10_LB_Detailed_Countries

July 13, 2021

0.1 Imports

[8]:
```
import plotly.graph_objects as go
import plotly.express       as px
import pandas               as pd
from   scipy                import signal
```

0.1.1 Reading Data

[9]:
```
data = pd.read_csv("../data/interim/Overall_data.csv")
```

0.2 Sentiment Germany over time

0.2.1 Filtering Data by Country

[10]:
```
data_germany = data[data.country == 'Germany']   #  857 rows
data_india = data[data.country == 'India']       # 7687 rows
data_uk = data[data.country == 'United Kingdom'] #21110 rows
data_us = data[data.country == 'United States']  #44824 rows
```

[11]:
```
#Scatter Plot combined with a Bar Chart with two y axis using germany data
fig = go.Figure()


fig.add_trace(go.Bar(
    x= data_germany.groupby(['date']).count().reset_index(drop=False)['date'],
    y= data_germany.groupby(['date'])['id'].count(),
    name='Amount of Tweets',
    marker_color='darkorange',
    yaxis = 'y1',
))

fig.add_trace(go.Scatter(
    x= data_germany.sort_values('created_at')['created_at'],
    y= signal.savgol_filter(
                    data_india.sort_values('created_at')['sentiment'].dropna(),
                    101,
                    2
```

```
                    ),
    name = 'Sentiment over time',
    yaxis = 'y2',
))

fig.update_layout(
    title_text="Sentiment on Amount of Tweets over time in Germany"
)

fig.update(layout=go.Layout(yaxis1 = go.YAxis(title='Amount of Tweets',␣
 ↪titlefont=go.Font(color='orange'), side="right"),
                            yaxis2 = go.YAxis(title='Average Sentiment',␣
 ↪titlefont=go.Font(color='red'), overlaying='y', side="left")))

#Adjusting Axis range
fig.update_layout(yaxis1 = dict(range = [0,50]))
fig.update_layout(yaxis2 = dict(range = [-0.3,0.3]))

#Export as HTML
fig.write_html("../reports/figures/OverallCovidTweets/Sentiment_Germany.html")

fig.show()
```

0.3 Sentiment India over time

[12]:
```
#Scatter Plot combined with a Bar Chart with two y axis using india data
fig = go.Figure()


fig.add_trace(go.Bar(
    x= data_india.groupby(['date']).count().reset_index(drop=False)['date'],
    y= data_india.groupby(['date'])['id'].count(),
    name='Amount of Tweets',
    marker_color='darkorange',
    yaxis = 'y1',
))

fig.add_trace(go.Scatter(
    x= data_india.sort_values('created_at')['created_at'],
    y= signal.savgol_filter(
                    data_india.sort_values('created_at')['sentiment'].dropna(),
                    101,
                    2
                    ),
    name = 'Sentiment over time',
    yaxis = 'y2',
))
```

```
fig.update_layout(
    title_text="Sentiment on Amount of Tweets over time in India"
)

fig.update(layout=go.Layout(yaxis1 = go.YAxis(title='Amount of Tweets',␣
 ↪titlefont=go.Font(color='orange'), side="right"),
                            yaxis2 = go.YAxis(title='Average Sentiment',␣
 ↪titlefont=go.Font(color='red'), overlaying='y', side="left")))

#Adjusting Axis range
fig.update_layout(yaxis1 = dict(range = [0,300]))
fig.update_layout(yaxis2 = dict(range = [-0.3,0.3]))

#Export as HTML
fig.write_html("../reports/figures/OverallCovidTweets/Sentiment_India.html")

fig.show()
```

0.4 Sentiment United States over time

[13]:
```
#Scatter Plot combined with a Bar Chart with two y axis using US Data
fig = go.Figure()


fig.add_trace(go.Bar(
    x= data_us.groupby(['date']).count().reset_index(drop=False)['date'],
    y= data_us.groupby(['date'])['id'].count(),
    name='Amount of Tweets',
    marker_color='darkorange',
    yaxis = 'y1',
))

fig.add_trace(go.Scatter(
    x= data_us.sort_values('created_at')['created_at'],
    y= signal.savgol_filter(
                    data_us.sort_values('created_at')['sentiment'].dropna(),
                    401,
                    4
                    ),
    name = 'Sentiment over time',
    yaxis = 'y2',
))

fig.update_layout(
    title_text="Sentiment on Amount of Tweets over time in the United States"
)
```

```
fig.update(layout=go.Layout(yaxis1 = go.YAxis(title='Amount of Tweets',␣
 ↪titlefont=go.Font(color='orange'), side="right"),
                            yaxis2 = go.YAxis(title='Average Sentiment',␣
 ↪titlefont=go.Font(color='red'), overlaying='y', side="left")))

#Adjusting Axis range
fig.update_layout(yaxis1 = dict(range = [0,800]))
fig.update_layout(yaxis2 = dict(range = [-0.3,0.3]))

#Export as HTML
fig.write_html("../reports/figures/OverallCovidTweets/Sentiment_US.html")

fig.show()
```

0.5 Sentiment United Kingdom over time

[14]:
```
#Scatter Plot combined with a Bar Chart with two y axis using UK Data
fig = go.Figure()


fig.add_trace(go.Bar(
    x= data_uk.groupby(['date']).count().reset_index(drop=False)['date'],
    y= data_uk.groupby(['date'])['id'].count(),
    name='Amount of Tweets',
    marker_color='darkorange',
    yaxis = 'y1',
))

fig.add_trace(go.Scatter(
    x= data_uk.sort_values('created_at')['created_at'],
    y= signal.savgol_filter(
                    data_uk.sort_values('created_at')['sentiment'].dropna(),
                    401,
                    4
                    ),
    name = 'Sentiment over time',
    yaxis = 'y2',
))

fig.update_layout(
    title_text="Sentiment on Amount of Tweets over time in the United Kingdom"
)

fig.update(layout=go.Layout(yaxis1 = go.YAxis(title='Amount of Tweets',␣
 ↪titlefont=go.Font(color='orange'), side="right"),
```

```
                              yaxis2 = go.YAxis(title='Average Sentiment',␣
↪titlefont=go.Font(color='red'), overlaying='y', side="left")))

#Adjusting Axis range
fig.update_layout(yaxis1 = dict(range = [0,650]))
fig.update_layout(yaxis2 = dict(range = [-0.3,0.3]))

#Export as HTML
fig.write_html("../reports/figures/OverallCovidTweets/Sentiment_UK.html")

fig.show()
```