



ADVANCED PROGRAMMING
HAIXIA CHAI; WEI ZHAO

ASSESSMENT 3 – WEB PROGRAMMING

WORLD CITIES FLASK WEB APPLICATION

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Cloud Deployment URL: <https://hospital-directory-flask.onrender.com>

GitHub Repository: <https://github.com/varshitha0301/hospital-directory-flask> , [Readme File](#)

Design:

The application is built using the Flask framework with a modular structure organized into templates and views. It features a clean and colorful homepage with a hospital name search bar and a U.S. state dropdown filter. Users can navigate to detailed hospital views, all styled using Bootstrap 5 without any use of JavaScript.

Development:

- Built a hospital listing page with state dropdown and live search input.
- Created the Hospital model using SQLAlchemy ORM and loaded a cleaned CSV file of 5000 hospitals.
- Designed reusable Jinja2 templates (index.html, hospital_detail.html, 404.html).
- Added a custom 404 error handler to manage invalid or missing hospital URLs.
- Ensured no <script> or JavaScript was used in templates, in compliance with project rules.
- Used Bootstrap 5 for layout, styling, and responsiveness.

Implementation:

- Developed all routes using Flask in app.py.
- Used query parameters for filtering and searching hospitals by state and name.
- Handled missing pages using a registered error handler and 404.html template.
- Modular design with proper separation of data loading logic and view rendering.
- Integrated unit tests for homepage and 404 behavior using Python's unittest module.

Installation:

git clone <https://github.com/varshitha0301/hospital-directory-flask.git> , **cd hospital-directory-flask**, **python3 -m venv venv**, **source venv/bin/activate**, **pip install -r requirements.txt**, **python3 app.py**

User & Testing:

- No login required. Users can:
- View the homepage with search and dropdown filters
- Access detailed hospital information
- 2 unit tests created using unittest for route testing and 404 error handling.
- Admin functionality was not required and not included as per assignment scope.

Deployment:

Deployed on **Render** using Python 3.10.7. Setup included requirements.txt, and Start Command: `python app.py`

Summary:

Hospital Directory is a Flask-based solo project that enables users to browse and search U.S. hospitals from a public dataset. The app includes search and filter functionality, Bootstrap-based styling, unit tests, and a user-friendly UI — all built without JavaScript. It meets all CS551P solo assignment requirements and is deployed successfully on Render.