

# Safety During COVID-19

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## Introduction

When the first instances of people contracting the corona virus emerged, I like many other of my friends, family members and colleges dismissed the seriousness of its danger and how unlikely it was to last any longer than a couple news cycles. Yet, as late January and early February rolled around, I started to retract my initial thoughts and after hearing and watching the damage it has done to the people of Italy. Then soon have the U.S to be under quarantine, my university transfer my classes online, and furloughed from my current position. I definitely underestimated the impact and seriousness of COVID-19 and I wondered how many others thought the same as me. *I decided to construct a small survey composed of 6 questions on information relating to COVID-19 and Social Distancing.*

## Overview

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I asked 6 questions: 1) “How do you stay informed on COVID-19?”, 2) “How frequently do you wash your hands?”, 3) “When you leave your home, do you wear a mask?” , 4) “ How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)”, 5) “Do you practice Social Distancing?”, 6) “Do you live in a known COVID-19 hotspot?”.

Once I finished constructing this survey I wanted to be as random as possible when distributing this survey. I choose Facebook as my main distribution tool. I wanted most of my responses to come from people in the U.S and being that 90% of my friends are in the U.S, this was the best option. I had also messaged the survey to about 30 friend and family members that had also forwarded it. (All of which reside in a different state from another) After about three days of having the survey live, I had a random sample of over 338 total responses. (I removed some of the responses when cleaning the data)

## Tools

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- Jupyter Notebook
- Microsoft Excel
- Microsoft Sheets
- Python (Programming Language)

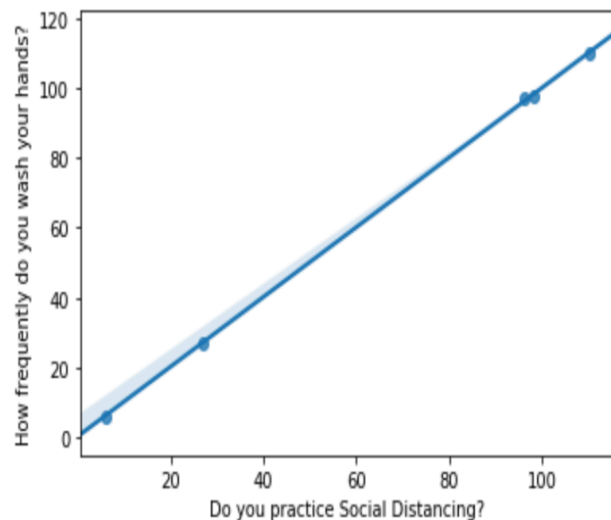
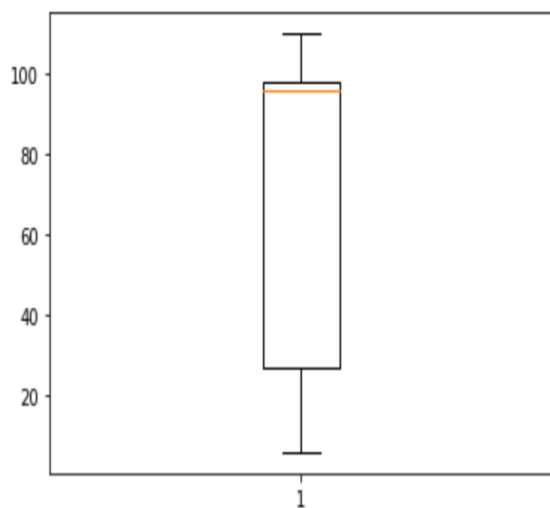
## Goal

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- Plot and map out results.
- Understand and interpret how serious people are following social distancing.
- Where most of the sample is obtaining their information on COVID-19.
- Is there a strong correlation with people washing their hands, wearing a mask and following social distancing guidelines?

## Graphics

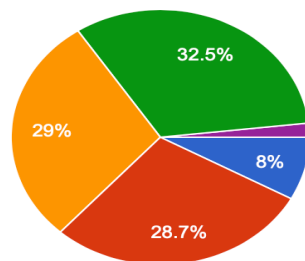
The first thing I decided to observe was the frequency at which people washed their hands a day vs if they practiced social distancing or not. After observing the data the sample recorded that: 110 people that said they practice social distancing and wash their hands 7 or more times a day, 98 people that said they practice social distancing and wash their hands 5-6 times a day, 96 people that said they practice social distancing and wash their hands 3-4 times a day, 27 people that said that they practice social distancing and frequently wash their hands 1-2 times a day, and 6 people that said they do not practice social distancing or wash their hands.



I was indeed thrilled to see that from the data at least 90% of the sample washes their hands at least 3 times a day and also follows some sort of social distancing.

How frequently do you wash your hands?

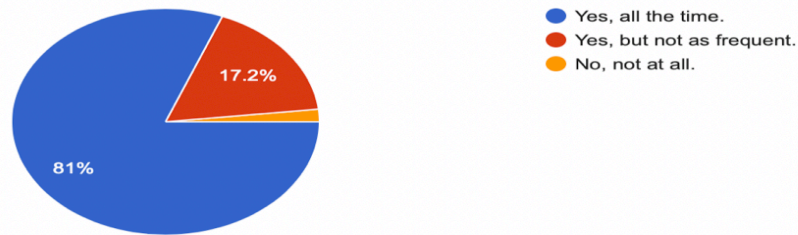
338 responses



- 1 - 2 times a day.
- 3 - 4 times a day.
- 5 - 6 times a day.
- 7 or more.
- 0 (Zero)

### Do you practice Social Distancing?

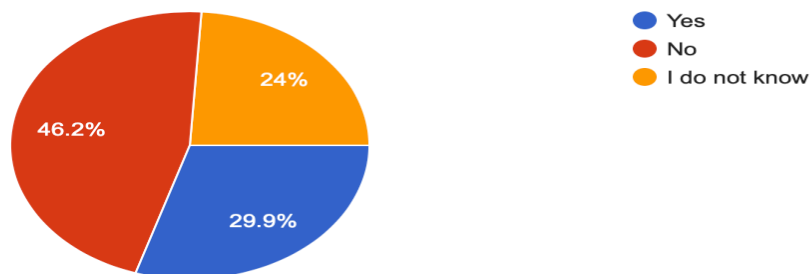
337 responses



Next, I wanted to observe the frequency of people leaving their homes per week vs if they know that they live in a known COVID-19 hotspot. Other than observing that almost half of the sample did not live near a COVID-19 hotspot, this is related to the amount of times people of the sample have left their homes. 181 people said they leave their homes just about 1-2 times a week. There is a strong indication that the 24% of the sample that doesn't know whether they live in a known COVID-19 hotspot actually do live in a designated hotspot. This assumption comes from how serious the precautions their county/state has taken and restricted travel or they in fact do not leave the house that often through out the week

### Do you live in a COVID-19 hotspot?

338 responses



### How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)

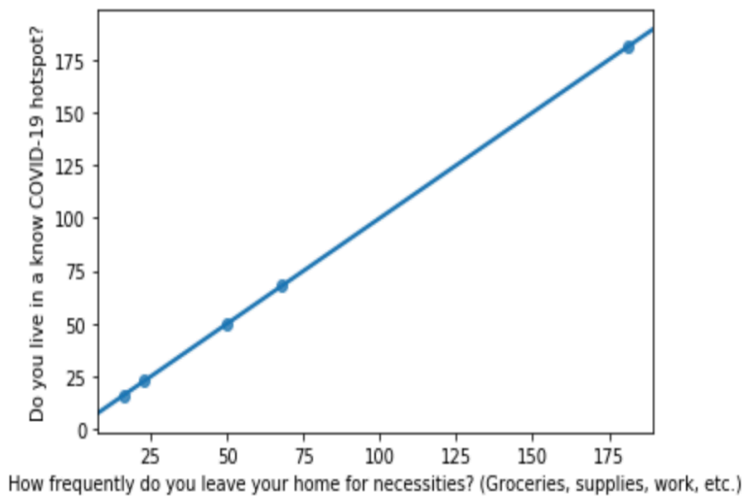
#### Do you live in a know COVID-19 hotspot?

I do not know	81
No	156
Yes	101

**How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)**

**How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)**

1 - 2 times a week.	181
3 - 4 times a week.	50
5 - 6 times a week.	23
7 or more.	16
I don't leave the house.	68





# CORONAVIRUS (COVID-19)

## Your safety during COVID-19

Form description

How do you stay informed on COVID-19?

☐ Social Media (Facebook, Twitter, etc.)



☐ Television News (CNN, FOX, MSNBC, etc.)



☐ Friends & Family



☐ I do not stay much informed



☐ Other



How frequently do you wash your hands?



☐ 1 - 2 times a day.

☐ 3 - 4 times a day.

☐ 5 - 6 times a day.

☐ 7 or more.

☐ 0 (Zero)

When you leave your home, do you wear a mask?



☐ Every time I leave and return to my home.

☐ I leave with my mask ON, but have it OFF when I return home.

☐ I leave with my mask OFF, but have it ON when I return home.

☐ I only wear a mask when entering a public place.

☐ I don't wear a mask.

How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)



☐ 1 - 2 times a week.

☐ 3 - 4 times a week.

☐ 5 - 6 times a week.

☐ 7 or more.

☐ I don't leave the house.

Do you practice Social Distancing?

## Practice Social Distancing.

What does this mean?



Avoid non-essential travel.



Avoid places where large groups of people



Limit any gatherings that include high-risk individuals.

☐ Yes, all the time.

☐ Yes, but not as frequent.

☐ No, not at all.

Do you live in a COVID-19 hotspot?

☐ Yes

☐ No

☐ I do not know



```
In [7]: # Uploading the needed libraries

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

```
In [11]: # Reading in the data file
data_set = pd.read_excel('/Users/josehernandez/Desktop/Your safety during COVID-19 (Responses)
.xlsx')
data_set
```

Out[11]:

	Timestamp	Score	How do you stay informed on COVID-19?	How frequently do you wash your hands?	When you leave your home, do you wear a mask?	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you practice Social Distancing?	Do you live in a know COVID-19 hotspot?
0	2020-05-04 03:33:57.455	0	Television News (CNN, FOX, MSNBC, etc.)	5 - 6 times a day.	Every time I leave and return to my home.	1 - 2 times a week.	Yes, but not as frequent.	Yes
1	2020-05-04 03:46:59.777	0	Social Media (Facebook, Twitter, etc.)	7 or more.	I only wear a mask when entering a public place.	3 - 4 times a week.	Yes, all the time.	I do not know
2	2020-05-04 04:02:37.788	0	Television News (CNN, FOX, MSNBC, etc.)	7 or more.	I only wear a mask when entering a public place.	3 - 4 times a week.	Yes, all the time.	No
3	2020-05-04 06:27:37.739	0	Other	1 - 2 times a day.	Every time I leave and return to my home.	1 - 2 times a week.	Yes, all the time.	No
4	2020-05-04 06:56:56.204	0	Social Media (Facebook, Twitter, etc.)	3 - 4 times a day.	Every time I leave and return to my home.	1 - 2 times a week.	Yes, all the time.	Yes
...	...	...	...	...	...	...	...	...
338	2020-05-09 21:28:45.960	0	Social Media (Facebook, Twitter, etc.)	5 - 6 times a day.	I only wear a mask when entering a public place.	1 - 2 times a week.	Yes, all the time.	No
339	2020-05-09 22:35:43.490	0	Social Media (Facebook, Twitter, etc.)	1 - 2 times a day.	I don't wear a mask.	3 - 4 times a week.	Yes, all the time.	No
340	2020-05-10 04:25:59.521	0	Television News (CNN, FOX, MSNBC, etc.)	5 - 6 times a day.	I leave with my mask ON, but have it OFF when ...	1 - 2 times a week.	Yes, all the time.	Yes
341	2020-05-10 11:22:30.337	0	Social Media (Facebook, Twitter, etc.)	7 or more.	Every time I leave and return to my home.	3 - 4 times a week.	Yes, all the time.	Yes
342	2020-05-10 16:14:52.536	0	Social Media (Facebook, Twitter, etc.)	3 - 4 times a day.	I only wear a mask when entering a public place.	3 - 4 times a week.	Yes, but not as frequent.	No

343 rows x 8 columns

## Washing Hands & Social Distancing

```
In [12]: # New data frame containing frequent hand wash and social distancing

Handwash_social = data_set[['How frequently do you wash your hands?', 'Do you practice Social Distancing?']]
Handwash_social
```

Out[12]:

	How frequently do you wash your hands?	Do you practice Social Distancing?
0	5 - 6 times a day.	Yes, but not as frequent.
1	7 or more.	Yes, all the time.
2	7 or more.	Yes, all the time.
3	1 - 2 times a day.	Yes, all the time.
4	3 - 4 times a day.	Yes, all the time.
...	...	...
338	5 - 6 times a day.	Yes, all the time.
339	1 - 2 times a day.	Yes, all the time.
340	5 - 6 times a day.	Yes, all the time.
341	7 or more.	Yes, all the time.
342	3 - 4 times a day.	Yes, but not as frequent.

343 rows x 2 columns

```
In [13]: First_stat = Handwash_social.groupby('How frequently do you wash your hands?')[['Do you practice Social Distancing?', 'How frequently do you wash your hands?']].count()
First_stat
```

Out[13]:

	Do you practice Social Distancing?	How frequently do you wash your hands?
How frequently do you wash your hands?		
0 (Zero)	6	6
1 - 2 times a day.	27	27
3 - 4 times a day.	96	97
5 - 6 times a day.	98	98
7 or more.	110	110

```
In [14]: First_stat.describe()

# 6 people that said they do not practice social distancing, said they do not wash their hands .

# 27 people that said that they practice social distancing, said they frequently wash their hands 1-2 times a day

# 96 people that said they practice social distancing, said they wash their hands 3-4 times a day

# 98 people that said they practice social distancing, said they wash their hands 5-6 times a day

# 110 people that said they practice social distancing, said they wash their hands 7 or more times a day.
```

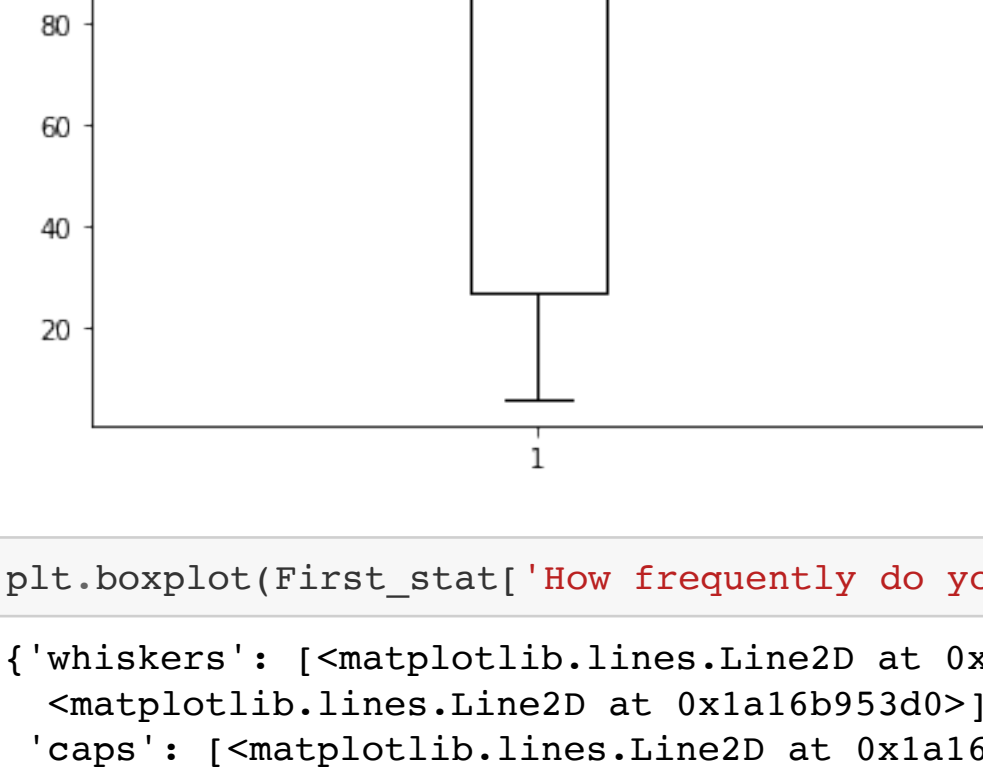
Out[14]:

	Do you practice Social Distancing?	How frequently do you wash your hands?
count	5.000000	5.000000
mean	67.400000	67.600000
std	47.358209	47.511051
min	6.000000	6.000000
25%	27.000000	27.000000
50%	96.000000	97.000000
75%	98.000000	98.000000
max	110.000000	110.000000

```
In [15]: # labeling the max, 75%,50%,25% and min of social distancing

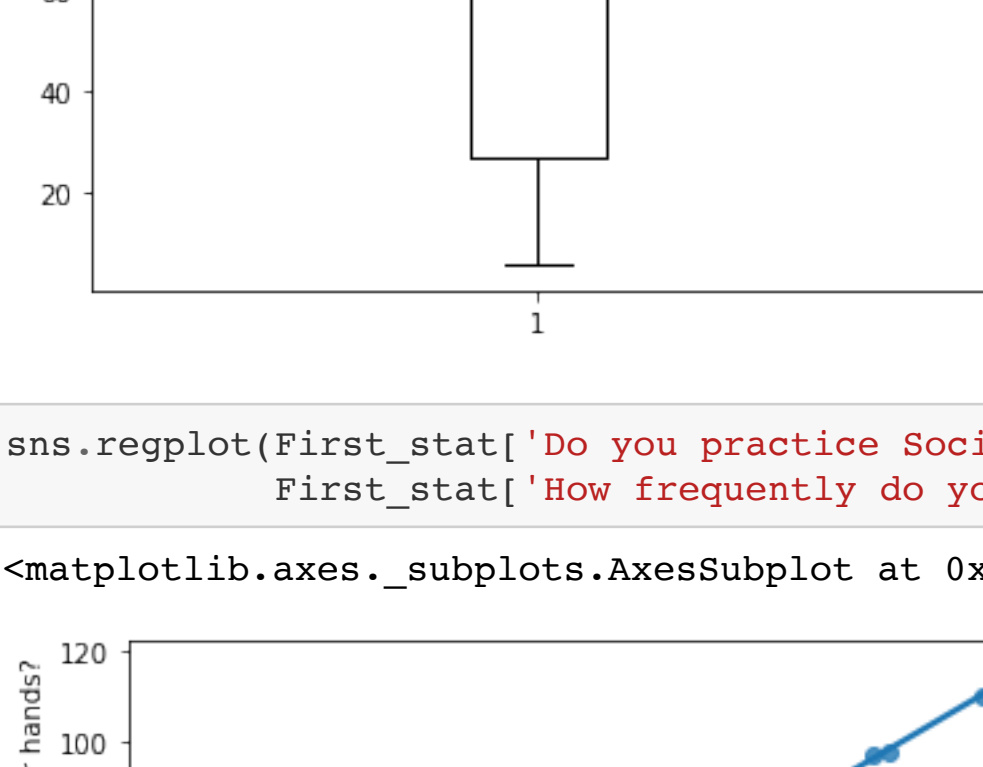
plt.boxplot(First_stat['Do you practice Social Distancing?'])
```

```
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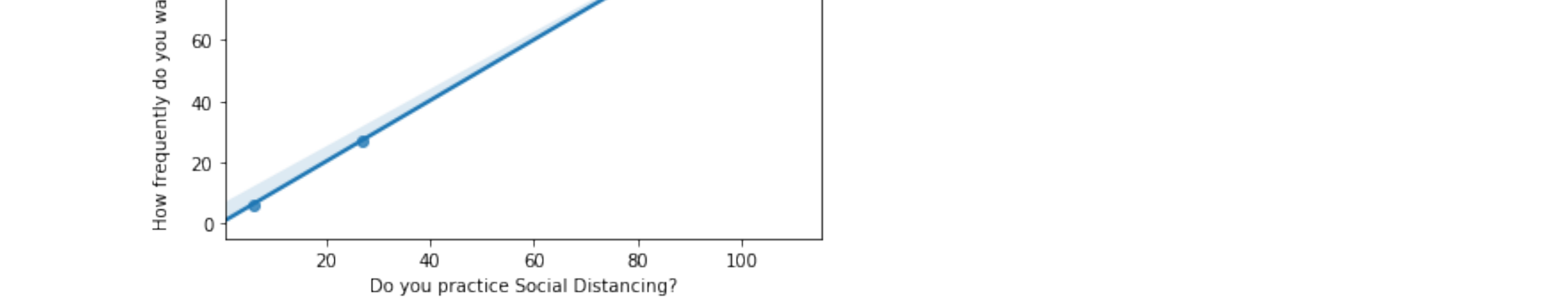


```
In [16]: plt.boxplot(First_stat['How frequently do you wash your hands?'])
```

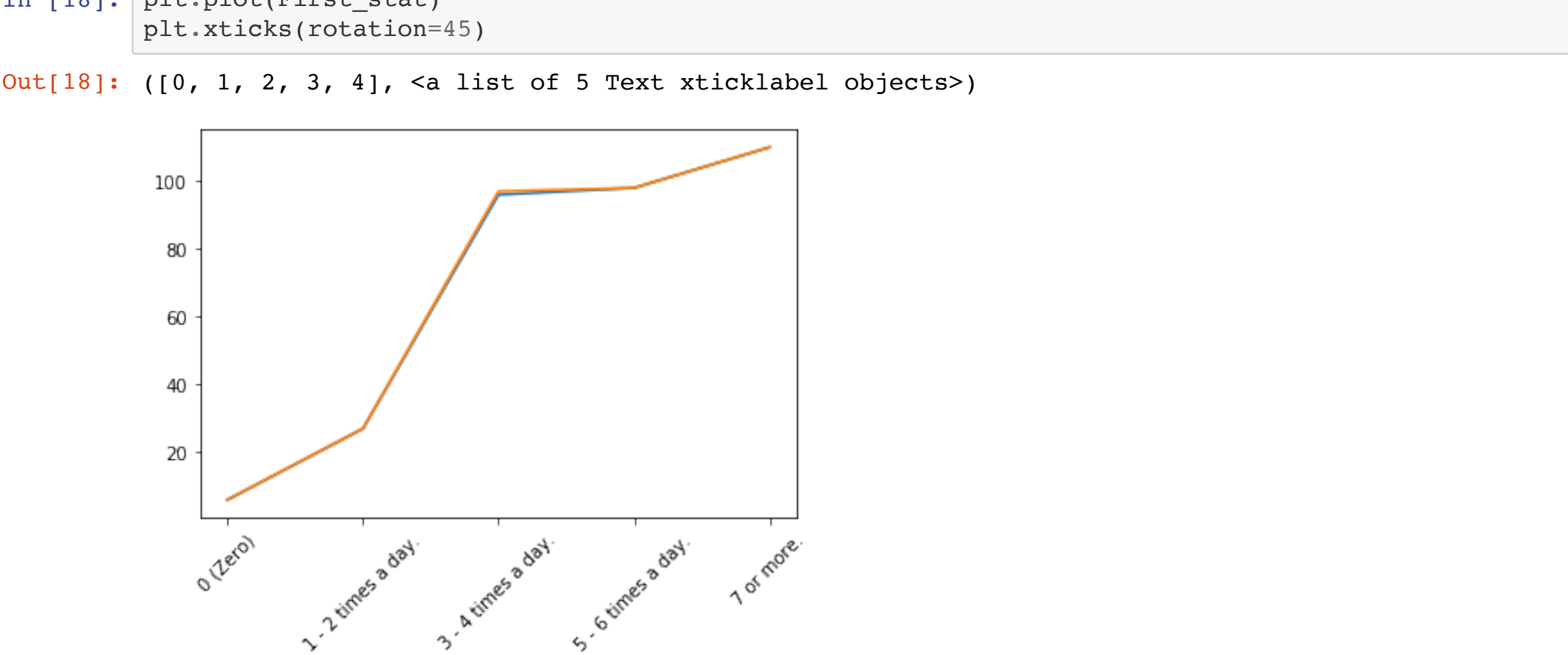
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'means': []}
```



```
In [17]: sns.regplot(First_stat['Do you practice Social Distancing?'],
First_stat['How frequently do you wash your hands?'])
```



```
In [18]: plt.plot(First_stat)
plt.xticks(rotation=45)
```



## Frequently Leaving & COVID-19 Hotspot

```
In [19]: # New data frame for leaving and hotspot

Freq_hotspot = data_set[['How frequently do you leave your home for necessities? (Groceries, s
upplies, work, etc.)',
'Do you live in a know COVID-19 hotspot?']]
Freq_hotspot
```

Out[19]:

	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you live in a know COVID-19 hotspot?
0	1 - 2 times a week.	Yes
1	3 - 4 times a week.	I do not know
2	3 - 4 times a week.	No
3	1 - 2 times a week.	No
4	1 - 2 times a week.	Yes
...	...	...
338	1 - 2 times a week.	No
339	3 - 4 times a week.	No
340	1 - 2 times a week.	Yes
341	3 - 4 times a week.	Yes
342	3 - 4 times a week.	No

343 rows x 2 columns

```
In [20]: # Notes:

Second_stat = Freq_hotspot.groupby('How frequently do you leave your home for necessities? (Gr
oceries, supplies, work, etc.)')[
['How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)',
'Do you live in a know COVID-19 hotspot?']].count()
Second_stat
```

Out[20]:

	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you live in a know COVID-19 hotspot?
How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)		
1 - 2 times a week.	181	181
3 - 4 times a week.	50	50
5 - 6 times a week.	23	23
7 or more.	16	16
I don't leave the house.	68	68

```
In [21]: Second_stat1 = Freq_hotspot.groupby('Do you live in a know COVID-19 hotspot?')[
['How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)',
'Do you live in a know COVID-19 hotspot?']].count()
Second_stat1
```

Out[21]:

	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you live in a know COVID-19 hotspot?
Do you live in a know COVID-19 hotspot?		
I do not know	81	81
No	156	156
Yes	101	101

```
In [22]: Second_stat.describe()
```

Out[22]:

	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you live in a know COVID-19 hotspot?
count	5.000000	5.000000
mean	67.600000	67.600000
std	66.748034	66.748034
min	16.000000	16.000000
25%	23.000000	23.000000
50%	50.000000	50.000000
75%	68.000000	68.000000
max	181.000000	181.000000

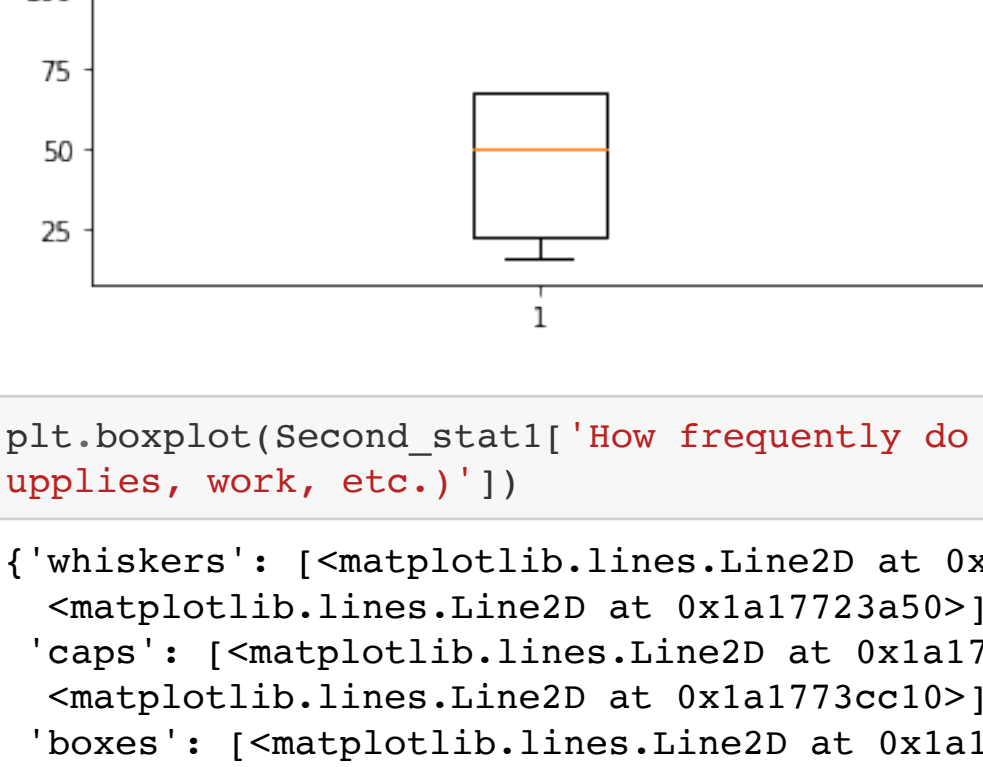
```
In [23]: Second_stat1.describe()
```

Out[23]:

	How frequently do you leave your home for necessities? (Groceries, supplies, work, etc.)	Do you live in a know COVID-19 hotspot?
count	3.000000	3.000000
mean	112.666667	112.666667
std	38.837267	38.837267
min	81.000000	81.000000
25%	91.000000	91.000000
50%	101.000000	101.000000
75%	128.500000	128.500000
max	156.000000	156.000000

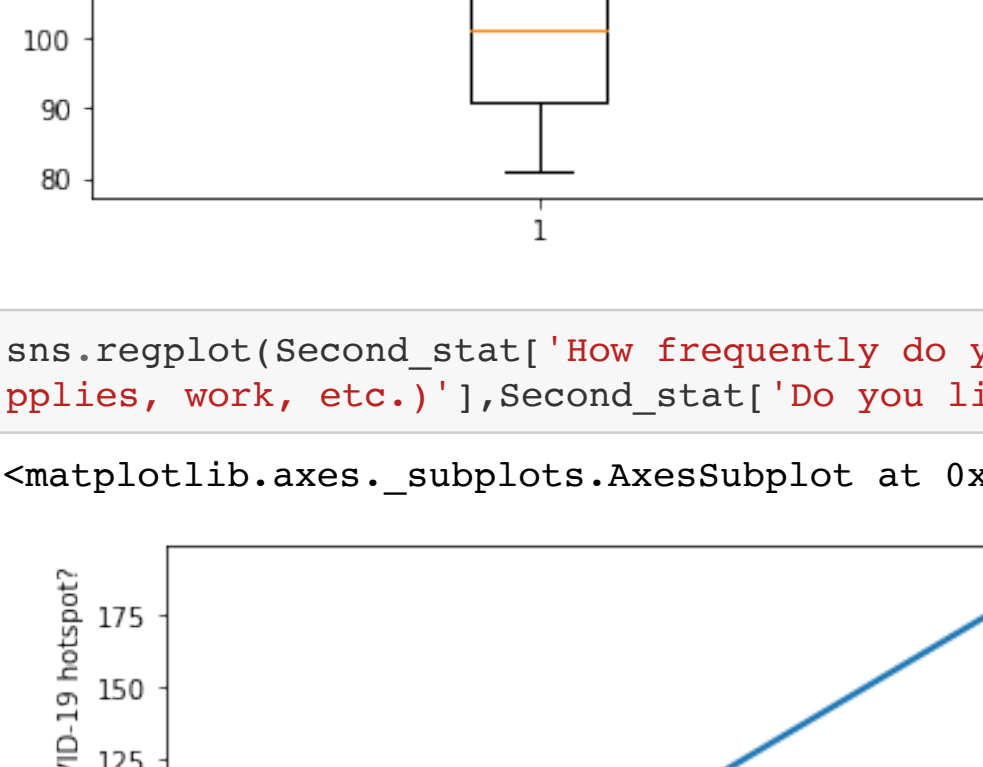
```
In [24]: plt.boxplot(Second_stat1['How frequently do you leave your home for necessities? (Groceries, s
upplies, work, etc.)'])
```

```
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```



```
In [25]: plt.boxplot(Second_stat1['Do you live in a know COVID-19 hotspot? (Groceries, s
upplies, work, etc.)'])
```

```
Out[25]: {'whiskers': [<matplotlib.lines.Line2D at 0x1a177380d0>,
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```



```
In [26]: sns.regplot(Second_stat1['How frequently do you leave your home for necessities? (Groceries, s
upplies, work, etc.)'],Second_stat1['Do you live in a know COVID-19 hotspot?'])
```

```
Out[26]: <matplotlib.axes._subplots.AxesSubplot at 0x1a17761450>
```

