

## Team Presentation

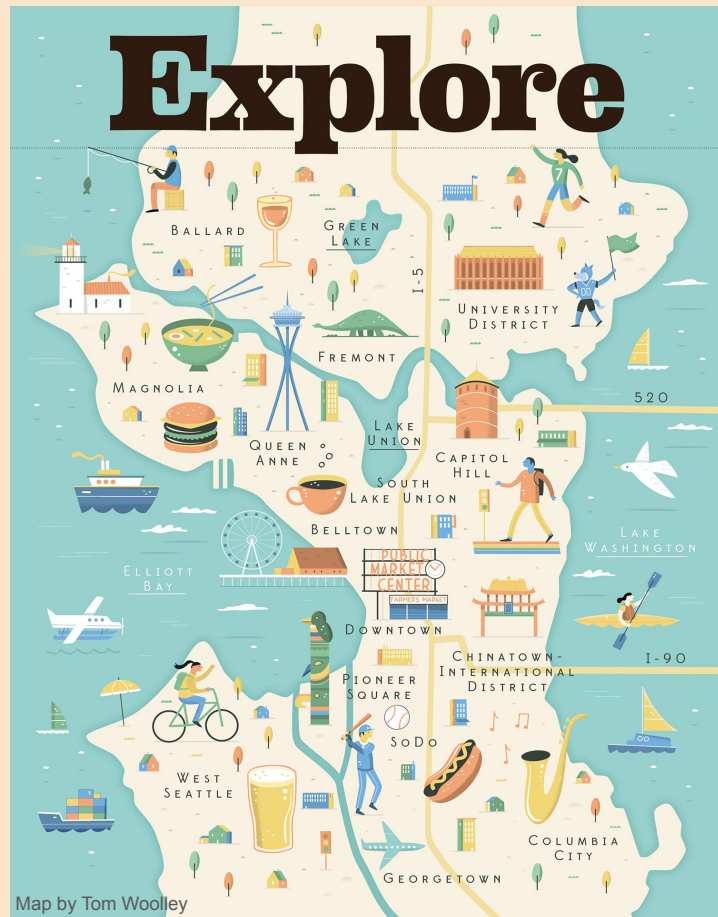
Marcela Vijil, Arjun Patel, Srishti Hegde, Allison Ying, and Sheetal Turaga

# Mission Statement

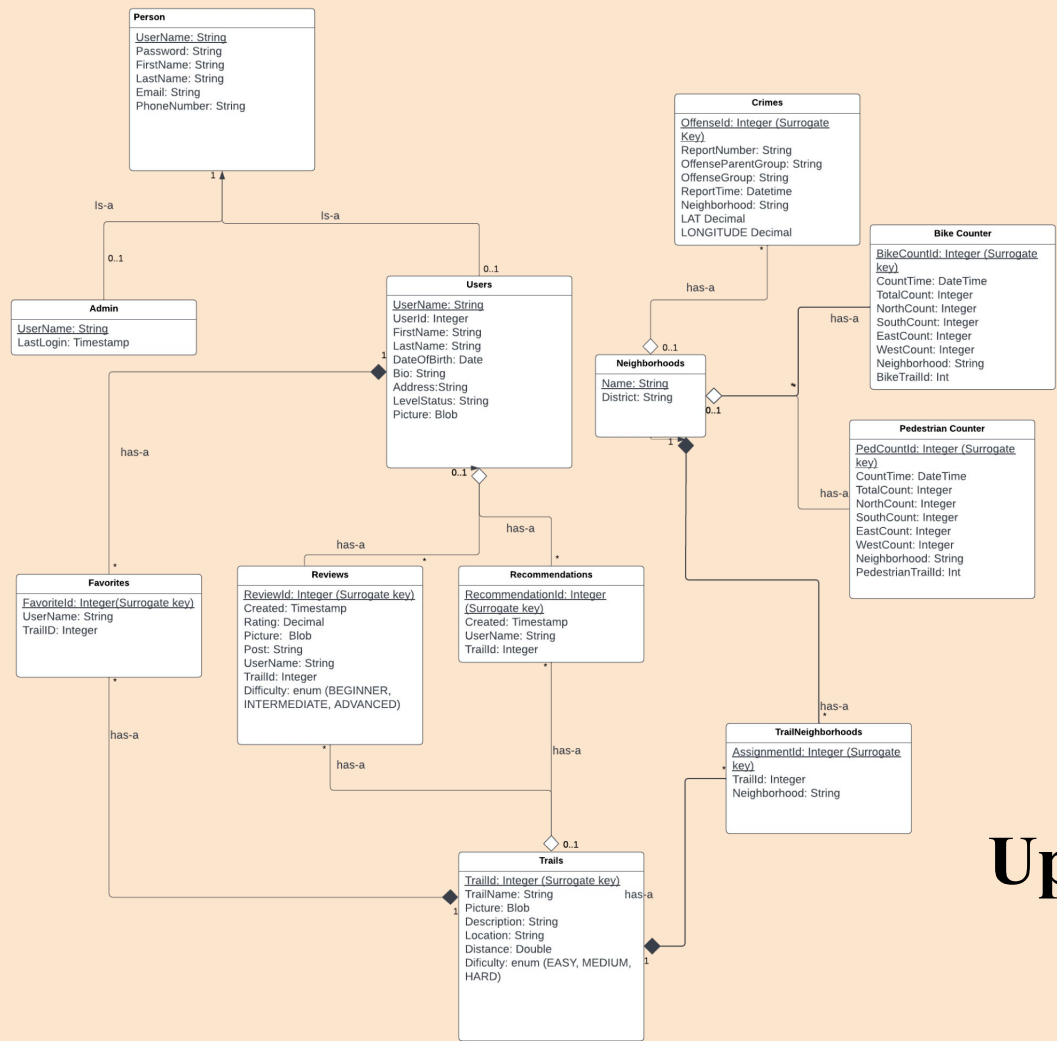
**Pleasant Pedal** is a web application designed for Seattle-based cyclists, from beginner to expert, who are unhappy with the crowds on popular trails and find the optimal times to ride when trails are free from other riders and pedestrians.

Our interactive platform is designed with the following goals in mind: (1) enhanced planning capabilities for cyclists, (2) improved safety on shared roads, and (3) promoting healthy exercise and environmentally friendly transport.

For new cyclists who want to avoid the judgment of advanced cyclists or for avid cyclists who want free range of the trail, our web application will make it easier to enjoy the open safe trails, so you can focus on peddling pleasantly.



Map by Tom Woolley



# Updated UML Diagram

# Value Proposition: Reflection

The primary objectives as stated in our Value Proposition was achieved in the following ways:

## **1. Enhanced Planning Capabilities:**

- a. Our application provides users with information on the trails available in the City of Seattle and enables the users to leverage traffic data to plan their ideal ride.

## **2. Improved Safety on Shared Roads:**

- a. Having studied the crime data from the Trail Neighborhoods, our platform gives the user realistic safety expectations to be had of these trails.

## **3. Promoting Healthy Exercise and Environmentally Friendly Transport:**

- a. Cyclists have their own personal incentives for biking. We believe that our users, no matter their motivations, are all investing in healthy exercising and sustainable transport to some extent.

# Data Insights on Multi-Use Trails

## Top 5 Busiest Bike Trails:

1. Lake Union Loop (ranked Intermediate)
2. Hiram M. Chittenden Locks (ranked Beginner)
3. Burke Gilman- Ballard to Bothell (ranked Advanced)
4. I-90 Trail (ranked Advanced)
5. Alki Trail (ranked Intermediate)

Our data further shows that the Myrtle Edwards to Elliot Bay Park (ranked as a Beginner trail) is one of the more popular trails for pedestrians, possibly due to its waterfront location, views of the mountain-ranges, and the nearby tourist attractions. On the other hand, the I-90 Trail (ranked as an Advanced trail) is less popular amongst pedestrians, potentially due to heavy bike and car traffic.

# Data Insights on Public Safety

## Top 6 Months with Most Crimes Reported:

1. August
2. September
3. October
4. December
5. July
6. November

## Top 5 Months with the most Bike Activity

1. May
2. July
3. August
4. June
5. April

Crime and Biking trends can be seasonal. Our data shows that the peak biking seasons fall somewhere between April-August, possibly due to the warmer weather and better biking conditions. There is some overlap between the peak months for crime, which is some time between July-December. Crime rates can also be attributed to the intense fluctuations in weather that tends to occur during Fall-Winter seasons.



# Further Analysis- Local Businesses

We found a Business Licensing database (Seattle Open Data) and extracted information regarding neighborhood-based businesses to find the following:

1. Businesses that are related to “All Other Transit And Ground Passenger Transportation” that are near trails have more bikers and pedestrians
2. Rainier Beach, Leschi, Sand Point, Capitol Hill, Ballard, and Fremont provide the most transit and ground passenger transportation services for commuters. Bike infrastructure tends to be more common and better maintained (by the city) in commuter-heavy neighborhoods.



Downtown Seattle Bike Traffic (Mike Siegel / The Seattle Times)

# Data Visualization- Local Businesses

Columns

Rows

### BussinessAndTrails

Category	Sub-Category	Value (Approximate)
WA All Other Transit and Ground Passenger Transportation	WA Beauty Salons	100,000,000
	WA Full-Service Restaurants	100,000,000
	WA Independent Artists, Writers, and Performers	100,000,000
	WA All Other	100,000,000
WA All Other Personal Services	WA Offices of Lawyers	100,000,000
	WA Other Individual	100,000,000
	WA Custom	100,000,000
	WA Limited-Service Restaurants	100,000,000
	WA Janitorial	100,000,000
	WA All Other	100,000,000
	WA Taxi Service	100,000,000
	WA Office	100,000,000
	WA Administrative Management and General Management Consulting	100,000,000
	WA Bed-and-Breakfast Inns	100,000,000

SUM(Total)

0 634,425,992

SUM(Total)

0 634,425,992



# Further Analysis- Weather

In our previous findings, we believed that weather could play a major role in biking trends. We found local weather records (Github repo) with information on precipitation, max temperatures, min temperatures, wind factor, and standardized weather categories (ie. drizzle, fog, rain, snow, and sun) to find that:

1. Higher temperatures within weather types show more pedestrians and bikers on trails
2. The ideal biking temperature is around 26 degrees celsius. Popular biking months fall somewhere between Spring and Summer.
3. Biking activity increases during Sunny weather, though Rain does not seem to be a major deterrent for Seattle Bikers. This could be influenced by Seattle's general weather conditions, which is often rainy. Local bikers might have a higher tolerance for this type of weather.

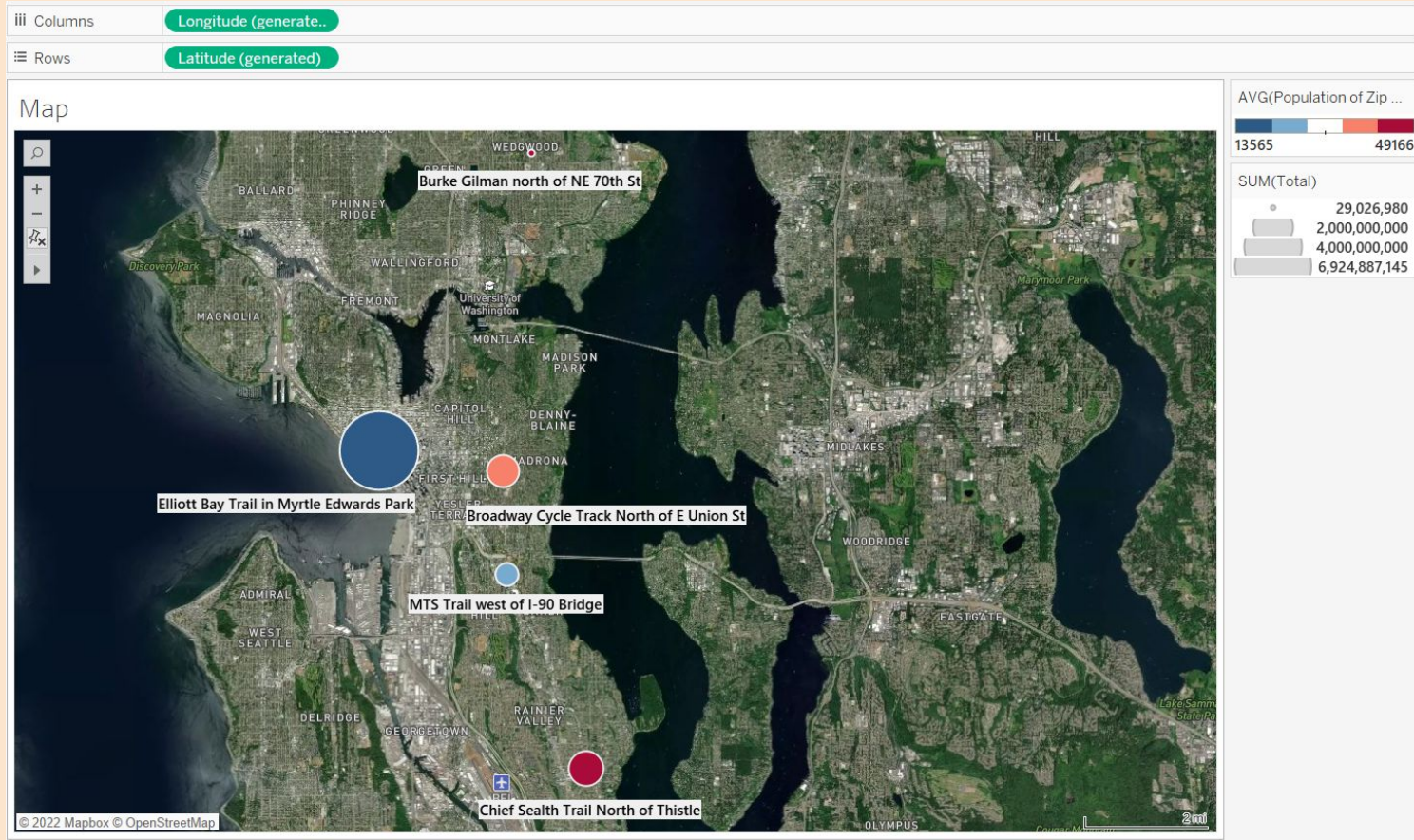
# Data Visualization- Weather



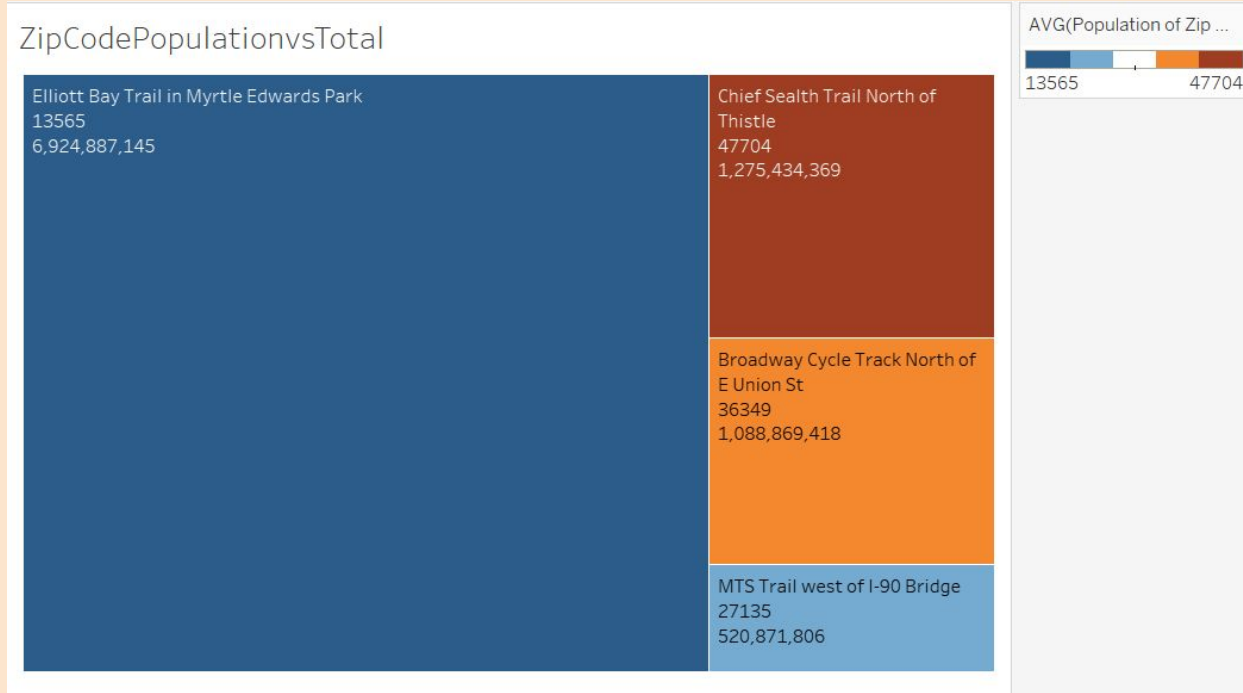
# Data Visualization- Weather



# Data Visualization- Location



# Data Visualization- Location



# Challenges and Confounding Variables

## 1. Data Collection and Extraction: Limitations of using pre-existing Databases/ Data

- a. City of Seattle has approx. 11 Bike and Pedestrian counter programs located in 11 different neighborhoods. This does not give us a truly accurate representation of the available bike trails in Seattle.
  - i. Pedestrian Counter data might not be very reliable, seems to be an under-representation of total pedestrian traffic.
  - ii. Counters are located at specific coordinate points on a trail and does not give a full-representation of the entire trail traffic.
  - iii. Some of the counter programs are newer than others and might not have as much total data as other counters. For certain operations, we had to minimize the date windows for comparisons.

## 2. Lack of User Data:

- a. We had to generate our own mock user dataset. Though this was useful for testing operations, it wasn't an actual representation of user motivations and application engagement.



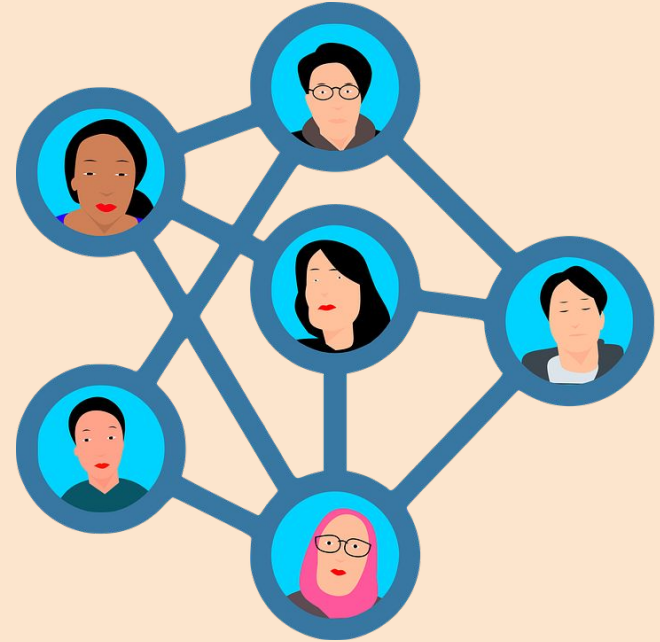
# The Future of Pleasant Pedal

## Commercial Opportunities

- How can we market this application to meet the demands of our target demographic?
  - Study the field
  - Focus Testing

## Add/ Build on User-oriented Features

- Take advantage of social networks to expand our user base:
  - Community message board
  - Option to create biking groups/ meetup events
  - Option to set personal/ group fitness goals
  - Admin View



**DEMO / PROOF OF CONCEPT**

# User Login/ Register



Please login to your account

UserName

Password

Log in

[Forgot password?](#)

Don't have an account?

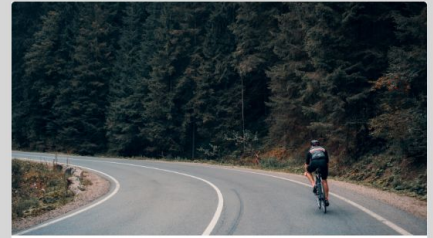
[New Profile](#)

Please enter valid username

## More than just trails..

No matter where you place yourself in the experience chart, we have something for everyone. Log in now to avail all our features to best plan your ride.

**HAPPY TRAILS!!**



## User Registration

User Name

Password

First Name

Last Name

Bio

Email

Address

Level

☐ Beginner

☐ Intermediate

☐ Advanced

Submit

# USER PROFILE

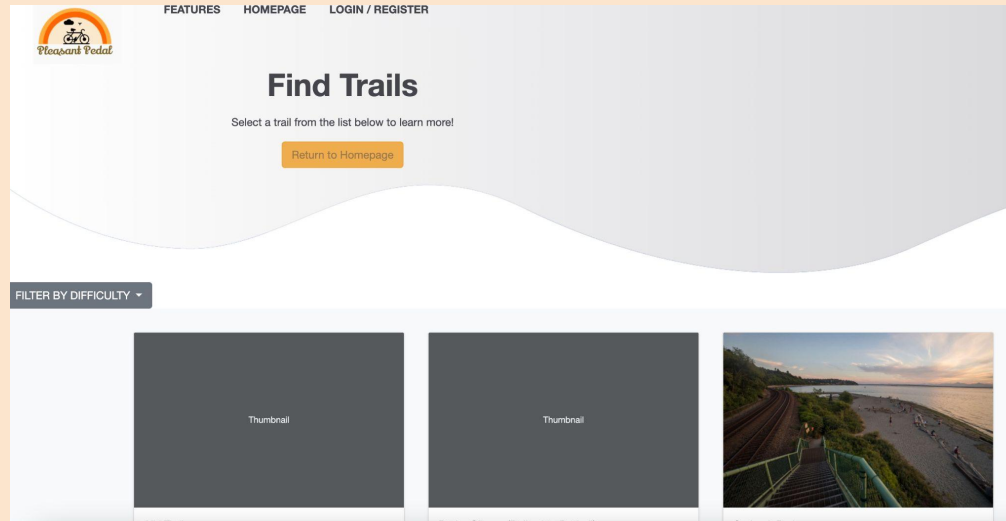
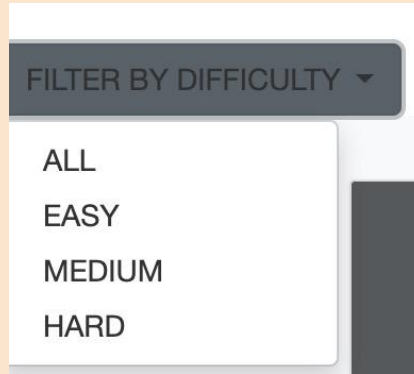


Hi, bruce

User Name	bruce
First Name	bruce
Last Name	shepherd
Email	alksjdfh
Bio	askdjfh
Address	aksjdjh
Level	BEGINNER

Created on	Photo	Rating	Trail Name
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# Trail Page & Information on Traffic on the specific trail



## Trail Information for Lake Union Loop

This is a well-maintained urban paved multi-use trail with great views of the lake. Users have reported that it's easy to get off route at Fremont Canal. Be on the lookout for the sign for University Bridge. Some of the trail shares the road with vehicles, so using reflective materials, lights, or flagging is recommended for safety.



Trail Name	Lake Union Loop
Trail Id	5
Level Difficulty	INTERMEDIATE
Distance	6.4

Peak Hour	Traffic Counter
17:00:00 - 18:00:00	340
08:00:00 - 9:00:00	276
07:00:00 - 8:00:00	194
18:00:00 - 19:00:00	231
16:00:00 - 17:00:00	212

# SAFETY INFORMATION



[TRAILS](#) [YOUR PROFILE](#) [LOGOUT](#)



## NEIGHBORHOOD SAFETY INFORMATION

Based on the previously recorded data, the search gives you the ranking of the crime categories reported in the selected neighborhood

Neighborhood

Past Years

[Search](#)

CRIME CATEGORY	COUNT
LARCENY-THEFT	43
FRAUD OFFENSES	8
MOTOR VEHICLE THEFT	14
DESTRUCTION/DAMAGE/VANDALISM OF PROPERTY	26
DRIVING UNDER THE INFLUENCE	3