In [27]:
```
import pandas as pd
import altair as alt



url = "https://raw.githubusercontent.com/MarkHershey/CompleteTrumpTweetsArch

tweets = pd.read_csv(
    url,
    encoding="utf-8-sig",                          # removes a BOM "Byte Order
    on_bad_lines="skip"                                    # skip the lines enc
)
tweets.columns = tweets.columns.str.strip()                              # strip
#print(tweets.columns)
tweets["Date & Time"] = pd.to_datetime(tweets["Time"], errors="coerce")
tweets = tweets.drop(columns=["ID", "Tweet URL", "Time"])
tweets = tweets.set_index("Date & Time")
tweets.head(10)
```

Out[27]:

Date & Time	Tweet Text
2017-01-20 06:31:00	"It all begins today! I will see you at 11:00...
2017-01-20 11:54:00	"We will bring back our jobs. We will bring b...
2017-01-20 11:55:00	"We will follow two simple rules: BUY AMERICA...
2017-01-20 11:58:00	"It is time to remember that...https://www.fa...
2017-01-20 12:13:00	"TO ALL AMERICANS https://www.facebook.com/Do...
2017-01-21 05:53:00	"A fantastic day and evening in Washington D....
2017-01-22 06:47:00	"Watched protests yesterday but was under the...
2017-01-23 05:38:00	"Busy week planned with a heavy focus on jobs...
2017-01-24 05:11:00	"Will be meeting at 9:00 with top automobile ...
2017-01-24 10:58:00	"A photo delivered yesterday that will be dis...

In [28]:
```
daytime = tweets.between_time("08:01", "16:00")      # 8:01 am - 4:00 pm
evening = tweets.between_time("16:01", "00:00")        # 4:01 pm - 12:00 am
overnight = tweets.between_time("00:01", "08:00")        # 12:01 am - 8:00 a

print(f"The number of tweets in the 'Daytime' category is: {len(daytime)}")
print(f"The number of tweets in the 'Evening' category is: {len(evening)}")
print(f"The number of tweets in the 'Overnight' category is: {len(overnight)

print("Just by the distribution of tweets it is surprisingly evenly spread;
```

```
The number of tweets in the 'Daytime' category is: 3325
The number of tweets in the 'Evening' category is: 3653
The number of tweets in the 'Overnight' category is: 3706
Just by the distribution of tweets it is surprisingly evenly spread; with th
e most tweets happening overnight.
```

In [29]:
```
tw = pd.Series(tweets.index.strftime('%m-%d'), index=tweets.index)     # Cha

spring = tweets.loc[tw.between('04-01', '06-30')]                      # April
summer = tweets.loc[tw.between('07-01', '09-30')]                     # July 1
autumn = tweets.loc[tw.between('10-01', '12-31')]                    # October
winter = tweets.loc[tw.between('01-01', '03-31')]                   # January

print(f"The number of tweets in the 'Spring' category is: {len(spring)}")
print(f"The number of tweets in the 'Summer' category is: {len(summer)}")
print(f"The number of tweets in the 'Autumn' category is: {len(autumn)}")
print(f"The number of tweets in the 'Winter' category is: {len(winter)}")
print("")
print("Judging by the distribution of tweets throughout the seasons, the fre
```

```
The number of tweets in the 'Spring' category is: 2520
The number of tweets in the 'Summer' category is: 3148
The number of tweets in the 'Autumn' category is: 3067
The number of tweets in the 'Winter' category is: 1949

Judging by the distribution of tweets throughout the seasons, the frequency
decays in the winter and spring and peaks in the summer
```

In [30]:
```
tweet_time = pd.DataFrame({
    "Time": ["daytime", "evening", "overnight"],
    "Count": [len(daytime), len(evening), len(overnight)]
})

tweet_time
```

Out[30]:

	Time	Count
0	daytime	3325
1	evening	3653
2	overnight	3706

In [145…
```
tweet_season = pd.DataFrame({
    "Season": ["Spring", "Summer", "Autumn", "Winter"],
    "Count": [len(spring), len(summer), len(autumn), len(winter)]
})

tweet_season
```

Out[145…

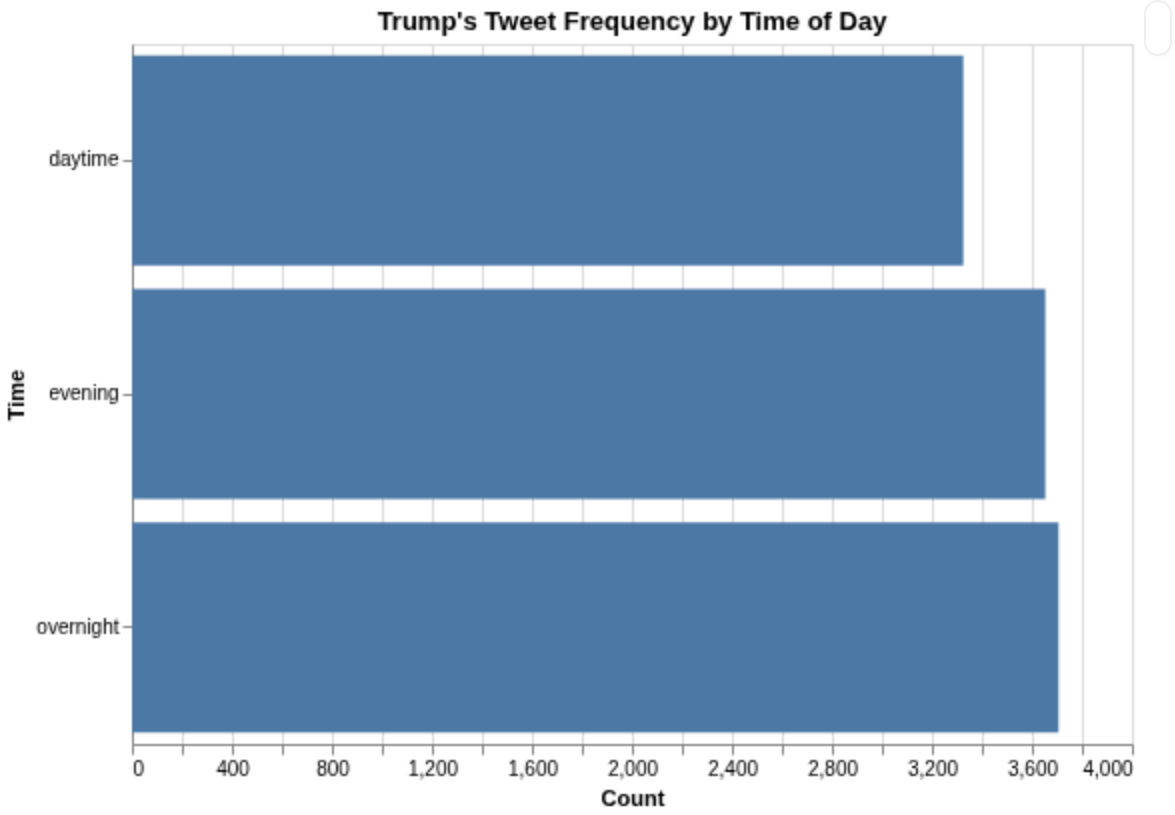
	Season	Count
0	Spring	2520
1	Summer	3148
2	Autumn	3067
3	Winter	1949

In [146…

```
time_bars = alt.Chart(tweet_time).mark_bar().encode(
    y = "Time:N",
    x = "Count:Q",
    ).properties(
    title="Trump's Tweet Frequency by Time of Day",
    width=500,
    height=350)

time_bars
```

Out[146…



In [147…

```
label_df = pd.DataFrame({
    "Time": ["daytime", "evening", "overnight"],
    "range": ["8:01am–4:00pm", "4:01pm–12:00am", "12:01am–8:00am"],
    "Count": tweet_time["Count"].values
})
```

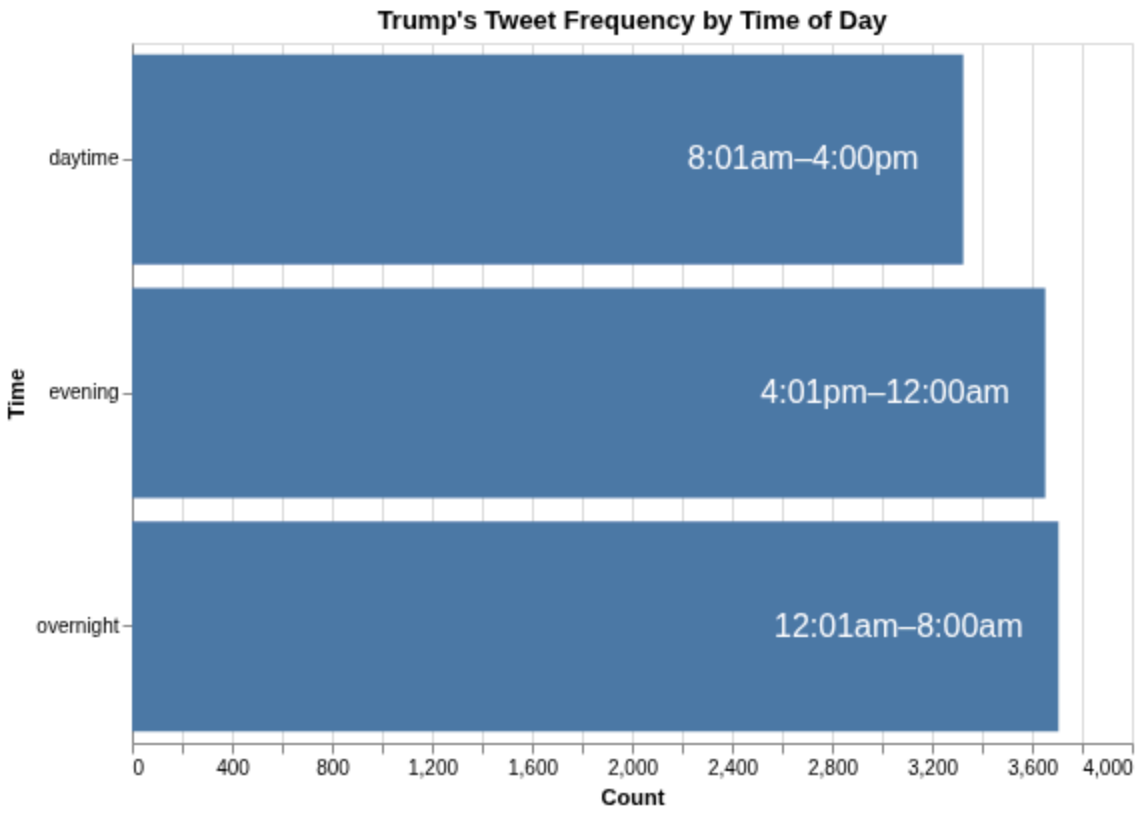
In [148…

```
range_text = (
    alt.Chart(label_df)
    .mark_text(
        align="center",
```

```
        baseline="middle",
        color="white",
        fontSize=16,
        dx=-80
    )
    .encode(
        y="Time:N",
        x="Count:Q",
        text="range:N"
    )
)

time_bars + range_text
```

Out[148…

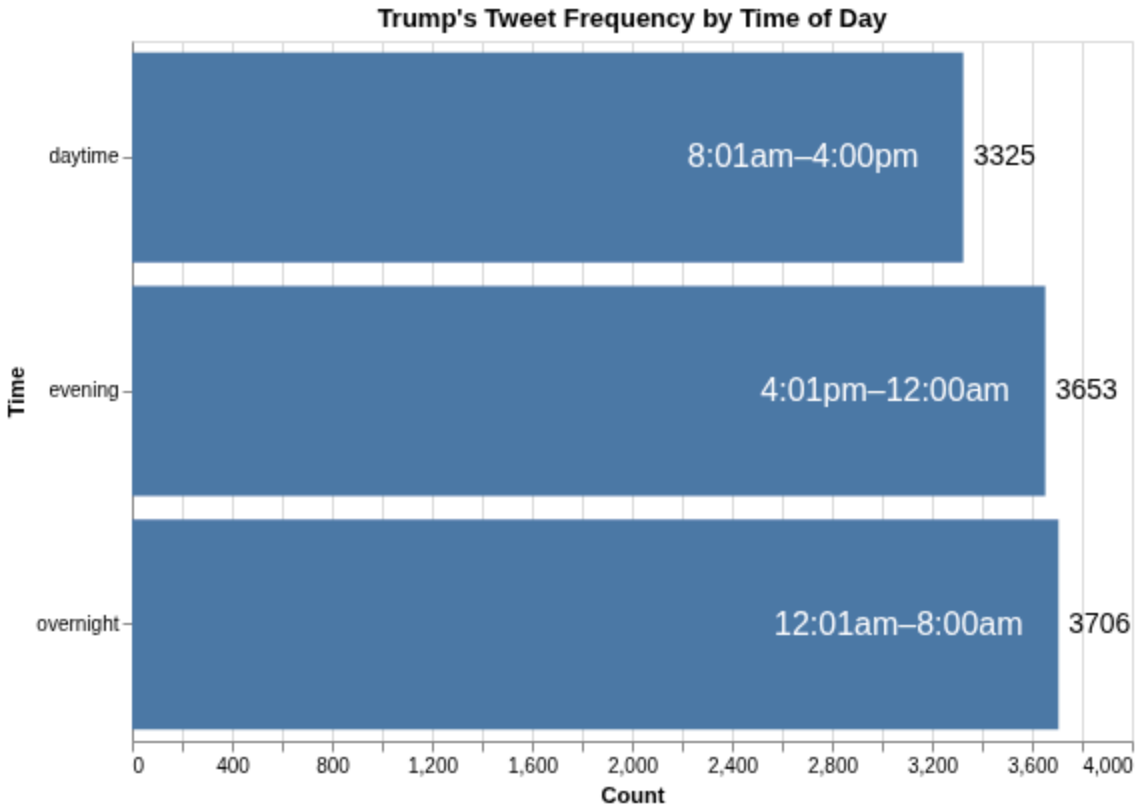


In [149…

```
count_text = alt.Chart(label_df).mark_text(
    align="left",
    baseline="middle",
    dx=5,
    color="black",
    fontSize=14
).encode(
    y="Time:N",
    x="Count:Q",
    text="Count:Q"
)

time_bars + range_text + count_text
```

Out[149…

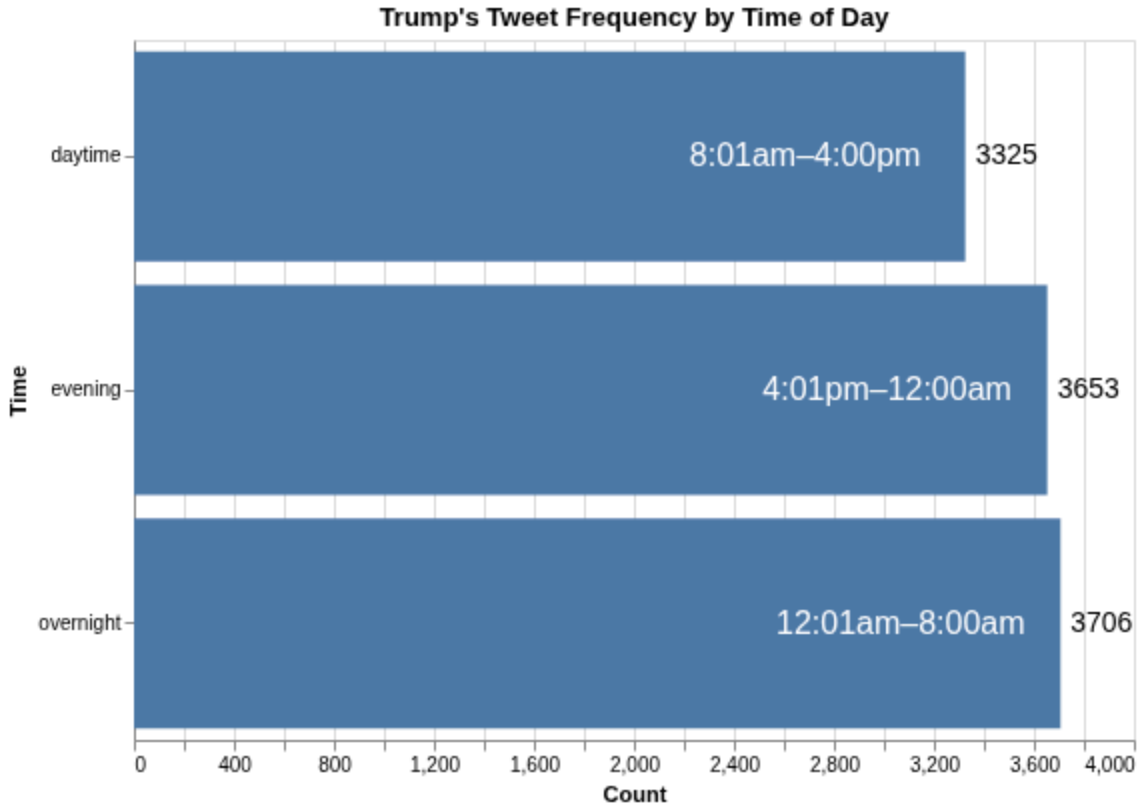


In [150…

```
final_time_of_day_chart = (time_bars + range_text + count_text).properties(p

final_time_of_day_chart
```

Out[150…

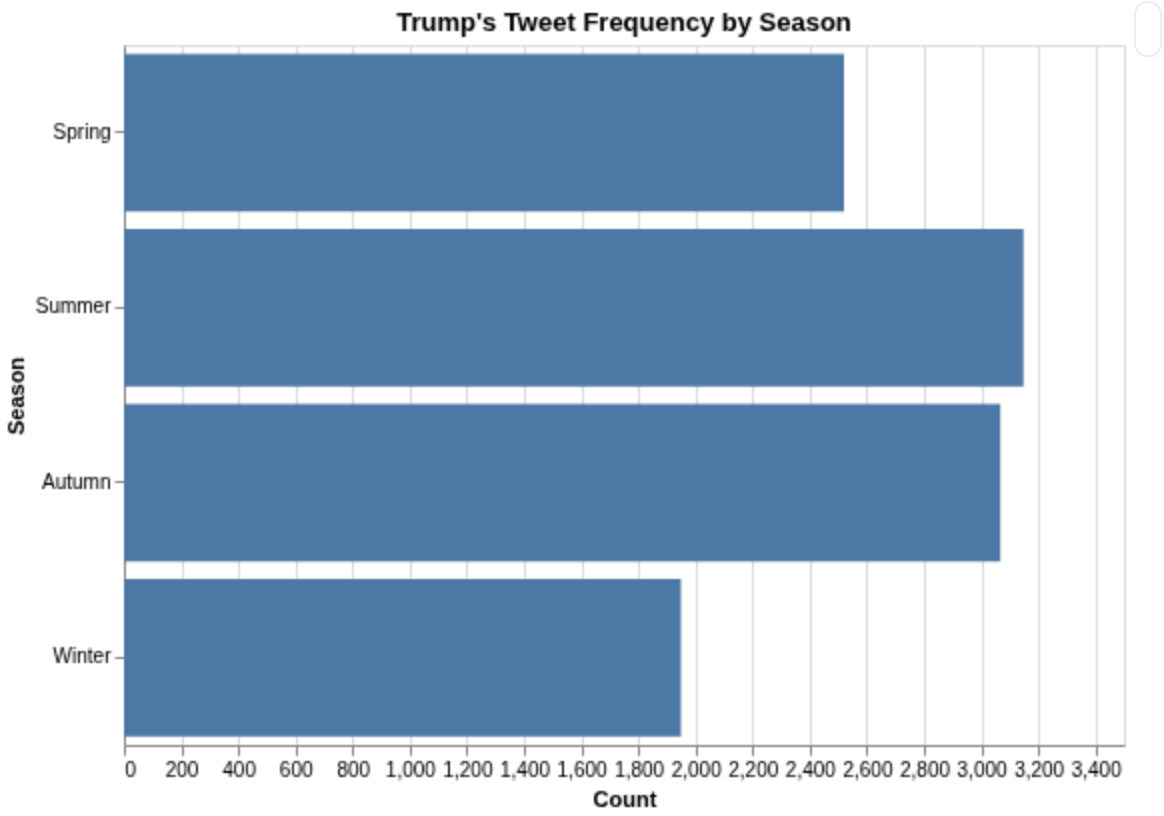


In [151…

```
season_bars = alt.Chart(tweet_season).mark_bar().encode(
    x="Count:Q",
    y=alt.Y("Season:N",sort=["Spring", "Summer", "Autumn", "Winter"])
    ).properties(
    title="Trump's Tweet Frequency by Season",
    width=500,
    height=350)

season_bars
```

Out[151…



In [152…

```
season_label_df = pd.DataFrame({
    "Season": ["Spring", "Summer", "Autumn", "Winter"],
    "range": ["April 1st - June 30th", "July 1st – Sept 30th", "Oct 1st – De
    "Count": tweet_season["Count"].values
})
season_label_df
```

Out[152…

	Season	range	Count
0	Spring	April 1st - June 30th	2520
1	Summer	July 1st – Sept 30th	3148
2	Autumn	Oct 1st – Dec 31st	3067
3	Winter	Jan 1st - March 31st	1949

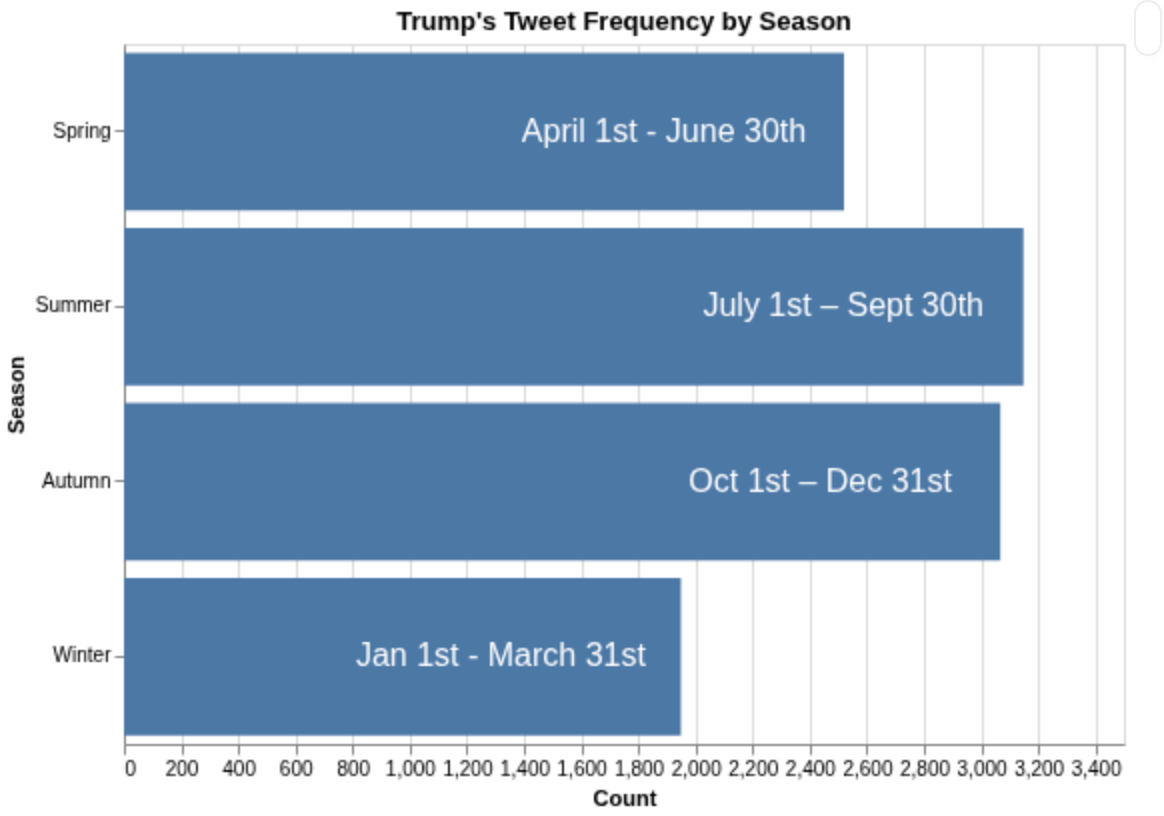
In [158…

```
season_range_text = alt.Chart(season_label_df).mark_text(
        align="center",
        baseline="middle",
```

```
        color="white",
        fontSize=16,
        dx=-90
    ).encode(
        y=alt.Y("Season:N",sort=["Spring", "Summer", "Autumn", "Winter"]),
        x="Count:Q",
        text="range:N"
    )

season_bars + season_range_text
```

Out[158…

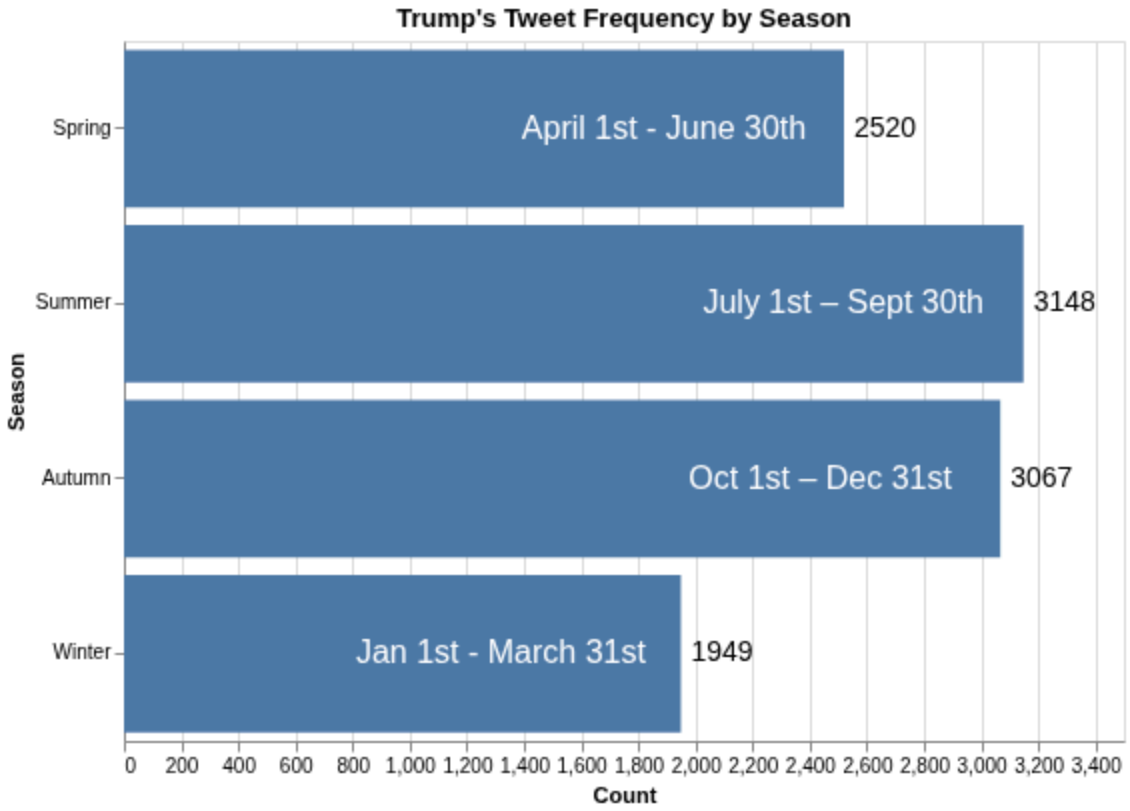


In [159…

```
season_count_text = alt.Chart(season_label_df).mark_text(
    align="left",
    baseline="middle",
    dx=5,
    color="black",
    fontSize=14
).encode(
    y=alt.Y("Season:N",sort=["Spring", "Summer", "Autumn", "Winter"]),
    x="Count:Q",
    text="Count:Q"
)

season_bars + season_range_text + season_count_text
```

Out[159…

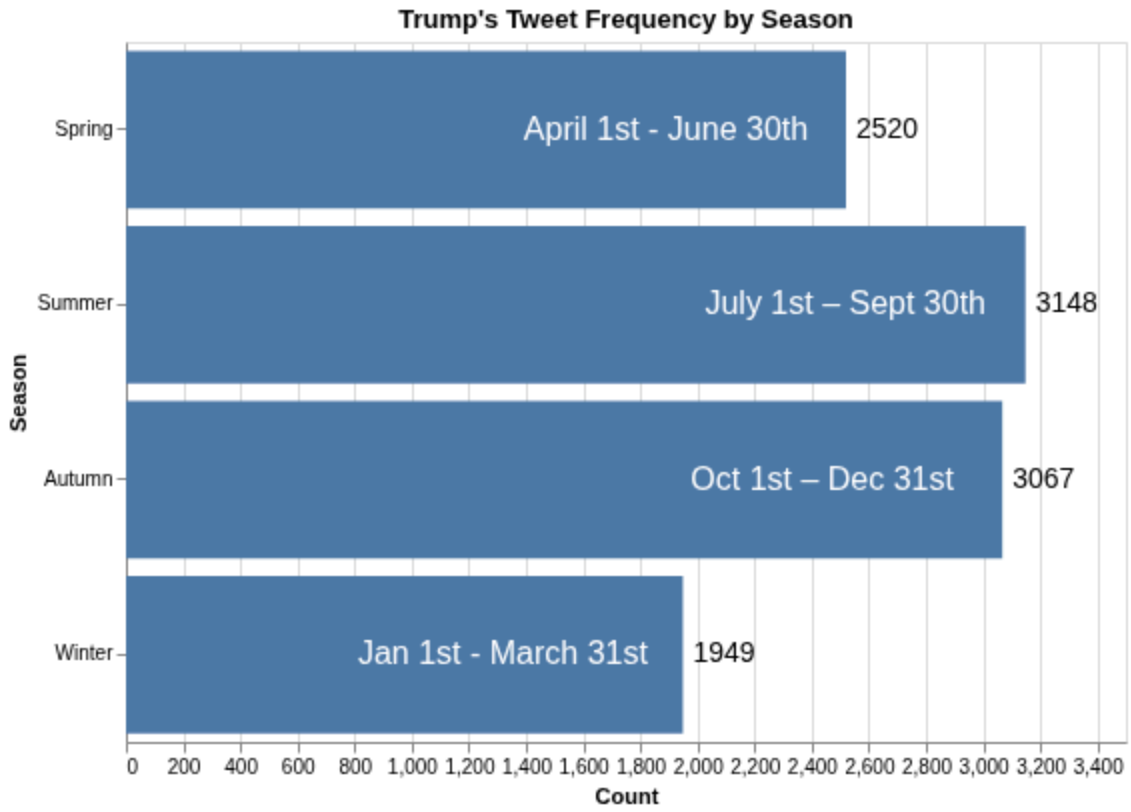


In [160…

```
final_season_chart = (season_bars + season_range_text + season_count_text).p

final_season_chart
```

Out[160…



In [ ]: