

sllLySaUsAgEsQuAD Design Document

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Overview

sllLySaUsAgEsQuAD's image-based web app integrates image recognition, generation, and user authentication systems with Flask, SQLite, and Bootstrap. The landing page will be available to all logged in users, who will be able to access their profiles and the app's image recognition page. In it, users can either upload their own images or generate one from the Unsplash API. Using other APIs, the app will then specify and show the names of any identifiable objects in said image, as well as their definitions.

Site Preview

Home Page

- Access Control: for logged-in users only. Non authenticated users redirect to the login page.
- Navbar with links to profile page and image request form.
- Overview of application (RESTful APIS)

User Profile Page

- Displays past image requests and detection history
- Allows users to revise/delete prior entries

Login/Registration Page

- Form fields for username and password
- Displays error messages for failed login attempts
- Redirects users to home page after login

API Results Page

- Form fields for image source selection. Allow users to input their own images.
- Options for object detection & text conversion
 - Identifies objects in image
 - Loads text output from AI API sources based on objects

Program Components

Flask App

- `__init__.py`

HTML Templates

- `home.html`:
- `profile.html`:

- login.html: (may be integrated into home page)
- register.html
- api_results.html:

Middleware Modules

- database.py
- api_handler.py
- image_processor.py

Static Files

- CSS: style.css

APIs

[CloudMersive](#) | detects objects in images

[Unsplash](#) | returns random image (needs a card)

[Merriam-Webster](#) | returns definition of words

Frontend Framework

Bootstrap

Bootstrap is both easily usable and readable. Its class attributes are simple and follow the framework's pre-determined design so that code lines are not excessively long (noticed this is the case with Tailwind). In addition, it's one of the most developed and expansive frameworks we have available.

Database Organization

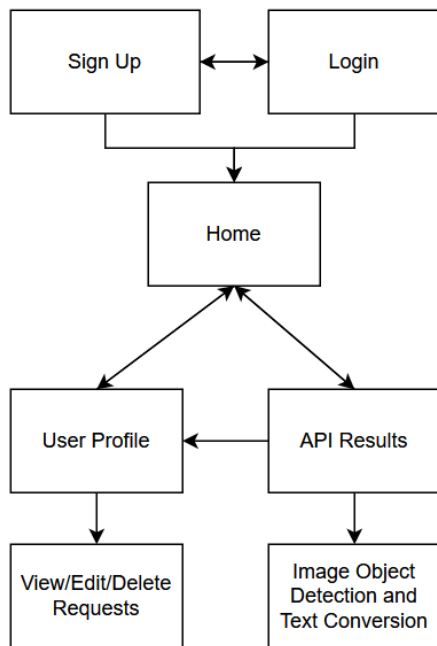
users | user IDs, API keys, login info

id	user_id	username	password_hash
#	AUTOINCREMENT	TEXT	TEXT

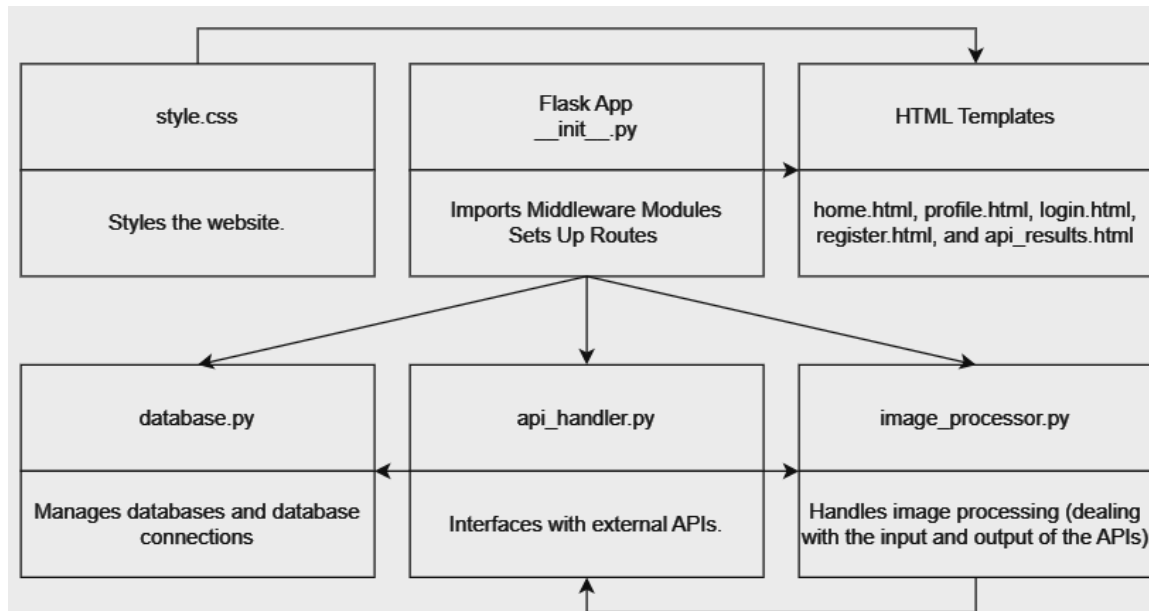
requests | user API requests & responses

id	request_id	user_id	request	response
#	AUTOINCREMENT	REFERENCE users(user_id)	TEXT	TEXT

Front-End Site Map



Component Map



Task Assignments

Disclaimer: These task assignments are NOT rigid. Group members may assist each other to ensure punctuality and proper completion of this project.

P1MJC	SQLite Databases
LUO	HTML Templates
H000	API Requests & Responses
DLH	Bootstrap, CSS Styling