tambourinecheesecatrhino (Emma Buller, Tami Takada, Christopher Liu, Owen Yaggy)
SoftDev
P02 -- Design Doc
2022-03-07
Time spent: 60 Minutes

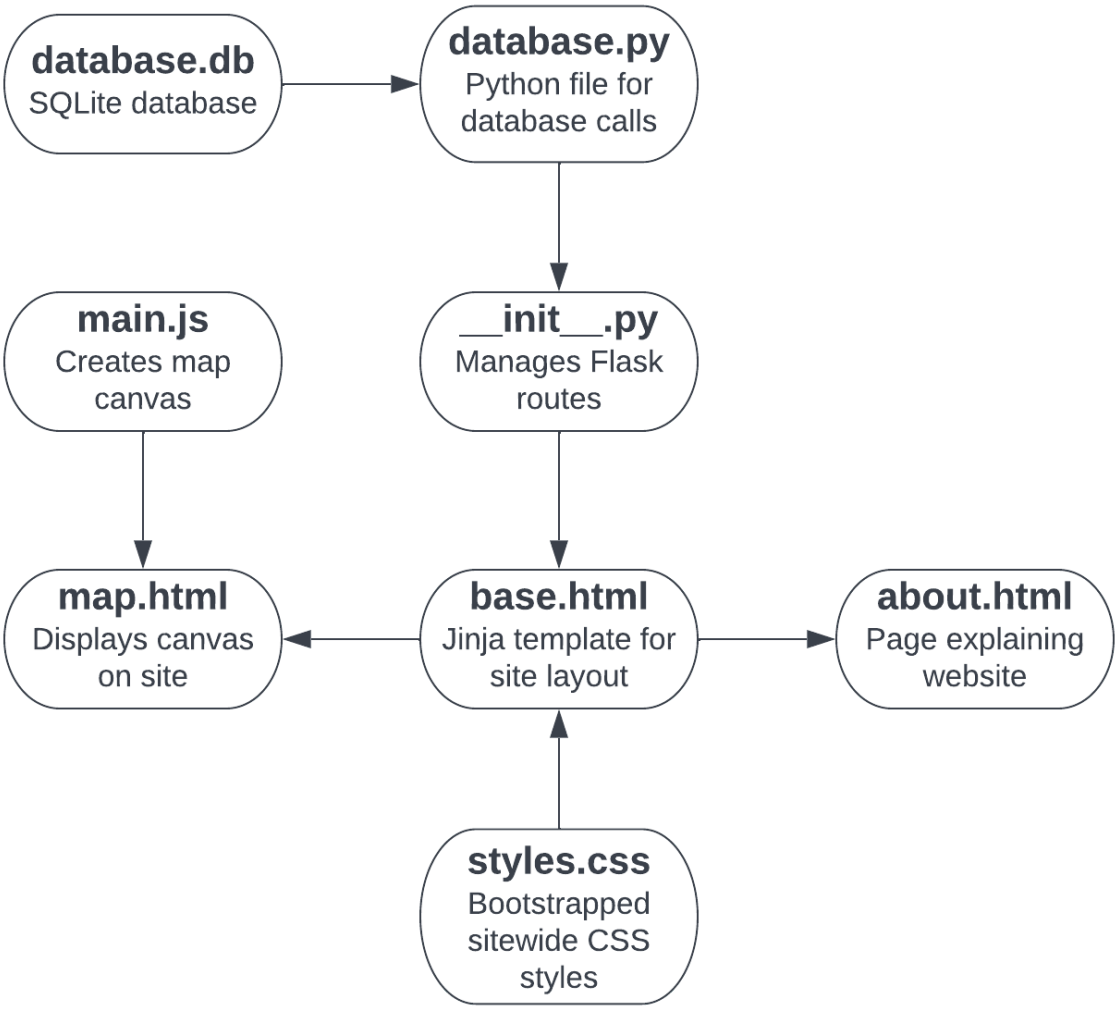
Project Description: *Moran's Maps:* An Interactive Map of Stuyvesant

Users will have access to floor plans of the school for all floors, and they can click on various rooms to get information about those rooms. Non-classrooms will be labeled (e.g. college office), and all rooms will have the room number available to view.

Project Components

- Floor plans
    - Currently have floor plans for every floor except for 8 and 10
    - 8 and 10: rough layouts based on other floor plans and data gathering
- Draw polygons around rooms in canvas as accurately as possible
    - Store vertex coordinate information in database
        - Use those stored coordinates to draw the rooms in the canvas when you select a floor
- Click on a polygon: display information of that room
    - Detecting if mouse is in polygon: https://medium.com/javascript-fanboi/2021-044-detecting-mouse-hover-over-irregular-shapes-bc9db265ff7d (A relatively simple algorithm that works by drawing a straight line from a mouse and selects correct room based on the number of times walls from different rooms are crossed)
- Information about classrooms
    - Main rooms (college office, music rooms, etc.))
    - Other information that can be displayed for classrooms
        - Which rooms have computers, smartboards, chalk boards, dry erase boards, etc. (Likely)
        - Room type (lab/demo/classroom/computer lab)
    - Gather information by walking around building and looking into classrooms
- Search for rooms
    - Allow user to look up rooms by room number -> display correct floor map and highlight room

Component Map



Database Organization

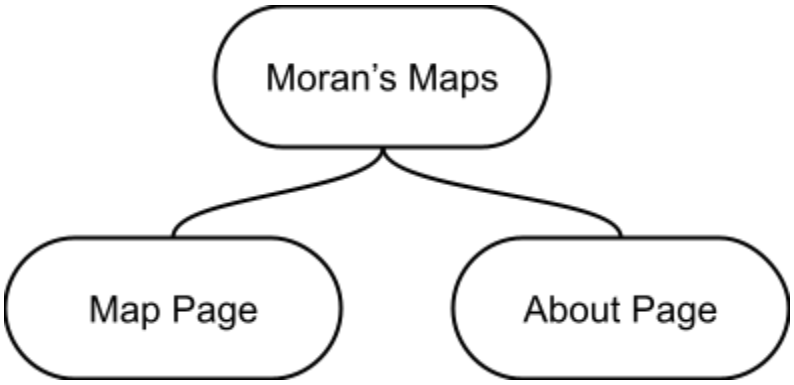
Room table

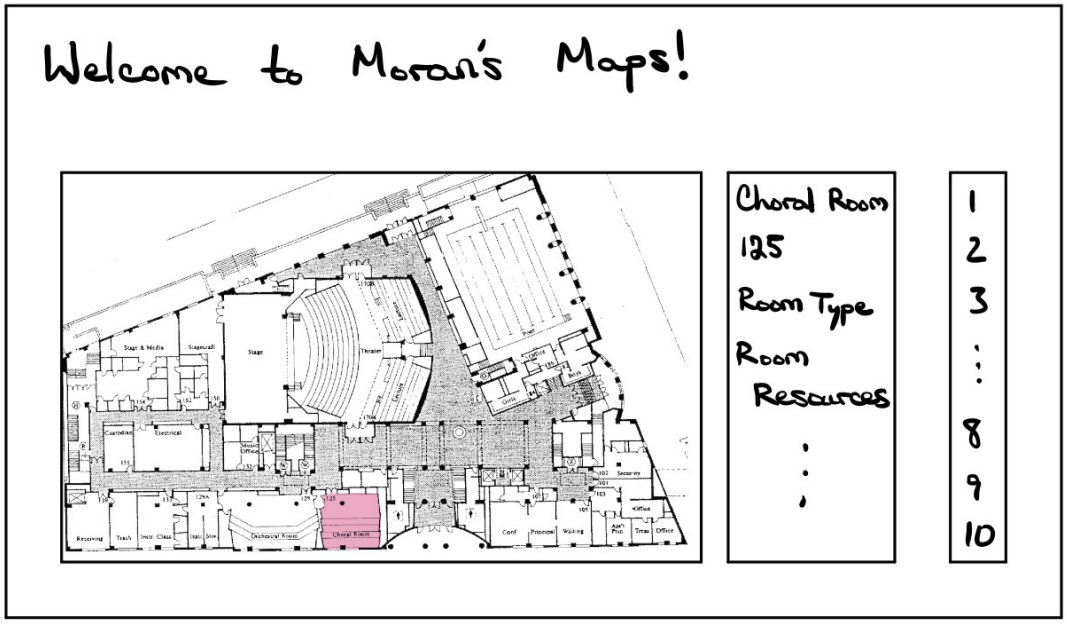
Columns	Floor	Room number	Room name	Coordinates (JSON)	Room info (JSON)
Example	1	101	Classroom	[(0, 0), (10, 0), (10, 10), (0, 10)]	{‘resources’: [‘smartboard’, ‘chalkboard’]}
	1	125	Music Room	[(20, 40), (30, 80), (40, 40)]	{‘resources’: [‘dry erase’, ‘projector’]}

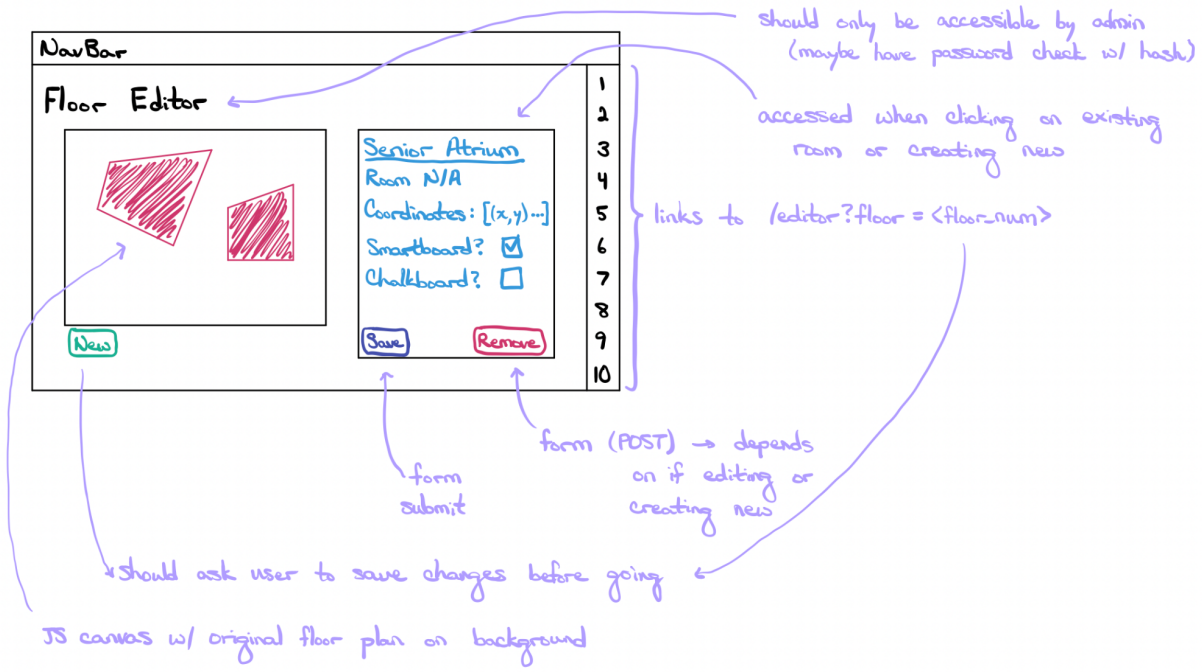
Coordinates and room info will be stored as JSON strings and will be parsed with json.loads(). For example, to find the coordinates of a given room, we can use our coordinate finding tool to select vertices and then use a form to send the information to our Python backend and store it in the database. When

we’re ready to display a room, we can read from our database, generate a JSON string with the required information, and pass the JSON string forward in a template.

Front-end Sitemap







Tasks

- Map making
  - Get coordinates for all rooms on all floors
  - Make maps for 8th and 10th floors
  - Get information for each room
    - Prioritize room name (for non-classrooms) and number
  - Make all of the maps look more appealing (If we have time)
- Database
  - Room information database
    - Collecting data for database
  - Displaying that Information
- HTML
  - Jinja templates for the pages
  - Needs to contain information to be passed to JavaScript
- CSS
  - Bootstrap formatting
  - Create mobile/small-screen-friendly format
- JS
  - Detect room click → display room info
  - Display different floors based on button click
  - Display the specified floor map
  - Get information from database
- Python/Flask
  - Create routes for different pages

- Connect database to website

Why Bootstrap
Bootstrap provides comprehensive options for styling with simple classes that all members of our group have experience with.

Roles
Everyone: Information Gathering
Emma: PM, HTML, CSS
Tami: Database
Chris: Javascript
Owen: Python/Flask, Javascript

Ship Date
2022-03-22