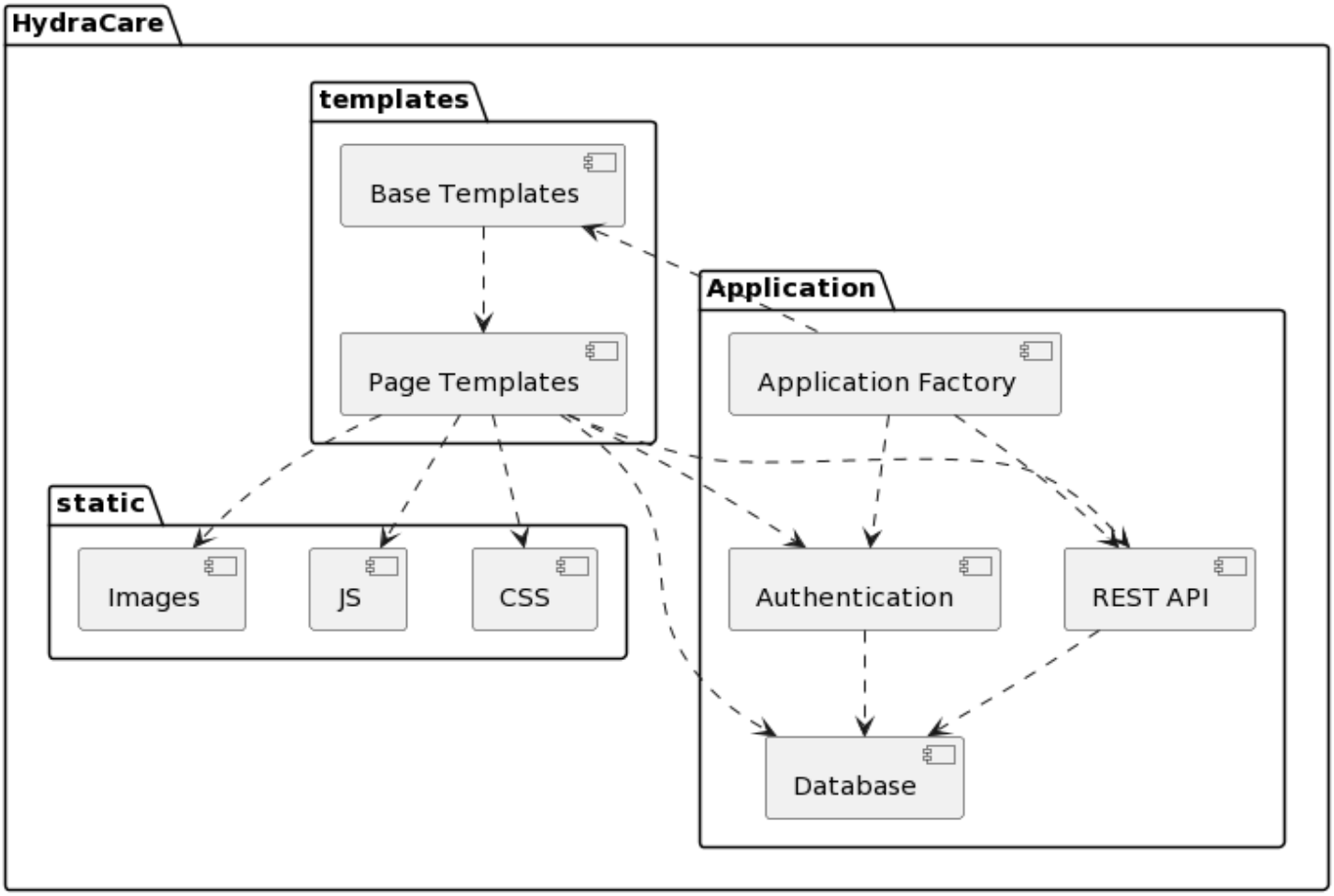
V. Structure and implement

1. Structure



The main components are:

- templates: Provides page templates, including base templates and page templates
- static: Provides static resources, including CSS, JS and images
- Application:
    - auth: Authentication module
    - db: Database operation module
    - rest: Provides REST API

- app: Application factory to create Flask app

The main relationships between components:

- Page templates depend on base templates
- Page templates use Authentication, Database and REST API
- Authentication and REST API both depend on database module
- Application registers Authentication and REST API modules when created

It's based on Flask's MVC architecture, use template mechanism to implement pages. Authentication and REST API provide main functionality.

2. Directory structure

```
.
├── __init__.py
├── __pycache__
│   ├── __init__.cpython-311.pyc
│   ├── app.cpython-311.pyc
│   ├── auth.cpython-311.pyc
│   ├── db.cpython-311.pyc
│   └── rest.cpython-311.pyc
├── auth.py
├── code-framework
│   └── framework
├── db.py
├── readme.md
├── requirements.txt
├── rest.py
├── schema.sql
├── static
│   ├── css
│   │   ├── bootstrap.min.css
│   │   └── index.css
│   ├── imgs
│   │   ├── drink1.jpg
│   │   ├── drink2.jpg
│   │   ├── drink3.jpg
│   │   ├── drink4.jpg
│   │   ├── fun1.png
│   │   ├── fun2.png
```

```
│   │   ├── fun3.png
│   │   └── water.jpg
│   ├── js
│   │   ├── bootstrap.bundle.min.js
│   │   ├── echarts.min.js
│   │   ├── feather-4.28.0.min.js
│   │   ├── index.js
│   │   └── jquery-3.5.1.js
│   └── lib
│       ├── axios.0.21.1.min.js
│       ├── bootstrap.bundle.min.js
│       └── vue-2.6.12.js
└── templates
    ├── 404.html
    ├── 500.html
    ├── base.html
    ├── base_login.html
    ├── hello.html
    ├── index.html
    ├── login.html
    ├── macros.html
    ├── message.html
    ├── record.html
    ├── register.html
    ├── settings.html
    └── statistics.html
```

3. Modules

3.1 templates

- Purpose: Provide page templates for rendering UI
- Functions:
  - Define base templates with common UI elements
  - Implement specific page templates that extend base templates
- Code location: templates folder
- Components:
  - base.html: Base template
  - *.html: Page templates
- Source: Implemented for this application
- Usage:
  - Page templates inherit styles and structure from base templates
  - Views render page templates to generate UI

3.2 static

- Purpose: Provide static resources like CSS, JS, images
- Functions: Store resource files
- Code location: static folder
- Components:
  - CSS files
  - JS files
  - Image files
- Source: External libraries and custom code
- Usage:
  - Page templates link to CSS/JS to apply styling
  - Images displayed in pages

3.3 Application

- Purpose: Create Flask application and implement app logic
- Functions:
  - App routing, request handling
  - Connect to data layer
  - Authentication and permissions
- Code location:
  - __init__.py - Application factory
  - auth.py - Authentication module
  - db.py - Database module
  - rest.py - REST API module
- Components:
  - Flask application object
  - App modules
- Source: Implemented for this application
- Usage:
  - Creates Flask app
  - Registers modules
  - Handles requests
  - Connects frontend to backend

VI. Using demo

Index Settings Record Statistics

HydraCare

Water plan Project

With the acceleration of life pace, many white-collar workers often forget to drink water or delay drinking time due to their busy work. Long-term dehydration can lead to physical dehydration and decreased normal body function. Therefore, it is of great significance to develop a water reminder APP. This APP can track users' daily water intake, set water reminders, and pop up reminders when reaching the set time to help users develop the habit of drinking water periodically. At the same time, the APP can also recommend some healthy drinks, such as various fruit teas, homemade drinks, etc., to enrich users' choices.

Index | Settings | Record | Statistics

Settings

Daily water intake goal: 1000

Submit

Github

Source code

Index | Settings | Record | Statistics

Record

Drank water: 1000

Record

Github

Source code

Index Settings Record Statistics

Statistics