

WeHelp
Assignment - Week 4

Build a website by Python FastAPI with Jinja2 template engine. Complete a simple verification system defined below.

Task 1: Home Page

Reference: [Static Files](#), [Templates](#).

Write your web application using FastAPI, running with Uvicorn as a web server. We want to get a home page described below:

Home Page:

- **URL:** <http://127.0.0.1:8000/>
- **Design Points:** a simple UI with a signin form, including a text input, password input, checkbox and submit button.

The screenshot shows a web page with a dark blue header containing the text "歡迎光臨，請輸入帳號密碼" in white. Below the header is a white box containing a login form. The form has a title "登入系統" in black. It includes two input fields: "帳號" (Username) with the value "test" and "密碼" (Password) with four dots. Below these is a checkbox labeled "同意條款" (I agree to the terms). At the bottom of the form is a button labeled "登入" (Login).

Required Procedure:

1. When a user tries to submit the signin form by clicking the submit button, check if the checkbox is checked by JavaScript in the front-end.
 - a. If the checkbox is not checked, show a simple alert dialog with "Please check the checkbox first" message inside.
 - b. If the checkbox is checked, submit the signin form.

Task 2: Verification

Reference: [Form Data](#), [Query Parameters](#), [Custom Response](#).

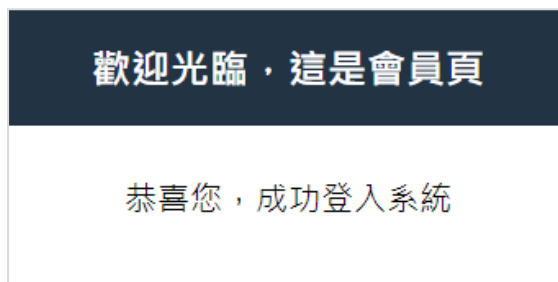
Users can enter username, password, check the checkbox, and finally submit the signin form to the back-end for verification. Redirect the user to the success or error page based on the verification result.

Verification Endpoint:

- **URL:** <http://127.0.0.1:8000/signin>
- **Method:** POST

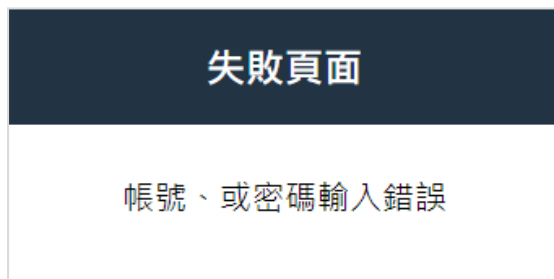
Success Page:

- **URL:** <http://127.0.0.1:8000/member>
- **Design Points:** show a simple successful message on this page.



Error Page:

- **URL:** <http://127.0.0.1:8000/error?message=自訂的錯誤訊息>
- **Design Points:** get error message from Query String in URL defined above and show it on this page.



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Required Procedure:

1. User enters username and password, checks the checkbox in the **Home Page**.
2. Submit form data to **Verification Endpoint** by **POST** method after user clicking submit button. Execute verification procedure described below in the back-end:
 - a. If the username or password is empty, redirect the user to the **Error Page** including "Please enter username and password" message.
 - b. **Verify** if the username and password are both **test**:
 - i. **If yes**, redirect the user to the **Success Page**.
 - ii. **If no**, redirect the user to the **Error Page** including "Username or password is not correct" message.

Task 3: User State Management

Reference: [SessionMiddleware](#), [Advanced Middleware](#).

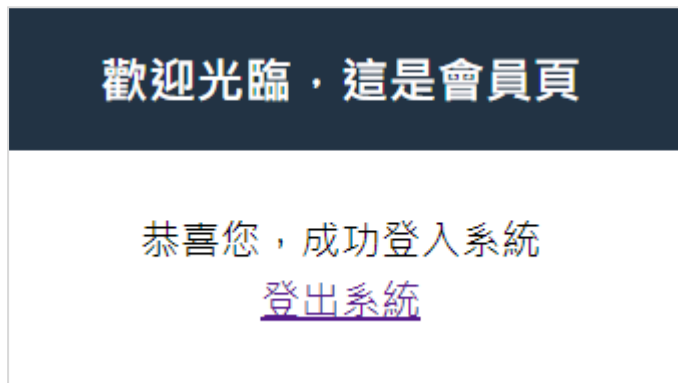
Use [SessionMiddleware](#) to manage user state in the verification procedure completed in Task 2. Record, trace, and verify user state in the back-end system.

Signout Endpoint:

- **URL:** <http://127.0.0.1:8000/signout>
- **Method:** GET

Success Page:

- **URL:** <http://127.0.0.1:8000/member>
- **Design Points:** show a simple successful message and a hyperlink for signing out on this page.

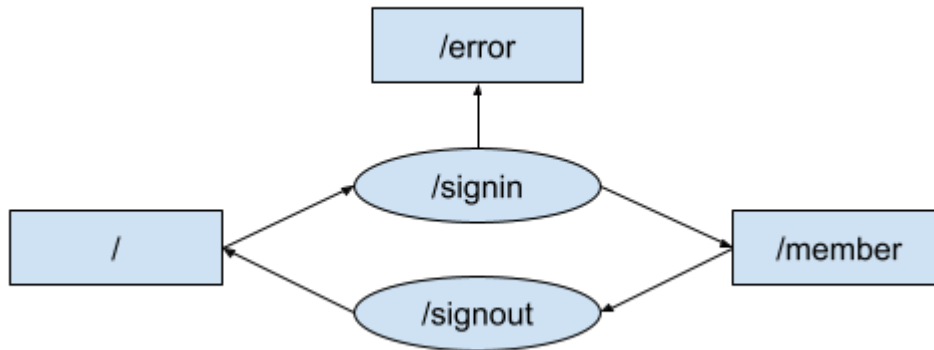


Required Procedure:

1. In the **Verification Endpoint**, if the username and password are verified, set **SIGNED-IN** state to **TRUE** and redirect the user to the **Success Page**.
1. In the **Success Page**, if the user clicks the sign out link, redirect to the **Signout Endpoint** where we set **SIGNED-IN** state to **FALSE**, and then redirect the user to the **Home Page**.
2. In the **Success Page**, we should always check the recorded **SIGNED-IN** state in the back-end logic. If it's **FALSE**, force redirecting the user to the **HomePage** without showing any content on the page.

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For previous 3 tasks, you can refer to user flow shown as below:



Task 4: Path Parameter (Optional)

Reference: [Path Parameters](#).

Accept a path parameter to calculate squared numbers.

Home Page:

- **URL:** <http://127.0.0.1:8000/>
- **Feature:** click button to calculate squared number.
- **Design Points:** a simple UI with a text input and a button.

歡迎光臨，請輸入帳號密碼

登入系統

帳號

密碼

同意條款 ☐

登入

計算正整數的平方

正整數

計算

Squared Number Page:

- **URL:** <http://127.0.0.1:8000/square/某個正整數>
- **Design Points:** show the squared number based on the number in the path of the URL defined above.

正整數平方計算結果

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Required Procedure:

1. User enters text in the text input in the **Home Page** and clicks the button.
2. Check if the entered text is a positive number by JavaScript. If not, show a simple alert dialog with "Please enter a positive number" message inside.
3. Redirect the user to the **Squared Number Page** by JavaScript where **the entered positive number should be appended to the end of the path**.
4. Show the squared number in the **Squared Number Page**.