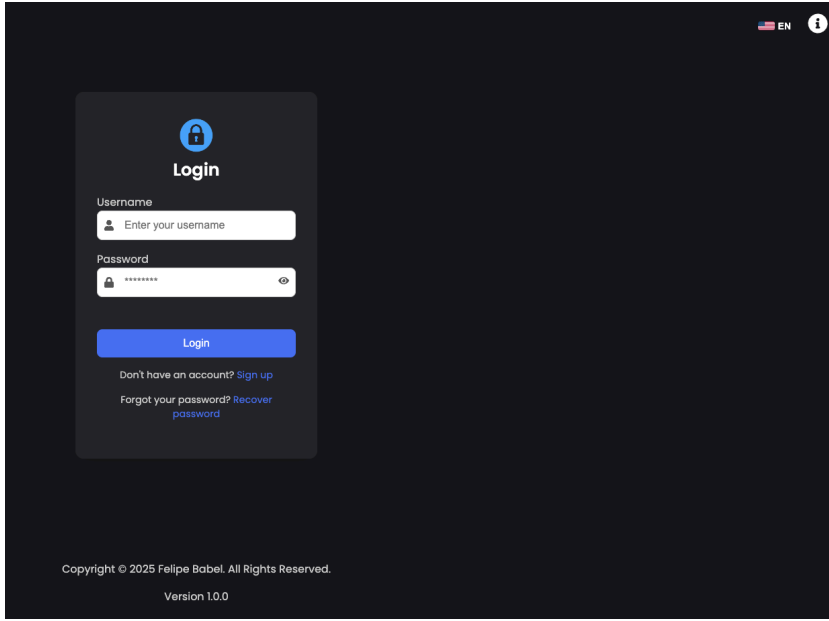
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Users with the Analyst role have a shortcut button to the Analyst Dashboard.

**Global Feature:** All Dashboards (Admin, Analyst, and User) include a Logout button to end the session.

## 6. Authentication and Recovery Flows

### Login

A screenshot of a login form on a dark background. The form is centered and contains a blue lock icon, the title 'Login', and two input fields: 'Username' with a placeholder 'Enter your username' and 'Password' with a placeholder 'Enter your password'. Below the fields is a blue 'Login' button. Under the button are two links: 'Don't have an account? Sign up' and 'Forgot your password? Recover password'. In the top right corner of the form area, there is a language selector showing 'EN' and an information icon. At the bottom of the form, there is a copyright notice: 'Copyright © 2025 Felipe Babel. All Rights Reserved.' and 'Version 1.0.0'.

Fields for Username and Password. Includes options for:

- View Project Documentation.
- Change Language (English, Portuguese, Spanish, German).
- Create Account.
- Forgot Password.

## Create Account (Sign Up)

Create Account

Username

Enter your username

Email

example@email.com

Your name

Your name

Password

\*\*\*\*\*

Confirm password

\*\*\*\*\*

Sign Up

Already have an account?

[Back to Login](#)

Requires Username, Email, Name, Password, and Confirmation. Send a 6-digit code via email, valid for 15 minutes, to activate the account. Includes an option to go back to Login.

## Validate Code Email

Email Verification

Enter the 6-digit code sent to

Verify Code

Screen to enter the activation code to activate the account.

Recover Password (Forgot Password)

Recover Password

Email

✉

Enter your email

Send Recovery Link

Remember your password? [Back to Login](#)

Send a reset link/code to the email. Option to return to Login.

Validate Code Password

✉

Validate Code

Enter the 6-digit code sent to your email

Verify Code

Didn't receive the code? [Click here to resend the code](#)

Did you remember your password? [Back to login](#)

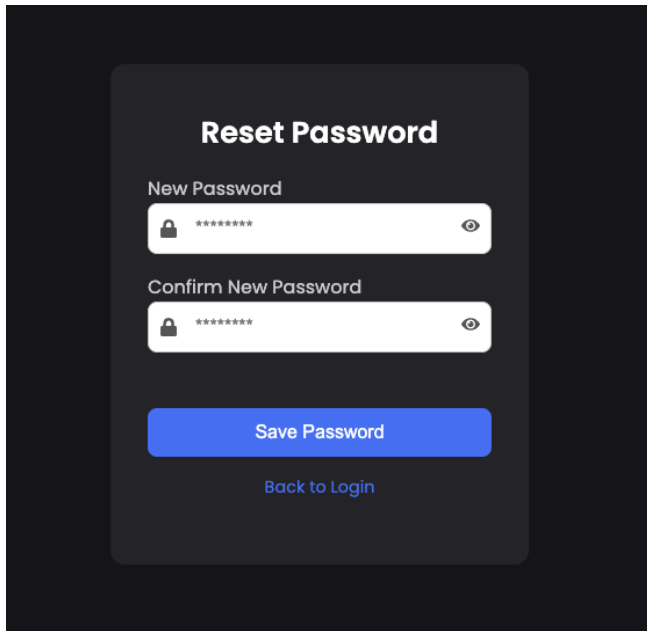
Screen to enter the 6-digit reset code (valid for 15 minutes).

**Features:**

**Resend Code:** If the user did not receive the email, they can request a resend, subject to a 2-minute cooldown between requests.

**Back to Login:** Option to cancel the process and return to the Login screen.

## Reset Password

A screenshot of a 'Reset Password' screen. The screen has a dark background. At the top, the title 'Reset Password' is displayed in white. Below the title, there are two input fields. The first is labeled 'New Password' and the second is labeled 'Confirm New Password'. Both fields have a lock icon on the left and an eye icon on the right. Below the input fields, there is a blue button labeled 'Save Password' and a link labeled 'Back to Login' in blue text.

Accessed after validating the recovery code or when the user's password expires (due to expiration policy). Requires New Password and Confirmation, with validation to ensure the new password is different from the previous one.