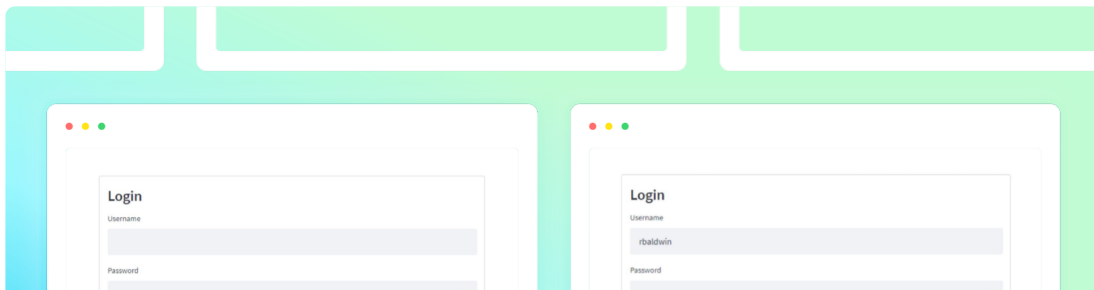**Blog**

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Streamlit-Authenticator, Part 1: Adding an authentication component to your app

How to securely authenticate users into your Streamlit app

By Mohammad Khorasani

Posted in Advocate Posts, December 6 2022

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As developers, we often require features that are yet to be made natively. For me, that was implementing user authentication and privileges in a client-related project that eventually grew into a full-fledged package aptly named Streamlit-Authenticator.

Specifically, my client asked for the ability to authenticate users with different privilege levels for their business needs, as well as a whole host of other features. That's what prompted me into developing this package. While authentication is definitely needed for some apps—especially corporate ones—it's great to make your apps accessible to the community whenever possible to share and spread the learnings!

In this two-part tutorial, you'll learn:

- How to install Streamlit-Authenticator
- How to hash user passwords
- How to create a login widget
- How to authenticate users
- How to implement user privileges

👉 TL;DR? Here's the [repo code](#).

How to install Streamlit-Authenticator

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How to hash user passwords

It's absolutely vital to hash any password that will be stored on a disk, database, or any other medium. Here, you'll be defining your users' credentials in a YAML file.

You'll also define several other configuration settings pertaining to the key and expiry date of the re-authentication JWT cookie. If you don't require passwordless re-authentication, just set the **expiry_days** to 0.

You can also define a *preauthorized* list of users who can register their usernames and passwords (I'll cover this in the next post in this series).

Step 1. Create the YAML file:

```
credentials:
  usernames:
    jsmith:
      email: jsmith@gmail.com
      name: John Smith
      password: abc # To be replaced with hashed password
    rbriggs:
      email: rbriggs@gmail.com
      name: Rebecca Briggs
      password: def # To be replaced with hashed password
```

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```
hashed_passwords = stauth.Hasher(['abc', 'def']).generate()
```

Step 3. Replace the plain text passwords in the YAML file with the
generated hashed passwords.

How to create a login widget

Now that you've defined your users' credentials and configuration
settings, you're ready to create an authenticator object.

Step 1. Import the YAML file into your script:

```
import yaml
from yaml.loader import SafeLoader
with open('../config.yaml') as file:
    config = yaml.load(file, Loader=SafeLoader)
```

Step 2. Create the authenticator object:

```
authenticator = Authenticate(
    config['credentials'],
```

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How to authenticate users

Once you have your authenticator object up and running, use the return values to read the *name*, *authentication_status*, and *username* of the authenticated user.

You can ppt-in for a logout button and add it as follows:

```python
if authentication_status:
    authenticator.logout('Logout', 'main')
    st.write(f'Welcome *{name}*')
    st.title('Some content')
elif authentication_status == False:
    st.error('Username/password is incorrect')
elif authentication_status == None:
    st.warning('Please enter your username and password')
```

Or you can access the same values through a session state:

```python
if st.session_state["authentication_status"]:
    authenticator.logout('Logout', 'main')
    st.write(f'Welcome *{st.session_state["name"]}*')
    st.title('Some content')
elif st.session_state["authentication_status"] == False:
```
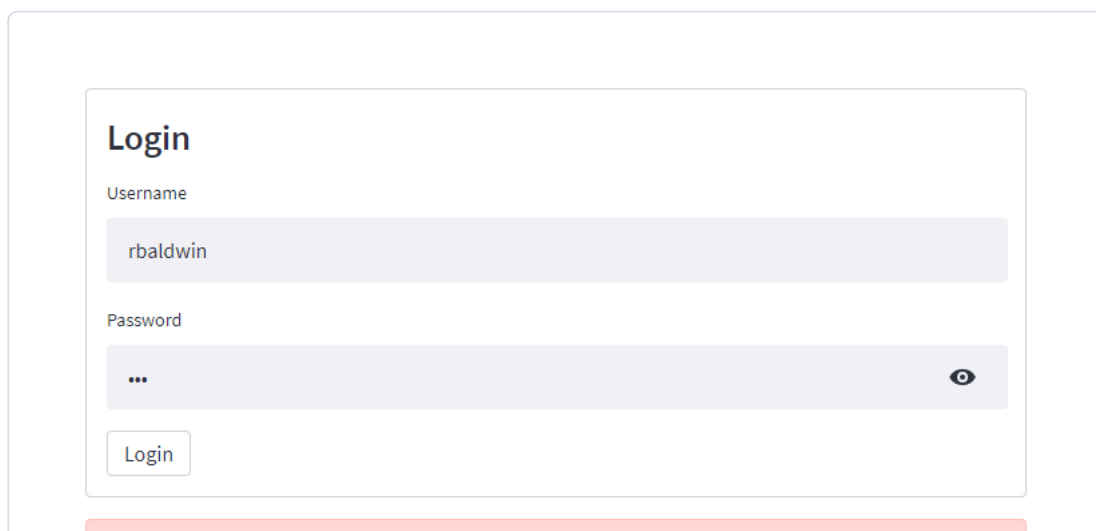
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Logout

Welcome *John Smith*

Some content
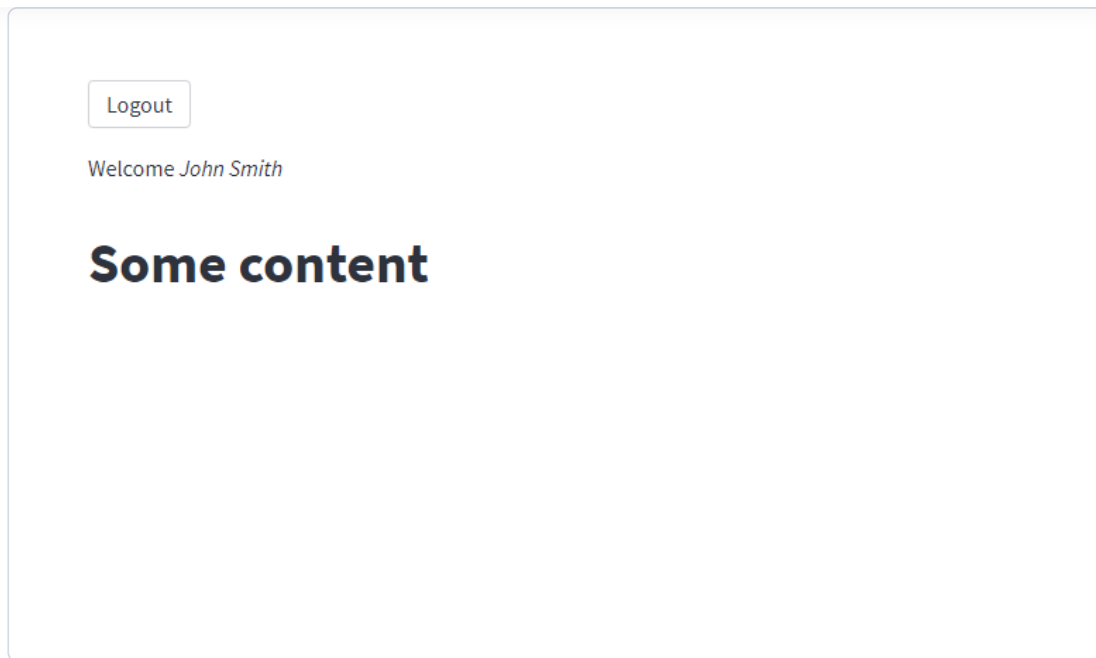
You can also alter the user if their credentials are incorrect:

Login

Username

rbaldwin

Password

•••   👁
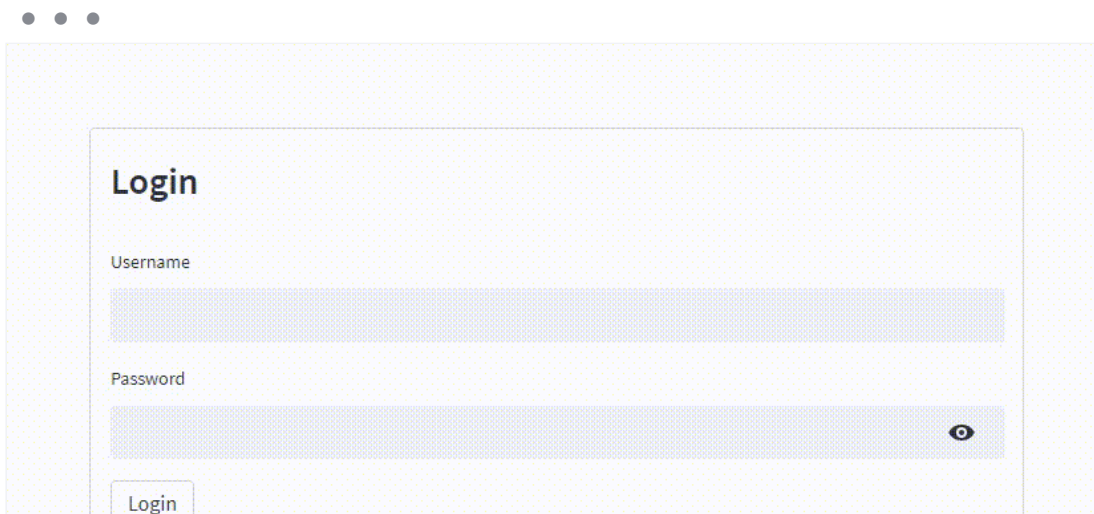
Login

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```python
name, authentication_status, username = authenticator.login
if authentication_status:
    authenticator.logout('Logout', 'main')
    if username == 'jsmith':
        st.write(f'Welcome *{name}*')
        st.title('Application 1')
    elif username == 'rbriggs':
        st.write(f'Welcome *{name}*')
        st.title('Application 2')
elif authentication_status == False:
    st.error('Username/password is incorrect')
elif authentication_status == None:
    st.warning('Please enter your username and password')
```


Login

Username

Password   👁

Login

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register new users, reset usernames/passwords, and update user data.

In the meantime, feel free to read more about this component in our book [Web Application Development with Streamlit](). And if you have any questions, please leave them in the comments below or contact me on [LinkedIn]().

Happy Streamlit-ing! 🎈

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           Hey Mohammad,

           I'm very new to streamlit/programming, so apologies in advance if what
           I'm asking is obvious.

           I'm using the Streamlit Authenticator with a Deta database for a project.
           My question is regarding the hasher. I've found that when creating a
           new user in the database like this:

           ```
           #start of code snipprt
           email=['brackethashed@email.com']

           username=['brackethashed']

           firstname = ['hashed']

           surname= ['hashed']

           password=['password']

           admin= ['True']

           approved=['True']
           ```

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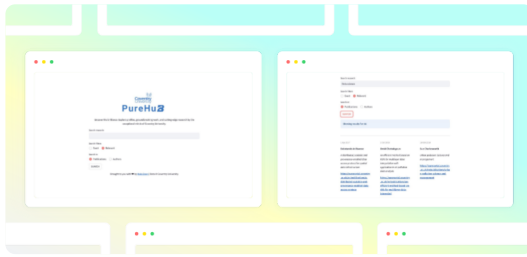

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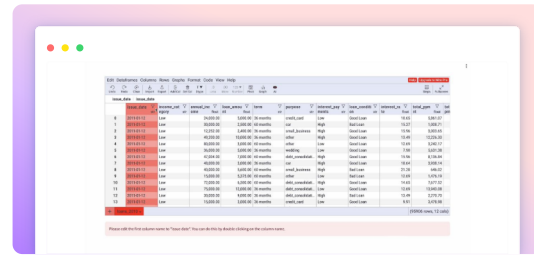October 6 2023

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