

## Jerry Barboza: Health Data Tracked from July 4, 2022

In this project I will show data about my health I been tracking down and run statistical analysis to find any correlations between the data. This project just contains a sample from the full dataset since the remaining data I keep it private, however there is still enough data to understand how important it is to track your health where you can help communication with your doctor and improve your health.

In [67]:

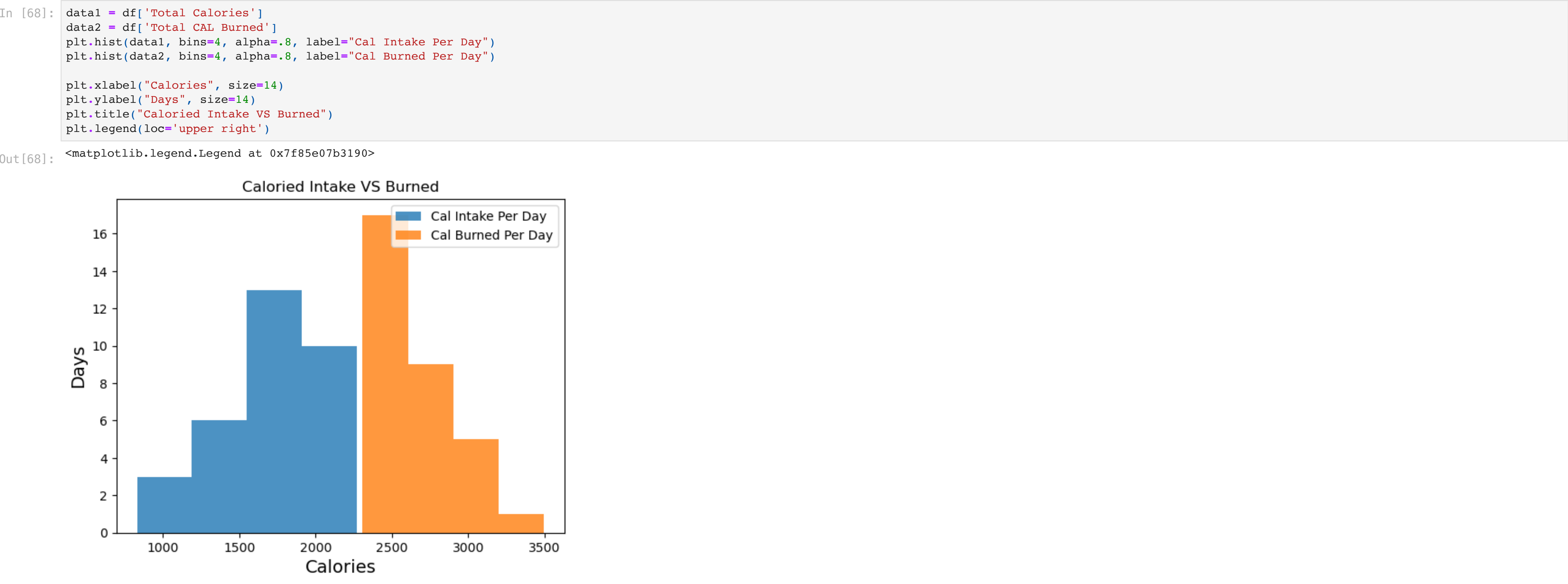
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

# dataframe for this project
df = pd.read_csv('Health_Data.csv')
df.head(n=10)
```

Out[67]:

	Date	Fats	Carbs	Protein	Total Calories	Resting Energy (cal)	Active Energy (cal)	Total CAL Burned	Calories	Morning Weight	Night Weight	Max BPM	Resting Heart Rate Average	Walking Heart Rate Average	Steps	Blood Pressure SYS (moring)	Blood Pressure DIA (moring)	Blood_Pressure_SYS_Night	Blood_Pressure_DIA_Night
0	Monday, July 4, 2022	75	283	62	2055	2215	652	2867	-812	208.2	208.5	133	80	115	11410.0	NaN	NaN	NaN	NaN
1	Tuesday, July 5, 2022	85	283	77	2205	2167	388	2555	-350	208.1	210.2	115	73	89	4687.0	NaN	NaN	NaN	NaN
2	Wednesday, July 6, 2022	53	239	59	1669	2175	728	2903	-1234	208.2	210.0	172	77	113	8332.0	NaN	NaN	NaN	NaN
3	Thursday, July 7, 2022	59	259	84	1903	2097	367	2464	-561	208.0	210.2	135	79	128	2871.0	NaN	NaN	NaN	NaN
4	Friday, July 8, 2022	70	330	80	2270	2135	409	2544	-274	208.1	210.0	135	84	123	2317.0	NaN	NaN	NaN	NaN
5	Saturday, July 9, 2022	50	300	70	1930	2254	639	2893	-963	207.0	211.4	151	74	123	6849.0	NaN	NaN	NaN	NaN
6	Sunday, July 10, 2022	70	330	80	2270	2277	1221	3498	-1228	208.6	211.6	180	84	148	15037.0	NaN	NaN	NaN	NaN
7	Monday, July 11, 2022	65	300	70	2065	2188	439	2627	-562	209.2	210.8	150	71	113	2938.0	NaN	NaN	NaN	NaN
8	Tuesday, July 12, 2022	60	300	75	2040	2169	443	2612	-572	208.4	210.4	123	79	111	4745.0	NaN	NaN	NaN	NaN
9	Wednesday, July 13, 2022	50	230	50	1570	2158	361	2519	-949	208.2	210.2	133	60	109	2832.0	NaN	NaN	NaN	NaN

## Calories Intake vs Calories Burned



In [69]:

```
print(f"Mean Calories Daily Intake: {np.mean(data1)}")
print(f"Mean Caloried Daily Burned: {np.mean(data2)}")
```

Mean Calories Daily Intake: 1675.5625  
Mean Caloried Daily Burned: 2669.53125

In [70]:

```
print(f"Mean Resting Heart Rate: {np.mean(df['Resting Heart Rate Average']):.2f}")
print(f"Mean Walkinng Heart Rate: {np.mean(df['Walking Heart Rate Average']):.2f}")
```

Mean Resting Heart Rate: 69.19  
Mean Walkinng Heart Rate: 110.06



## Correlation Matrix

In this matrix, we are able to see any correlations within our dataset. A number of 1 is a perfect correlation, therefore anything closer to 1 means there is a strong correlation between the data.

In [90]:

```
data = pd.read_csv('Health_Data.csv', usecols = ['Total Calories','Resting Energy (cal)','Active Energy (cal)','Total CAL Burned',
'Morning Weight','Night Weight','Resting Heart Rate Average','Walking Heart Rate Average','Steps'])
df = pd.DataFrame(data)

# Calculate the correlation matrix
corr = df.corr()

# Style the correlation matrix
styled_corr = corr.style.format(precision=3).background_gradient(cmap="RdBu", vmin=-1, vmax=1)

styled_corr
```

Out[90]:

	Total Calories	Resting Energy (cal)	Active Energy (cal)	Total CAL Burned	Morning Weight	Night Weight	Resting Heart Rate Average	Walking Heart Rate Average	Steps
Total Calories	1.000	0.290	0.426	0.416	0.549	0.483	0.613	0.409	0.380
Resting Energy (cal)	0.290	1.000	0.724	0.829	0.131	0.179	0.423	0.371	0.577
Active Energy (cal)	0.426	0.724	1.000	0.986	0.130	0.150	0.555	0.666	0.871
Total CAL Burned	0.416	0.829	0.986	1.000	0.137	0.165	0.553	0.630	0.840
Morning Weight	0.549	0.131	0.130	0.137	1.000	0.906	0.538	0.259	-0.005
Night Weight	0.483	0.179	0.150	0.165	0.906	1.000	0.523	0.338	-0.038
Resting Heart Rate Average	0.613	0.423	0.555	0.553	0.538	0.523	1.000	0.840	0.469
Walking Heart Rate Average	0.409	0.371	0.666	0.630	0.259	0.338	0.840	1.000	0.461
Steps	0.380	0.577	0.871	0.840	-0.005	-0.038	0.469	0.461	1.000

## MACROS: Fats, Carbs and Protein

The Recommended Dietary Allowance (RDA) for protein is a modest 0.8 grams of protein per kilogram of body weight or 0.36 grams of protein per pound of body weight. According to Harvard Health, if your goal is to gain msucle then you should be consuming at least 50% more (1.2+ grams per Kilogram). Since we break down muscle fibers when working out, your body needs a higher intake of protein to recover and get them bigger.

The main source of protein I am consuming is Soy, milk and eggs since I am vegetarian I need to find my source of protein from foods that are not meat.

