CENTRAL PARK SQUIRREL ANALYSIS

By Enid Roman

Introduction

The Squirrel Census (https://www.thesquirrelcensus.com/) is a multimedia science, design, and storytelling project focusing on the Eastern gray (Sciurus carolinensis). They count squirrels and present their findings to the public. This table contains squirrel data for each of the 3,023 sightings, including location coordinates, age, primary and secondary fur color, elevation, activities, communications, and interactions between squirrels and with humans.

Research Question

In my analysis I want to find out how many squirrels were adult and juvenile age, their primary fur color, their activities, communications, foraging and behavior by age and interactions between squirrels and humans. I also want to find out how many squirrels were seen each day during the analysis and how many were seen in the am and pm

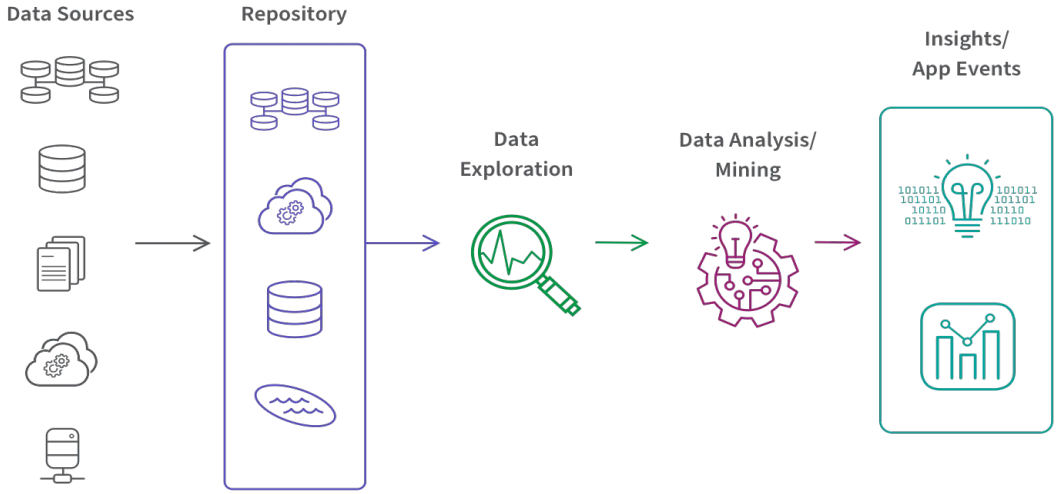
Justification

After a long search for a interesting dataset I came upon this dataset. I actually started laughing because my son and my stepson love squirrels. My son used to observed and feed the friendly squirrels at Penn State. (There is actually a squirrel name Sneezy at Penn State. Feel free to google it.) Also my stepson is a photographer and he takes pictures and feed the squirrels in New York. I thought it would be interesting and fun to analyze this dataset.

Libraries potentially being used.

- Pandas Library
- Numpy Library
- Matplotlib Library
- Seaborn Library
- Scikit-learn
- Pyplot Library
- MPL Plotter Library
- Mcolors
- cm
- Col
- **Colorspacious**

Data Exploration




```
# Load the pandas package.
import pandas as pd
import numpy as np
```

```
# Load the dataset after is saved in github.
df =
pd.read_csv('https://raw.githubusercontent.com/enidroman/Data_602_Advanced_Programming_and_Techniques/main/2018_Central_Park_Squirrel_Census_-_Squirrel_Data.csv')
```

```
# Previewed the data by calling your dataframe's
name.
# This shows the first 5 rows and last 5 rows of
the dataset.
Df
# .shape will display the number of
observations(rows) and features(columns)
# in the dataset.
Df.shape
```

There are 3023 rows and 31 columns.

```
# The index property returns the index (row labels)
information of the
# DataFrame. The index information contains the labels of
the rows. If the rows
# has NOT named indexes, the index property returns a
RangeIndex object with the
# start, stop, and step values. (either row numbers or
row names.)
Df.index
```

This returns RangeIndex object with the start of 0, stop of 3023 and step of 1.

```
# Return a Numpy representation of the DataFrame.
.values returns a numpy
# array with the underlying data of the DataFrame,
without any index or columns
# names.
Df.values
```

Numpy representation of the DataFrame without any index or columns names.

```
# .columns displays the columns name.
Df.columns
```

```
Index(['X', 'Y', 'Unique Squirrel ID', 'Hectare', 'Shift', 'Date',
       'Hectare Squirrel Number', 'Age', 'Primary Fur Color',
       'Highlight Fur Color', 'Combination of Primary and Highlight
Color',
       'Color notes', 'Location', 'Above Ground Sighter Measurement',
       'Specific Location', 'Running', 'Chasing', 'Climbing', 'Eating',
       'Foraging', 'Other Activities', 'Kuks', 'Quaas', 'Moans', 'Tail
flags',
       'Tail twitches', 'Approaches', 'Indifferent', 'Runs from',
       'Other Interactions', 'Lat/Long'],
      dtype='object')
```

```
# .info helps to understand the data type and
information about data,
# including the number of records in each column, data
having null or not null,
# Data type, the memory usage of the dataset
df.info()
```

The data types are : 13 bools, 2 floats, 2 ints, 14 objects. There are 3023 entries, from index 0 to 3023. Each records in each columns containing non-null values, meaning there are no missing value in this dataset.

```
# .nunique is based on several unique values in each
column and the data
# description, we can identify the continuous and
categorical columns in the
# data.
df.nunique()
```

There are several unique values in each column and the data description. Duplicated data can be handled or removed based on further analysis. Here I believe it is normal to have duplicate values.

```
# isnull(). Values. any() method to check if there are any
missing data in
# pandas DataFrame, missing data is represented as NaN or
None values in
# DataFrame. When your data contains NaN or None, using
this method returns the
# boolean value True otherwise returns False .
df.isnull().any()
```

Age, Primary Fur Color, Highlight Fur Color, Color notes, Location, Above Ground Sighter Measurement, Specific Location, Other Activities, and Other Interactions have missing values.

```
# .isnull.sum is used to get the number of missing records in each column.
df.isnull().sum()
```

This gives us the total of missing values that are in each columns.

```
# .duplicated().sum() identifying relevant data and finds duplicate rows.
print("number of duplicate rows:", df.duplicated().sum())
print("row number:", np.where(df.duplicated()== True)[0])
```

There are no duplicate rows.

```
# .describe provides a statistics summary of data belonging to numerical
# datatype such as int, float.
# This includes the count, mean, std, min, max as well as lower, 50 and upper
# percentiles.
# By default the lower percentile is 25 and the upper percentile is 75.
# The 50 percentile is the same as the median.
df.describe()
```

```
# .std returns sample standard deviation over requested axis. Removed the columns that was needed for standard deviation.
df.iloc[:, ~df.columns.isin(['X', 'Y', 'Date', 'Hectare Squirrel Number'])].std()
```

Data Wrangling

```
# Renamed the the dataframe from df to sq.
sq = df
sq.head()
```

Created a subset of your original data to perform the data wrangling.

```
# .rename renames multiple columns by index.
sq.rename(columns={sq.columns[0]: 'Longtitude',
sq.columns[1]: 'Latitude', sq.columns[2]: 'Squirrel
ID', sq.columns[3]: 'Location', sq.columns[13]: 'Above
Ground Sighter'},inplace=True)
sq.head()
```

I renamed columns Unique Squirrel ID, Hectare, Above Ground Sighter Measurement.

```
# .replace() method replaces the specified value with another specified value.
# .replace() method searches the entire DataFrame and replaces every case of the specified value.
squ = sq.replace('+', 'Unknown')
squ["Combination of Primary and Highlight Color"]
```

I replaced the + to Unknown in the Combination of Primary and Highlight Color column. I returned just the column where I made the change.

```
squ = sq.replace('?', 'Unknown')
squ["Age"]
```

replaced the ? to Unknown in the Age column. I returned just the column where I made the change.

```
# .fillna() method replaces the NULL values with a specified value.
I also added
# inplace=True so the replacement can be permanent.
squ_unk = squ
squ_unk.fillna('Unknown', inplace=True)
squ_unk.head()
```

I replaced the NaN to Unknown.

```
# df*1, converts booleans to numbers. To get 1 and 0
values instead of TRUE or
# FALSE logical values, simply multiply the
expression by 1.
squnum= squ_unk*1
squnum.head()
```

I replaced True to 1 and False to 0 for better counting.

```
# Return the dtypes in the DataFrame.
print (squnum.dtypes['Date'])
```

The date is improperly coded. Need to convert from int64 to datetime format.

Had to do this procedure after converting booleans to numbers. Otherwise I will not be able to perform this procedure.

```
# This function converts a scalar, array-like, Series or DataFrame/dict-like to
# a pandas datetime object.
squnum['Date'] = pd.to_datetime(squnum['Date'], format='%m%d%Y').dt.to_period('D')
```

Convert column date from int64 to datetime format.

```
# Return the dtypes in the DataFrame.
print (squnum.dtypes['Date'])
```

Checked now if date is properly formated.

```
# The .drop() method removes the specified row or column. By
specifying the
# column axis ( axis='columns' ), the drop() method removes the
specified
# column.
squcol = squnum
squcol.drop(['Color notes','Above Ground Sighter','Lat/Long'], axis
= 1, inplace = True)
squcol.head()
```

I removed Color notes, Above Ground Sighter, and Lat/Long columns, since I will not be using these columns.

```
# np.issubdtype() function by passing the specific column
to the function as a
#parameter along with the np.number which returns the
boolean value of True or
#False.
np.issubdtype(squcol['Hectare Squirrel Number'].dtype,
np.number)
```

Check whether numeric values are present in a given column of your dataframe.

EDA and Summary Statistics.

Activity

Sound

Behavior

Age

Foraging by Age

Behavior by Age

Fur Color

Count Per Day

Count Per Shift

Per Shift Each Day

Activity

Before doing a groupby to do an analysis of the squirrel's activities I created a new dataframe and created a new column call activity.

```
 Using datadrame.copy() create new dataframe.
squactiv = squnum[['Squirrel ID','Running',
'Chasing', 'Climbing', 'Eating', 'Foraging', 'Tail
flags', 'Tail twitches']].copy()
Squactiv
```

```
# A groupby operation involves some combination of splitting the object,
# applying a function, and combining the results. This can be used to
group
# large amounts of data and compute operations on these groups.
# an aggregation function is one which takes multiple individual values
and
# returns a summary. In the majority of the cases, this summary is a
single
# value.
result1 = squactivpivoted.groupby('Activity').agg({'Count': ['sum','mean',
'min', 'max']})
Result1
```

I created a new dataframe called squactivpivoted, where I created a new column based on existing columns. Please see a couple codes below.

```
# groupby() function takes up the column name as argument followed by
sum()
# function andreset_index() function resets and provides the new index
to the
# grouped by dataframe and makes them a proper dataframe structure
# sort_values(by=) method sorts the DataFrame by the specified label.
result2 = squactivpivoted.groupby('Activity').sum().reset_index()
result2.sort_values(by='Count', ascending=False)
```

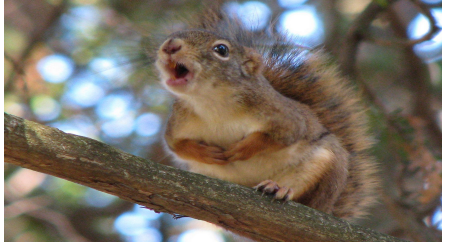
Grouped the dataset by two columns and then sort the aggregated results within the groups.

For squirrels activity there were 1435 squirrels that were foraging, 760 eating, 730 running, 658 climbing, 434 Tail twitches, 279 chasing, and 155 Tail flags.

```
<ipython-input-30-b706f302dc78>:5: FutureWarning: The default value of numeric_only in DataFrameGroupBy.sum is deprecated. In a future version, numeri
  result2 = squactivpivoted.groupby('Activity').sum().reset_index()
```

	Activity	Count
3	Foraging	1435
2	Eating	760
4	Running	730
1	Climbing	658
6	Tail twitches	434
0	Chasing	279
5	Tail flags	155

Sound



```
squasound = squnum[['Squirrel ID', 'Kuks',  'Quaas','Moans']].copy()
Squasound

squasoundpivoted= squasound.melt(id_vars="Squirrel ID")
squasoundpivoted = squasoundpivoted.rename(columns={'variable': 'Sound',
'value': 'Count'})
squasoundpivoted.head(10)

resultsound= squasoundpivoted.groupby('Sound').sum().reset_index()
resultsound.sort_values(by='Count', ascending=False)
```

For squirrels sound there were 102 squirrels that made Kuks sound, 50 that made Quaas, and 3 that Moans.

```
<ipython-input-33-a025e94dc601>:1: FutureWarning: The default value of numeric_only in DataFrameGroupBy.sum is deprecated. In a future version, numeri
  resultsound= squasoundpivoted.groupby('Sound').sum().reset_index()
```

	Sound	Count
0	Kuks	102
2	Quaas	50
1	Moans	3

Behavior

```
squabehavior = squnum[['Squirrel ID', 'Approaches', 'Indifferent','Runs from']].copy()
Squabehavior

squabehaviorpivoted= squabehavior.melt(id_vars="Squirrel ID")
squabehaviorpivoted = squabehaviorpivoted.rename(columns={'variable': 'Behavior Towards Human', 'value': 'Count'})
squabehaviorpivoted.head(10)

esultbehavior= squabehaviorpivoted.groupby('Behavior Towards Human').sum().reset_index()
resultbehavior.sort_values(by='Count', ascending=False)
```

For squirrels behavior towards human there were 1454 squirrel that reacted indifferent towards human, 678 ran away from human, and 178 approach humans.

```
<ipython-input-36-9231b26163bd>:1: FutureWarning: The default value of numeric_only in DataFrameGroupBy.sum is deprecated. In a future version, numeri
  resultbehavior= squabehaviorpivoted.groupby('Behavior Towards Human').sum().reset_index()
```

	Behavior Towards Human	Count
1	Indifferent	1454
2	Runs from	678
0	Approaches	178

Age

```
squaage = squnum[['Squirrel ID', 'Age']].copy(
Squaage

resultage =
squaage.groupby(['Age']).size().reset_index(name='Count')
resultage.sort_values(by='Count', ascending=False)
```

For squirrels Age there were 2568 squirrel that were Adult, 330 Juvenile, and 125 Unknown.

	Age	Count
0	Adult	2568
1	Juvenile	330
2	Unknown	125

Foraging by Age

```
resultforaging =
squnum.groupby("Age")["Foraging"].value_counts().reset_index(level=0)
resultforaging.columns = ["Age", "Foraging_Counts"]
resultforaging.reset_index(inplace=True)
resultforaging["Foraging"] = [
    "Foraging" if value == 1 else "Not Foraging" for value in
resultforaging["Foraging"]
]

Resultforaging
```

There were 1273 Adult Squirrels foraging(searching for food) while 1295 Adult Squirrels that were not foraging. There were 118 Juvenile Squirrels that were foraging and 212 Juvenile Squirrels that were not foraging. 44 were unknown for foraging and 81 were unknown that were foraging.

	Foraging	Age	Foraging_Counts
0	Not Foraging	Adult	1295
1	Foraging	Adult	1273
2	Not Foraging	Juvenile	212
3	Foraging	Juvenile	118
4	Not Foraging	Unknown	81
5	Foraging	Unknown	44

Behavior by Age

```
squabehaviorage = squnum[[ 'Squirrel ID', 'Approaches',  'Indifferent','Runs from', 'Age']].copy()
Squabehaviorage

squabehaviorpivoted= squabehavior.melt(id_vars= "Squirrel ID")
squabehaviorpivoted = squabehaviorpivoted.rename(columns={ 'variable': 'Behavior Towards Human', 'value': 'Count'})


resultbehavior= squabehaviorpivoted.groupby( 'Behavior Towards Human').sum().reset_index()
resultbehavior.sort_values(by= 'Count', ascending=False)
```

For squirrels behavior towards human there were 1454 squirrel that reacted indifferent towards human, 678 ran away from human, and 178 approach humans.

	Age	Behavior Towards Human	Count
1	Adult	Indifferent	1267
2	Adult	Runs from	571
0	Adult	Approaches	151
4	Juvenile	Indifferent	144
5	Juvenile	Runs from	81
7	Unknown	Indifferent	43
8	Unknown	Runs from	26
3	Juvenile	Approaches	22
6	Unknown	Approaches	5

Fur Color

```
squafurcolor = squnum[['Squirrel ID', 'Primary Fur
Color']].copy()
Squafurcolor

resultfurcolor = squafurcolor.groupby(['Primary Fu
Color']).size().reset_index(name='Count')
resultfurcolor.sort_values(by='Count', ascending=Fa
```

For squirrels primary fur color there were 2473 squirrel that were Gray, 392 Cinnamon, 103 Black, and 55 Unknown.

	Primary Fur Color	Count
2	Gray	2473
1	Cinnamon	392
0	Black	103
3	Unknown	55

Per Day

```
squadate = squnum[['Squirrel ID', 'Date']].copy()
Squadate

resultdate =
squadate.groupby(['Date']).size().reset_index(name='Co
unt')
resultdate.sort_values(by='Count', ascending=False)
```

For squirrels counts per each day there were 434 squirrels that were seen on 10/13/2018, 405 on 10/7/2018, 368 on 10/14/2018, 337 on 10/6/2018, 335 on 10/10/2018, 285 on 10/8/2018, 218 on 10/12/2018, 216 on 10/17/2018, 200 on 10/18/2018, 158 on 10/19/2018, and 67 on 10/20/2018.

	Date	Count
5	2018-10-13	434
1	2018-10-07	405
6	2018-10-14	368
0	2018-10-06	337
3	2018-10-10	335
2	2018-10-08	285
4	2018-10-12	218
7	2018-10-17	216
8	2018-10-18	200
9	2018-10-19	158
10	2018-10-20	67

Per Shift

```
squashift = squnum[['Squirrel ID', 'Shift']].copy()
Squashift
```

```
resultshift =
squashift.groupby(['Shift']).size().reset_index(name='Count'
)
resultshift.sort_values(by='Count')
```

1676 squirrels were seen at PM shift while 1347 were seen at AM shift.

676 squirrels were seen at PM shift while 1347 were seen at AM shift.

	Shift	Count
0	AM	1347
1	PM	1676

1676 squirrels were seen at PM shift while 1347 were seen at AM shift.

Per Shift Each Day

```
squadateshift = squnum[['Squirrel ID', 'Date','Shift']].copy()
Squadateshift
```

```
resultdateshift = squadateshift.groupby(['Date',
'Shift']).size().reset_index(name='Squirrel Count')
Resultdateshift
```

	Date	Shift	Squirrel Count
0	2018-10-06	AM	163
1	2018-10-06	PM	174
2	2018-10-07	AM	208
3	2018-10-07	PM	197
4	2018-10-08	AM	165
5	2018-10-08	PM	120
6	2018-10-10	AM	189
7	2018-10-10	PM	146
8	2018-10-12	AM	77
9	2018-10-12	PM	141
10	2018-10-13	AM	110
11	2018-10-13	PM	324
12	2018-10-14	AM	169
13	2018-10-14	PM	199
14	2018-10-17	AM	110
15	2018-10-17	PM	106
16	2018-10-18	AM	75
17	2018-10-18	PM	125
18	2018-10-19	AM	63
19	2018-10-19	PM	95
20	2018-10-20	AM	18
21	2018-10-20	PM	49

Here we have Squirrel count for AM and PM of each day.

Sightings of Squirrels by Location and Shift

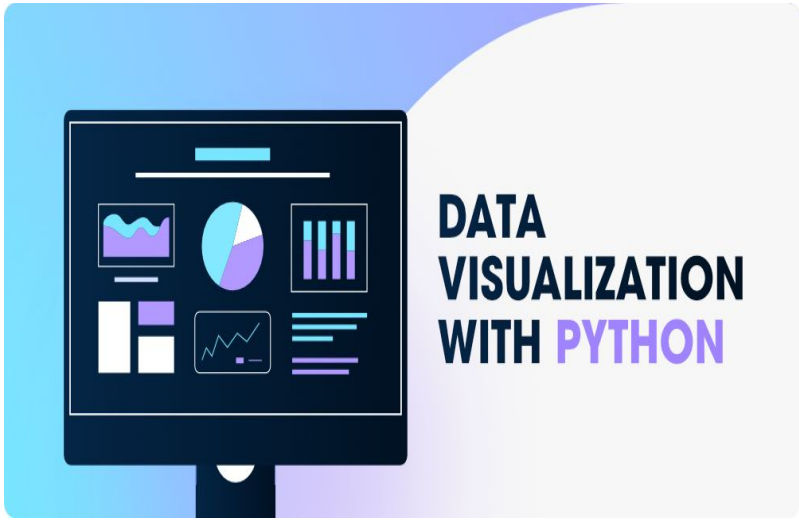
```
import plotly.express as px

px.scatter_mapbox(squcol, title = "Sighting of Squirrels by Location and Shift",
                  lat=squcol['Latitude'],
                  lon=squcol['Longtitude'],
                  color='Shift',
                  center=dict(lat=40.7128, lon=-74.0060),
                  mapbox_style='open-street-map')
```

Here is an interactive map where you can see the sighting of the squirrels by location, AM and PM

Visualizations

```
import matplotlib.pyplot as plt
#from colorspacious import cspace_converter
import matplotlib as mpl
import matplotlib.colors as mcolors
import matplotlib.cm as cm
import matplotlib.colors as col
import seaborn as sns
import numpy as np
```

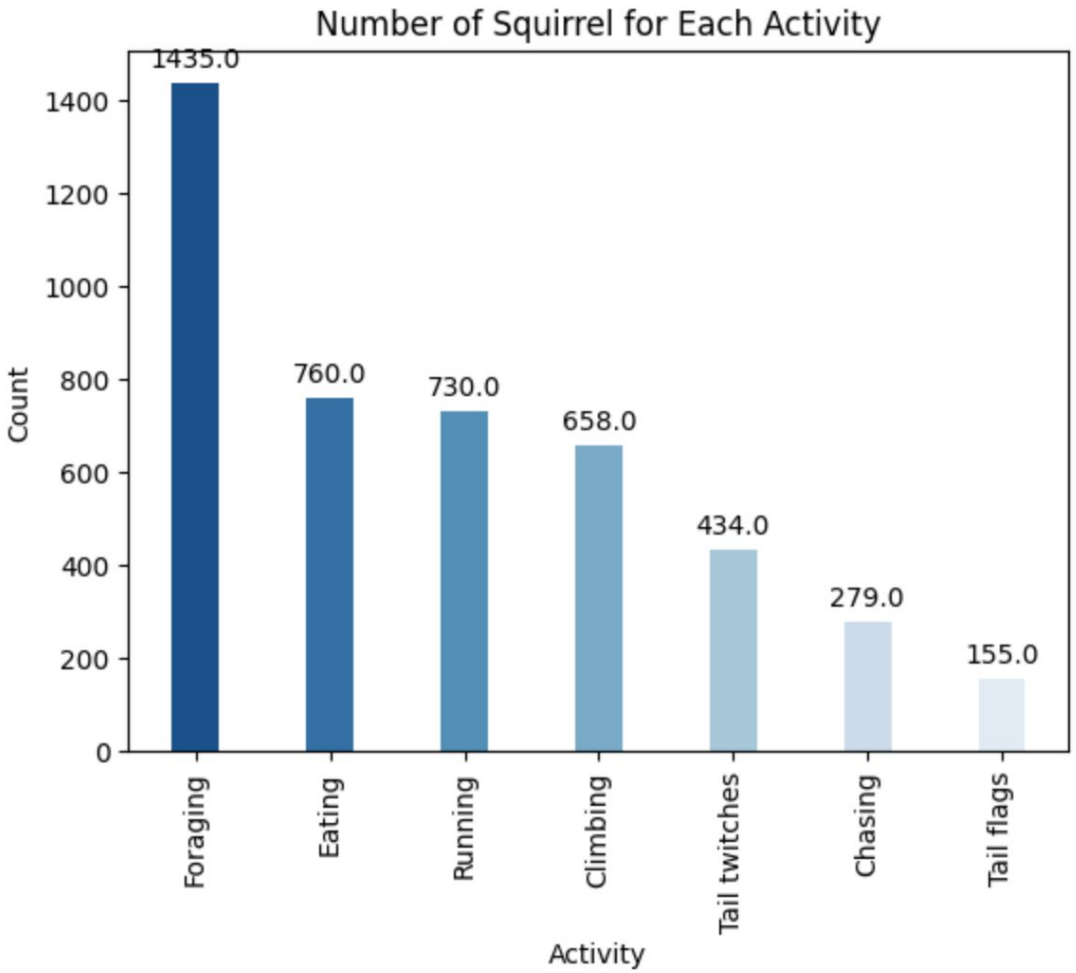


Activity

Here we see a bar graph of squirrels activity. There were 1435 squirrels that were foraging, 760 eating, 730 running, 658 climbing, 434 Tail twitches, 279 chasing, and 155 Tail flags.

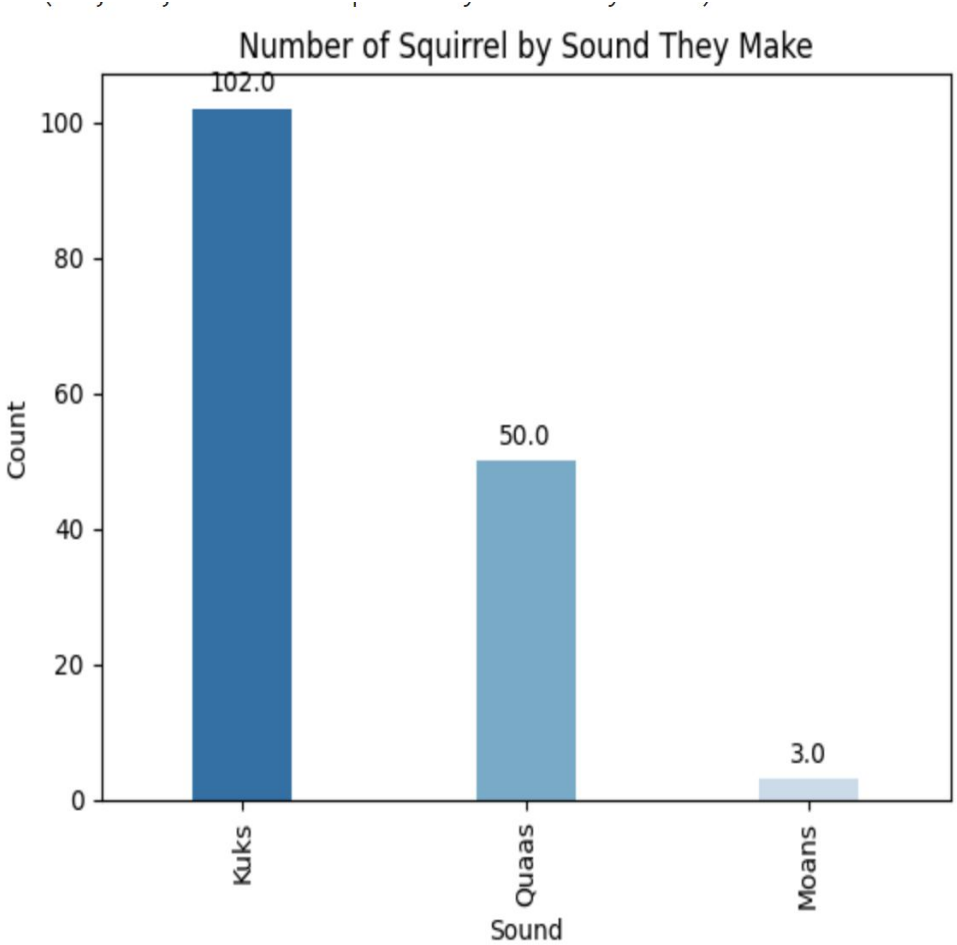
Squirrels in Central Park were a hungry bunch- the top two activities that they were recorded doing was foraging and eating.

The least common activity of these five was chasing, perhaps because observers would need to see at least two squirrels together in order for this behavior to play out.



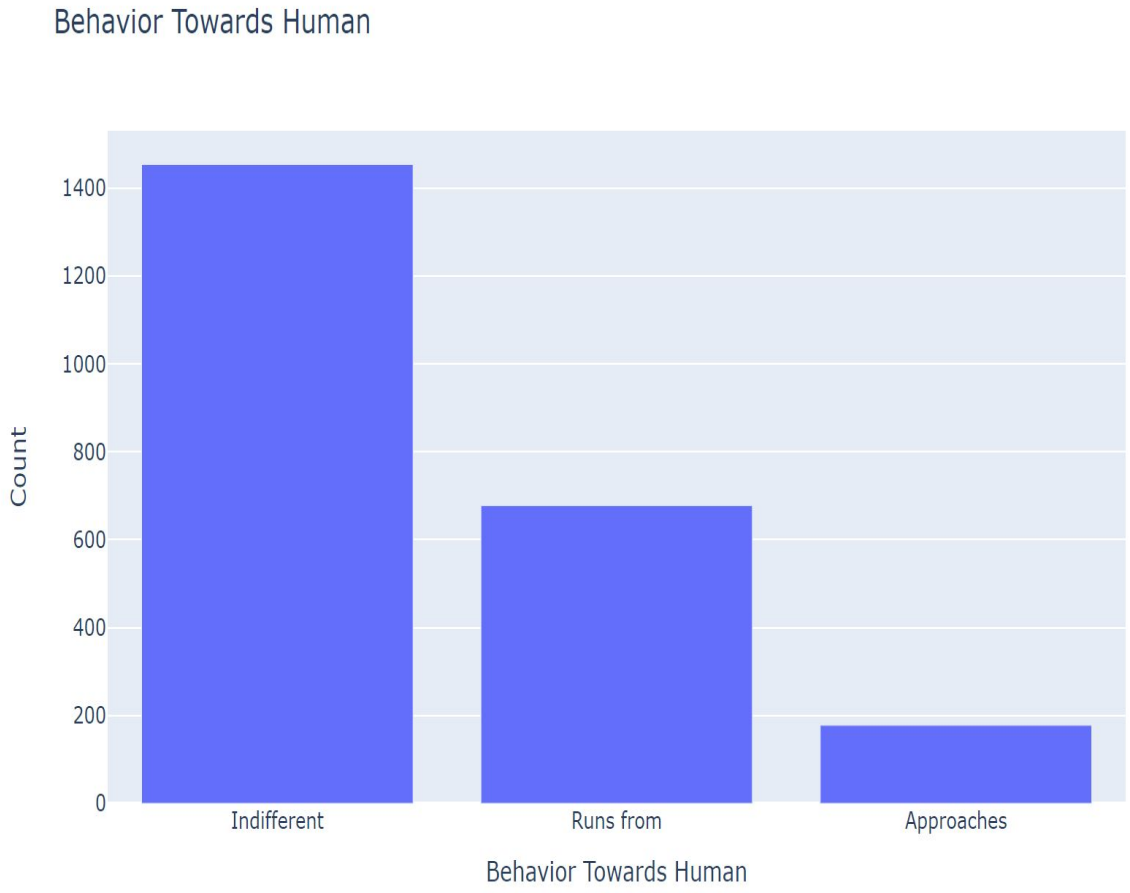
Sound

For squirrels sound there were 102 squirrels that made Kuks sound, 50 that made Quaas, and 3 that Moans. One indication of recognition of predators is the vocal patterns of squirrels. When a squirrel is heard “quaaing”, which is an elongated vocal communication, this can indicate the presence of a ground predator such as a dog. Additionally, squirrel “moaning” is a high-pitched vocal communication which can indicate the presence of an air predator such as a hawk. Kuks are a more generic form of squirrel communication which is a chirpy vocal sound used for a variety of reasons. We can see that there is a very low count of squirrels in Central Park that are quaaing and moaning- indicating that there are not likely many squirrels who are facing predators (at least in October 2018 when this data was collected).



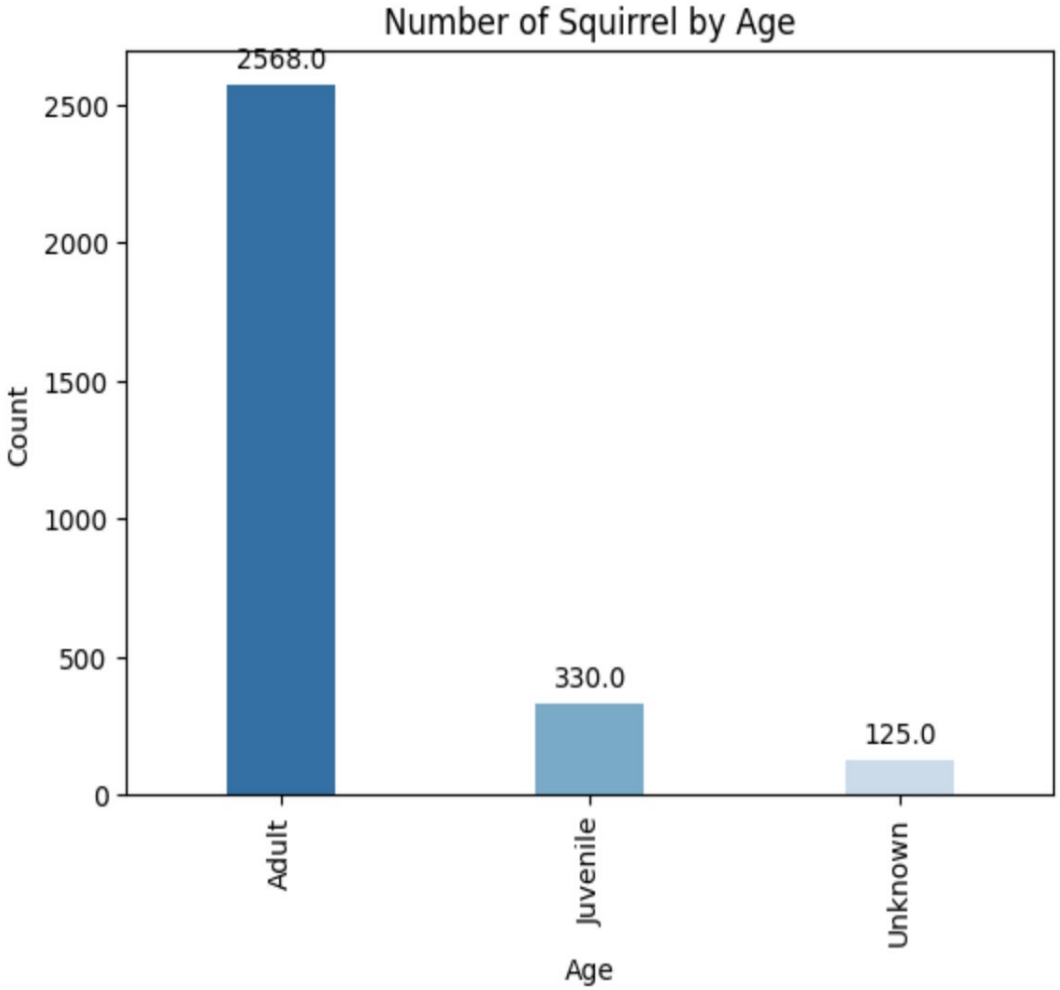
Behavior

Here we see the relationship between squirrels and humans in New York. We see their interactions and whether they approached, ran from or were indifferent towards humans. It's worth pointing out that there were some observations in which the squirrel was somehow doing all three of these activities at once. Less squirrels approached humans, half ran from humans, and most of squirrels were indifferent from humans.



Age

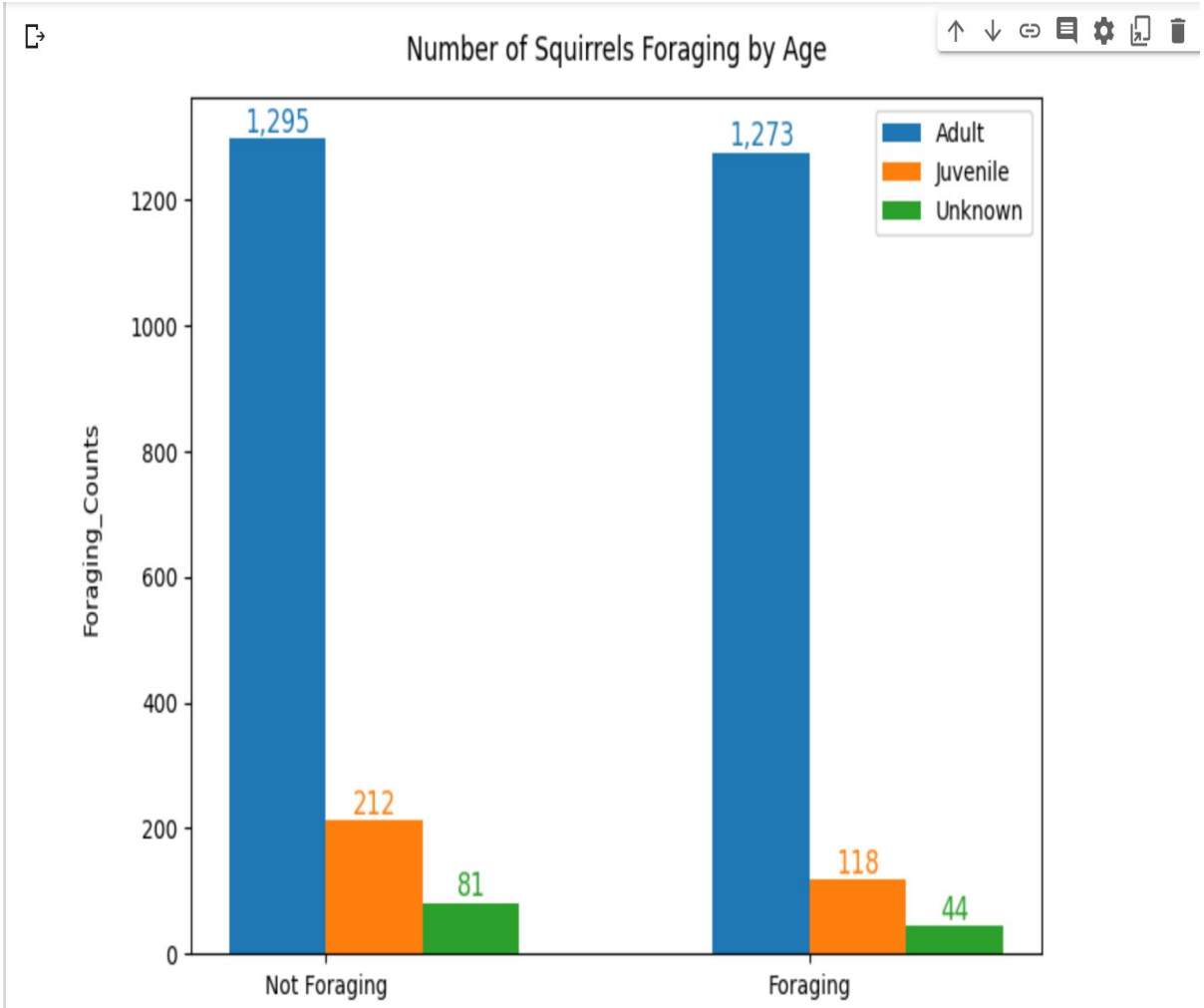
The majority of squirrels identified in Central Park were of adult-age (1+ year), with approximately 330 identified as juvenile.



Foraging by Age

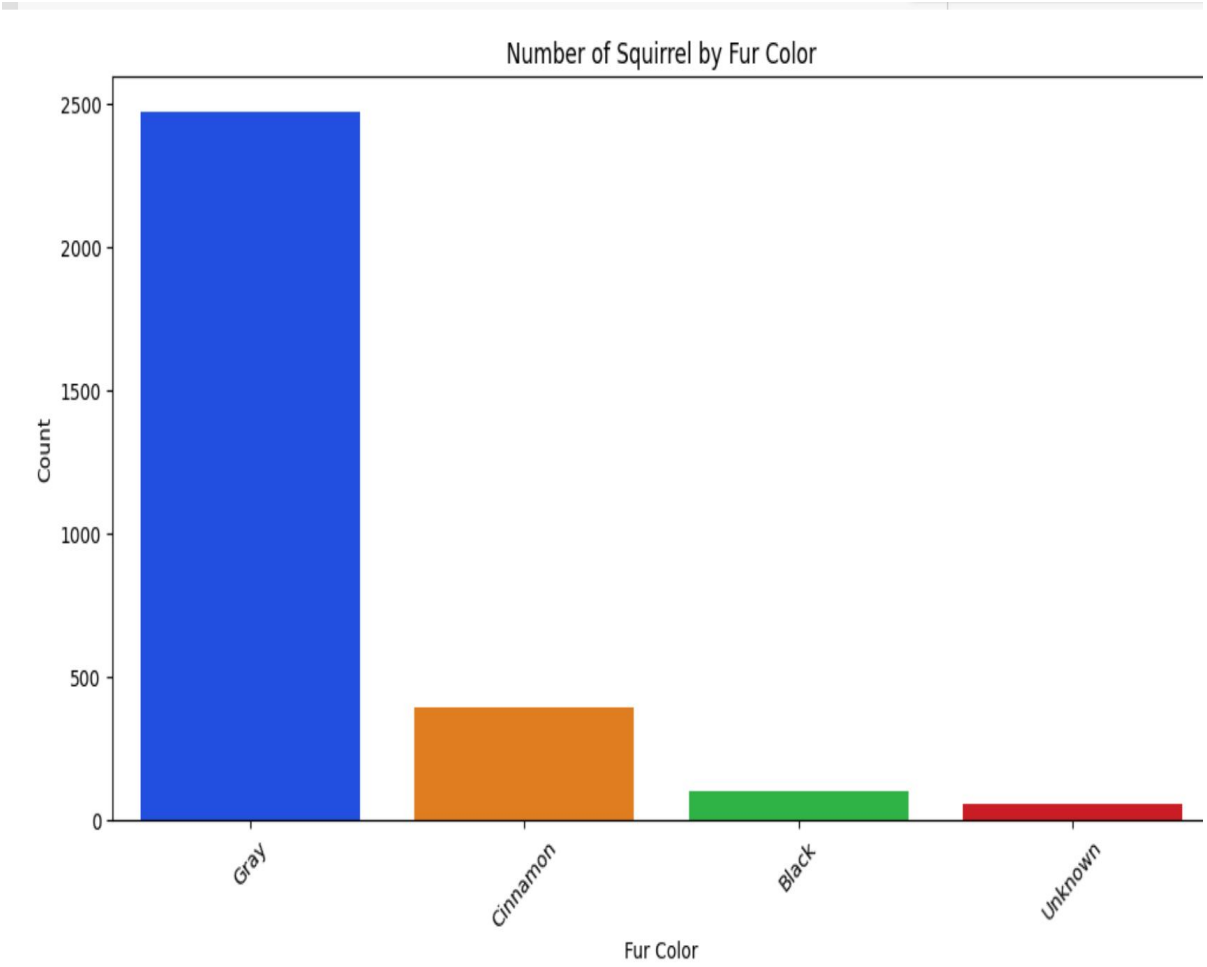
In this graph of the Adults, Juvenile, and unknown squirrels that were foraging (searching for food) or not foraging. There were 1273 Adult Squirrels foraging while 1295 Adult Squirrels that were not foraging. There were 118 Juvenile Squirrels that were foraging and 212 Juvenile Squirrels that were not foraging. 44 were unknown for foraging and 81 were unknown that were foraging.

It's really intersting what we see in this graph. In the observed squirrels meetings, the squirrel adults far often beg for food. The reason for this is probably that the young squirrels have not learned yet, that the people can feed them and are more afraid of humans.



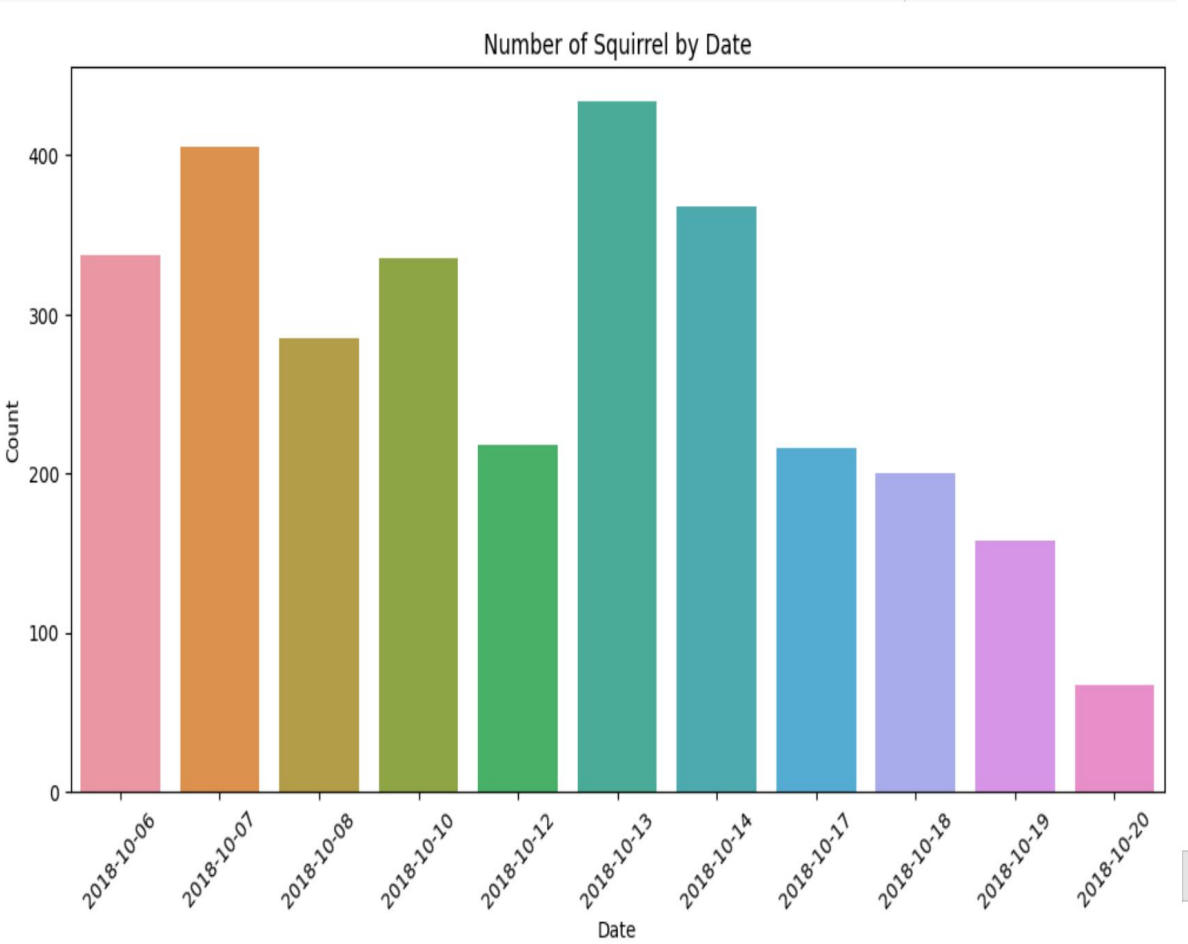
Fur Color

The predominant primary fur color for all Central Park squirrels is grey. This could be due to the fact that the grey squirrels are able to blend in best with the urban environment of NYC. A slightly greater proportion of squirrels have a primary fur color of cinnamon. There is a slightly greater proportion of black squirrels. Black fur coats are due to recessive genes that cause abnormal pigmentation, and thus are only found in areas where the population is contained (such as Central Park).



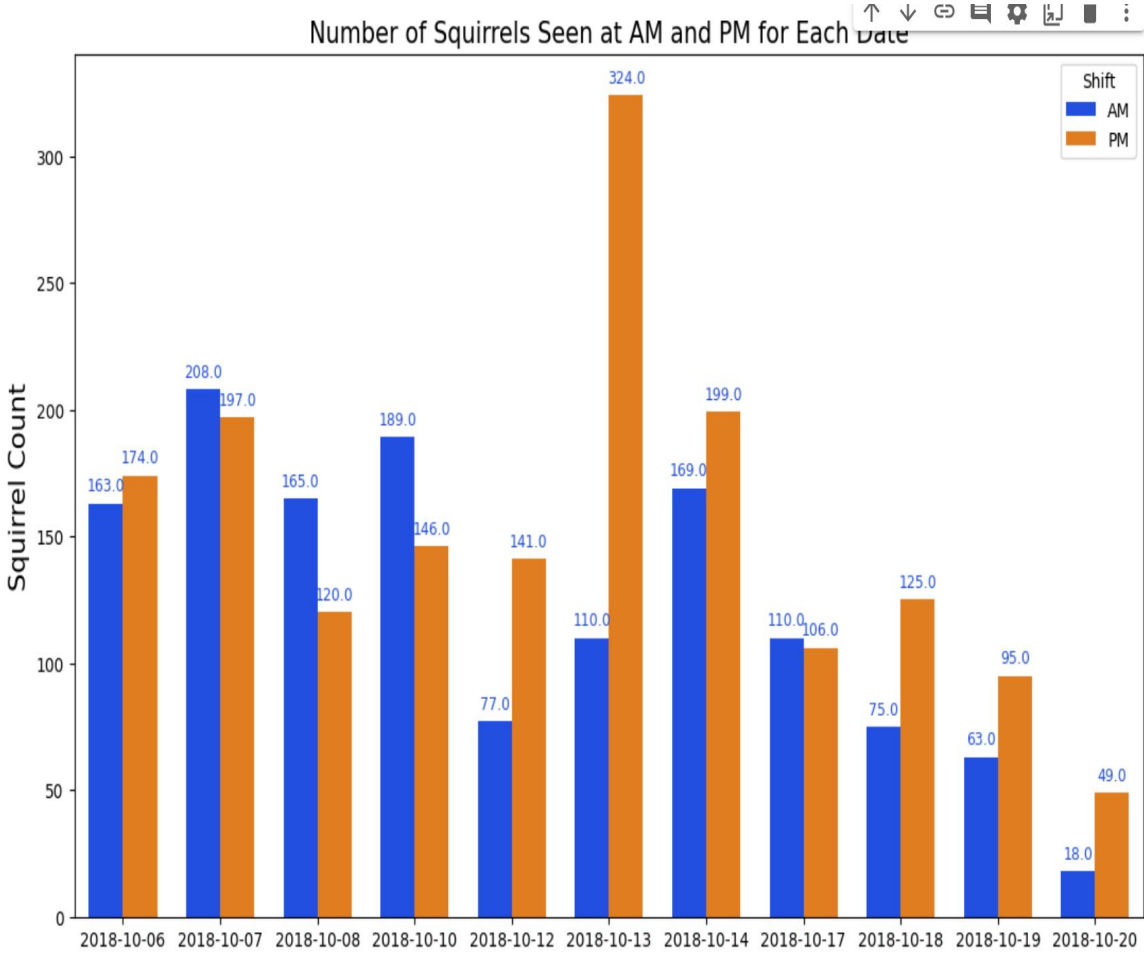
Squirrels Per Day

We can see that on 10/13 had the most squirrel sighting with over 400 then the other days. 10/20 had the least sighting with approximately 50. We tend to notice a decrease after 10/14.

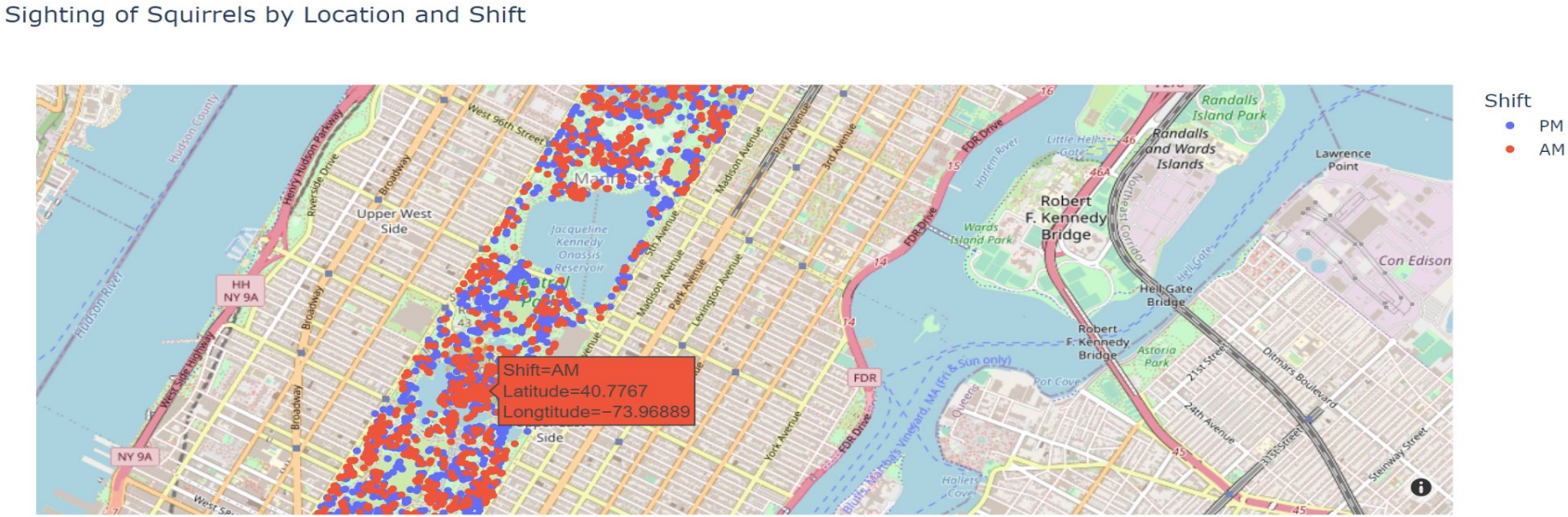


Per Shift Each Day

The data for the squirrel census was collected over a 14-day period starting October 6th, 2018. The majority of observations were recorded towards the beginning of the month and on October 13th and 14th. In addition to recording the date, time of day was also recorded for each of the observation (AM or PM). Recordings tend to be in the afternoon/evening. Here we see that the sightings on 10/13 was mostly in the PM of the day. The least was in the day on 10/20. It looks like the squirrels tend to come out in the AM in the begining of October. Again we tend to see a drop of sightings of Squirrels in the AM then the PM after 10/14. During fall months, squirrels are preparing for winter by eating and storing as much as much food as possible (FMR, 2021). This tends to happen in the early morning and later in the evening, with midday being the least active time for squirrel activity. Unfortunately, our temporal data is limited as we can't identify what time exactly in the PM the data was collected, but it can be assumed that it was recorded prior to sunset.



Sightings of Squirrels by Location and Shift



Here is an interactive map where you can see the sighting of the squirrels by location, AM and PM.

Conclusion

I showed you in my analysis and visualization the sightings of squirrels, including location coordinates in Central Park, age, primary fur color, activities, communications, behavior and interactions between squirrels and with humans.

For squirrels activity there were 1435 squirrels that were foraging, 760 eating, 730 running, 658 climbing, 434 Tail twitches, 279 chasing, and 155 Tail flags. The reason for the high count in foraging is due to the squirrels looking for food in October to store for the winter.

For squirrels sound there were 102 squirrels that made Kuks sound, 50 that made Quaas, and 3 that Moans. Kuks are a more generic form of squirrel communication which is a chirpy vocal sound used for a variety of reasons. We saw that there is a very low count of squirrels in Central Park that are quaaing and moaning- indicating that there are not likely many squirrels who are facing predators (at least in October 2018 when this data was collected).

For squirrels behavior towards human there were 1454 squirrel that reacted indifferent towards human, 678 ran away from human, and 178 approach humans. It's worth pointing out that there were some observations in which the squirrel was somehow doing all three of these activities at once. Less squirrels approached humans, half ran from humans, and most of squirrels were indifferent from humans.

The majority of squirrels identified in Central Park were of adult-age (1+ year), with approximately 330 identified as juvenile.

In regards to foraging by age, it's really intersting what we saw. In the observed squirrels meetings, the squirrel adults far often beg for food. The reason for this is probably that the young squirrels have not learned yet, that the people can feed them and are more afraid of humans.

As you saw the adult and younger squirrels tend to be indifferent towards human followed by running from human and less Adult and younger squirrels tend to approach humans.

The predominant primary fur color for all Central Park squirrels is grey. This could be due to the fact that the grey squirrels are able to blend in best with the urban environment of NYC. A slightly greater proportion of squirrels have a primary fur color of cinnamon. There is a slightly greater proportion of black squirrels. Black fur coats are due to recessive genes that cause abnormal pigmentation, and thus are only found in areas where the population is contained (such as Central Park).

There were more Squirrel sighting on 10/13 with over 400 then the other days. 10/20 had the least sighting with approximately 50. We tend to notice a decrease after 10/14.

The sightings on 10/13 was mostly in the PM of the day. The least was in the day on 10/20. It looks like my squirrel tend to come out in the PM of the day. Again we tend to see a drop of sightings of Squirrels in the AM then the PM after 10/14.

During fall months, squirrels are preparing for winter by eating and storing as much as much food as possible (FMR, 2021). This tends to happen in the early morning and later in the evening, with midday being the least active time for squirrel activity. Unfortunately, our temporal data is limited as we can’t identify what time exactly in the PM the data was collected, but it can be assumed that it was recorded prior to sunset.

I wish I would had more time to do some type of machine learning. I would like to conduct a regression analysis with the population of the squirrels in Central Park in the future. I would also like to conduct a chi-squared test for independence between age and whether or not the squirrels were seen foraging, as well as age and whether or not the squirrel were seen being indifferent to human presence.