Title: DwellX

Project Summary:

DwellX is a consolidated platform to check ratings of districts in Chicago based on certain demographic and infrastructure metrics in order to determine an appropriate place for newcomers to live. It aims to assist newcomers in finding places to live by considering metrics such as house prices, high school ratings, crime rates, political affiliation, employment rates, and more. These metrics would then be used to rank each county from best to worst place to live based on user preferences.

The user will be able to create an account and choose which metrics are most important to them. Whether they value housing prices or schools rankings more, DwellX will be able to suggest ideal places for the user to live, while catering to their individual needs.

Description:

Finding a safe and ideal community to live in is often a time-consuming and overwhelming process. Prospective residents must research multiple factors like school quality, safety, healthcare accessibility, and job opportunities, which can be scattered across various sources. DwellX aims to streamline this process by consolidating relevant data into a single platform that provides users with customized district recommendations based on their needs. This will make the relocation decision more informed, efficient, and personalized

DwellX will be a platform that makes the process of finding safe and ideal communities a lot faster and easier. When looking for a place to live, different people have a variety of metrics they consider before committing to a new community. They might be looking for good schools to ensure their kids receive a good education, or they might be wanting to live in a close proximity to a hospital due to ongoing medical conditions. The process of doing this research can often be lengthy and time consuming. DwellX aims to speed up this process by allowing a user to input their preferences to quickly see a complete list of counties that match their current needs.

Creative Component:

To optimize user experience, DwellX will feature an interactive and dynamic map, which will allow the user to easily view the recommended counties and their specific metrics. The map will allow the users to explore the counties to see how the metrics are affecting the recommended rankings. To create this map and metric charts, we will be using the MapBox API and Chart.js.

We will also explore data visualization tools like Tableau to enhance the user's ability to save and compare districts. Users will be able to "record" saved or interested counties as interactive cards, displaying key metrics and visual comparisons in a side-by-side format. This feature will allow users to quickly assess differences between districts based on their personal priorities. Additionally, DwellX will include a community-driven forum section where users can provide feedback, share personal experiences, and engage in discussions about different neighborhoods. This user-generated content will add a qualitative dimension to the platform, complementing the statistical data with real-life insights from residents.

Usefulness:

DwellX will provide a comprehensive and user-friendly platform to assist individuals and families in choosing the best places to live. Users can:

- Search for districts based on customized preferences (e.g., affordability, safety, schools, closeness to office, etc).
- View detailed rankings and comparisons of various districts.
- Interact with a dynamic map to visualize data in an intuitive way.
- Access real-time updates on housing trends, crime rates, and employment statistics.

Unlike existing platforms such as Zillow, which primarily focus on estimating home prices and facilitating real estate transactions, DwellX is designed to help users identify suitable communities based on comprehensive data-driven insights. Rather than predicting home values (often criticized for inaccuracy) our platform

enables users to explore different districts first, allowing them to make informed decisions before delving into specific housing options. We don't provide predictions, only real data.

Realness:

Our data is highly accurate as it will be drawn from an official source of information: https://data.cityofchicago.org/. This website gives access to multiple datasets (in csv format) for various aspects (sanitation, crime, education, etc) over various years. We will be adding the following tables to our database using these csv files:

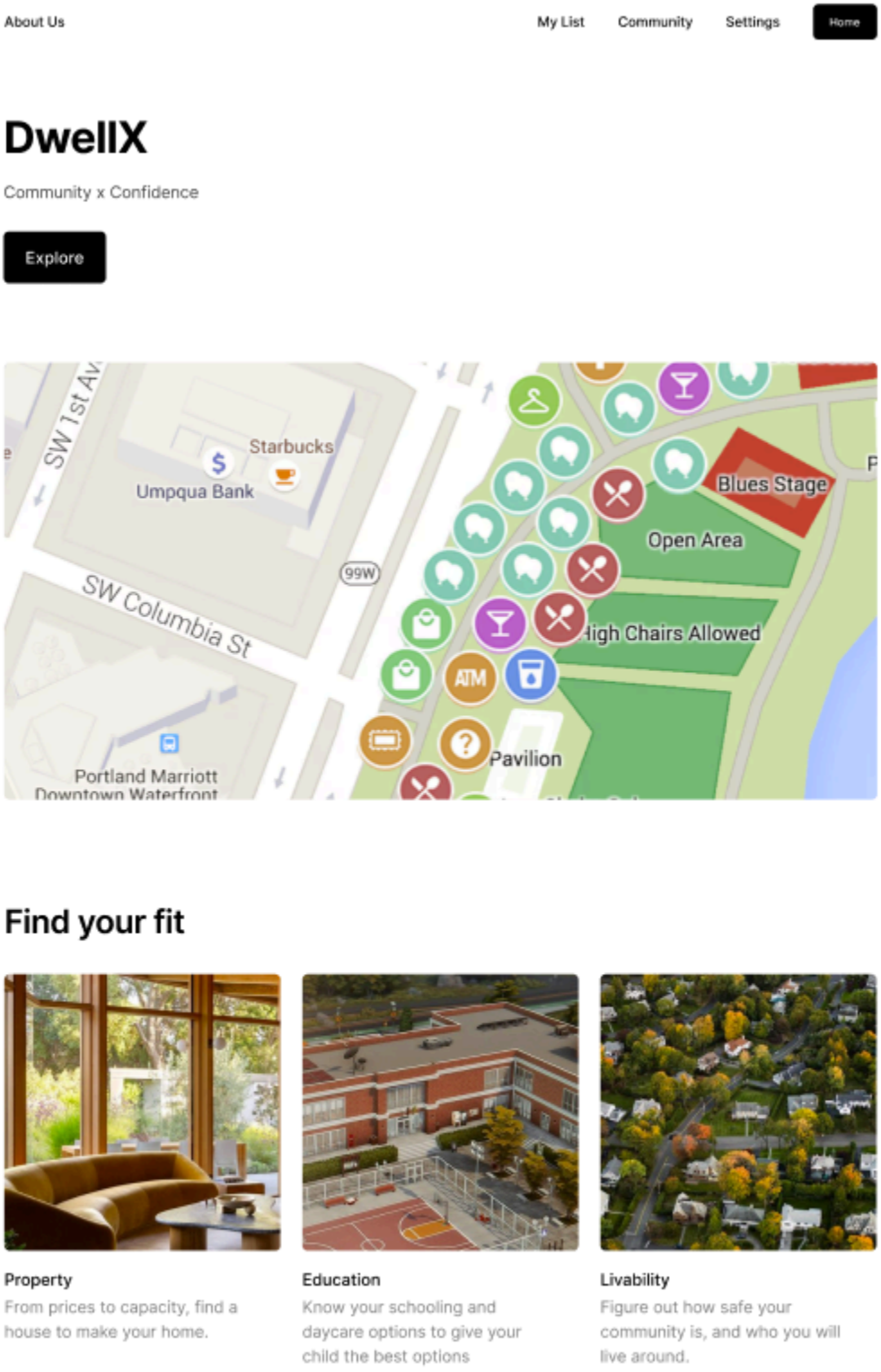
1. Houses
    a. Cardinality: 1003
    b. Degree: 68
2. Public Schools
    a. Cardinality: 650
    b. Degree: 15
3. Crimes:
    a. Cardinality: 251,440
    b. Degree: 6
4. Parks and Recreation:
    a. Cardinality: 4,467
    b. Degree: 6
5. Hospitals:
    a. Cardinality: 42
    b. Degree: 7

We will be retaining only important and clean data by dropping rows and columns that are irrelevant to our project. The degree and cardinality mentioned for each table reflects the value after the change.

Functionality:

- Users create an account and rank the importance of different factors (e.g., housing affordability vs. school quality).
- Users input preferences, and the platform generates ranked district recommendations.
- Users explore district data using interactive maps and can engage with a community forum.
- Users refine results based on additional criteria such as commute time, population density, or healthcare access.
- Users can save shortlisted districts and compare them side by side with effective visualizations

A low fidelity UI mockup



The DwellX platform will feature a clean and intuitive user interface, starting with a homepage that includes a search bar for districts, a login/register button, and a preview of top-ranked districts with key metric highlights such as crime rate, affordability, and school ratings. Upon logging in, users will be directed to a personalized dashboard where they can adjust ranking sliders to set preferences for different metrics like safety, housing cost, and education quality. The dashboard will also display a list of recommended districts ranked based on the user's priorities, along with a "Compare Districts" button for side-by-side evaluations. Clicking on a district will open an information page containing a dynamic map view with color-coded ratings, detailed statistics on house prices, crime rates, employment levels, and other relevant factors. Users will also have access to a community forum where they can read and contribute district-specific discussions and feedback. The platform will ensure ease of navigation and provide users with effective visualization tools to refine and compare their options effortlessly.

Project work distribution:

- Backend Development & Database Integration: [Manavi Chaudhry] - Setting up databases, API integrations, and backend logic.
- Frontend Development & UI Design: [Annapoorna Narayan] - Creating user interface components, login and ensuring responsive design in visualizations.
- Data Collection & Processing: [Advita Gelli] - Gathering, cleaning, and integrating datasets into the platform.
- Interactive Map & Visualization Implementation: [Khushi Patel] - Developing and optimizing the maps.