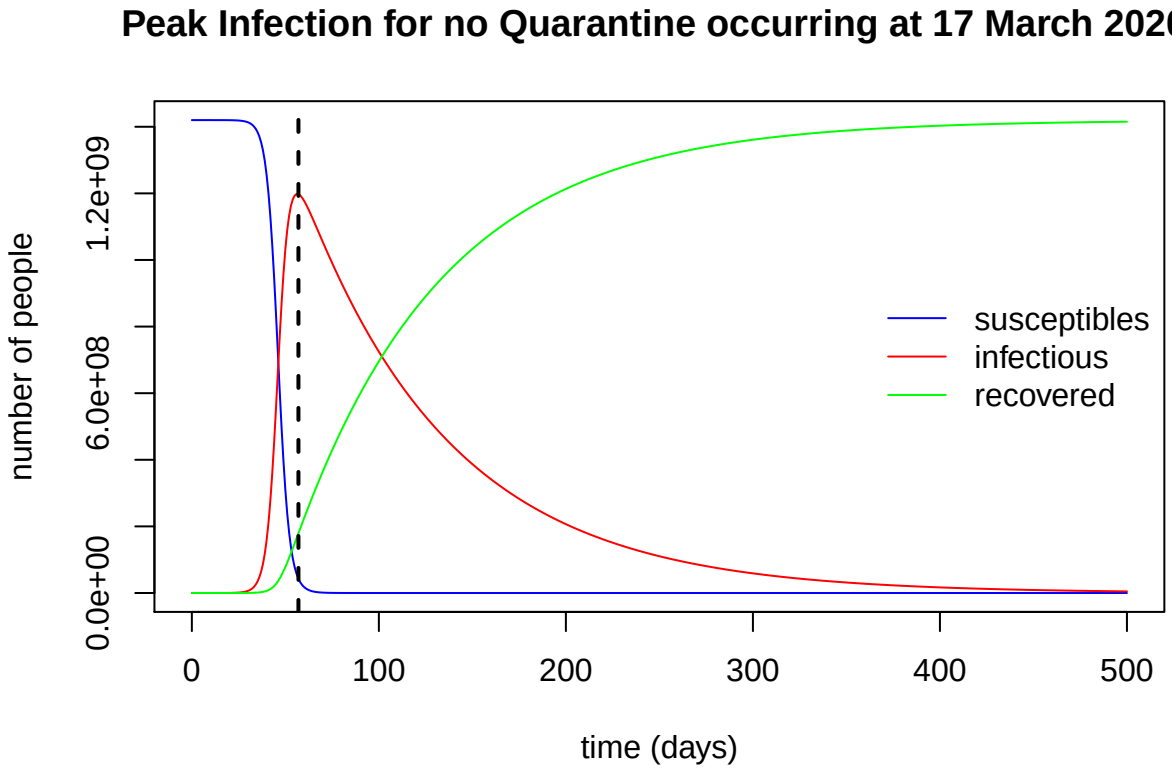
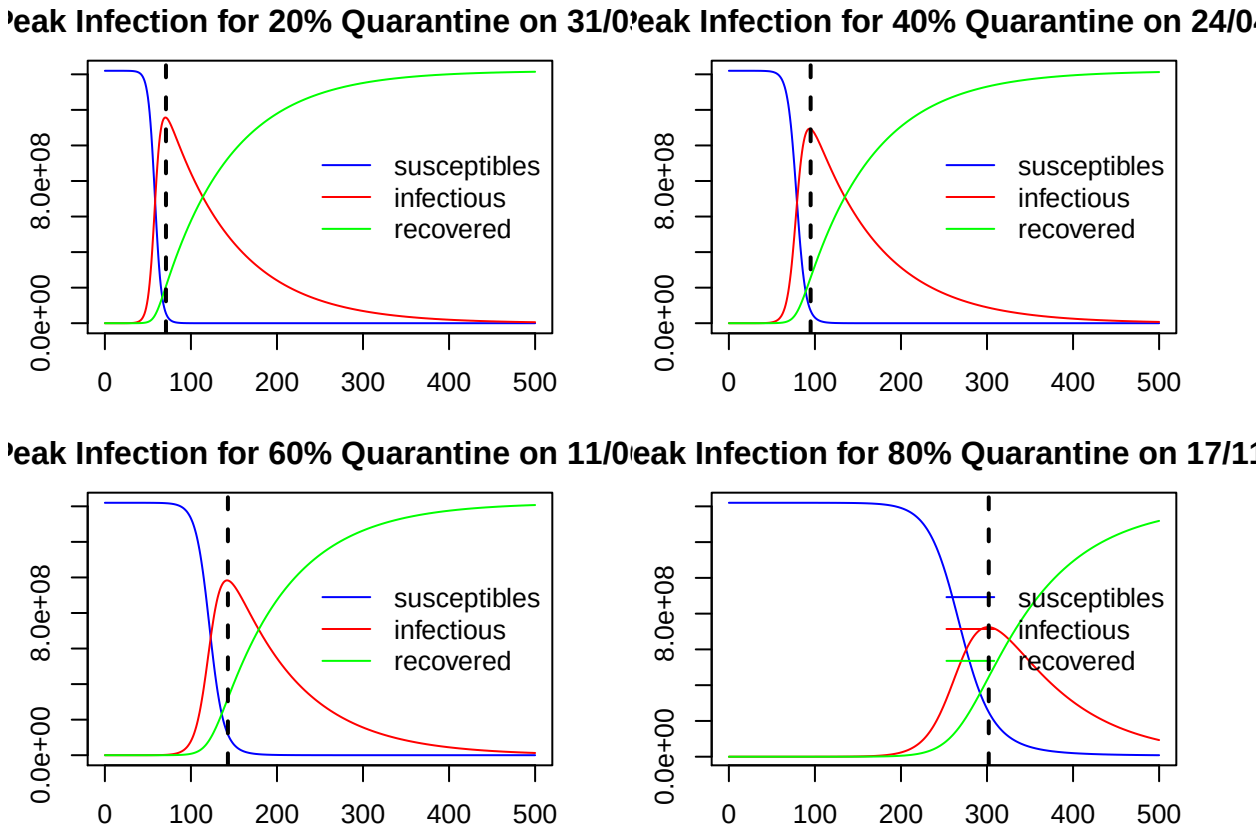
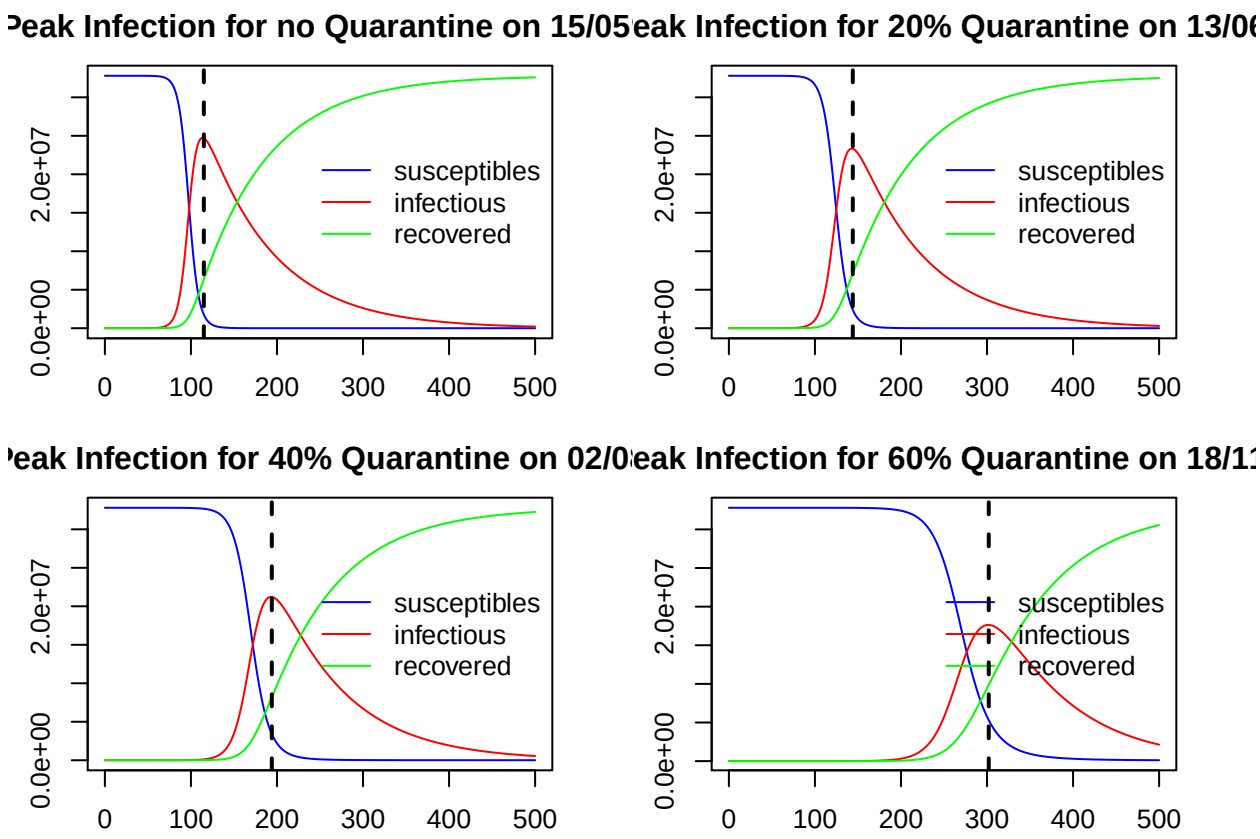
Coronavirus

Impact of quarantine on time taken to reach epidemic peak for China:





As it can be observed that as the percentage of quarantine increases, the transmission rate decreases. The quarantine should be applied to those regions where the population density as well as area is high in order to reduce the transmission rate efficiently. ## Impact of quarantine on time taken to reach epidemic peak for USA:



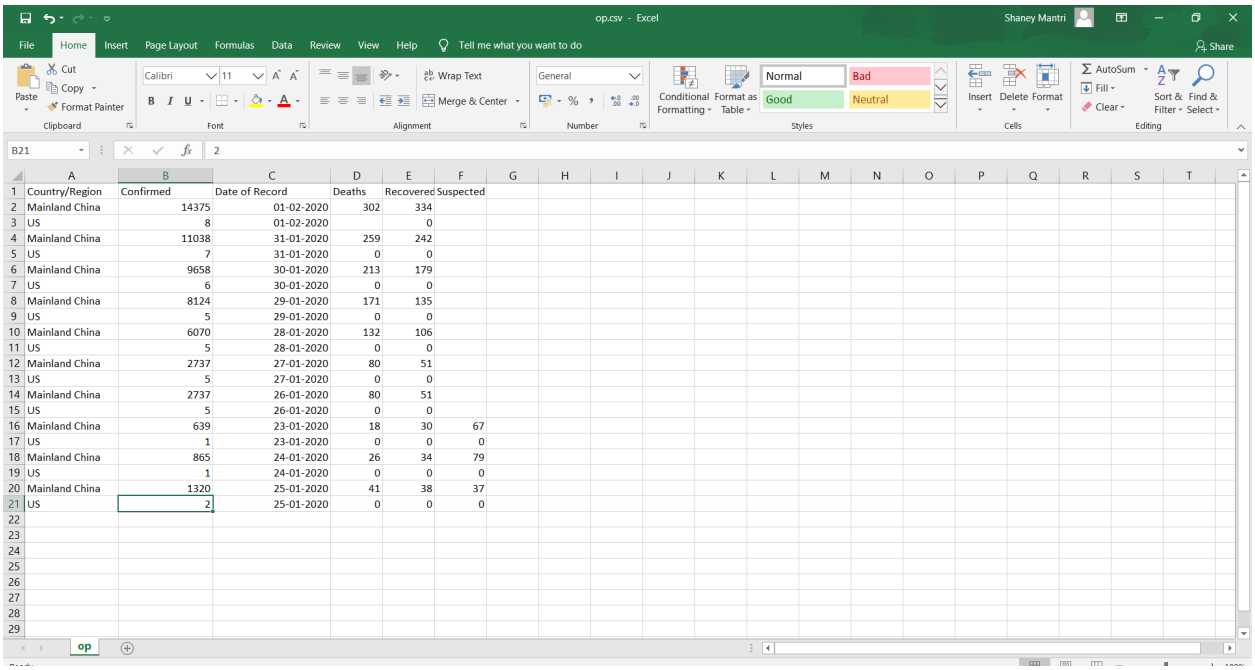
Data Set Used:

Prediction

Thus we can see that look at the following parameters as :

```
#Number of new cases in USA and China on 31 Jan 2020
Y1= 1381

#Number of new cases in USA and China on 1 Feb 2020
Y2=3338

#Predicted number of new cases in USA and China on 31 Feb 2020
X1=1985

#Predicted number of new cases in USA and China on 1 Feb 2020
X2=2102

Percentage_error = 100*(Y1+Y2-X1-X2)/(Y1+Y2)
print(Percentage_error)
```

```
## [1] 13.39267
```



	Country/Region	Confirmed	Date of Record	Deaths	Recovered	Suspected
2	Mainland China	14375	01-02-2020	302	334	
3	US	8	01-02-2020		0	
4	Mainland China	11038	31-01-2020	259	242	
5	US	7	31-01-2020	0	0	
6	Mainland China	9658	30-01-2020	213	179	
7	US	6	30-01-2020	0	0	
8	Mainland China	8124	29-01-2020	171	135	
9	US	5	29-01-2020	0	0	
10	Mainland China	6070	28-01-2020	132	106	
11	US	5	28-01-2020	0	0	
12	Mainland China	2737	27-01-2020	80	51	
13	US	5	27-01-2020	0	0	
14	Mainland China	2737	26-01-2020	80	51	
15	US	5	26-01-2020	0	0	
16	Mainland China	639	23-01-2020	18	30	67
17	US	1	23-01-2020	0	0	0
18	Mainland China	865	24-01-2020	26	34	79
19	US	1	24-01-2020	0	0	0
20	Mainland China	1320	25-01-2020	41	38	37
21	US	2	25-01-2020	0	0	0

Figure 1: Data Set Used for Analaysis

```
Cases
 Date.of.Record        Country Confirmed
     2020-01-22 Mainland China    549.00
     2020-01-23 Mainland China    639.00
     2020-01-24 Mainland China    865.00
     2020-01-25 Mainland China   1320.00
     2020-01-26 Mainland China   2737.00
     2020-01-27 Mainland China   2737.00
     2020-01-28 Mainland China   6070.00
     2020-01-29 Mainland China   8124.00
     2020-01-30 Mainland China   9658.00
     2020-01-31 Mainland China  11221.00
     2020-02-01 Mainland China  15009.74
     2020-02-02 Mainland China  18863.98
     2020-02-03 Mainland China  23570.36
```

Figure 2: Predicted number of cases for China

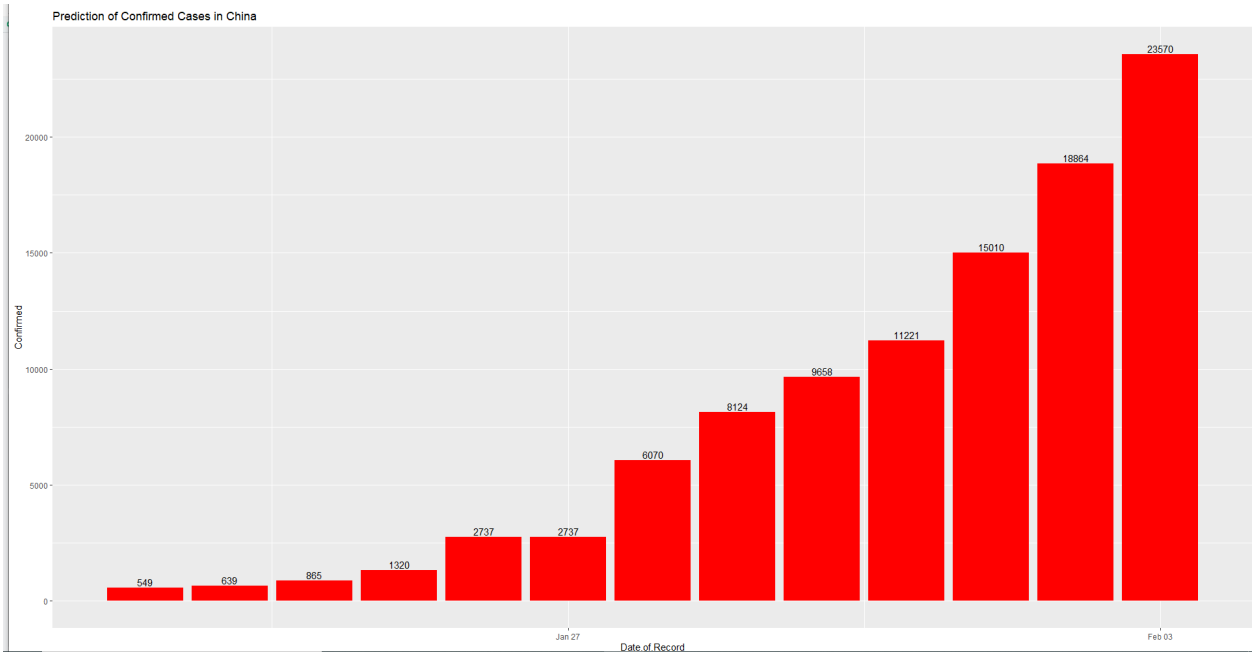


Figure 3: Predicted number of cases for China

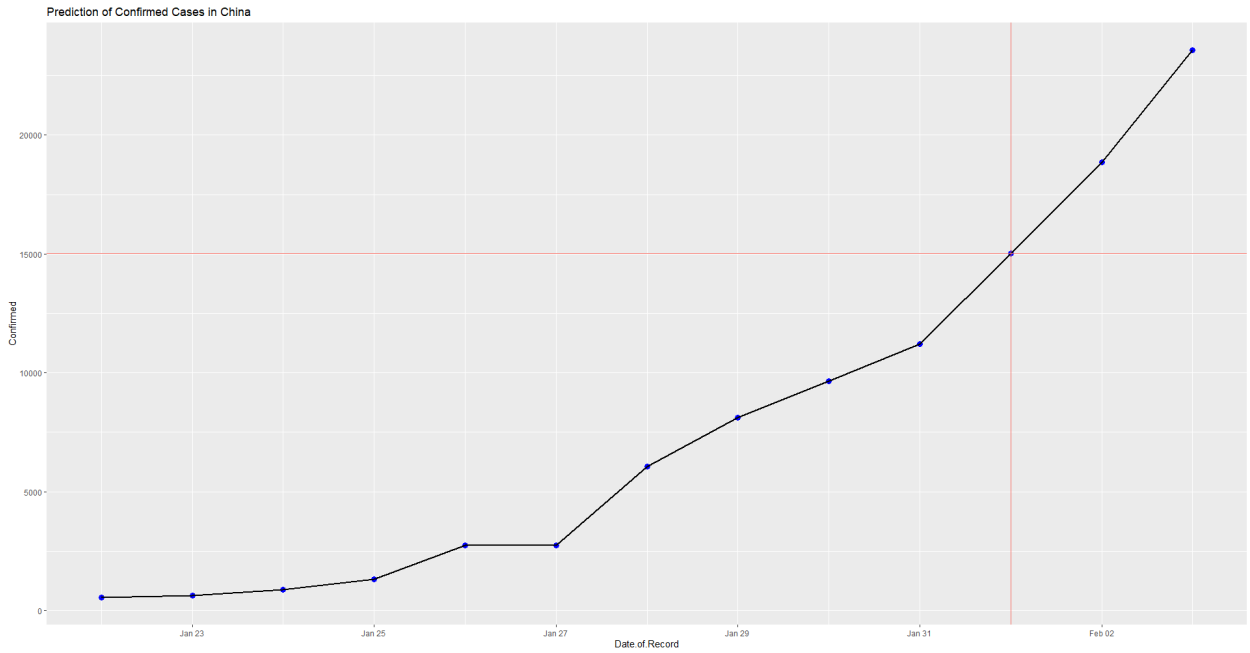


Figure 4: Predicted number of cases for China in Line Graph

```
> df
    Date.of.Record Country Confirmed
20      2020-01-22      US         1
18      2020-01-23      US         1
16      2020-01-24      US         1
14      2020-01-25      US         2
12      2020-01-26      US         5
10      2020-01-27      US         5
8       2020-01-28      US         5
6       2020-01-29      US         5
4       2020-01-30      US         6
2       2020-01-31      US         7
11      2020-02-01      US         8
121     2020-02-02      US         8
13      2020-02-03      US        10
> 
```

Figure 5: Predicted number of cases for USA

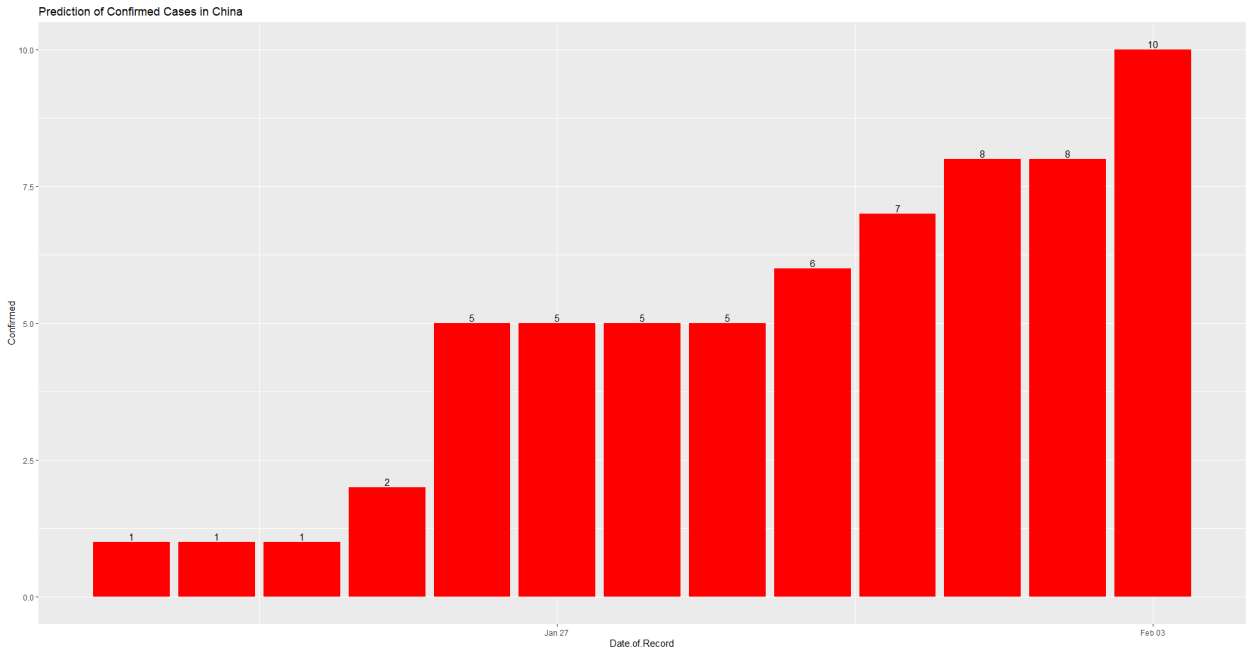


Figure 6: Predicted number of cases for USA