

Team 15

- G S S VIGNESH
- J KAPARDHI
- SYAM SAI

WEATHER FORECASTING

Data Preprocessing

Steps involved

- Finding the features that are required
- dropping the rows that have too many null values
- standardizing the data to become stationary

Dataset

```
<class 'pandas.core.frame.DataFrame'>
DatetimeIndex: 96432 entries, 2009-01-01 00:00:00 to 2020-01-01 23:00
Data columns (total 15 columns):
#   Column                Non-Null Count  Dtype
---  -
0   sunHour                96432 non-null  float64
1   uvIndex                96432 non-null  int64
2   moon_illumination      96432 non-null  int64
3   DewPointC              96432 non-null  int64
4   FeelsLikeC             96432 non-null  int64
5   HeatIndexC             96432 non-null  int64
6   WindChillC             96432 non-null  int64
7   WindGustKmph           96432 non-null  int64
8   humidity               96432 non-null  int64
9   precipMM               96432 non-null  float64
10  pressure               96432 non-null  int64
11  tempC                  96432 non-null  int64
12  visibility              96432 non-null  int64
13  winddirDegree           96432 non-null  int64
14  windspeedKmph           96432 non-null  int64
dtypes: float64(2), int64(13)
memory usage: 11.8 MB
```

FINDING DATA IS STATIONARY OR NOT BY USING P-VALUE

PROCESS ARE

- Rolling mean,std plot
- Augmented Dickey-Fuller unit root test



Test statistic: -7.849263579622407

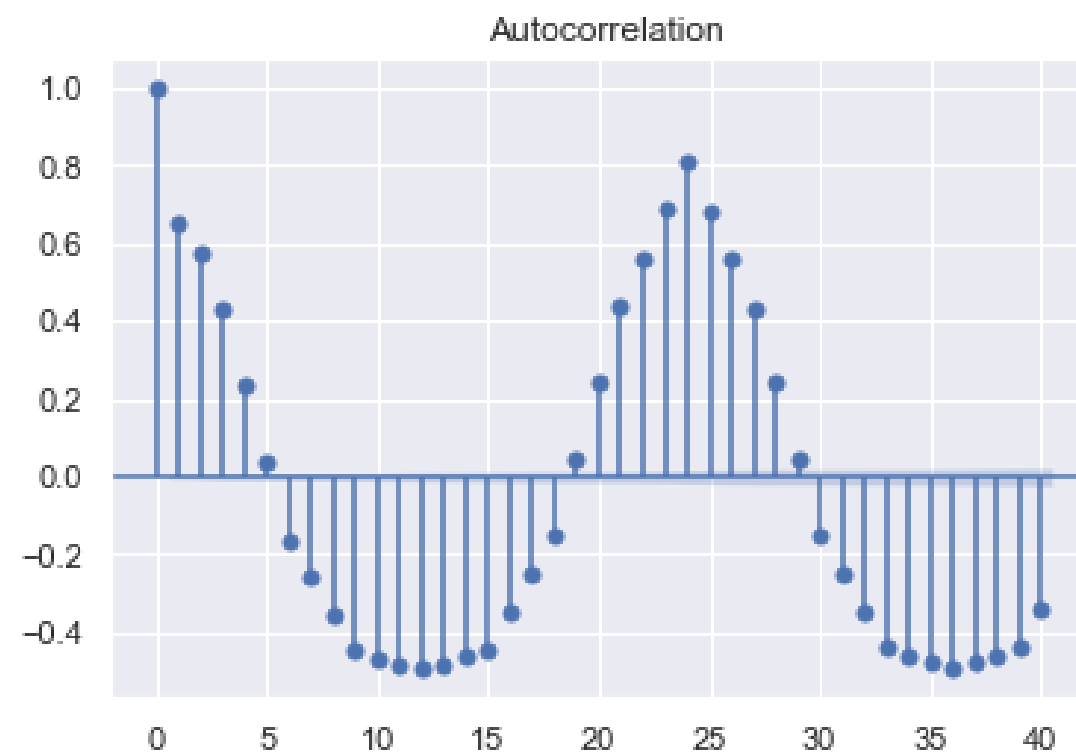
Critical Values: {'1%': -3.4304178622120522, '5%': -2.8615699940220614, '10%': -2.566785964770556}

P value 5.6586120697407855e-12

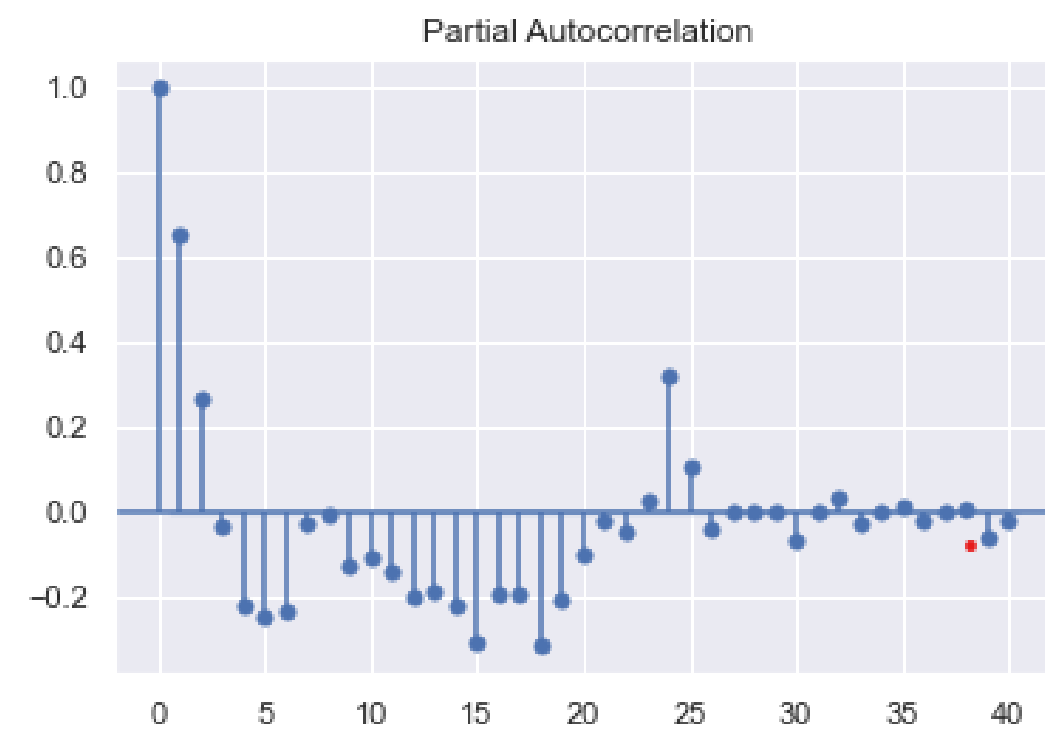
(-7.849263579622407, 5.6586120697407855e-12, 67, 96364, {'1%': -3.4304178622120522, '5%': -2.8615699940220614, '10%': -2.566785964770556}, 152558.29659647588)

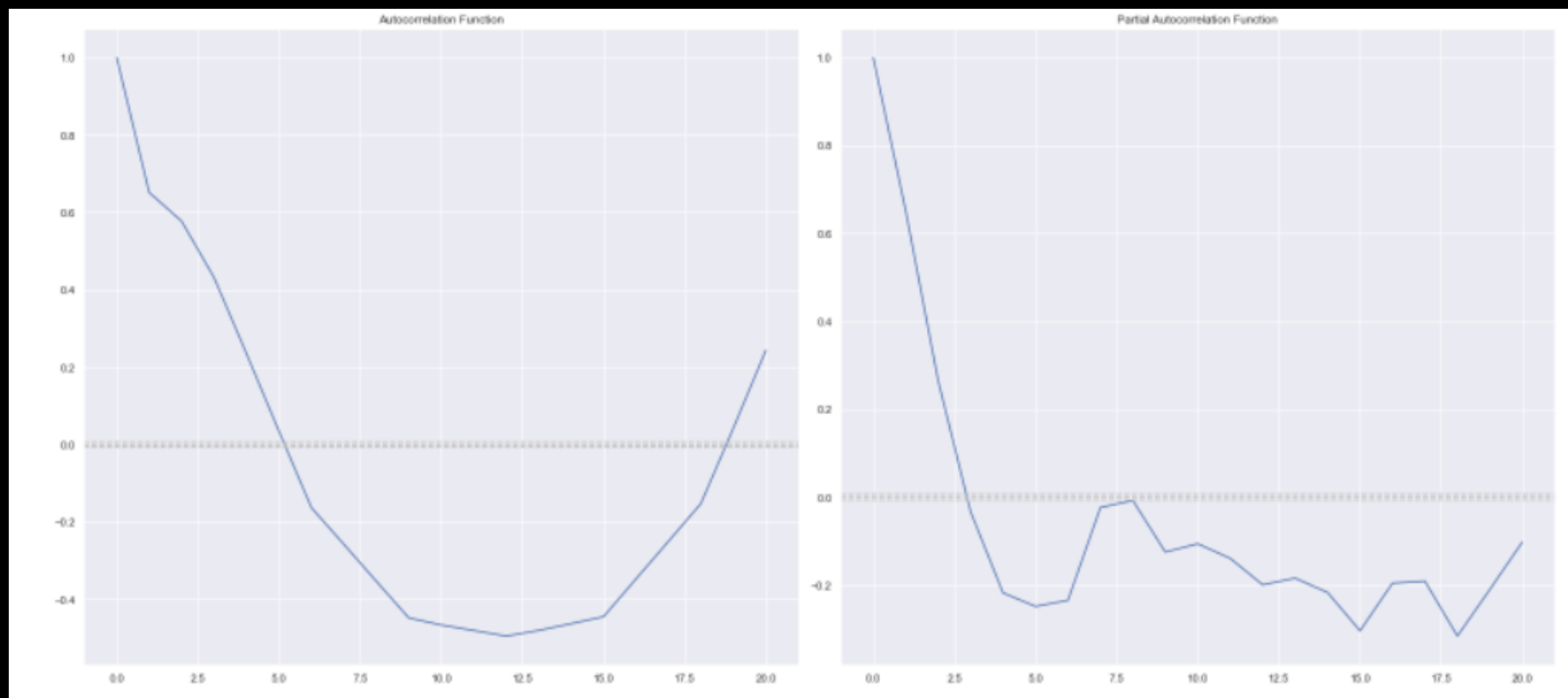
FINDING p,q,d values using acf and pacf

```
: sm.graphics.tsa.plot_acf(df.tempC.diff().dropna().values,lags=40)  
plt.show()
```



```
: sm.graphics.tsa.plot_pacf(df.tempC.diff().dropna().values.squeeze(), lags=40, method="yw")  
plt.show()
```





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Finally model

THANK YOU