

In [2]:

```
import pandas as pd
```

In [6]:

```
Weather = pd.read_csv('Weather_Dataset.csv')  
Weather
```

Out[6]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog
2	1/1/2012 2:00	-1.8	-3.4	89	7	4.0	101.26	Freezing Drizzle,Fog
3	1/1/2012 3:00	-1.5	-3.2	88	6	4.0	101.27	Freezing Drizzle,Fog
4	1/1/2012 4:00	-1.5	-3.3	88	7	4.8	101.23	Fog
...
8779	12/31/2012 19:00	0.1	-2.7	81	30	9.7	100.13	Snow
8780	12/31/2012 20:00	0.2	-2.4	83	24	9.7	100.03	Snow
8781	12/31/2012 21:00	-0.5	-1.5	93	28	4.8	99.95	Snow
8782	12/31/2012 22:00	-0.2	-1.8	89	28	9.7	99.91	Snow
8783	12/31/2012 23:00	0.0	-2.1	86	30	11.3	99.89	Snow

8784 rows × 8 columns

How to analyze Dataframes?

head()

In [13]:

```
# It shows the first N rows in the data (by default, N=5).
```

In [15]:

```
Weather.head()
```

Out[15]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog
2	1/1/2012 2:00	-1.8	-3.4	89	7	4.0	101.26	Freezing Drizzle,Fog
3	1/1/2012 3:00	-1.5	-3.2	88	6	4.0	101.27	Freezing Drizzle,Fog
4	1/1/2012 4:00	-1.5	-3.3	88	7	4.8	101.23	Fog

Shape()

In [19]:

```
# It shows the total no. of rows and no. of columns of the dataframe
```

In [23]:

```
Weather.shape
```

Out[23]:

```
(8784, 8)
```

Index

In [26]:

```
# This attribute provides the index of the dataframe
```

In [28]:

```
Weather.index
```

Out[28]:

```
RangeIndex(start=0, stop=8784, step=1)
```

columns

In [33]:

```
# It shows the name of each column
```

In [35]:

```
Weather.columns
```

Out[35]:

```
Index(['Date/Time', 'Temp_C', 'Dew Point Temp_C', 'Rel Hum_%',
      'Wind Speed_km/h', 'Visibility_km', 'Press_kPa', 'Weather'],
      dtype='object')
```

dtypes

In [38]:

```
# It shows the data-type of each column
```

In [40]:

```
Weather.dtypes
```

Out[40]:

```
Date/Time      object
Temp_C         float64
Dew Point Temp_C float64
Rel Hum_%      int64
Wind Speed_km/h int64
Visibility_km   float64
Press_kPa      float64
Weather        object
dtype: object
```

unique

In [43]:

```
# In a column, it shows all the unique values. It can be applied on a single column only
```

In [49]:

```
Weather['Weather'].unique()
```

Out[49]:

```
array(['Fog', 'Freezing Drizzle,Fog', 'Mostly Cloudy', 'Cloudy', 'Rain',
      'Rain Showers', 'Mainly Clear', 'Snow Showers', 'Snow', 'Clear',
      'Freezing Rain,Fog', 'Freezing Rain', 'Freezing Drizzle',
      'Rain,Snow', 'Moderate Snow', 'Freezing Drizzle,Snow',
      'Freezing Rain,Snow Grains', 'Snow,Blowing Snow', 'Freezing Fog',
      'Haze', 'Rain,Fog', 'Drizzle,Fog', 'Drizzle',
      'Freezing Drizzle,Haze', 'Freezing Rain,Haze', 'Snow,Haze',
      'Snow,Fog', 'Snow,Ice Pellets', 'Rain,Haze', 'Thunderstorms,Rain',
      'Thunderstorms,Rain Showers', 'Thunderstorms,Heavy Rain Showers',
      'Thunderstorms,Rain Showers,Fog', 'Thunderstorms',
      'Thunderstorms,Rain,Fog',
      'Thunderstorms,Moderate Rain Showers,Fog', 'Rain Showers,Fog',
      'Rain Showers,Snow Showers', 'Snow Pellets', 'Rain,Snow,Fog',
      'Moderate Rain,Fog', 'Freezing Rain,Ice Pellets,Fog',
      'Drizzle,Ice Pellets,Fog', 'Drizzle,Snow', 'Rain,Ice Pellets',
      'Drizzle,Snow,Fog', 'Rain,Snow Grains', 'Rain,Snow,Ice Pellets',
      'Snow Showers,Fog', 'Moderate Snow,Blowing Snow'], dtype=object)
```

nunique()

In [52]:

```
# It shows the total no. of unique values in each column. It can be applied on a single column
```

In [56]:

```
Weather.nunique()
```

Out[56]:

```
Date/Time      8784
Temp_C         533
Dew Point Temp_C 489
Rel Hum_%      83
Wind Speed_km/h 34
Visibility_km   24
Press_kPa      518
Weather        50
dtype: int64
```

count

In [59]:

```
# It shows the total no. of non-null values in each column. It can be applied on a single column.
```

In [61]:

```
Weather.count()
```

Out[61]:

```
Date/Time      8784
Temp_C         8784
Dew Point Temp_C 8784
Rel Hum_%      8784
Wind Speed_km/h 8784
Visibility_km   8784
Press_kPa      8784
Weather        8784
dtype: int64
```

value_counts

In [64]:

```
# In a column, it shows all the unique values with their count. It can be applied on a single column.
```

In [66]:

```
Weather['Weather'].value_counts()
```

Out[66]:

```
Weather
Mainly Clear      2106
Mostly Cloudy    2069
Cloudy            1728
Clear             1326
Snow              390
Rain              306
Rain Showers     188
Fog              150
Rain,Fog         116
Drizzle,Fog      80
Snow Showers     60
Drizzle          41
Snow,Fog         37
Snow,Blowing Snow 19
Rain,Snow        18
Thunderstorms,Rain Showers 16
Haze             16
```

Drizzle,Snow,Fog	15
Freezing Rain	14
Freezing Drizzle,Snow	11
Freezing Drizzle	7
Snow,Ice Pellets	6
Freezing Drizzle,Fog	6
Snow,Haze	5
Freezing Fog	4
Snow Showers,Fog	4
Moderate Snow	4
Rain,Snow,Ice Pellets	4
Freezing Rain,Fog	4
Freezing Drizzle,Haze	3
Rain,Haze	3
Thunderstorms,Rain	3
Thunderstorms,Rain Showers,Fog	3
Freezing Rain,Haze	2
Drizzle,Snow	2
Rain Showers,Snow Showers	2
Thunderstorms	2
Moderate Snow,Blowing Snow	2
Rain Showers,Fog	1
Thunderstorms,Moderate Rain Showers,Fog	1
Snow Pellets	1
Rain,Snow,Fog	1
Moderate Rain,Fog	1
Freezing Rain,Ice Pellets,Fog	1
Drizzle,Ice Pellets,Fog	1
Thunderstorms,Rain,Fog	1
Rain,Ice Pellets	1
Rain,Snow Grains	1
Thunderstorms,Heavy Rain Showers	1
Freezing Rain,Snow Grains	1

Name: count, dtype: int64

info

In [69]:

```
# Provides basic information about the dataframe.
```

In [71]:

```
Weather.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 8784 entries, 0 to 8783
Data columns (total 8 columns):
#   Column                Non-Null Count  Dtype
---  -
0   Date/Time              8784 non-null   object
1   Temp_C                 8784 non-null   float64
2   Dew Point Temp_C       8784 non-null   float64
3   Rel Hum_%              8784 non-null   int64
4   Wind Speed_km/h        8784 non-null   int64
5   Visibility_km           8784 non-null   float64
6   Press_kPa              8784 non-null   float64
7   Weather                8784 non-null   object
```

dtypes: float64(4), int64(2), object(2)
memory usage: 549.1+ KB

1) Find all the unique 'Wind Speed' values in the data.

In [77]:

```
Weather.head(2)
```

Out[77]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog

In [79]:

```
Weather.nunique()
```

Out[79]:

```
Date/Time      8784
Temp_C         533
Dew Point Temp_C  489
Rel Hum_%       83
Wind Speed_km/h  34
Visibility_km    24
Press_kPa       518
Weather         50
dtype: int64
```

In [81]:

```
Weather['Wind Speed_km/h'].nunique()
```

Out[81]:

```
34
```

In [83]:

```
Weather['Wind Speed_km/h'].unique()
```

Out[83]:

```
array([ 4,  7,  6,  9, 15, 13, 20, 22, 19, 24, 30, 35, 39, 32, 33, 26, 44,
        43, 48, 37, 28, 17, 11,  0, 83, 70, 57, 46, 41, 52, 50, 63, 54,  2],
      dtype=int64)
```

2. Find the number of times when the 'Weather' is exactly Clear

In [86]:

```
Weather.head(1)
```

Out[86]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [92]:

```
# value_counts
Weather['Weather'].value_counts()
```

Out[92]:

```
Weather
Mainly Clear                2106
Mostly Cloudy              2069
Cloudy                     1728
Clear                      1326
Snow                       390
Rain                       306
Rain Showers               188
Fog                        150
Rain,Fog                   116
Drizzle,Fog                80
Snow Showers               60
Drizzle                    41
Snow,Fog                   37
Snow,Blowing Snow         19
Rain,Snow                  18
Thunderstorms,Rain Showers 16
Haze                       16
Drizzle,Snow,Fog          15
Freezing Rain              14
Freezing Drizzle,Snow     11
Freezing Drizzle           7
Snow,Ice Pellets           6
Freezing Drizzle,Fog       6
Snow,Haze                  5
Freezing Fog               4
Snow Showers,Fog           4
Moderate Snow              4
Rain,Snow,Ice Pellets      4
Freezing Rain,Fog          4
Freezing Drizzle,Haze      3
Rain,Haze                  3
Thunderstorms,Rain         3
Thunderstorms,Rain Showers,Fog 3
Freezing Rain,Haze         2
Drizzle,Snow               2
Rain Showers,Snow Showers  2
Thunderstorms              2
Moderate Snow,Blowing Snow 2
Rain Showers,Fog           1
Thunderstorms,Moderate Rain Showers,Fog 1
Snow Pellets               1
Rain,Snow,Fog              1
Moderate Rain,Fog           1
Freezing Rain,Ice Pellets,Fog 1
Drizzle,Ice Pellets,Fog    1
Thunderstorms,Rain,Fog     1
Rain,Ice Pellets           1
```

Rain,Snow Grains 1
Thunderstorms,Heavy Rain Showers 1
Freezing Rain,Snow Grains 1
Name: count, dtype: int64

In [98]:

```
# Filtering
Weather[Weather['Weather'] == 'Clear']
```

Out[98]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
67	1/3/2012 19:00	-16.9	-24.8	50	24	25.0	101.74	Clear
114	1/5/2012 18:00	-7.1	-14.4	56	11	25.0	100.71	Clear
115	1/5/2012 19:00	-9.2	-15.4	61	7	25.0	100.80	Clear
116	1/5/2012 20:00	-9.8	-15.7	62	9	25.0	100.83	Clear
117	1/5/2012 21:00	-9.0	-14.8	63	13	25.0	100.83	Clear
...
8646	12/26/2012 6:00	-13.4	-14.8	89	4	25.0	102.47	Clear
8698	12/28/2012 10:00	-6.1	-8.6	82	19	24.1	101.27	Clear
8713	12/29/2012 1:00	-11.9	-13.6	87	11	25.0	101.31	Clear
8714	12/29/2012 2:00	-11.8	-13.1	90	13	25.0	101.33	Clear
8756	12/30/2012 20:00	-13.8	-16.5	80	24	25.0	101.52	Clear

1326 rows × 8 columns

In [104]:

```
# groupby()
Weather.groupby('Weather').get_group('Clear')
```

Out[104]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
67	1/3/2012 19:00	-16.9	-24.8	50	24	25.0	101.74	Clear
114	1/5/2012 18:00	-7.1	-14.4	56	11	25.0	100.71	Clear
115	1/5/2012 19:00	-9.2	-15.4	61	7	25.0	100.80	Clear

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
116	1/5/2012 20:00	-9.8	-15.7	62	9	25.0	100.83	Clear
117	1/5/2012 21:00	-9.0	-14.8	63	13	25.0	100.83	Clear
...
8646	12/26/2012 6:00	-13.4	-14.8	89	4	25.0	102.47	Clear
8698	12/28/2012 10:00	-6.1	-8.6	82	19	24.1	101.27	Clear
8713	12/29/2012 1:00	-11.9	-13.6	87	11	25.0	101.31	Clear
8714	12/29/2012 2:00	-11.8	-13.1	90	13	25.0	101.33	Clear
8756	12/30/2012 20:00	-13.8	-16.5	80	24	25.0	101.52	Clear

1326 rows × 8 columns

3. Find the number of times when the 'Wind Speed was exactly 4 km/h'

In [107]:

```
Weather.head(1)
```

Out[107]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [109]:

```
Weather[Weather['Wind Speed_km/h'] == 4]
```

Out[109]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog
96	1/5/2012 0:00	-8.8	-11.7	79	4	9.7	100.32	Snow
101	1/5/2012 5:00	-7.0	-9.5	82	4	4.0	100.19	Snow

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
146	1/7/2012 2:00	-8.1	-11.1	79	4	19.3	100.15	Cloudy
...
8768	12/31/2012 8:00	-8.6	-10.3	87	4	3.2	101.14	Snow Showers
8769	12/31/2012 9:00	-8.1	-9.6	89	4	2.4	101.09	Snow
8770	12/31/2012 10:00	-7.4	-8.9	89	4	6.4	101.05	Snow,Fog
8772	12/31/2012 12:00	-5.8	-7.5	88	4	12.9	100.78	Snow
8773	12/31/2012 13:00	-4.6	-6.6	86	4	12.9	100.63	Snow

474 rows × 8 columns

4. Find out all the Null Values in the data.

In [112]:

```
Weather.isnull().sum()
```

Out[112]:

```
Date/Time      0
Temp_C         0
Dew Point Temp_C  0
Rel Hum_%      0
Wind Speed_km/h  0
Visibility_km   0
Press_kPa      0
Weather        0
dtype: int64
```

In [114]:

```
Weather.notnull().sum()
```

Out[114]:

```
Date/Time      8784
Temp_C         8784
Dew Point Temp_C 8784
Rel Hum_%      8784
Wind Speed_km/h 8784
Visibility_km   8784
Press_kPa      8784
Weather        8784
dtype: int64
```

5. Rename the column name 'Weather' of the dataframe to 'Weather Condition'.

In [119]:

```
Weather.head(1)
```

Out[119]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [135]:

```
Weather.rename(columns={'Weather' : 'Weather Condition'},inplace=True)  
Weather
```

Out[135]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog
2	1/1/2012 2:00	-1.8	-3.4	89	7	4.0	101.26	Freezing Drizzle,Fog
3	1/1/2012 3:00	-1.5	-3.2	88	6	4.0	101.27	Freezing Drizzle,Fog
4	1/1/2012 4:00	-1.5	-3.3	88	7	4.8	101.23	Fog
...
8779	12/31/2012 19:00	0.1	-2.7	81	30	9.7	100.13	Snow
8780	12/31/2012 20:00	0.2	-2.4	83	24	9.7	100.03	Snow
8781	12/31/2012 21:00	-0.5	-1.5	93	28	4.8	99.95	Snow
8782	12/31/2012 22:00	-0.2	-1.8	89	28	9.7	99.91	Snow
8783	12/31/2012 23:00	0.0	-2.1	86	30	11.3	99.89	Snow

8784 rows × 8 columns

6. What is the mean 'Visibility' ?

In [138]:

```
Weather.head(1)
```

Out[138]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [140]:

```
Weather['Visibility_km'].mean()
```

Out[140]:

27.664446721311478

7. What is the Standard Deviation of 'Pressure' in this data?

In [143]:

```
Weather['Press_kPa'].std()
```

Out[143]:

0.8440047459486474

8. What is the Variance of 'Relative Humidity' in this data ?

In [146]:

```
Weather['Rel Hum_%'].var()
```

Out[146]:

286.2485501984998

9. Find all instances when 'Snow' was recorded.

In [153]:

```
# value_counts()
Weather['Weather Condition'].value_counts()
```

Out[153]:

Weather Condition	
Mainly Clear	2106
Mostly Cloudy	2069
Cloudy	1728
Clear	1326
Snow	390
Rain	306
Rain Showers	188
Fog	150
Rain,Fog	116
Drizzle,Fog	80
Snow Showers	60
Drizzle	41
Snow,Fog	37
Snow,Blowing Snow	19
Rain,Snow	18

```

Thunderstorms,Rain Showers    16
Haze                          16
Drizzle,Snow,Fog              15
Freezing Rain                 14
Freezing Drizzle,Snow         11
Freezing Drizzle              7
Snow,Ice Pellets              6
Freezing Drizzle,Fog          6
Snow,Haze                     5
Freezing Fog                  4
Snow Showers,Fog              4
Moderate Snow                 4
Rain,Snow,Ice Pellets         4
Freezing Rain,Fog             4
Freezing Drizzle,Haze         3
Rain,Haze                     3
Thunderstorms,Rain            3
Thunderstorms,Rain Showers,Fog 3
Freezing Rain,Haze            2
Drizzle,Snow                  2
Rain Showers,Snow Showers     2
Thunderstorms                 2
Moderate Snow,Blowing Snow    2
Rain Showers,Fog              1
Thunderstorms,Moderate Rain Showers,Fog 1
Snow Pellets                  1
Rain,Snow,Fog                 1
Moderate Rain,Fog             1
Freezing Rain,Ice Pellets,Fog 1
Drizzle,Ice Pellets,Fog       1
Thunderstorms,Rain,Fog        1
Rain,Ice Pellets              1
Rain,Snow Grains              1
Thunderstorms,Heavy Rain Showers 1
Freezing Rain,Snow Grains     1
Name: count, dtype: int64

```

In [155]:

```

# Filtering
Weather[Weather['Weather Condition'] == 'Snow']

```

Out[155]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
55	1/3/2012 7:00	-14.0	-19.5	63	19	25.0	100.95	Snow
84	1/4/2012 12:00	-13.7	-21.7	51	11	24.1	101.25	Snow
86	1/4/2012 14:00	-11.3	-19.0	53	7	19.3	100.97	Snow
87	1/4/2012 15:00	-10.2	-16.3	61	11	9.7	100.89	Snow
88	1/4/2012 16:00	-9.4	-15.5	61	13	19.3	100.79	Snow
...

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
8779	12/31/2012 19:00	0.1	-2.7	81	30	9.7	100.13	Snow
8780	12/31/2012 20:00	0.2	-2.4	83	24	9.7	100.03	Snow
8781	12/31/2012 21:00	-0.5	-1.5	93	28	4.8	99.95	Snow
8782	12/31/2012 22:00	-0.2	-1.8	89	28	9.7	99.91	Snow
8783	12/31/2012 23:00	0.0	-2.1	86	30	11.3	99.89	Snow

390 rows × 8 columns

In [161]:

```
# str.contains
Weather[Weather['Weather Condition'].str.contains('Snow')]
```

Out[161]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
41	1/2/2012 17:00	-2.1	-9.5	57	22	25.0	99.66	Snow Showers
44	1/2/2012 20:00	-5.6	-13.4	54	24	25.0	100.07	Snow Showers
45	1/2/2012 21:00	-5.8	-12.8	58	26	25.0	100.15	Snow Showers
47	1/2/2012 23:00	-7.4	-14.1	59	17	19.3	100.27	Snow Showers
48	1/3/2012 0:00	-9.0	-16.0	57	28	25.0	100.35	Snow Showers
...
8779	12/31/2012 19:00	0.1	-2.7	81	30	9.7	100.13	Snow
8780	12/31/2012 20:00	0.2	-2.4	83	24	9.7	100.03	Snow
8781	12/31/2012 21:00	-0.5	-1.5	93	28	4.8	99.95	Snow
8782	12/31/2012 22:00	-0.2	-1.8	89	28	9.7	99.91	Snow
8783	12/31/2012 23:00	0.0	-2.1	86	30	11.3	99.89	Snow

583 rows × 8 columns

10. Find all instances when 'Wind Speed is above 24' and 'Visibility is 25'.

In [164]:

```
Weather.head(1)
```

Out[164]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [166]:

```
Weather[(Weather['Wind Speed_km/h'] > 24) & (Weather['Visibility_km'] == 25)]
```

Out[166]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
23	1/1/2012 23:00	5.3	2.0	79	30	25.0	99.31	Cloudy
24	1/2/2012 0:00	5.2	1.5	77	35	25.0	99.26	Rain Showers
25	1/2/2012 1:00	4.6	0.0	72	39	25.0	99.26	Cloudy
26	1/2/2012 2:00	3.9	-0.9	71	32	25.0	99.26	Mostly Cloudy
27	1/2/2012 3:00	3.7	-1.5	69	33	25.0	99.30	Mostly Cloudy
...
8705	12/28/2012 17:00	-8.6	-12.0	76	26	25.0	101.34	Mainly Clear
8753	12/30/2012 17:00	-12.1	-15.8	74	28	25.0	101.26	Mainly Clear
8755	12/30/2012 19:00	-13.4	-16.5	77	26	25.0	101.47	Mainly Clear
8759	12/30/2012 23:00	-12.1	-15.1	78	28	25.0	101.52	Mostly Cloudy
8760	12/31/2012 0:00	-11.1	-14.4	77	26	25.0	101.51	Cloudy

308 rows × 8 columns

11. What is the Mean value of each column against each 'Weather Condition' ?

```
In [170]:
Weather.head(1)
```

Out[170]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

```
In [184]:
Weather.groupby('Weather Condition').sum()
```

Out[184]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
Clear	1/3/2012 19:00	15.0	10.0	65	13	16.0	1013.2	Clear
	1/5/2012 18:00	15.0	10.0	65	13	16.0	1013.2	
	1/5/2012 18:00	15.0	10.0	65	13	16.0	1013.2	
	1/5/2012 19:00	15.0	10.0	65	13	16.0	1013.2	
Cloudy	1/1/2012 17:00	13.7	4.1	120	278	46009.3	17437	Cloudy
	1/1/2012 20:00	13.7	4.1	120	278	46009.3	17437	
	1/1/2012 20:00	13.7	4.1	120	278	46009.3	17437	
	1/1/2012 21:00	13.7	4.1	120	278	46009.3	17437	
Drizzle	1/23/2012 21:00	301.5	225.7	36	660	735.2	411	Drizzle
	1/27/2012 4:00	301.5	225.7	36	660	735.2	411	
	1/28/2012 4:00	301.5	225.7	36	660	735.2	411	
	1/28/2012 17:00	301.5	225.7	36	660	735.2	411	
Drizzle,Fog	1/23/2012 20:00	645.4	562.7	74	949	420.6	806	Drizzle,Fog
	1/27/2012 11:00	645.4	562.7	74	949	420.6	806	
	1/27/2012 11:00	645.4	562.7	74	949	420.6	806	
	1/27/2012 12:00	645.4	562.7	74	949	420.6	806	
Drizzle,Ice Pellets,Fog		12/17/2012 9:00	0.4	-0.7	92	20	4.0	10
Drizzle,Snow	12/17/2012 15:00	2.1	0.3	187	28	21.0	20	Drizzle,Snow
	12/19/2012 15:00	2.1	0.3	187	28	21.0	20	
	12/19/2012 18:00	2.1	0.3	187	28	21.0	20	
	12/19/2012 18:00	2.1	0.3	187	28	21.0	20	
Drizzle,Snow,Fog	12/18/2012 21:00	10.4	1.8	1438	233	82.7	148	Drizzle,Snow,Fog
	12/18/2012 22:00	10.4	1.8	1438	233	82.7	148	
	12/18/2012 22:00	10.4	1.8	1438	233	82.7	148	
	12/18/2012 23:00	10.4	1.8	1438	233	82.7	148	
Fog	1/1/2012 0:00	645.5	473.9	13843	1192	937.2	1517	Fog
	1/1/2012 1:00	645.5	473.9	13843	1192	937.2	1517	
	1/1/2012 1:00	645.5	473.9	13843	1192	937.2	1517	
	1/1/2012 4:00	645.5	473.9	13843	1192	937.2	1517	

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press.
Weather Condition							
Freezing Drizzle	1/7/2012						
	11:001/7/2012						
	12:001/13/2012	-39.6	-56.0	585	116	64.4	70
	10:001/1...						
Freezing Drizzle,Fog	1/1/2012						
	2:001/1/2012	-15.2	-25.1	531	102	31.6	60
	3:001/7/2012						
	8:001/27/20...						
Freezing Drizzle,Haze	2/1/2012						
	11:002/1/2012	-16.3	-24.0	246	31	8.0	30
	12:002/1/2012						
	13:00						
Freezing Drizzle,Snow	1/13/2012						
	3:001/17/2012	-56.2	-77.8	947	179	64.6	110
	5:001/17/2012						
	6:001/17...						
Freezing Fog	1/22/2012						
	6:002/5/2012	-30.3	-37.0	351	19	2.6	40
	10:003/17/2012						
	5:003/17...						
Freezing Rain	1/7/2012						
	10:001/7/2012	-54.4	-85.1	1185	269	115.4	139
	13:001/13/2012						
	8:001/13...						
Freezing Rain,Fog	1/7/2012						
	9:001/17/2012	-8.9	-15.0	358	62	30.2	39
	23:0012/10/2012						
	6:0012/...						
Freezing Rain,Haze	2/1/2012						
	14:002/1/2012	-9.8	-14.9	165	15	4.8	20
	15:00						
Freezing Rain,Ice Pellets,Fog	12/17/2012 3:00	-2.6	-3.7	92	28	8.0	10
Freezing Rain,Snow Grains	1/13/2012 9:00	-5.0	-7.3	84	32	4.8	9
Haze	1/22/2012						
	12:001/22/2012	-3.2	-47.6	1306	167	125.3	162
	13:002/1/2012						
	10:002/...						
Mainly Clear	1/2/2012						
	12:001/3/2012	26449.1	9649.0	127765	29789	72161.8	21323
	12:001/3/2012						
	13:001/3/...						
Moderate Rain,Fog	12/10/2012 8:00	1.7	0.8	94	17	6.4	9
Moderate Snow	1/12/2012						
	15:001/12/2012	-22.1	-29.0	351	135	3.0	40
	16:0012/27/2012						
	8:001...						

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press.
Weather Condition							
Moderate Snow,Blowing Snow	12/27/2012 10:0012/27/2012 12:00	-10.9	-13.0	185	80	1.2	20
Mostly Cloudy	1/1/2012 16:001/2/2012 2:001/2/2012 3:001/2/20...	21878.2	6478.4	128490	32719	64664.2	20902
Rain	1/1/2012 18:001/1/2012 19:001/23/2012 14:001/2...	2994.6	2155.1	25589	5892	5770.1	3067
Rain Showers	1/1/2012 22:001/2/2012 0:002/22/2012 15:002/23...	2579.8	1727.3	14130	3221	4289.5	1887
Rain Showers,Fog	10/20/2012 3:00	12.8	12.1	96	13	6.4	9
Rain Showers,Snow Showers	11/4/2012 8:0012/5/2012 10:00	4.3	-3.0	153	45	43.4	20
Rain,Fog	1/23/2012 18:001/23/2012 19:001/27/2012 10:002...	959.7	837.5	10810	1716	797.3	1165
Rain,Haze	3/13/2012 7:003/13/2012 8:003/13/2012 9:00	13.9	6.2	250	35	20.1	30
Rain,Ice Pellets	12/18/2012 5:00	0.6	-0.6	92	24	9.7	10
Rain,Snow	1/10/2012 5:001/28/2012 23:002/22/2012 3:002/2...	19.0	-10.2	1602	511	210.1	179
Rain,Snow Grains	12/21/2012 0:00	1.9	-2.1	75	26	25.0	10
Rain,Snow,Fog	12/8/2012 21:00	0.8	0.3	96	9	6.4	10
Rain,Snow,Ice Pellets	12/21/2012 1:0012/21/2012 3:0012/21/2012 4:001...	4.4	-0.7	366	93	24.0	40
Snow	1/3/2012 7:001/4/2012 12:001/4/2012 14:001/4/2...	-1764.4	-2973.1	30930	7815	4357.0	3920
Snow Pellets	11/24/2012 15:00	0.7	-6.4	59	35	2.4	9
Snow Showers	1/2/2012 17:001/2/2012	-210.4	-472.0	4341	1154	1209.5	605

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press.
Weather Condition	20:001/2/2012						
	21:001/2/...						
Snow Showers,Fog	12/26/2012						
	9:0012/29/2012	-42.7	-47.6	363	55	28.1	40
	11:0012/29/2012						
	12:0...						
Snow,Blowing Snow	1/13/2012						
	21:001/13/2012	-102.8	-144.8	1605	662	78.0	189
	23:001/14/2012						
	0:001/...						
Snow,Fog	2/10/2012						
	23:002/11/2012	-187.8	-235.5	3355	641	167.9	372
	0:002/24/2012						
	15:002/...						
Snow,Haze	2/1/2012						
	17:002/1/2012	-20.1	-34.3	403	25	23.2	50
	18:002/1/2012						
	19:002/1/...						
Snow,Ice Pellets	3/3/2012						
	4:003/28/2012	-11.3	-22.0	526	143	44.5	60
	8:0012/10/2012						
	3:0012/1...						
Thunderstorms	7/4/2012						
	16:007/16/2012	48.3	39.5	154	15	49.1	20
	1:00						
Thunderstorms,Heavy Rain Showers	5/29/2012 6:00	10.9	9.0	88	9	2.4	10
Thunderstorms,Moderate Rain Showers,Fog	7/17/2012 6:00	19.6	18.5	93	15	3.2	10
Thunderstorms,Rain	5/25/2012						
	20:007/23/2012	61.3	55.6	267	47	59.5	30
	17:007/23/2012						
	18:00						
Thunderstorms,Rain Showers	5/29/2012						
	4:005/29/2012	320.6	281.9	1382	293	254.3	160
	5:005/29/2012						
	16:005/2...						
Thunderstorms,Rain Showers,Fog	6/29/2012						
	3:007/17/2012	64.8	56.1	252	59	29.1	30
	9:007/31/2012						
	20:00						
Thunderstorms,Rain,Fog	7/17/2012 5:00	20.6	18.6	88	19	4.8	10

12. What is the Minimum & Maximum value of each column against each 'Weather Condition' ?

In [188]:

```
Weather.groupby('Weather Condition').min()
```

Out[188]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Clear	1/11/2012 1:00	-23.3	-28.5	20	0	11.3	99.52
Cloudy	1/1/2012 17:00	-21.4	-26.8	18	0	11.3	98.39
Drizzle	1/23/2012 21:00	1.1	-0.2	74	0	6.4	97.84
Drizzle,Fog	1/23/2012 20:00	0.0	-1.6	85	0	1.0	98.65
Drizzle,Ice Pellets,Fog	12/17/2012 9:00	0.4	-0.7	92	20	4.0	100.79
Drizzle,Snow	12/17/2012 15:00	0.9	0.1	92	9	9.7	100.63
Drizzle,Snow,Fog	12/18/2012 21:00	0.3	-0.1	92	7	2.4	97.79
Fog	1/1/2012 0:00	-16.0	-17.2	80	0	0.2	98.31
Freezing Drizzle	1/13/2012 10:00	-9.0	-12.2	78	6	4.8	98.44
Freezing Drizzle,Fog	1/1/2012 2:00	-6.4	-9.0	82	6	3.6	98.74
Freezing Drizzle,Haze	2/1/2012 11:00	-5.8	-8.3	81	9	2.0	100.28
Freezing Drizzle,Snow	1/13/2012 3:00	-8.3	-10.4	79	6	2.4	99.19
Freezing Fog	1/22/2012 6:00	-19.0	-22.9	71	0	0.2	101.97
Freezing Rain	1/13/2012 11:00	-6.5	-9.0	81	7	2.8	98.22
Freezing Rain,Fog	1/17/2012 23:00	-6.1	-8.7	82	7	2.8	98.32
Freezing Rain,Haze	2/1/2012 14:00	-4.9	-7.5	82	6	2.0	100.34
Freezing Rain,Ice Pellets,Fog	12/17/2012 3:00	-2.6	-3.7	92	28	8.0	100.95
Freezing Rain,Snow Grains	1/13/2012 9:00	-5.0	-7.3	84	32	4.8	98.56
Haze	1/22/2012 12:00	-11.5	-16.0	68	0	4.8	100.35

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Mainly Clear	1/10/2012 11:00	-22.8	-28.0	20	0	12.9	98.67
Moderate Rain,Fog	12/10/2012 8:00	1.7	0.8	94	17	6.4	99.98
Moderate Snow	1/12/2012 15:00	-6.3	-7.6	83	26	0.6	99.88
Moderate Snow,Blowing Snow	12/27/2012 10:00	-5.5	-6.6	92	39	0.6	100.50
Mostly Cloudy	1/1/2012 16:00	-23.2	-28.5	18	0	11.3	98.36
Rain	1/1/2012 18:00	0.3	-5.7	40	0	4.0	97.52
Rain Showers	1/1/2012 22:00	1.6	-7.2	37	0	6.4	98.51
Rain Showers,Fog	10/20/2012 3:00	12.8	12.1	96	13	6.4	99.83
Rain Showers,Snow Showers	11/4/2012 8:00	2.1	-1.8	75	17	19.3	101.09
Rain,Fog	1/23/2012 18:00	0.0	-1.2	83	0	2.0	98.61
Rain,Haze	3/13/2012 7:00	4.0	1.0	81	7	4.0	100.50
Rain,Ice Pellets	12/18/2012 5:00	0.6	-0.6	92	24	9.7	100.12
Rain,Snow	1/10/2012 5:00	0.6	-1.7	81	13	2.4	98.18
Rain,Snow Grains	12/21/2012 0:00	1.9	-2.1	75	26	25.0	100.60
Rain,Snow,Fog	12/8/2012 21:00	0.8	0.3	96	9	6.4	100.73
Rain,Snow,Ice Pellets	12/21/2012 1:00	0.9	-0.7	88	17	4.8	99.85
Snow	1/10/2012 1:00	-16.7	-24.6	41	0	1.0	97.75
Snow Pellets	11/24/2012 15:00	0.7	-6.4	59	35	2.4	99.70
Snow Showers	1/12/2012 7:00	-13.3	-19.3	52	0	2.4	99.49
Snow Showers,Fog	12/26/2012 9:00	-11.3	-12.7	89	7	4.0	100.63
Snow,Blowing Snow	1/13/2012 21:00	-12.0	-16.2	70	24	0.6	98.11

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Snow,Fog	12/16/2012 15:00	-10.1	-12.0	77	4	1.2	99.38
Snow,Haze	2/1/2012 17:00	-4.3	-7.2	80	0	4.0	100.61
Snow,Ice Pellets	12/10/2012 3:00	-4.3	-5.9	76	19	2.8	99.40
Thunderstorms	7/16/2012 1:00	21.6	19.4	67	0	24.1	99.84
Thunderstorms,Heavy Rain Showers	5/29/2012 6:00	10.9	9.0	88	9	2.4	100.26
Thunderstorms,Moderate Rain Showers,Fog	7/17/2012 6:00	19.6	18.5	93	15	3.2	100.01
Thunderstorms,Rain	5/25/2012 20:00	19.4	18.2	83	4	16.1	100.19
Thunderstorms,Rain Showers	5/29/2012 16:00	11.0	7.0	68	7	6.4	99.65
Thunderstorms,Rain Showers,Fog	6/29/2012 3:00	19.5	16.1	80	7	9.7	99.71
Thunderstorms,Rain,Fog	7/17/2012 5:00	20.6	18.6	88	19	4.8	100.08

In [190]:

```
Weather.groupby('Weather Condition').max()
```

Out[190]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Clear	9/9/2012 5:00	32.8	20.4	99	33	48.3	103.63
Cloudy	9/9/2012 23:00	30.5	22.6	99	54	48.3	103.65
Drizzle	9/30/2012 3:00	18.8	17.7	96	30	25.0	101.56
Drizzle,Fog	9/30/2012 2:00	19.9	19.1	100	28	9.7	102.07
Drizzle,Ice Pellets,Fog	12/17/2012 9:00	0.4	-0.7	92	20	4.0	100.79
Drizzle,Snow	12/19/2012 18:00	1.2	0.2	95	19	11.3	101.15
Drizzle,Snow,Fog	12/22/2012 3:00	1.1	0.6	98	32	9.7	100.15

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Fog	9/22/2012 0:00	20.8	19.6	100	22	9.7	103.04
Freezing Drizzle	2/1/2012 5:00	-2.3	-3.3	93	26	12.9	101.02
Freezing Drizzle,Fog	12/10/2012 5:00	-0.3	-2.3	94	33	8.0	101.27
Freezing Drizzle,Haze	2/1/2012 13:00	-5.0	-7.7	83	11	4.0	100.36
Freezing Drizzle,Snow	3/2/2012 12:00	-3.3	-4.6	94	24	12.9	101.18
Freezing Fog	3/17/2012 6:00	-0.1	-0.3	99	9	0.8	102.85
Freezing Rain	2/1/2012 7:00	0.3	-1.7	92	28	16.1	101.00
Freezing Rain,Fog	12/17/2012 1:00	0.1	-0.9	93	26	9.7	101.01
Freezing Rain,Haze	2/1/2012 15:00	-4.9	-7.4	83	9	2.8	100.41
Freezing Rain,Ice Pellets,Fog	12/17/2012 3:00	-2.6	-3.7	92	28	8.0	100.95
Freezing Rain,Snow Grains	1/13/2012 9:00	-5.0	-7.3	84	32	4.8	98.56
Haze	3/13/2012 23:00	14.1	11.1	86	17	9.7	102.97
Mainly Clear	9/9/2012 9:00	33.0	21.2	99	63	48.3	103.59
Moderate Rain,Fog	12/10/2012 8:00	1.7	0.8	94	17	6.4	99.98
Moderate Snow	12/27/2012 9:00	-4.9	-6.7	93	39	0.8	100.67
Moderate Snow,Blowing Snow	12/27/2012 12:00	-5.4	-6.4	93	41	0.6	100.64
Mostly Cloudy	9/9/2012 2:00	32.4	24.4	100	83	48.3	103.65
Rain	9/5/2012 2:00	22.8	20.4	99	52	48.3	102.26
Rain Showers	9/8/2012 16:00	26.4	23.0	97	41	48.3	102.31
Rain Showers,Fog	10/20/2012 3:00	12.8	12.1	96	13	6.4	99.83
Rain Showers,Snow Showers	12/5/2012 10:00	2.2	-1.2	78	28	24.1	101.11

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Rain,Fog	9/30/2012 23:00	21.7	19.5	100	46	9.7	101.77
Rain,Haze	3/13/2012 9:00	5.5	2.9	86	17	9.7	100.61
Rain,Ice Pellets	12/18/2012 5:00	0.6	-0.6	92	24	9.7	100.12
Rain,Snow	4/23/2012 3:00	1.7	0.5	94	52	25.0	101.07
Rain,Snow Grains	12/21/2012 0:00	1.9	-2.1	75	26	25.0	100.60
Rain,Snow,Fog	12/8/2012 21:00	0.8	0.3	96	9	6.4	100.73
Rain,Snow,Ice Pellets	12/21/2012 5:00	1.3	0.1	94	28	6.4	100.47
Snow	4/27/2012 9:00	3.7	0.3	96	57	25.0	102.73
Snow Pellets	11/24/2012 15:00	0.7	-6.4	59	35	2.4	99.70
Snow Showers	3/4/2012 21:00	2.9	-0.7	94	37	48.3	102.50
Snow Showers,Fog	12/29/2012 13:00	-10.0	-11.1	92	22	9.7	102.52
Snow,Blowing Snow	2/25/2012 9:00	-1.4	-2.9	91	48	9.7	100.62
Snow,Fog	3/14/2012 19:00	1.1	0.8	99	35	9.7	102.07
Snow,Haze	2/1/2012 21:00	-3.6	-6.4	81	15	6.4	100.99
Snow,Ice Pellets	3/3/2012 4:00	0.8	-1.7	92	33	11.3	100.96
Thunderstorms	7/4/2012 16:00	26.7	20.1	87	15	25.0	100.62
Thunderstorms,Heavy Rain Showers	5/29/2012 6:00	10.9	9.0	88	9	2.4	100.26
Thunderstorms,Moderate Rain Showers,Fog	7/17/2012 6:00	19.6	18.5	93	15	3.2	100.01
Thunderstorms,Rain	7/23/2012 18:00	21.3	19.1	93	30	24.1	100.83
Thunderstorms,Rain Showers	9/8/2012 4:00	25.5	23.1	98	32	25.0	101.06
Thunderstorms,Rain Showers,Fog	7/31/2012 20:00	22.9	21.3	91	35	9.7	100.64

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa
Weather Condition							
Thunderstorms,Rain,Fog	7/17/2012 5:00	20.6	18.6	88	19	4.8	100.08

13. Show all the Records where Weather Condition is Fog.

In [197]:

```
Weather[Weather['Weather Condition'] == 'Fog']
```

Out[197]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog
1	1/1/2012 1:00	-1.8	-3.7	87	4	8.0	101.24	Fog
4	1/1/2012 4:00	-1.5	-3.3	88	7	4.8	101.23	Fog
5	1/1/2012 5:00	-1.4	-3.3	87	9	6.4	101.27	Fog
6	1/1/2012 6:00	-1.5	-3.1	89	7	6.4	101.29	Fog
...
8716	12/29/2012 4:00	-16.0	-17.2	90	6	9.7	101.25	Fog
8717	12/29/2012 5:00	-14.8	-15.9	91	4	6.4	101.25	Fog
8718	12/29/2012 6:00	-13.8	-15.3	88	4	9.7	101.25	Fog
8719	12/29/2012 7:00	-14.8	-16.4	88	7	8.0	101.22	Fog
8722	12/29/2012 10:00	-12.0	-13.3	90	7	6.4	101.15	Fog

150 rows × 8 columns

14. Find all instances when 'Weather is Clear' or 'Visibility is above 40'.

In [200]:

```
Weather.head(1)
```

Out[200]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [202]:

```
Weather[(Weather['Weather Condition'] == 'Clear') | (Weather['Visibility_km'] > 40)]
```

Out[202]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
67	1/3/2012 19:00	-16.9	-24.8	50	24	25.0	101.74	Clear
106	1/5/2012 10:00	-6.0	-10.0	73	17	48.3	100.45	Mainly Clear
107	1/5/2012 11:00	-5.6	-10.2	70	22	48.3	100.41	Mainly Clear
108	1/5/2012 12:00	-4.7	-9.6	69	20	48.3	100.38	Mainly Clear
109	1/5/2012 13:00	-4.4	-9.7	66	26	48.3	100.40	Mainly Clear
...
8749	12/30/2012 13:00	-12.4	-16.2	73	37	48.3	100.92	Mostly Cloudy
8750	12/30/2012 14:00	-11.8	-16.1	70	37	48.3	100.96	Mainly Clear
8751	12/30/2012 15:00	-11.3	-15.6	70	32	48.3	101.05	Mainly Clear
8752	12/30/2012 16:00	-11.4	-15.5	72	26	48.3	101.15	Mainly Clear
8756	12/30/2012 20:00	-13.8	-16.5	80	24	25.0	101.52	Clear

3027 rows × 8 columns

15) Find all instances when : A. 'Weather is Clear' and 'Relative Humidity is greater than 50' or B. 'Visibility is above 40'

In [205]:

```
Weather.head(1)
```

Out[205]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
0	1/1/2012 0:00	-1.8	-3.9	86	4	8.0	101.24	Fog

In [207]:

```
Weather[(Weather['Weather Condition'] == 'Clear') & (Weather['Rel Hum_%'] > 50) | (Weath
```

Out[207]:

	Date/Time	Temp_C	Dew Point Temp_C	Rel Hum_%	Wind Speed_km/h	Visibility_km	Press_kPa	Weather Condition
106	1/5/2012 10:00	-6.0	-10.0	73	17	48.3	100.45	Mainly Clear
107	1/5/2012 11:00	-5.6	-10.2	70	22	48.3	100.41	Mainly Clear
108	1/5/2012 12:00	-4.7	-9.6	69	20	48.3	100.38	Mainly Clear
109	1/5/2012 13:00	-4.4	-9.7	66	26	48.3	100.40	Mainly Clear
110	1/5/2012 14:00	-5.1	-10.7	65	22	48.3	100.46	Mainly Clear
...
8749	12/30/2012 13:00	-12.4	-16.2	73	37	48.3	100.92	Mostly Cloudy
8750	12/30/2012 14:00	-11.8	-16.1	70	37	48.3	100.96	Mainly Clear
8751	12/30/2012 15:00	-11.3	-15.6	70	32	48.3	101.05	Mainly Clear
8752	12/30/2012 16:00	-11.4	-15.5	72	26	48.3	101.15	Mainly Clear
8756	12/30/2012 20:00	-13.8	-16.5	80	24	25.0	101.52	Clear

2921 rows × 8 columns

In []:

In []: