sculpt.io

Correct Horse Battery Staple

Overview

sculpt.io is a 3D sandbox live sculpting utility. At its core, it allows users to interact with substrates — mostly-freeform objects. Much like a ball of clay, users can shape substrates however they wish using the provided toolbox.

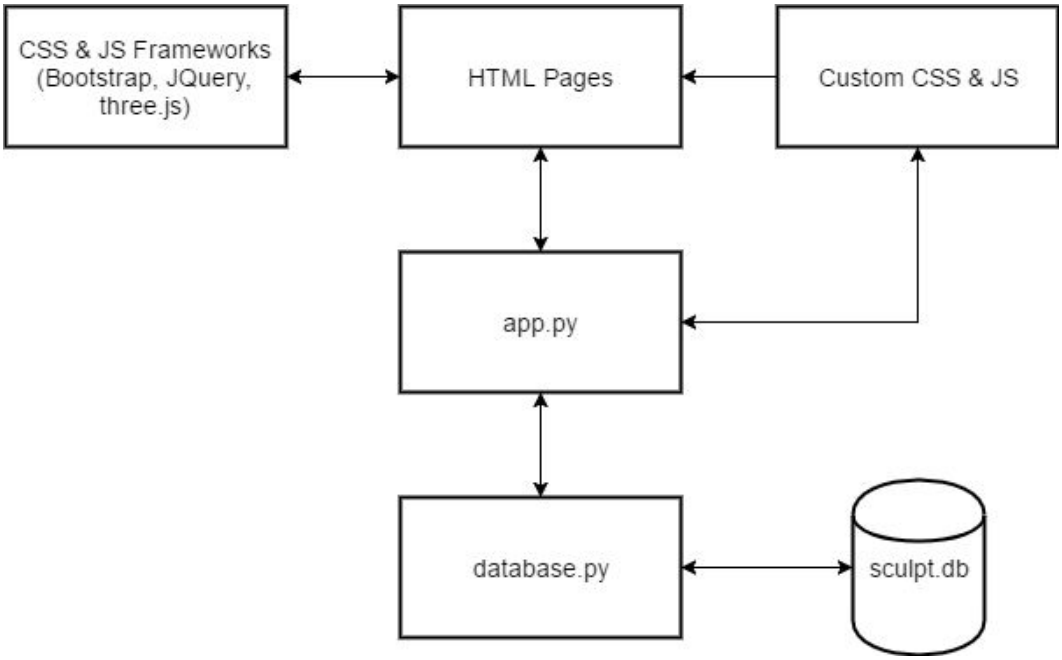
In Google Drive style, users may collaborate on projects in real-time; changes made on one client will propagate to all others through websockets. Users will be able to save and share their creations under their own user accounts.

Component Description

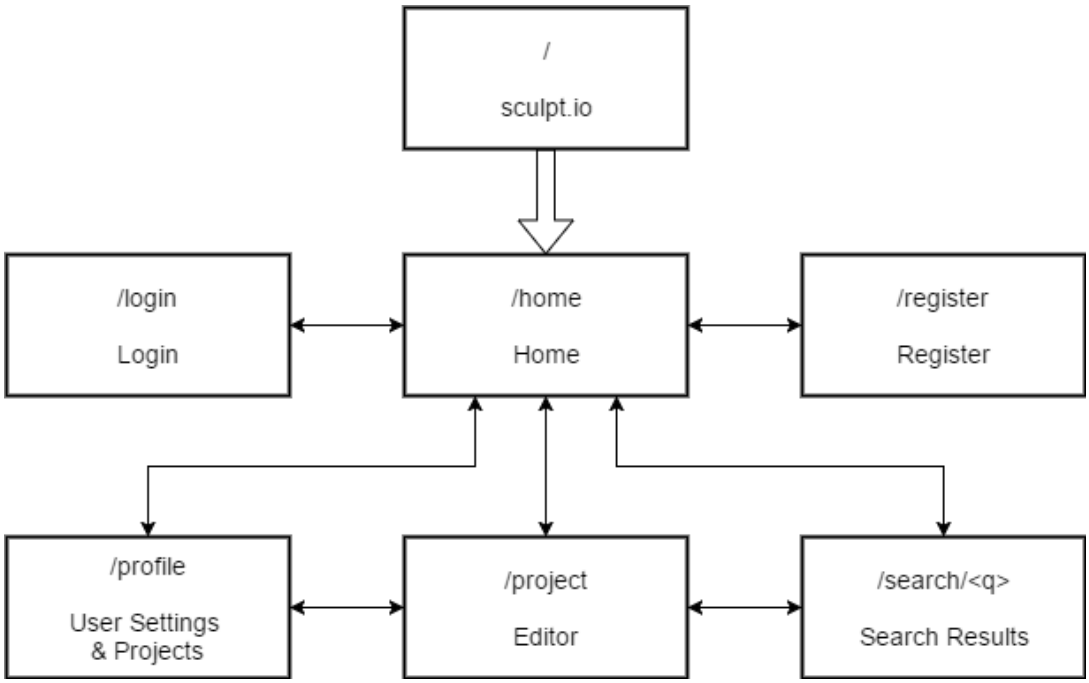
- Python files
    - app.py
        - HTTP Routes
            - GET /
                - Redirects to home
            - GET /home/
                - Renders index.html
            - POST /search/<query>/
                - Renders search.html with results of search query
            - POST /login/
                - Redirects to home if credentials verified
                - Renders auth.html with error otherwise
            - POST /register/
                - Redirects to home if registered successfully
                - Renders auth.html with error otherwise
            - GET /project/
                - Renders project.html
            - GET /profile/
                - Renders profile.html
        - SocketIO listeners
            - user-connect
                - Notify other users when user connects
            - user-disconnect
                - Notify other users when user disconnects
            - project-update
                - Propagates changes to other users

                - project-save
                    - Saves changes to database
    - database.py
        - is_registered(username)
            - Checks if user is registered
        - login(username, password)
            - Authenticates user credentials
        - register(username, password, confirm)
            - Adds user to database
        - change_password(username, password, new_password)
            - Changes user password
        - get_projects()
            - Gets all projects
        - get_projects_by_keyword(keyword)
            - Gets all projects with a given keyword
        - get_projects_by_user(username)
            - Gets all projects a user has contributed to
        - create_project(project)
            - Creates project
        - save_project(project_id, project)
            - Saves a project to the database
        - delete_project(project_id)
            - Deletes a project
- HTML Templates
    - index.html
        - Basic overview
        - Link to a login/register page
        - Search bar based on keywords/tags, creation/modification date, rating, author
            - GET /search/
    - search.html
        - List of results from a search
        - Button to import substrate into a new project
    - auth.html
        - Login and register forms
            - POST /login/ or /register/
    - project.html
        - HTML5 canvas and JavaScript (!!) needed to actually create substrates
    - profile.html
        - User settings (password change form)
        - List of projects user has contributed to

Component Map



Site Map



Database Schema (MongoDB)

- sculpt-db
    - users
        - username
        - passhash
            - SHA256 or similar hash
    - projects
        - project_name
        - creator
            - Original contributor
        - created
            - Time of creation
        - contributors
            - List of all users who have contributed to the project
        - last_modified
            - Time of last modification
        - project_data
            - List of points to render cubes and other metadata

Task Delegation

- Kenneth — JavaScript and HTML5 Canvas
- Misha (Project Manager) — Flask app
- Nick — JavaScript and MongoDB
- James — Frontend design and websockets

Timeline - soon™

- 5/15 — Basic server/client structure setup
- 5/18 — Database structure and user accounts
- 5/22 — Basic socket interfacing setup
- 5/29 — Sculpting working, searching working
- 6/5 — Debugging
- 6/12 — Due date