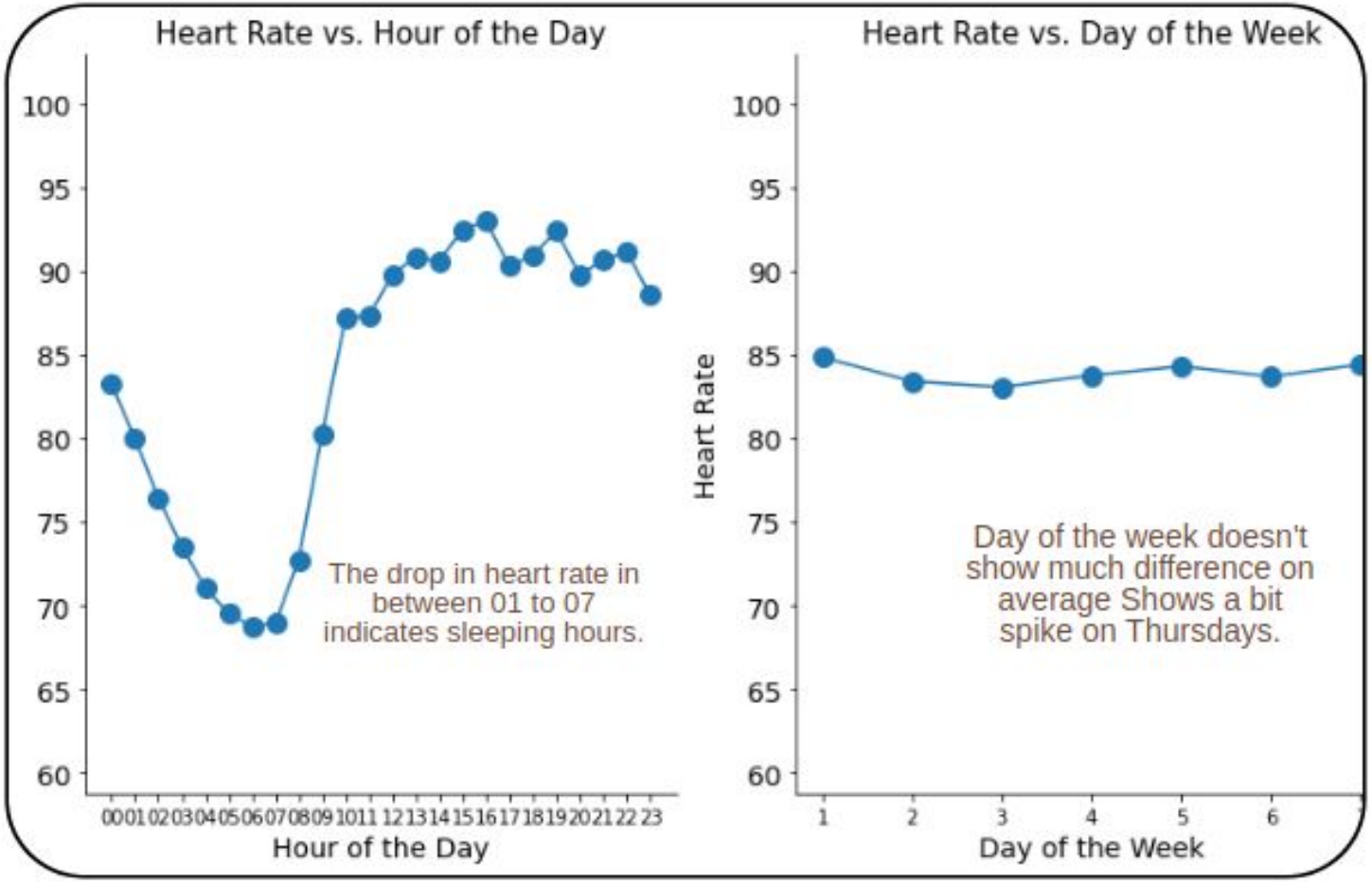
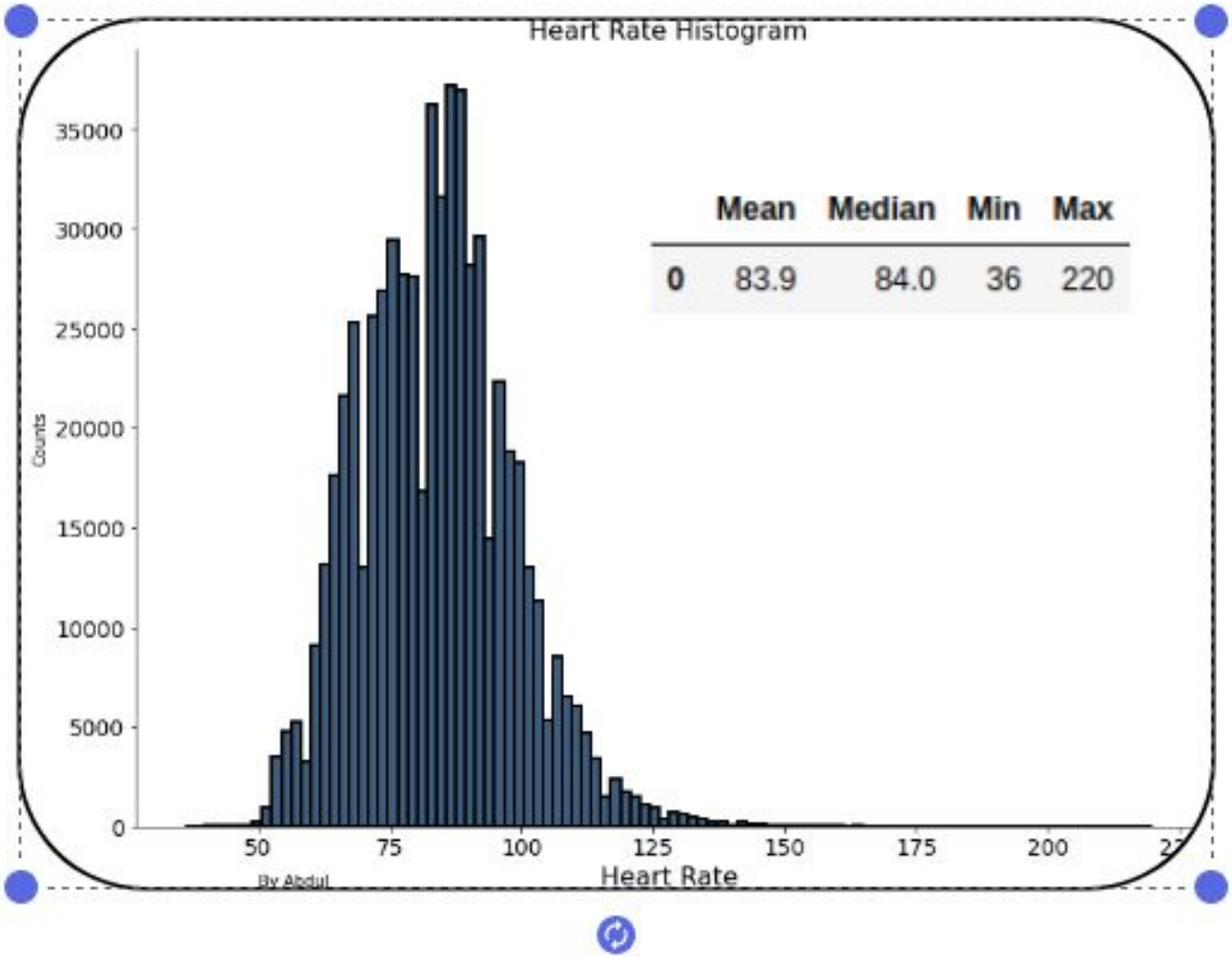
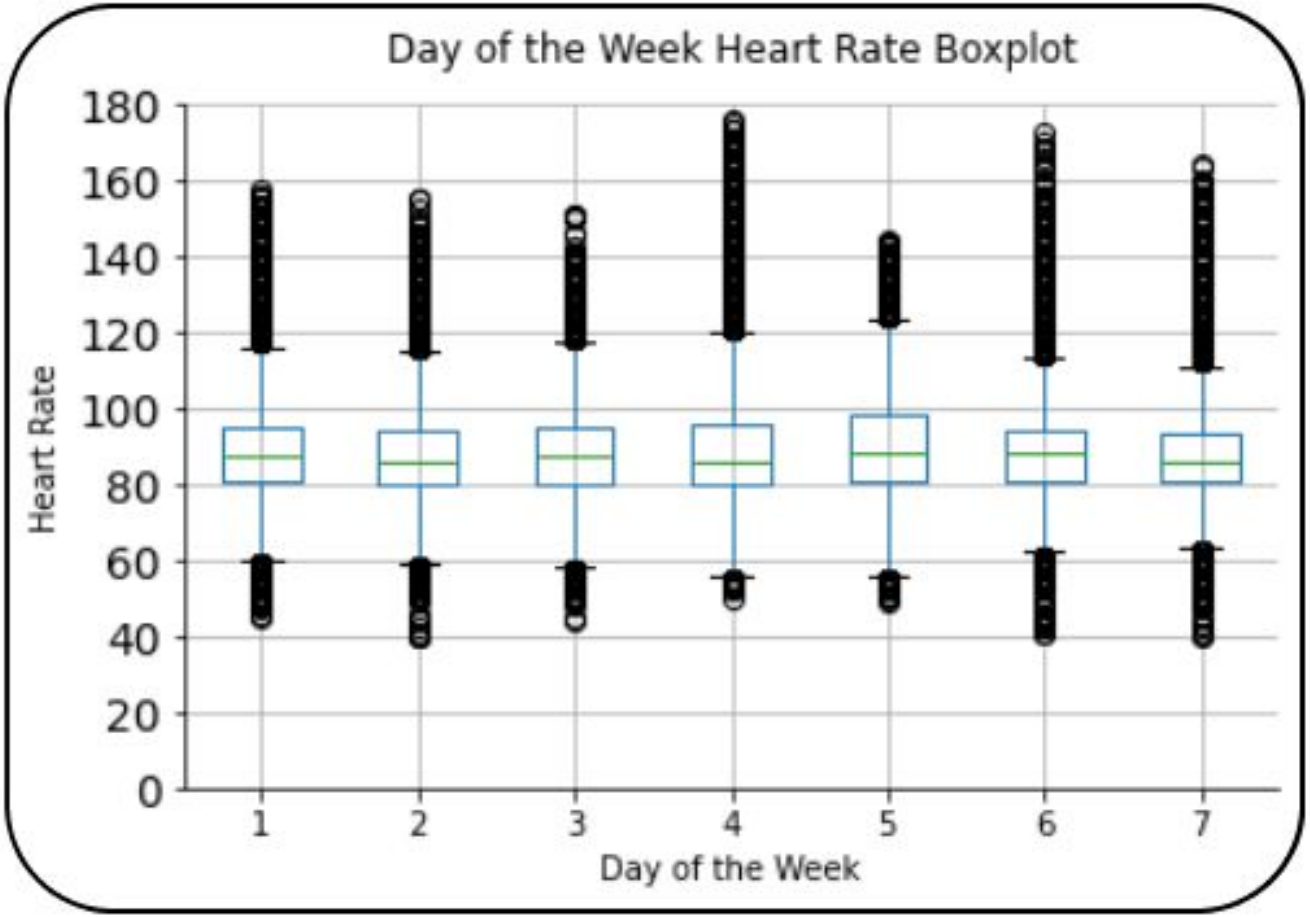

Heart Rate vs. Hour of the Day
100
95
90
85
80
75
70
65
60
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Hour of the Day
The drop in heart rate in between 01 to 07 indicates sleeping hours.
Heart Rate vs. Day of the Week
Heart Rate
100
95
90
85
80
75
70
65
60
1
2
3
4
5
6
Day of the Week
Day of the week doesn't show much difference on average Shows a bit spike on Thursdays.



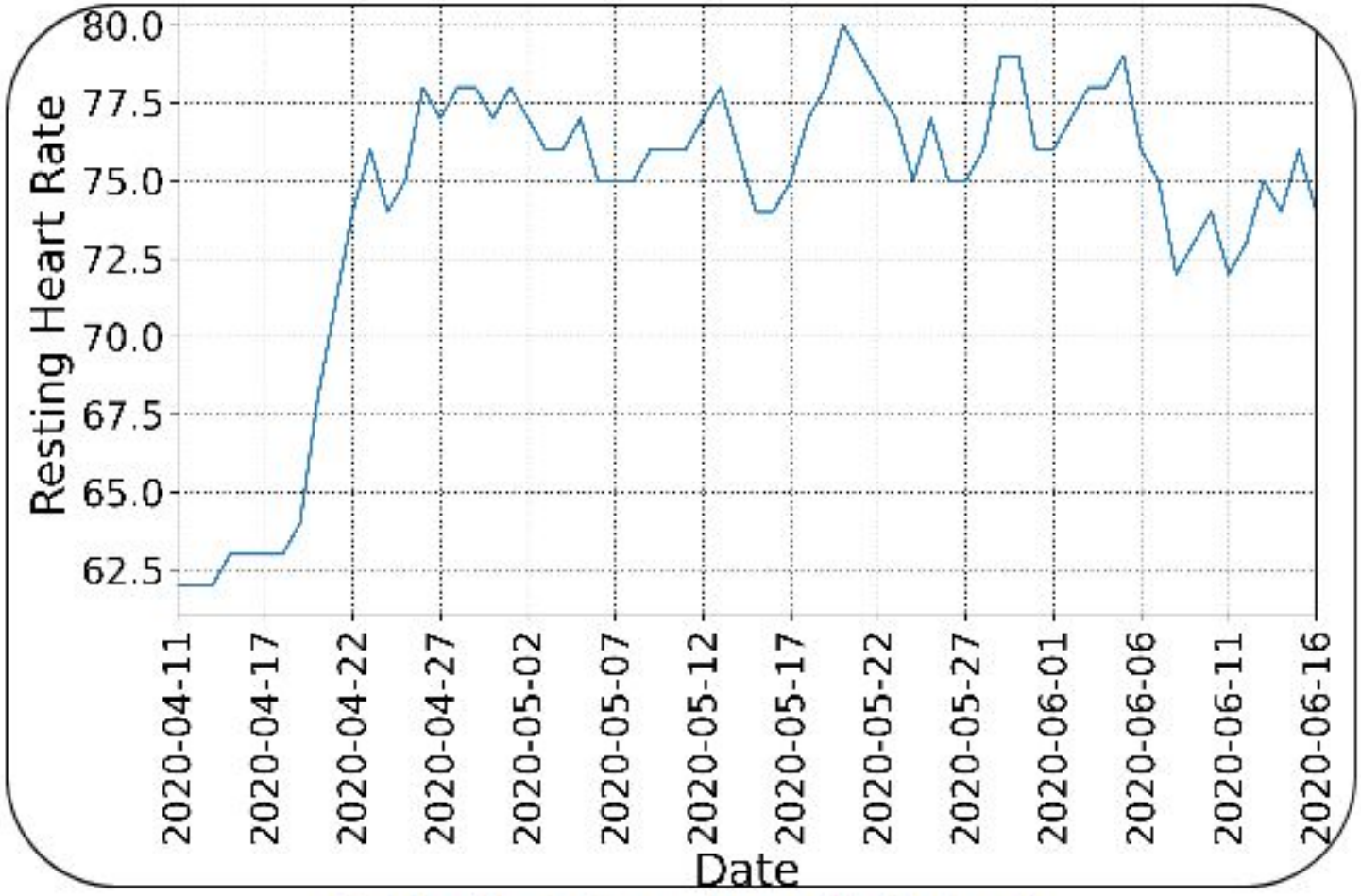
	Mean	Median	Min	Max
0	83.9	84.0	36	220

Indicates a right skew

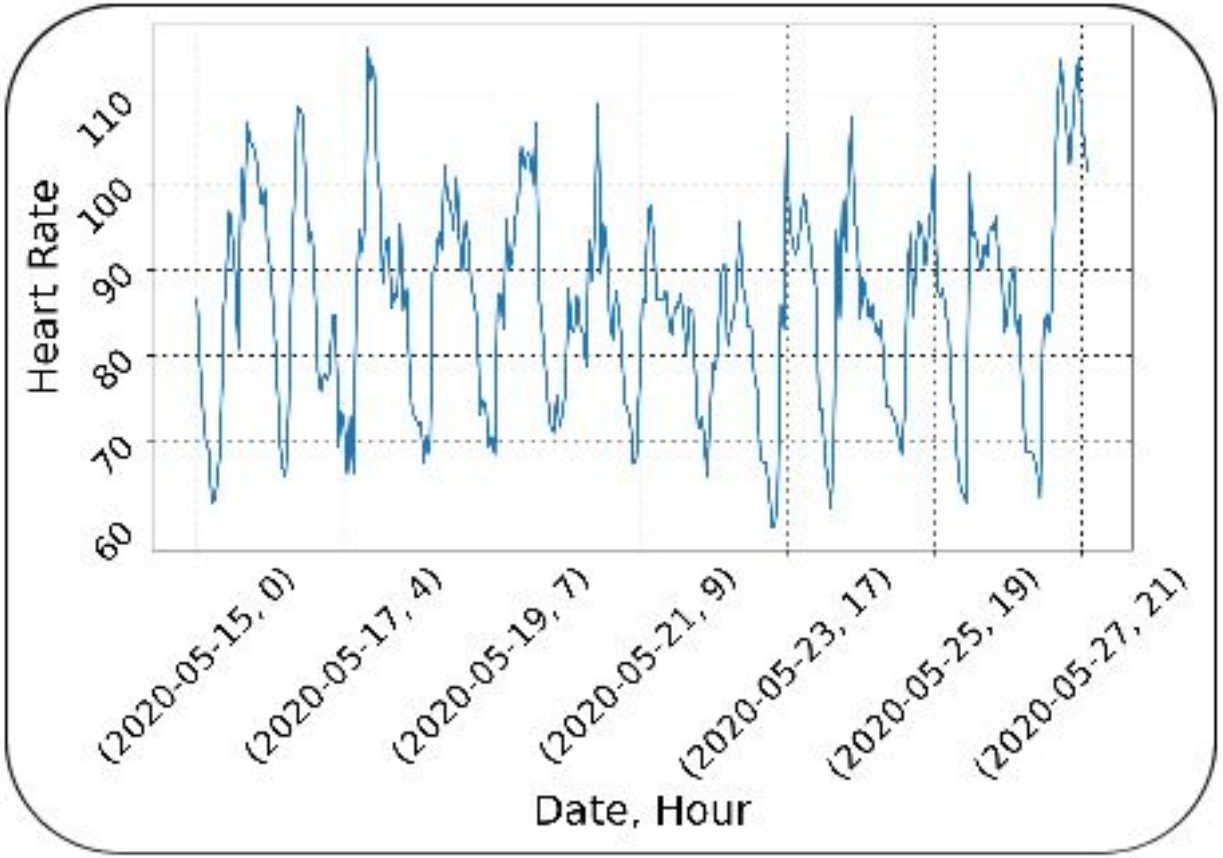
Median>Mean



Indicates a bit of a spike in Thurdays



Resting Heart rate can be good indicator of health



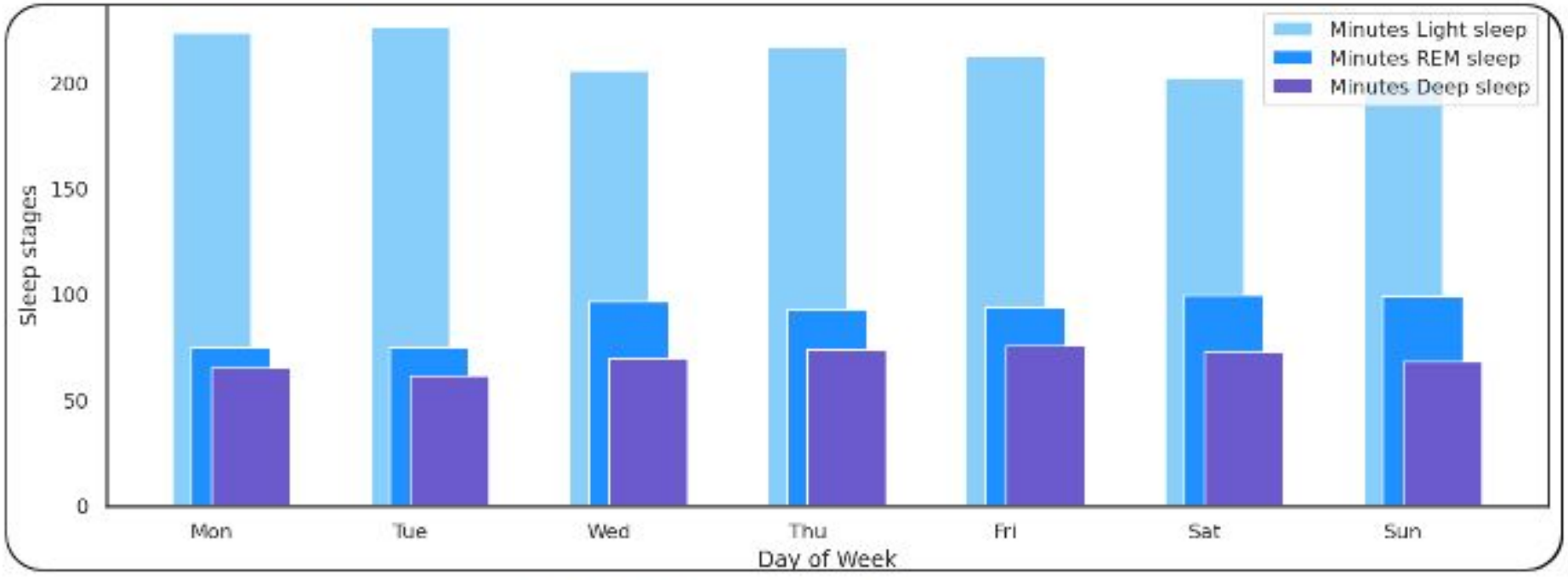
General Heart Rate Stats for a few days

```
print('HR when Awake: '+str(round(Nine_to_five
print('HR when Awake: '+str(round(Free_timedf[
```

```
HR when Awake: 88.21
HR when Awake: 81.63
```

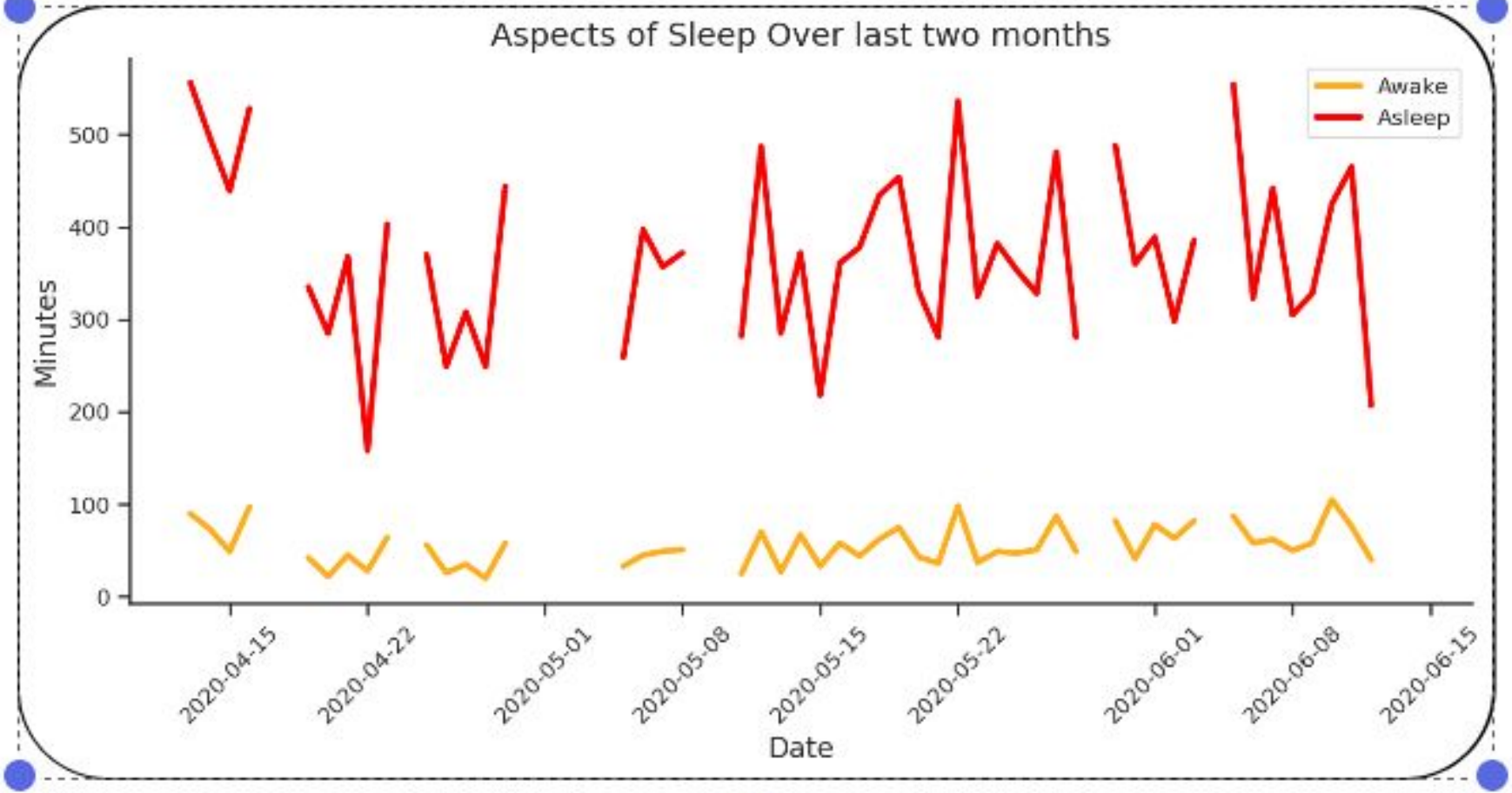
```
Free_time_wokedf = Free_timedf[(Free_timedf['H
Free_time_sleepdf = Free_timedf[~(Free_timedf[
print('HR when Free & Awake: '+str(round(Free_
print('HR when Free & Asleep: '+str(round(Free
```

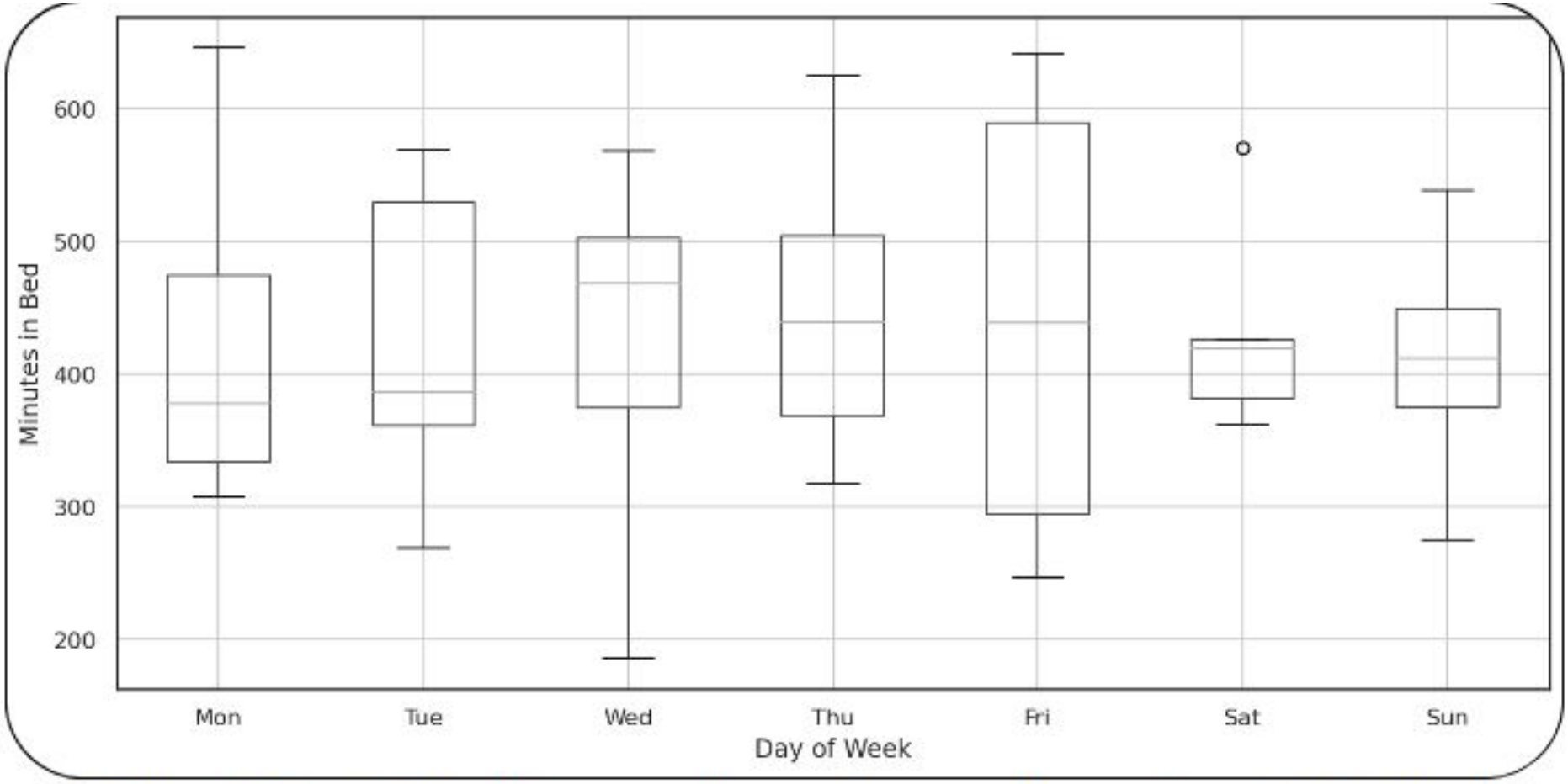
```
HR when Free & Awake: 88.13
HR when Free & Asleep: 77.04
```



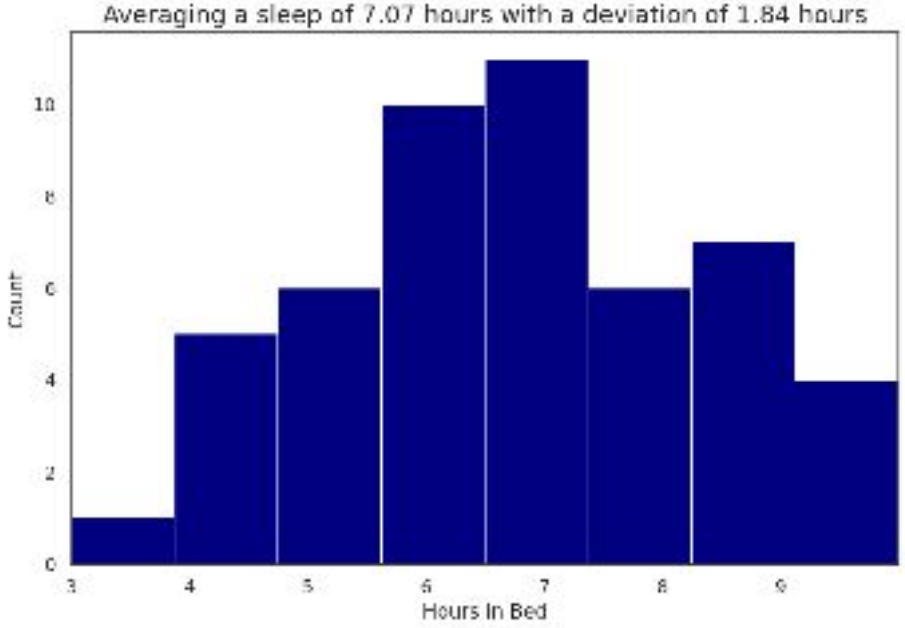
Type of Sleep per day on Average.

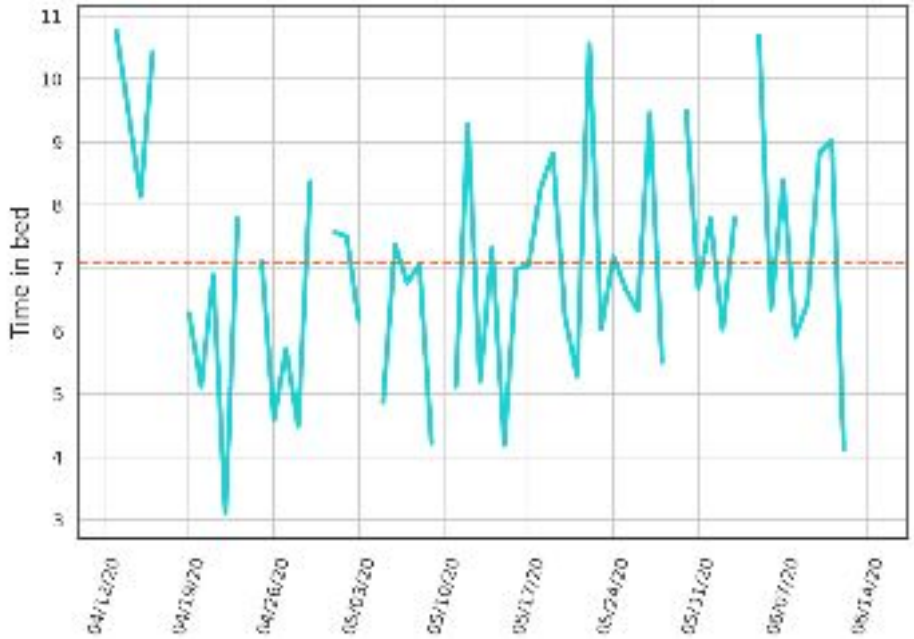
We can see that light sleep makes the most part of the sleep cycle. Quality of sleep matters.

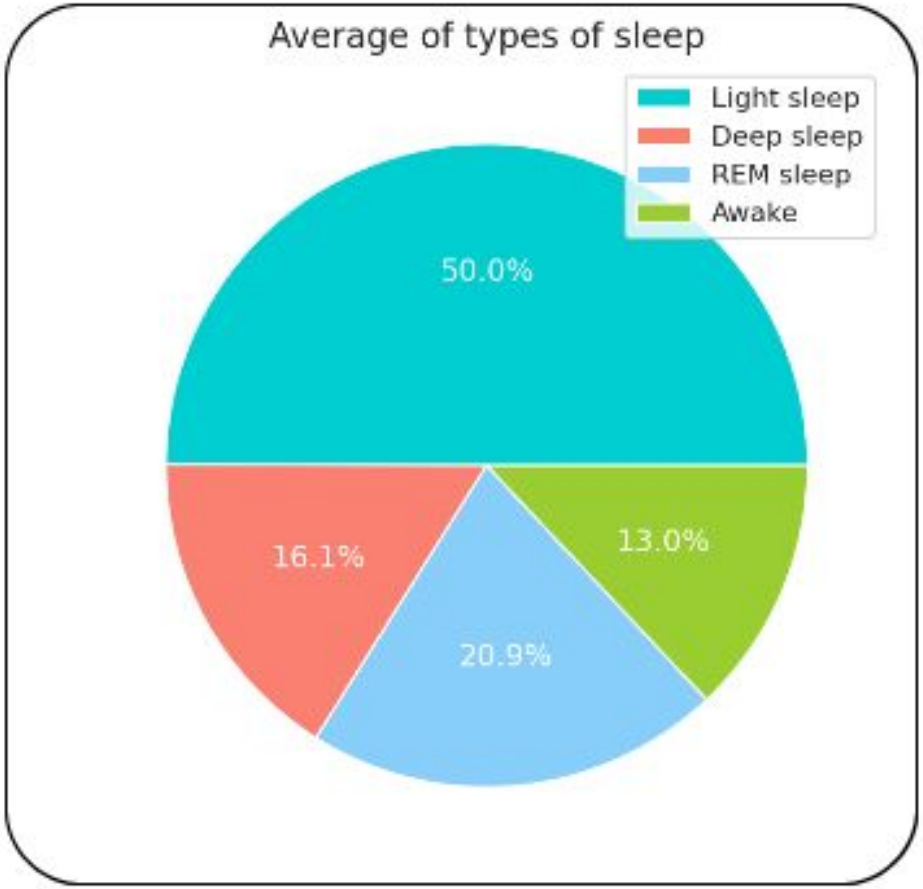

Aspects of Sleep Over last two months
Awake
Asleep
Minutes
0
100
200
300
400
500
2020-04-15
2020-04-22
2020-05-01
2020-05-08
2020-05-15
2020-05-22
2020-06-01
2020-06-08
2020-06-15
Date



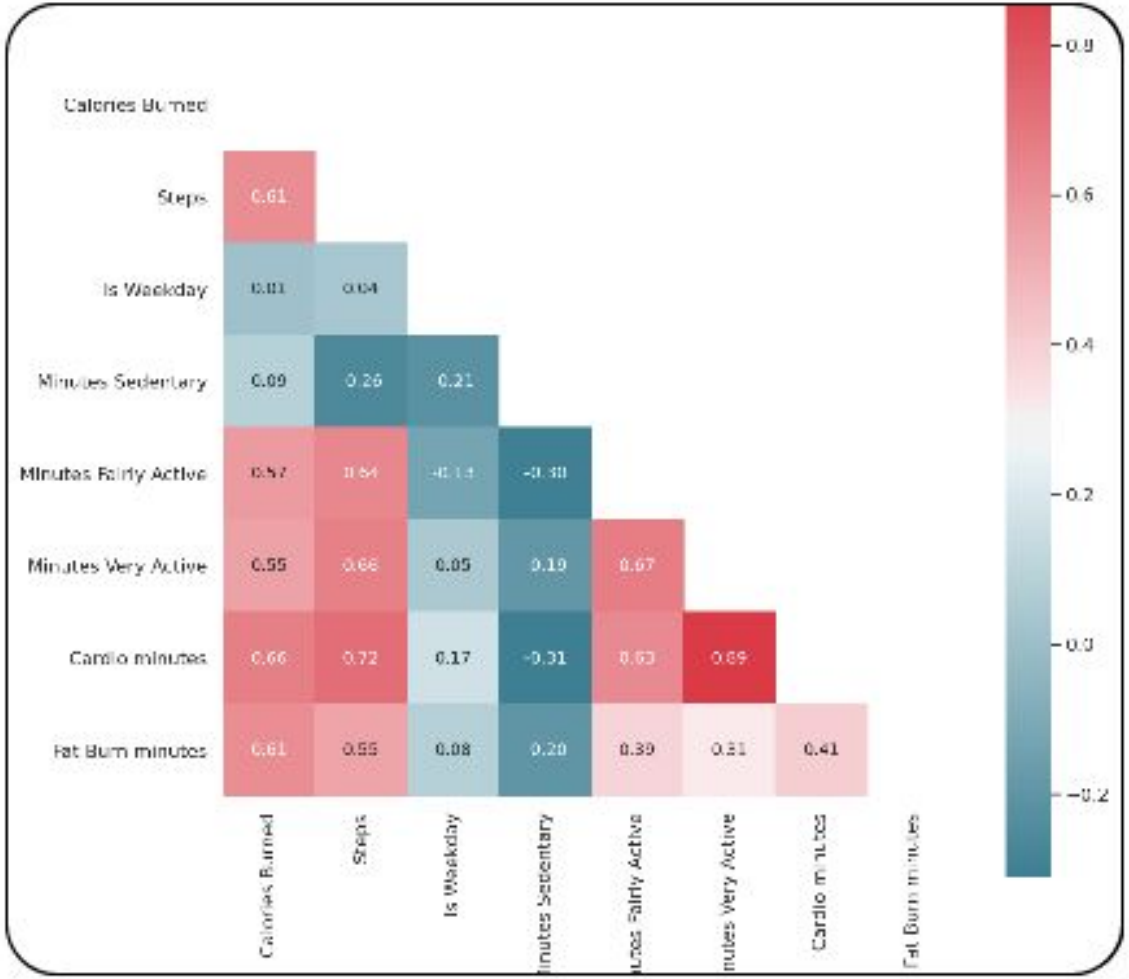
Friday has been stretched for greater sleep as we can see. Reasons can not be explained unless personal data is available.


Averaging a sleep of 7.07 hours with a deviation of 1.84 hours
Count
Hours In Bed

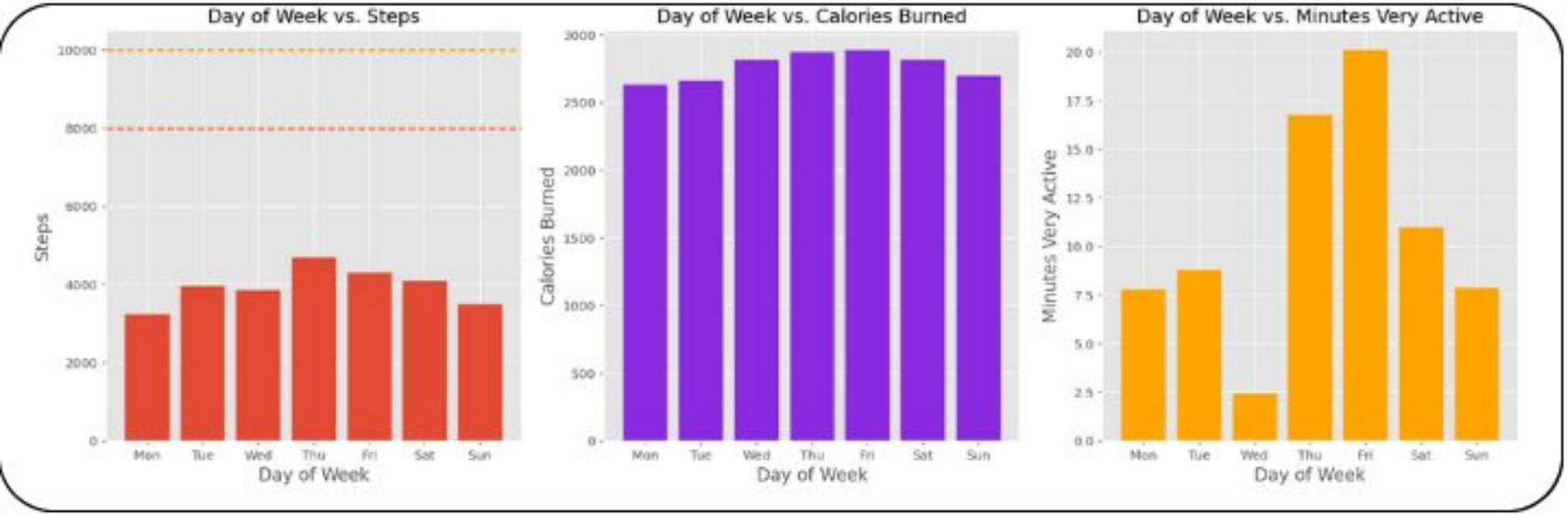

Time in bed

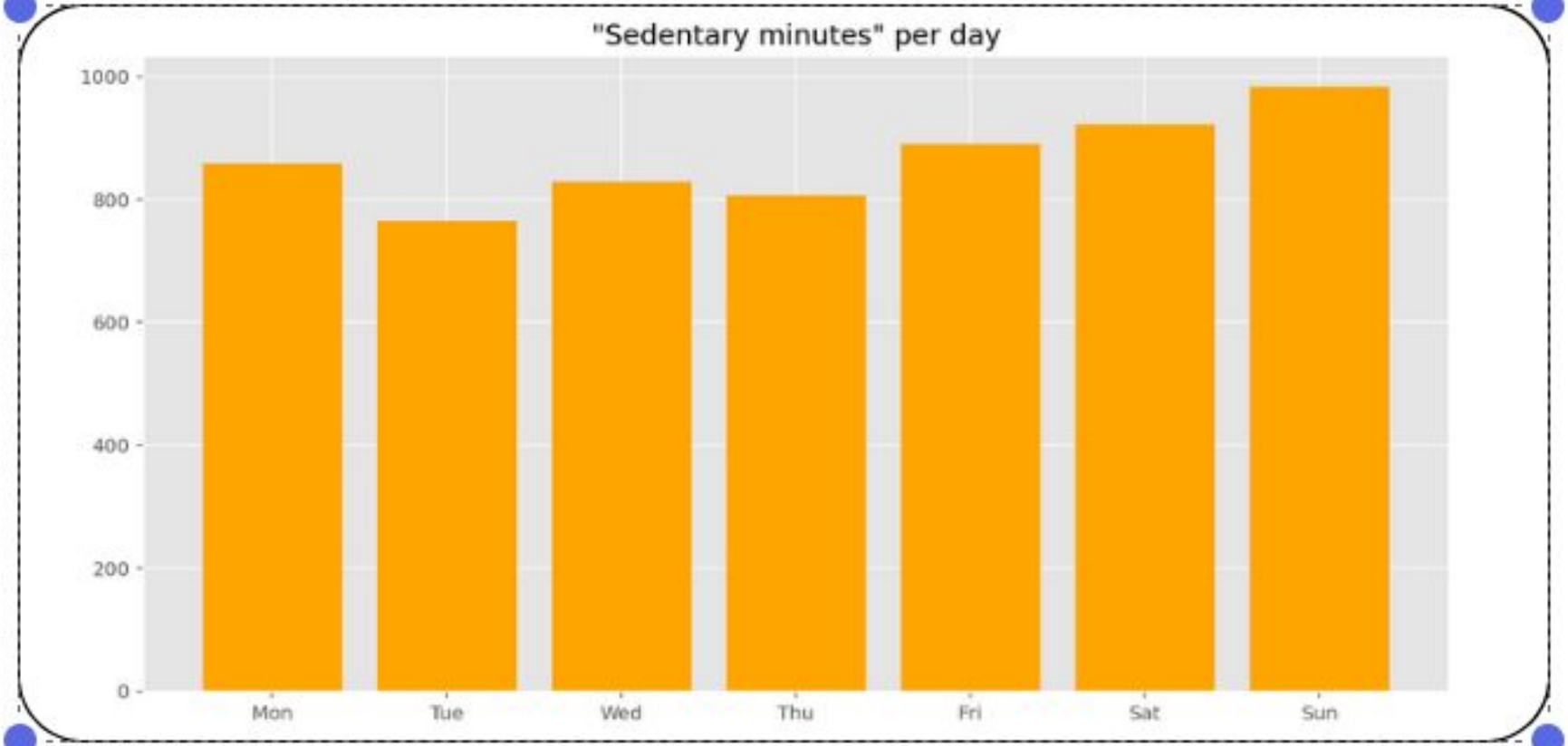


Quality of sleep needs to be improved.



Correlation matrix indicates Caories burned is related to steps and acive/fat burn minutes.


Day of Week vs. Steps
Steps
10000
8000
6000
4000
2000
0
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Day of Week
Day of Week vs. Calories Burned
Calories Burned
3000
2500
2000
1500
1000
500
0
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Day of Week
Day of Week vs. Minutes Very Active
Minutes Very Active
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Day of Week


"Sedentary minutes" per day
1000
800
600
400
200
0
Mon
Tue
Wed
Thu
Fri
Sat
Sun

	count	mean	std	min	25%	50%	75%	max
Calories Burned	67.0	2765.388060	555.918540	26.0	2567.5	2790.0	3005.5	4041.0
Steps	67.0	3938.044776	2289.191894	0.0	2704.0	3762.0	4814.0	12128.0
Minutes Sedentary	67.0	865.537313	266.039376	20.0	728.0	813.0	997.0	1440.0
Minutes Fairly Active	67.0	12.283582	16.259082	0.0	0.0	7.0	18.0	74.0
Minutes Very Active	67.0	10.582090	16.103029	0.0	0.0	5.0	14.0	74.0
Cardio minutes	65.0	8.415385	12.813436	0.0	0.0	5.0	11.0	66.0
Fat Burn minutes	65.0	425.430769	213.266923	27.0	249.0	440.0	583.0	916.0
Resting Heart Rate	65.0	74.276923	4.816987	62.0	74.0	76.0	77.0	80.0

Stats over a period of two months.

Future analyses with more data could include predictions of what days might throw off data such as special holidays, any seasonal effects such as getting more sleep in the early part of the year versus the latter or predicting events from data. We can use machine learning models to fill in the missing values. Also, further analyses could have been drawn if sleeping patterns, work hours of someone are known before hand.