Project: Dashboard Implementation

The dashboard includes each and every visualization we created. The dashboard can be used by students, parents, university administrators, working professionals, and real estate communities who need information regarding student housing based on the opinions provided by students. This dashboard consists of bar charts, pie charts, maps, and line charts that are used to depict information such as mode of transport, population, preferred apartment, and amenities. It helps students to know more about the communities with respect to the amenities, lease period, cost, location, and other factors. This dashboard helps students compare the cost of different housing units and provides information about the amenities and services provided.

Section 2: Dataset Description

The data is collected through various methods, such as online surveys, and inputs are collected by doing surveys on-campus with domestic as well as international students.

The student housing dataset includes data on different types of housing units, such as apartments, dormitories, and houses. The data could include information about the mode of transportation from the housing to the nearest college campus. The dataset also includes information on the number of bedrooms and bathrooms in each unit, the availability of parking, laundry facilities, and other amenities.

Additionally, the dataset includes information about challenges faced in the apartment, lease period, living expenses, and the campus to which students belong.

There are 194 rows and 11 columns in it. We chose the most significant components and cleaned them up so that they could be utilized by machine learning applications because there were numerous factors that either directly or indirectly impact heart disease in our dataset.

Data Attributes and Column Data Types

- **Apartment Names:** It covers information about both on- and off-campus student housing in Tempe. It is a **Categorical** data type attribute.
- **Rent:** It consists of data regarding apartment rents per period. It is a **Ratio** data type attribute.
- **Campus:** It defines the campus name to which the student belongs. It is a **Categorical** Attribute. The ASU campuses considered are Tempe, Polytechnic, Downtown and West.
- **Amenities:** It includes information about the amenities that are currently offered by the housing, such as a gym, jacuzzi, patio, swimming pool, clubhouse, etc. It is a **Categorical** data type attribute.

- **Preferable Apartment:** It displays the apartment which is most preferred by students. It is an **Ordinal** data type attribute.
- **Challenges:** It consists of numerous issues that the students in their current residence are having. It is a **Categorical** data type attribute.
- **Priorities:** It offers information about the priorities of students as determined by their choices of apartments. It is an **Ordinal** data type attribute.
- **Mode of Transportation:** It offers information about the priorities of students as determined by their choices of apartments. The mode of transportation can be Bus, Escooter, Car, Cycle, Metro, Walk, etc. It is a **Categorical** data type attribute.
- **Lease Period:** It includes information on the number of months the lease is valid for. It is a **Ratio** data type attribute.
- **Kind of Apartment:** It includes information about how many bedrooms and bathrooms each residence offers. It can be either 1B1B, 2B1B, 2B2B, 3B2B, Studio, Dorms, etc. It is a **Categorical** data type attribute.
- **Living Expenses:** It offers information about average living costs apart from rent such as money spent on Electricity, Wi-Fi, Utilities, etc.

Section 3: Prospective Dashboard User

1. University Administrators: These people might be interested in observing patterns and trends over time, as well as keeping an eye on the availability and use of student accommodation on and off-campus. The dashboard can be used by them to distribute resources, determine rental prices, and decide on development and repair projects.
2. Working Professionals: Working professionals who are engaged in recruitment, relocation, and professional development can benefit from information from a student housing

dashboard. The dashboard can facilitate and speed up moving to an unfamiliar city or university by offering details on housing possibilities, rental costs, and other issues.

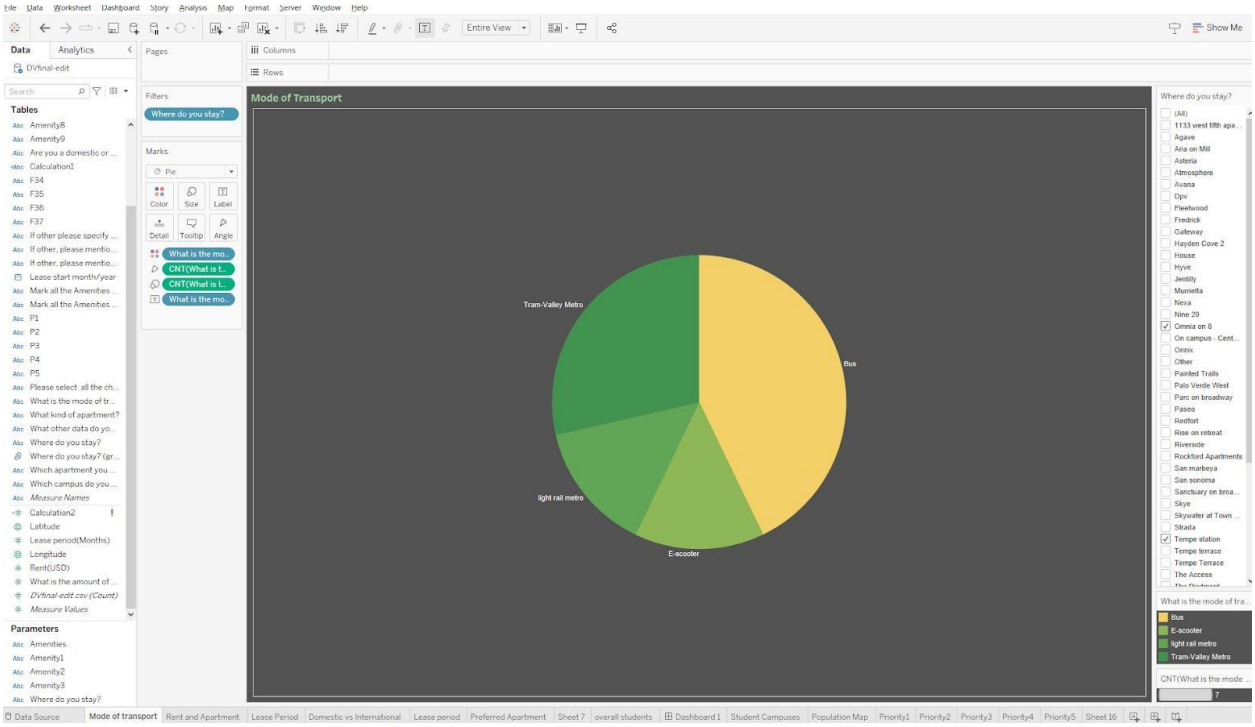
3. Students: Students are likely interested in searching for affordable housing options, comparing rental prices, and viewing images and other information about various residences using the dashboard. Additionally, they can contact home managers or submit maintenance requests using the dashboard.
4. Parents: The parents of university pupils can use the dashboard as a tool to look up housing possibilities around their child's school, compare rental prices, and check safety and security aspects of various residences.
5. Real estate investors: The dashboard can be used by real estate investors that focus on the student housing industry to watch market trends, keep up-to-date on rental prices, and spot investment opportunities.

Section 4: List of Final Questions

1. Which apartment to consider based on all factors overall?
2. What is the most significant factor while selecting an apartment?
3. What is the most used mode of commute?
4. How is rent related to lease period?
5. How many students prefer to live on-campus and how many prefer to live off-campus?
6. Which apartment community do majority of students live in?
7. Which apartment community has the most expensive 2b2b and the least expensive 2b2b?
8. Out of the students who answered the survey, which campus do the majority of the students go to?
9. What would be the average expenses for Students who prefer Off-campus/On-campus ?

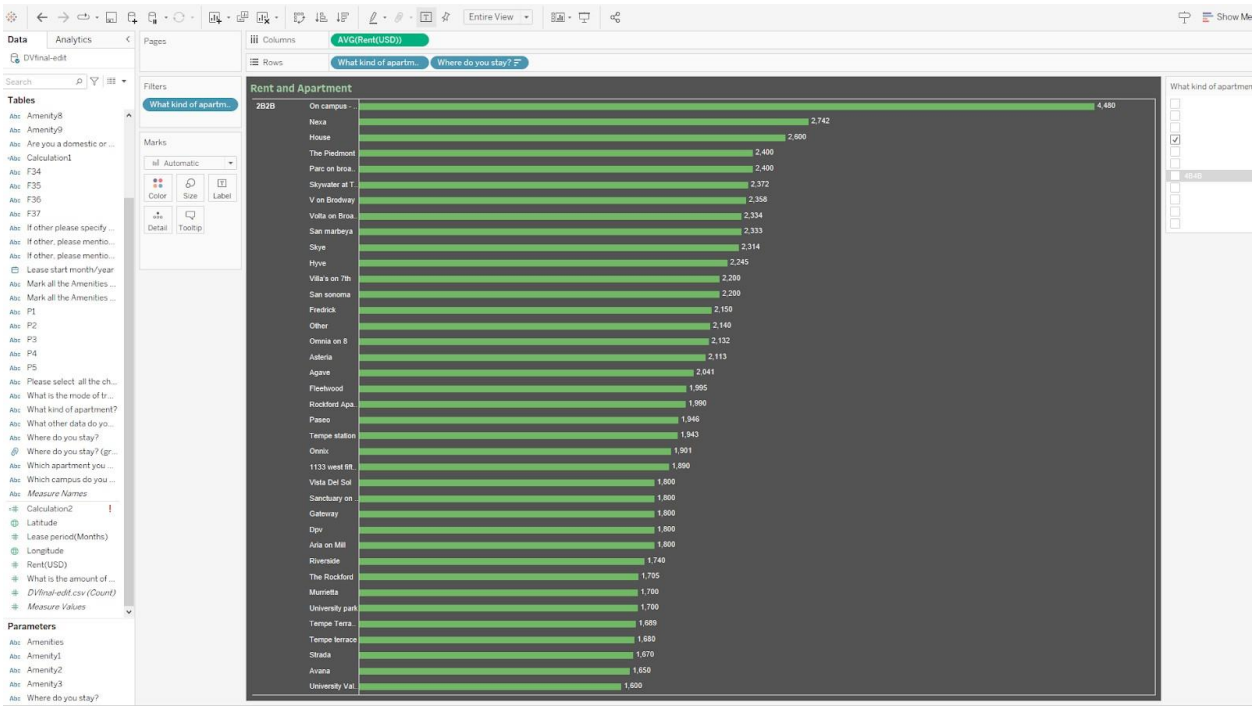
Section 5: Dashboard Plots

Mode 3 Transportation



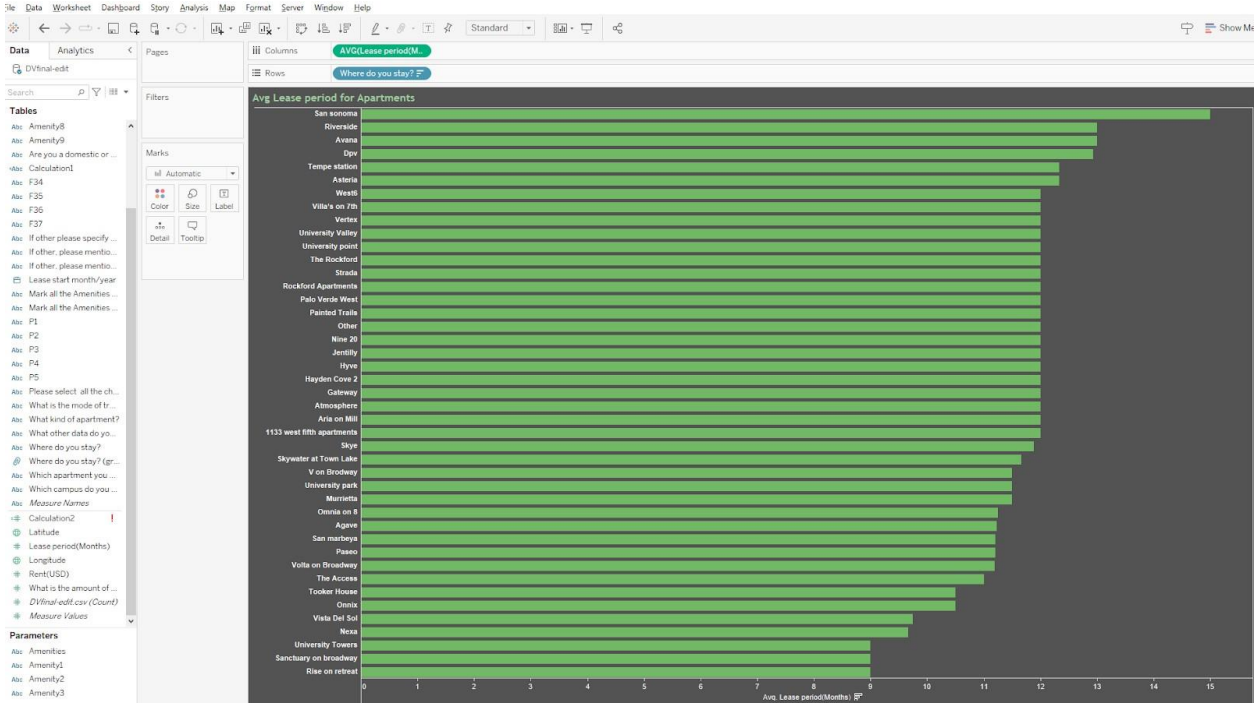
A pie chart was used to construct the mode of transport visualization, and a Where do you stay? an interactivity filter has been connected to it. It is visible on the chart where it is represented in Hue-colors, where the mode of transport includes Bus, E-scooter, Tram, Light rail or metro, walk, etc. The preattentive attribute in this chart is hue, size.

Rent and Apartment



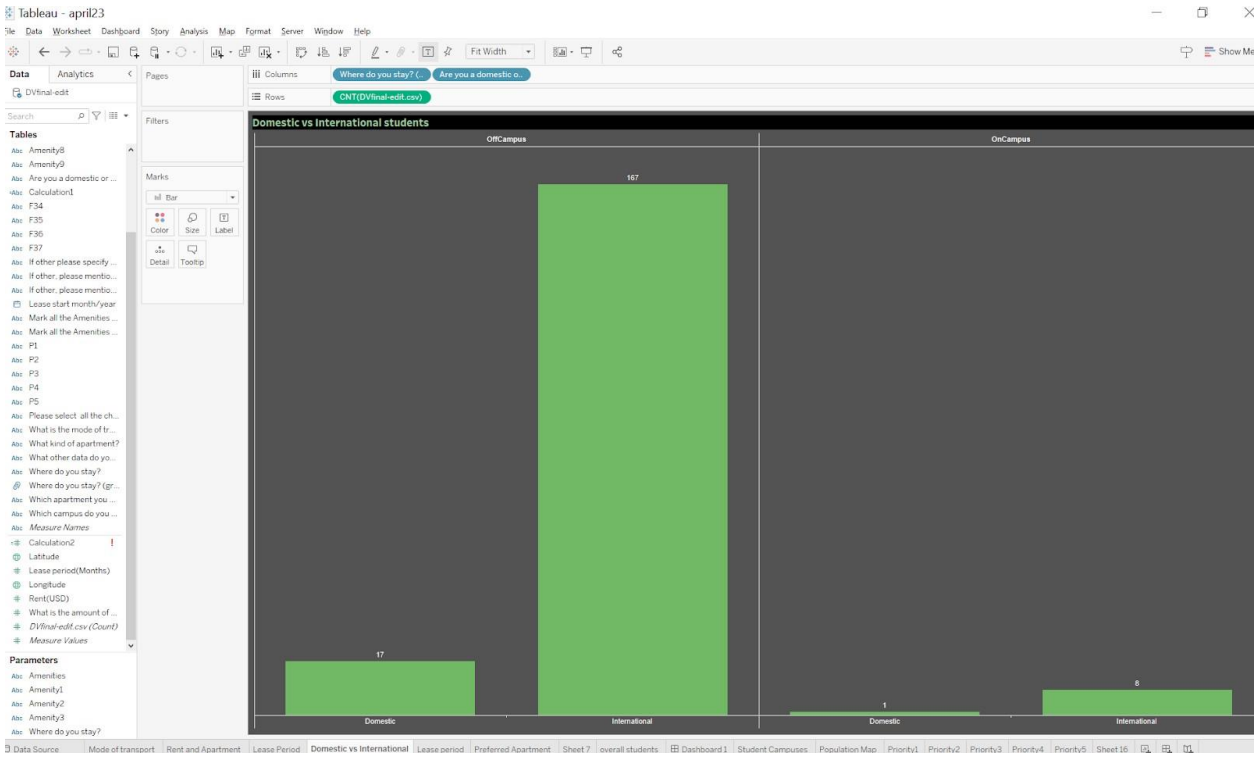
This visualization is created using a bar chart that represents the rent and the respective apartment, an interactivity filter named What kind of apartment? has been linked to the visualization. It is visible on the right side of the visualization, which consists of 1B1B, 2B1B, 2B2B, 3B2B,etc,. The preattentive attribute in this chart is length.

Avg Lease period for Apartments



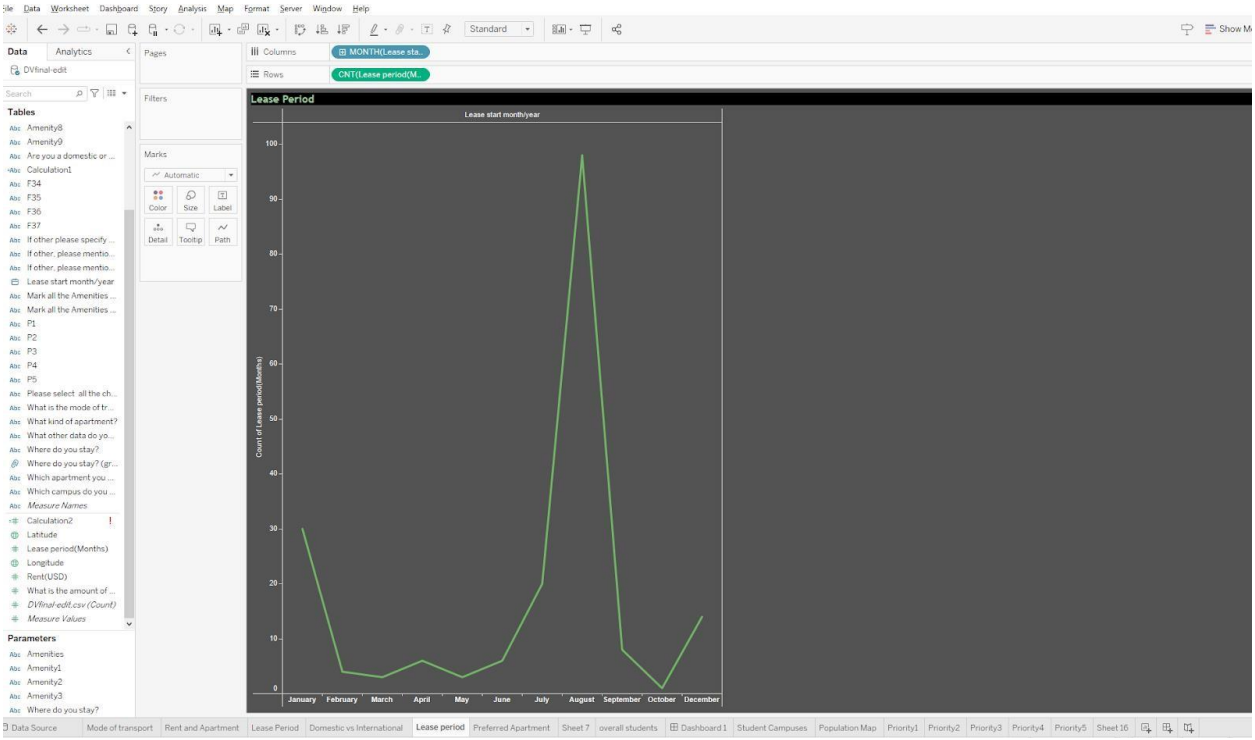
The above visualization is represented by a bar chart, which represents the average lease period for various apartments. This chart gives an overview of a particular apartment offering a lease for a particular period. The preattentive attribute in this chart is length.

Domestic vs International Students



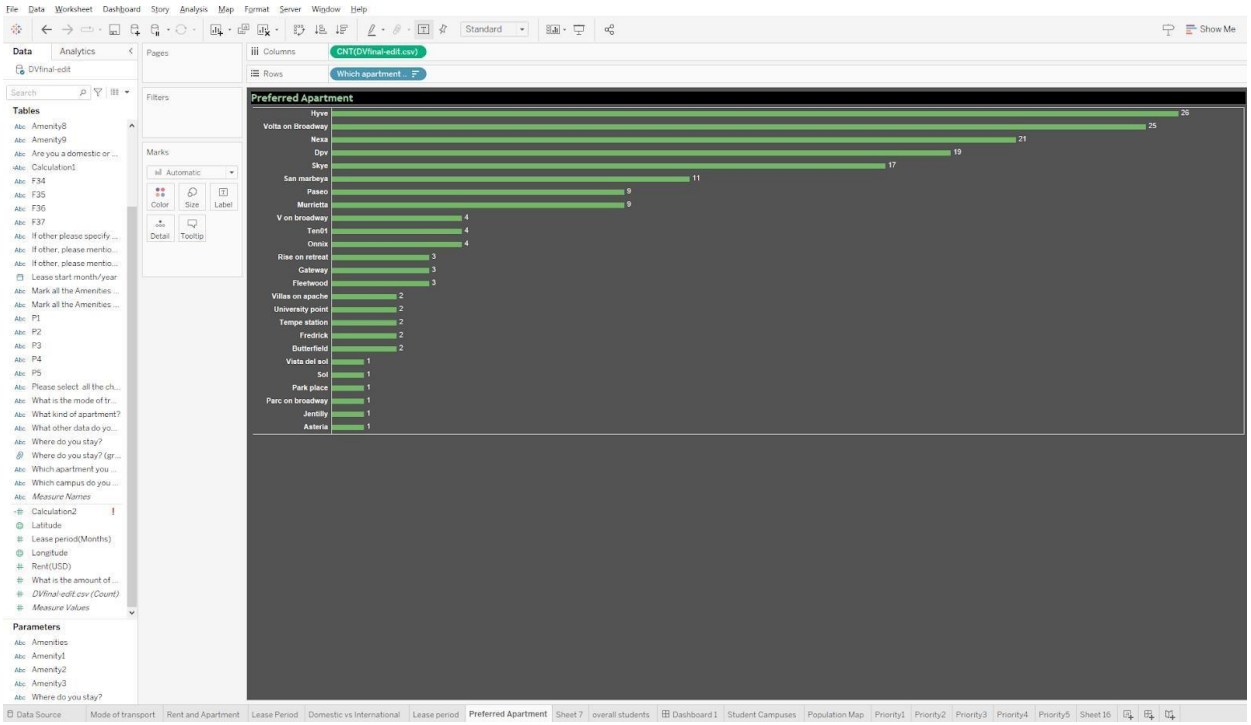
This visualization is done using a bar chart, which represents domestic and international students staying on-campus or off-campus. The preattentive attribute for this chart is length.

Lease Period



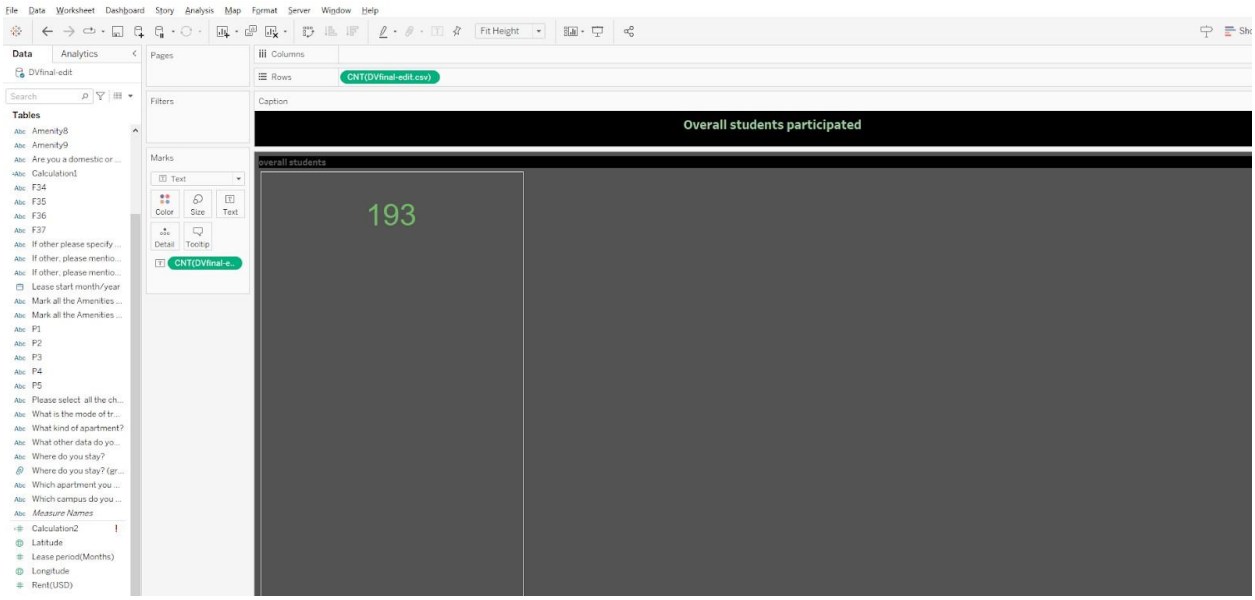
This visualization is created using a line chart which represents the lease period. This chart represents the highest count of people who started their lease. Here, the peak value represents the month August - highest count of people who started their lease in that month. The preattentive attribute in this chart is position.

Preferred Apartment



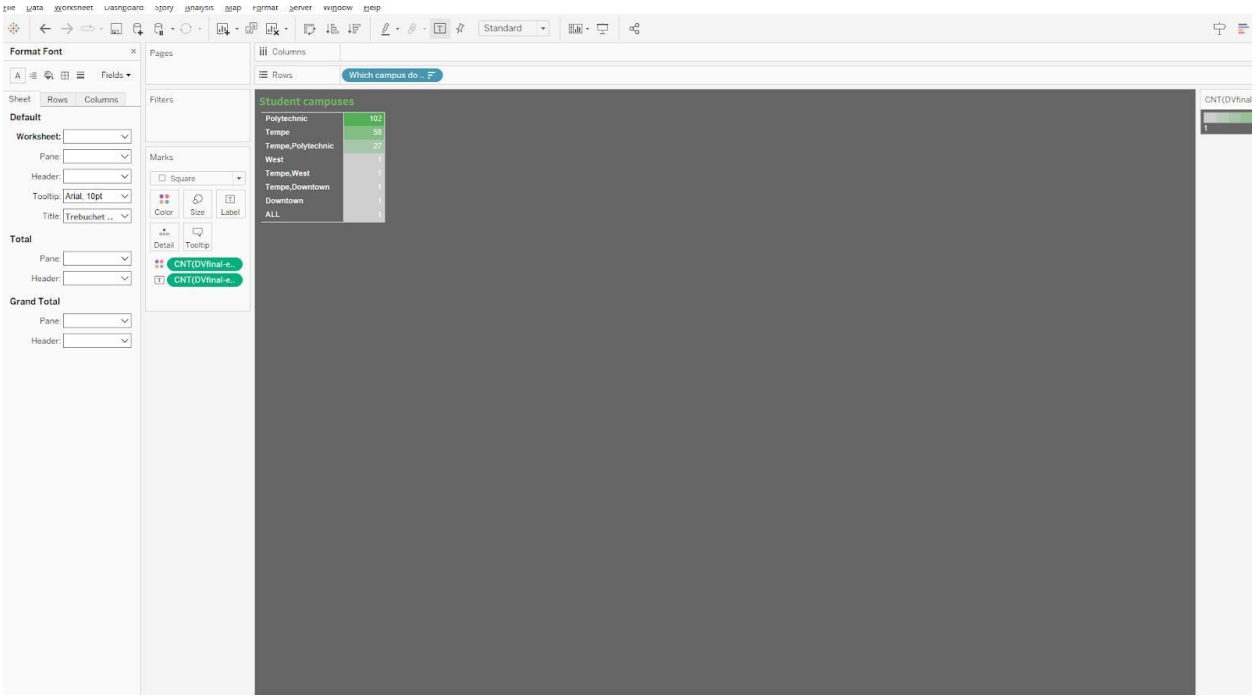
This visualization is created using a bar chart which represents the list of apartments in which the Preferred apartment is displayed in the visualization. Here, the apartment preferred by students is Hyve apartment with a count of nearly 26 students. The preattentive attribute is length.

Student Participation



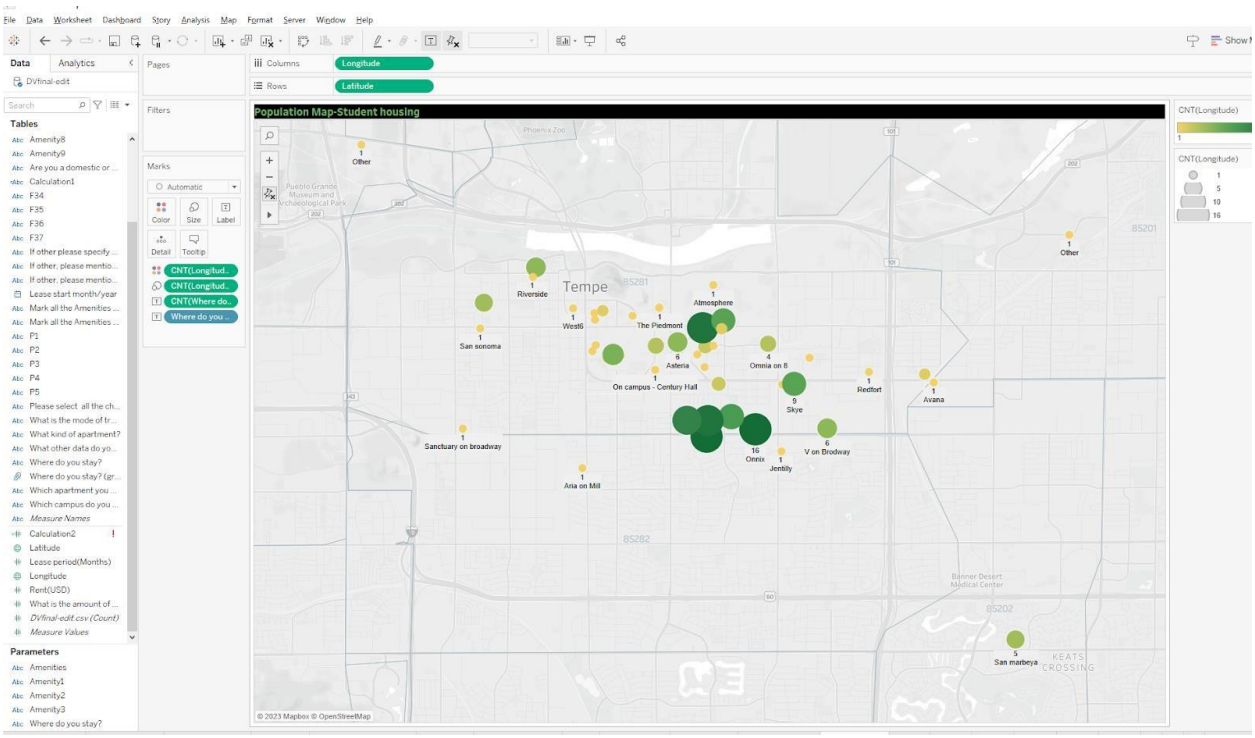
This chart is visualized just to show how many students participated in the survey. **Student**

Campuses



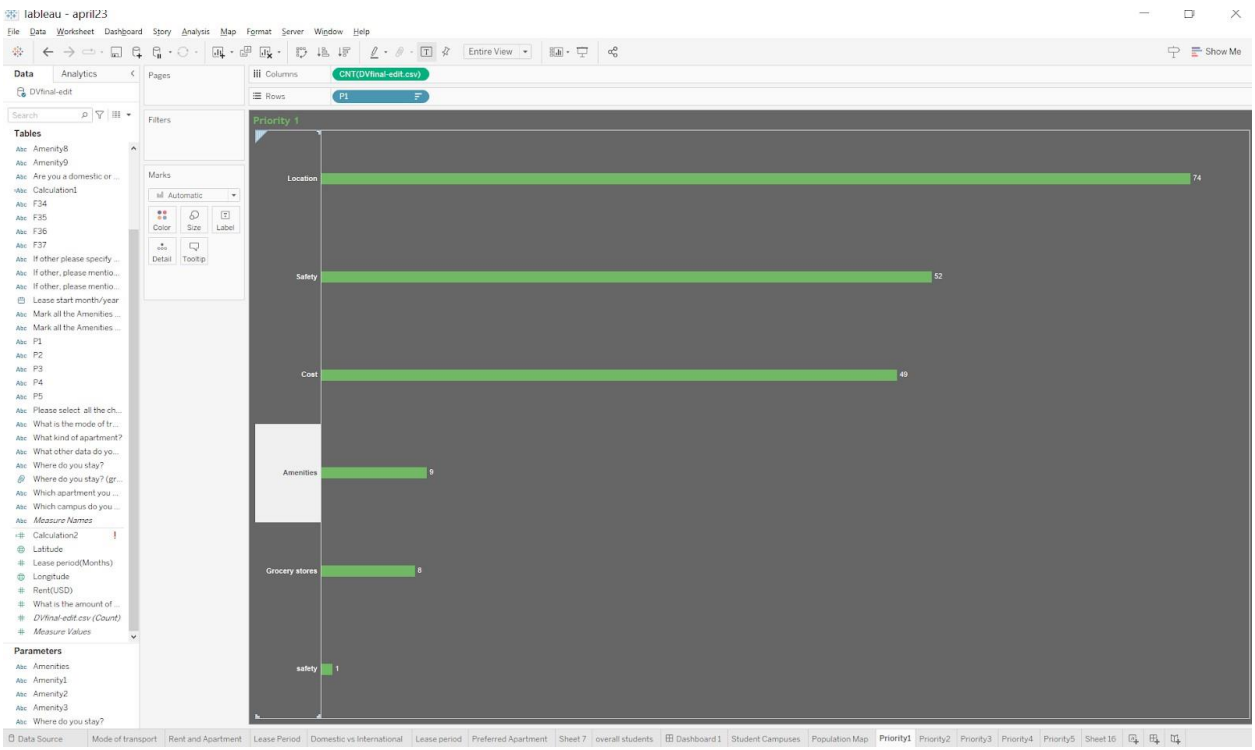
This visualization is created using highlight tables. This chart shows student campuses list with students associated with that campus. The preattentive attribute for this visualization is color hue.

Population Map-Student Housing



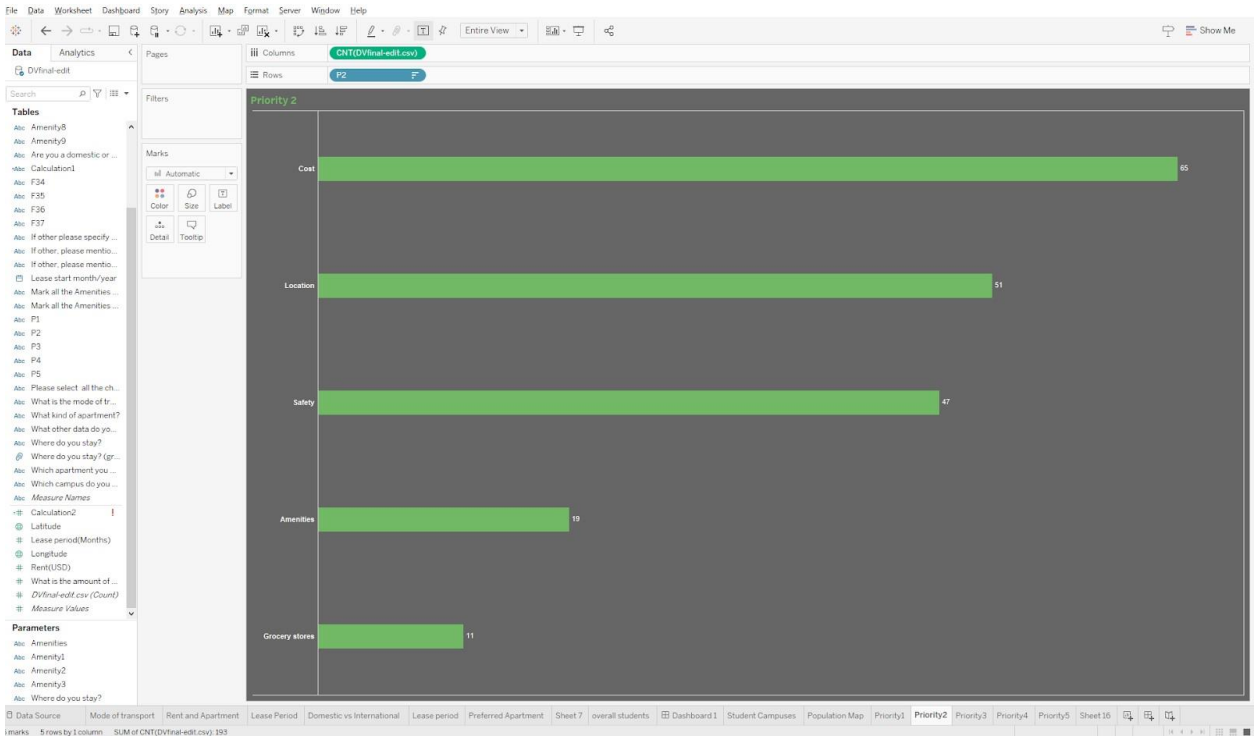
This visualization is represented using a map, which depicts the student population in different apartments across Tempe. The preattentive attributes are Size, Hue and Position.

Priority 1



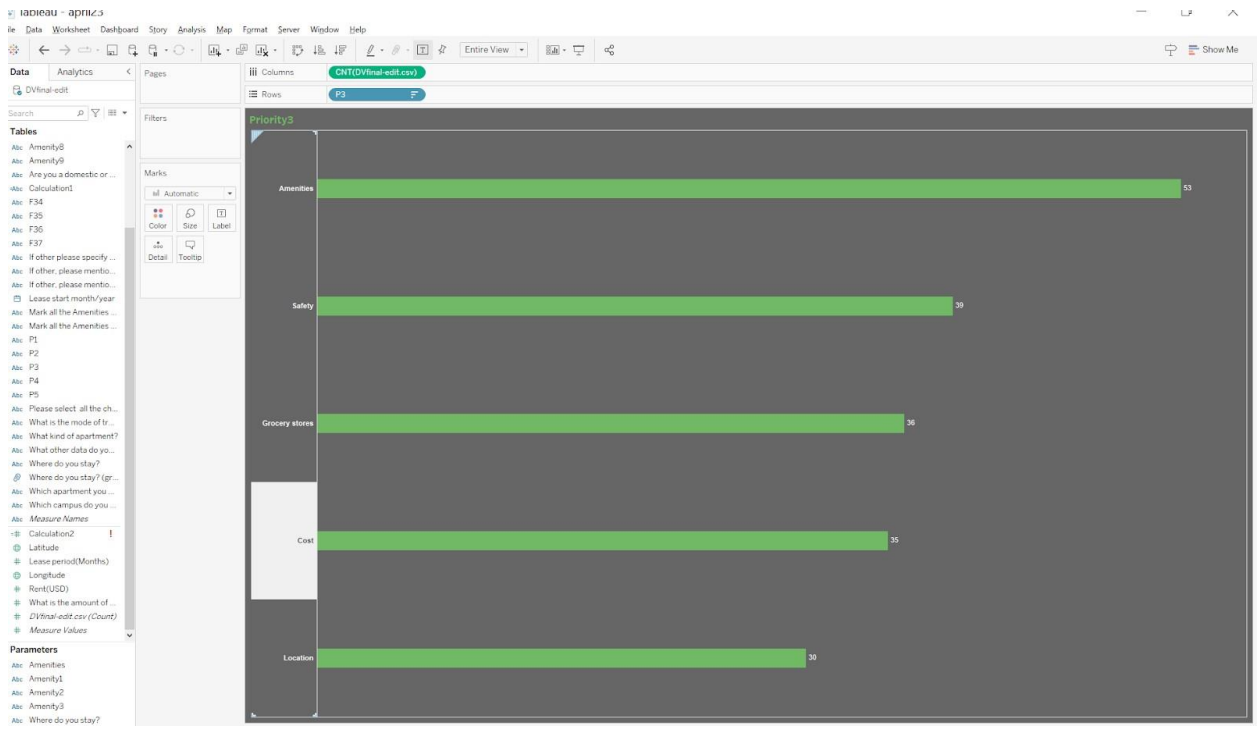
This visualization is represented using a Bar Chart which indicates which is the first Priority as per students considering the aspects of Location, Cost, Safety, Grocery Stores and Amenity. The preattentive attribute for this chart is length.

Priority 2



This visualization is represented using a Bar Chart which indicates which is the Second most Priority as per students considering the aspects of Location, Cost, Safety, Grocery Stores and Amenity. The preattentive attribute for this chart is length.

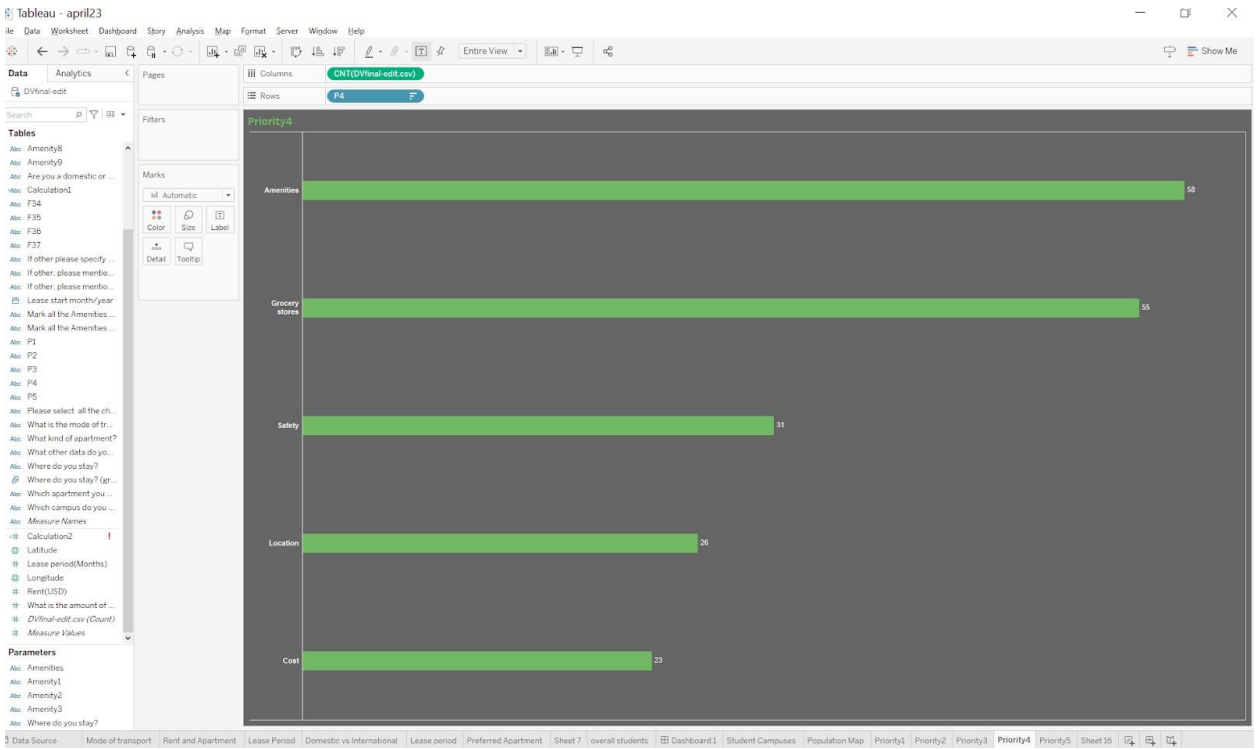
Priority 3



This visualization is represented using a Bar Chart which indicates which is the Third most Priority as per students considering the aspects of Location, Cost, Safety, Grocery Stores and Amenity.

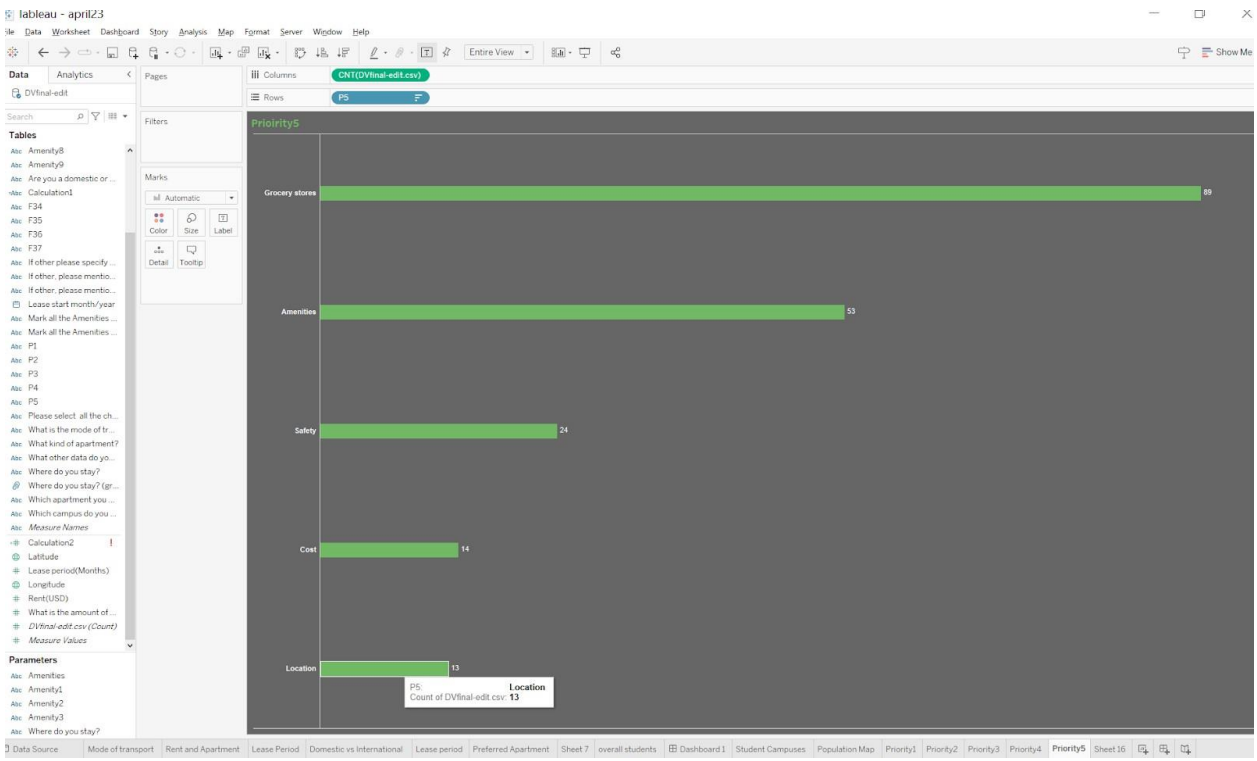
The preattentive attribute for this chart is length.

Priority 4



This visualization is represented using a Bar Chart which indicates which is the Fourth most Priority as per students considering the aspects of location, Cost, Safety, Grocery Stores and Amenity. The preattentive attribute for this chart is length.

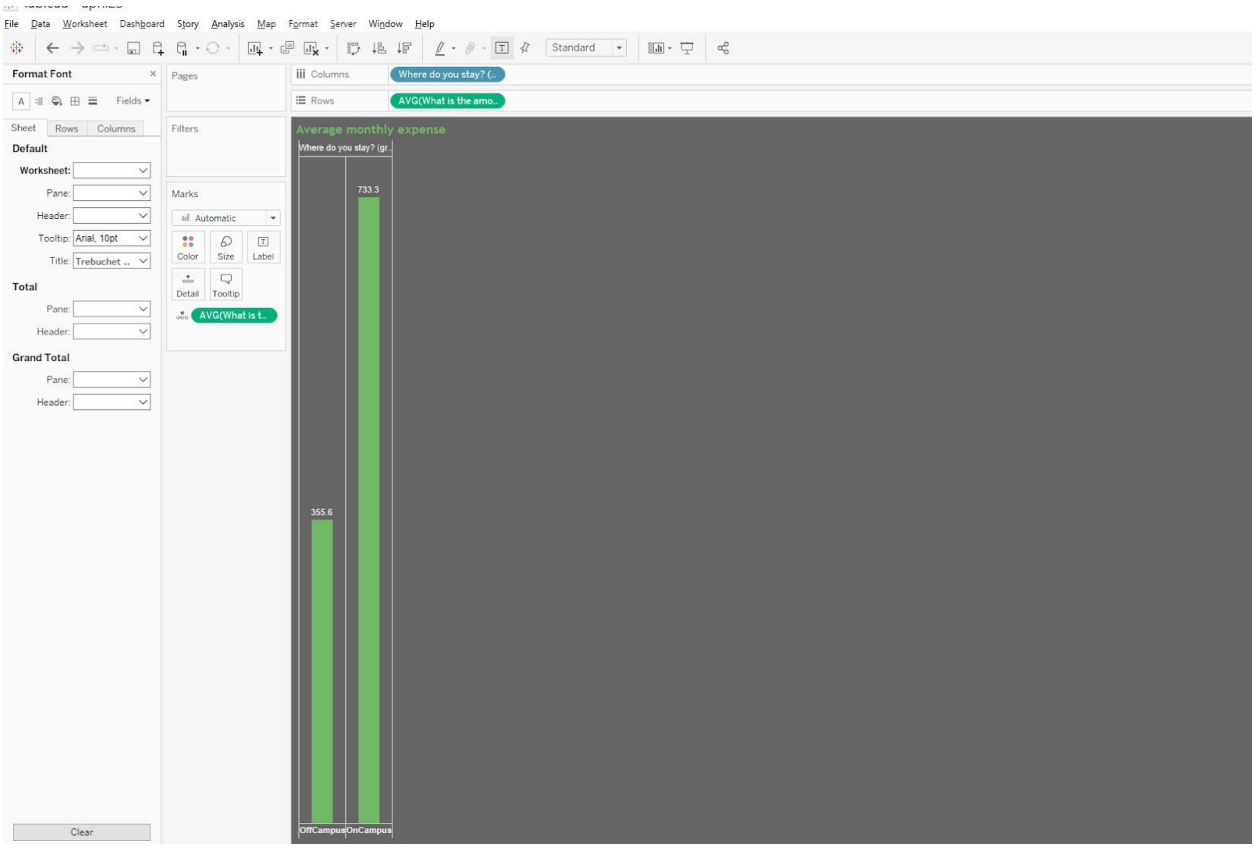
Priority 5



This visualization is represented using a Bar Chart which indicates which is the Fifth most Priority as per students considering the aspects of Location, Cost, Safety, Grocery Stores and Amenity.

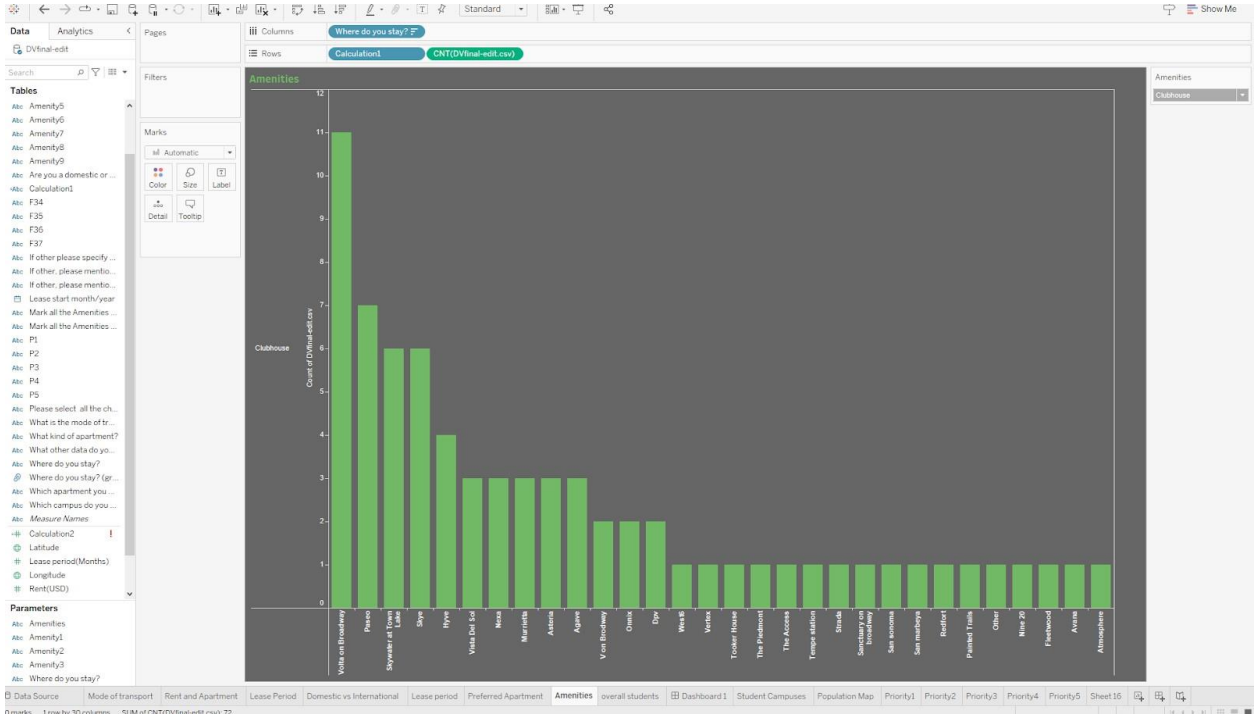
The preattentive attribute is length.

Average monthly expense



This visualization is represented using a Bar chart, which depicts the average monthly expenses of an apartment from rent considering both on-campus and off-campus. The preattentive attribute is length in this chart.

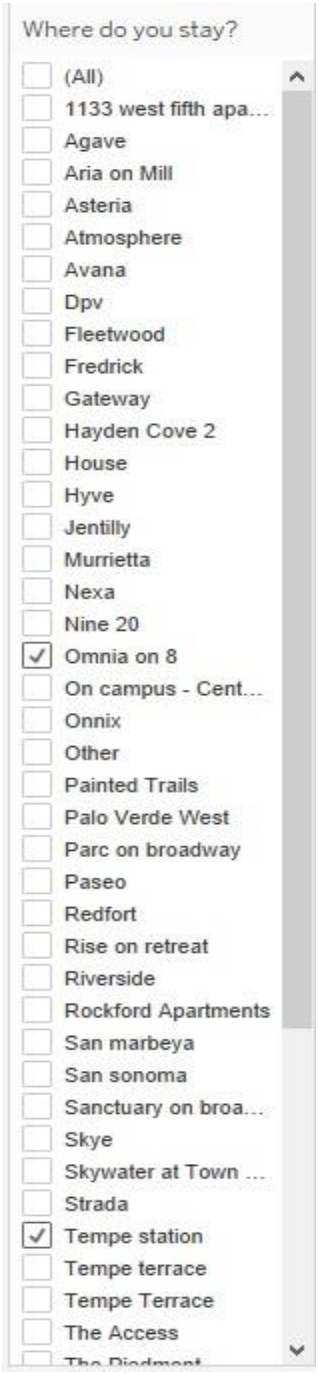
Amenities



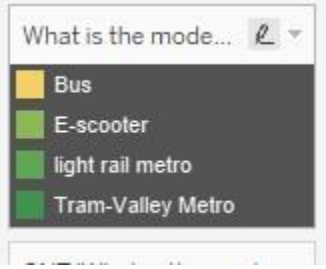
This visualization is represented using a bar chart, which depicts the list of all amenities and the count of people in each apartment, along with a count of those who participated in the survey. An interactivity, named Amenities is created, which consists of amenities such as a gym, inhouse laundry, clubhouse, patio, etc,. The preattentive attribute for this chart is length.

Section 5: Dashboard Interactivity

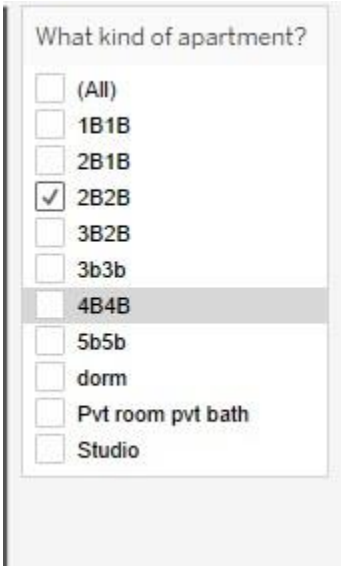
This interactivity filter is added to the Mode of Transport worksheet, where the users select the options for which the pie chart value changes as per the dataset.



This filter is again used in the mode of transport worksheet, and it shows the colors that describe each mode of transport.

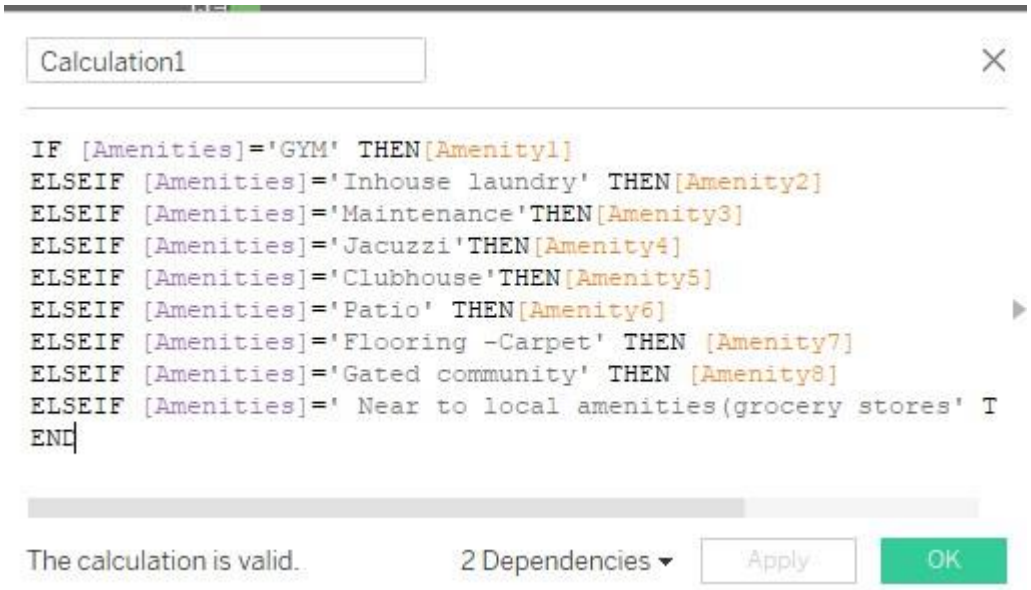


This interactivity filter is added to the Rent and Apartment worksheet with the each value added as a check box ,Upon selecting an option , the values vary as per the dataset.



This interactivity filter is used in Amenities worksheet, where individual amenities are added to the dropdown box and upon selecting the option, the chart would change as per the values.

We have added the below calculated field which uses amenities parameters to show individual parameters.



References:

1. Mural Link:

   https://app.mural.co/t/dvproject4029/m/dvproject4029/1681347522570/4c64ed49e9ee0da22fdaa67737ca786a22d9ec6e?sender=u85888f9c3d7265fbd7f53156

2. Selected Dataset Link:

   https://docs.google.com/spreadsheets/d/1gFjxwLkoc8m8XyKyXLxn3_xOE9CCs9dLJCriyD0POs/edit#gid=0

3. Dashboard Link:

   https://public.tableau.com/app/profile/priyanka.avasarala/viz/StudentHousing_16823150698610/StudentHousing?publish=yes