import pandas as pd In [1]: data = pd.read_csv('weather file.csv') data In [5]: Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[5]: 1/1/2012 0:00 -1.8 -3.9 8.0 101.24 Fog 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 4 Fog 1/1/2012 2:00 7 2 -1.8 -3.4 89 4.0 101.26 Freezing Drizzle, Fog 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 8779 12/31/2012 19:00 81 100.13 0.1 -2.7 30 9.7 Snow **8780** 12/31/2012 20:00 0.2 -2.4 83 24 9.7 100.03 Snow **8781** 12/31/2012 21:00 93 -0.5 -1.5 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 -2.1 86 30 99.89 0.0 11.3 Snow 8784 rows × 8 columns How to Analyze Dataframes In [6]: data.head() Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[6]: 0 1/1/2012 0:00 -1.8 -3.9 86 8.0 101.24 4 Fog **1** 1/1/2012 1:00 -1.8 -3.787 8.0 101.24 Fog 2 1/1/2012 2:00 -1.8 -3.4 89 4.0 101.26 Freezing Drizzle, Fog -3.2 88 101.27 Freezing Drizzle, Fog **3** 1/1/2012 3:00 -1.5 4.0 4 1/1/2012 4:00 -1.5 -3.3 88 4.8 101.23 Fog data.shape In [8]: (8784, 8) Out[8]: In [9]: data.index RangeIndex(start=0, stop=8784, step=1) Out[9]: data.columns In [10]: Index(['Date/Time', 'Temp_C', 'Dew Point Temp_C', 'Rel Hum_%', Out[10]: 'Wind Speed_km/h', 'Visibility_km', 'Press_kPa', 'Weather'], dtype='object') In [11]: data.dtypes Date/Time object Out[11]: Temp_C float64 Dew Point Temp_C float64 int64 Rel Hum_% Wind Speed_km/h int64 Visibility_km float64 Press_kPa float64 Weather object dtype: object In [32]: data.nunique() Date/Time 8784 Out[32]: Temp_C 533 Dew Point Temp_C 489 Rel Hum_% 83 Wind Speed_km/h 34 24 Visibility_km 518 Press_kPa 50 Weather dtype: int64 In [33]: data.count() 8784 Date/Time Out[33]: 8784 Temp_C Dew Point Temp C 8784 Rel Hum_% 8784 Wind Speed km/h 8784 Visibility_km 8784 Press_kPa 8784 8784 Weather dtype: int64 In [35]: data['Weather'].value_counts() Mainly Clear 2106 Out[35]: 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 37 Snow, Fog Snow, Blowing Snow 19 Rain, Snow 18 Thunderstorms, Rain Showers 16 16 Haze 15 Drizzle, Snow, Fog Freezing Rain 14 11 Freezing Drizzle, Snow 7 Freezing Drizzle 6 Snow, Ice Pellets Freezing Drizzle, Fog 6 Snow, Haze Freezing Fog Snow Showers, Fog Moderate Snow Rain, Snow, Ice Pellets Freezing Rain, Fog Freezing Drizzle, Haze Rain, Haze 3 Thunderstorms, Rain Thunderstorms, Rain Showers, Fog 3 2 Freezing Rain, Haze Drizzle, Snow 2 2 Rain Showers, Snow Showers 2 Thunderstorms 2 Moderate Snow, Blowing Snow Rain Showers, Fog Thunderstorms, Moderate Rain Showers, Fog Snow Pellets Rain, Snow, Fog Moderate Rain, Fog Freezing Rain, Ice Pellets, Fog Drizzle, Ice Pellets, Fog 1 Thunderstorms, Rain, Fog 1 Rain, Ice Pellets 1 Rain, Snow Grains Thunderstorms, Heavy Rain Showers Freezing Rain, Snow Grains Name: Weather, dtype: int64 data.info() In [39]: <class 'pandas.core.frame.DataFrame'> RangeIndex: 8784 entries, 0 to 8783 Data columns (total 8 columns): # Column Non-Null Count Dtype -----Date/Time 0 8784 non-null object Temp C 8784 non-null float64 1 Dew Point Temp C 8784 non-null float64 8784 non-null Rel Hum_% int64 Wind Speed_km/h 8784 non-null int64 Visibility_km 5 8784 non-null float64 6 Press_kPa 8784 non-null float64 8784 non-null 7 Weather object dtypes: float64(4), int64(2), object(2) memory usage: 549.1+ KB In [40]: data.head(2) Out[40]: Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather **0** 1/1/2012 0:00 101.24 -1.8 -3.9 86 Fog 87 **1** 1/1/2012 1:00 -1.8 -3.7 8.0 101.24 Fog data.nunique() In [42]: Date/Time 8784 Out[42]: 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 data['Wind Speed_km/h'].nunique() In [44]: Out[44]: data['Wind Speed_km/h'].unique() In [46]: 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) data.head(2) In [48] Out[48]: 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 -3.9 86 101.24 Fog -1.8 8.0 **1** 1/1/2012 1:00 8.0 101.24 Fog In [49]: # Value Count data.Weather.value_counts() Mainly Clear 2106 Out[49]: Mostly Cloudy 2069 Cloudy 1728 Clear 1326 Snow 390 306 Rain 188 Rain Showers 150 Fog Rain, Fog 116 Drizzle, Fog 80 Snow Showers Drizzle 41 37 Snow, Fog 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 Snow Showers, Fog Moderate Snow Rain, Snow, Ice Pellets Freezing Rain, Fog Freezing Drizzle, Haze Rain, Haze Thunderstorms, Rain Thunderstorms, Rain Showers, Fog 2 Freezing Rain, Haze 2 Drizzle, Snow 2 Rain Showers, Snow Showers Thunderstorms 2 Moderate Snow, Blowing Snow Rain Showers, Fog Thunderstorms, Moderate Rain Showers, Fog Snow Pellets Rain, Snow, Fog Moderate Rain, Fog Freezing Rain, Ice Pellets, Fog Drizzle, Ice Pellets, Fog Thunderstorms, Rain, Fog Rain, Ice Pellets Rain, Snow Grains Thunderstorms, Heavy Rain Showers Freezing Rain, Snow Grains Name: Weather, dtype: int64 In [54]: #filtering #data.hea data.Weather == 'clear' 0 False Out[54]: False False 2 3 False False 8779 False 8780 False 8781 False 8782 False 8783 False Name: Weather, Length: 8784, dtype: bool In [61]: #groupby data.head(2) Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[61]: 0 1/1/2012 0:00 -1.8 -3.9 86 8.0 101.24 Fog **1** 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog data[data['Wind Speed_km/h'] == 4] Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[65]: 1/1/2012 0:00 -1.8 -3.9 86 8.0 101.24 Fog 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog 1/5/2012 0:00 -8.8 -11.7 79 100.32 96 4 9.7 Snow -9.5 82 4.0 100.19 101 1/5/2012 5:00 -7.0 Snow 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 12/31/2012 9:00 8769 -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 88 -5.8 -7.5 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 data.isnull().sum() In [67]: Date/Time 0 Out[67] Temp_C 0 Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km 0 Press_kPa 0 Weather 0 dtype: int64 data.notnull().sum() In [68]: Date/Time 8784 Out[68]: 8784 Temp_C Dew Point Temp_C 8784 Rel Hum_% 8784 Wind Speed_km/h 8784 Visibility_km 8784 Press_kPa 8784 Weather 8784 dtype: int64 #Rename Columns In [69]: data.head(2) Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[69]: **0** 1/1/2012 0:00 Fog -1.8 -3.9 86 4 8.0 101.24 **1** 1/1/2012 1:00 -1.8 -3.7 8.0 101.24 Fog In [76]: data.rename(columns = {'Weather' : 'Weather condition'}) Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[76]: Weather condition 0 1/1/2012 0:00 -1.8 -3.9 86 8.0 101.24 Fog 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog 2 1/1/2012 2:00 -1.8 -3.4 89 7 4.0 101.26 Freezing Drizzle, Fog 1/1/2012 3:00 -1.5 -3.2 88 6 4.0 101.27 Freezing Drizzle, Fog 7 4 1/1/2012 4:00 -1.5 -3.3 88 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 In [72]: data.head() Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[72]: **0** 1/1/2012 0:00 -3.9 86 101.24 Fog -1.8 8.0 **1** 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog **2** 1/1/2012 2:00 89 -3.4 7 101.26 Freezing Drizzle,Fog -1.8 4.0 **3** 1/1/2012 3:00 -1.5 -3.2 88 4.0 101.27 Freezing Drizzle, Fog 88 **4** 1/1/2012 4:00 -1.5 -3.3 7 4.8 101.23 Fog data.head(2) Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[77]: **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 8.0 101.24 Fog data.Visibility_km.mean() In [78]: 27.664446721311478 Out[78]: In [97]: # Value Count data.Weather.value_counts() 2106 Mainly Clear Out[97]: Mostly Cloudy 2069 Cloudy 1728 Clear 1326 Snow 390 Rain 306 Rain Showers 188 150 Fog Rain, Fog 116 Drizzle, Fog 80 Snow Showers 60 Drizzle 41 37 Snow, Fog Snow, Blowing Snow 19 18 Rain, Snow Thunderstorms, Rain Showers 16 Haze 16 15 Drizzle, Snow, Fog Freezing Rain 14 Freezing Drizzle, Snow 11 Freezing Drizzle 7 Snow, Ice Pellets 6 Freezing Drizzle, Fog 6 Snow, Haze 5 Freezing Fog Snow Showers, Fog Moderate Snow Rain, Snow, Ice Pellets Freezing Rain, Fog Freezing Drizzle, Haze 3 Rain, Haze 3 3 Thunderstorms, Rain Thunderstorms, Rain Showers, Fog 3 2 Freezing Rain, Haze 2 Drizzle, Snow Rain Showers, Snow Showers Thunderstorms Moderate Snow, Blowing Snow Rain Showers, Fog Thunderstorms, Moderate Rain Showers, Fog Snow Pellets Rain, Snow, Fog 1 Moderate Rain, Fog Freezing Rain, Ice Pellets, Fog Drizzle, Ice Pellets, Fog Thunderstorms, Rain, Fog 1 Rain, Ice Pellets Rain, Snow Grains Thunderstorms, Heavy Rain Showers 1 Freezing Rain, Snow Grains Name: Weather, dtype: int64 In [124... #str.conatins data[data['Weather'].str.contains('snow')] Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[124]: #wind speed visibility In [115... data.head(2) Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[115]: **0** 1/1/2012 0:00 -1.8 -3.9 101.24 Fog **1** 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog data[(data['Wind Speed_km/h'] > 24) & (data['Visibility_km'] == 25)] In [117... Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[117]: Weather 23 1/1/2012 23:00 5.3 2.0 79 30 25.0 99.31 Cloudy 1/2/2012 0:00 5.2 1.5 77 35 25.0 99.26 Rain Showers 24 72 25.0 99.26 25 1/2/2012 1:00 4.6 0.0 39 Cloudy 1/2/2012 2:00 3.9 -0.9 71 32 25.0 99.26 Mostly Cloudy 26 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 Mainly Clear 101.26 **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 -14.4 77 26 25.0 101.51 -11.1 Cloudy 308 rows × 8 columns #weather condition In [118... data.head(2) Out[118]: Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather 86 **0** 1/1/2012 0:00 -1.8 -3.9 8.0 101.24 Fog **1** 1/1/2012 1:00 -3.7 87 101.24 -1.8 8.0 Fog data.groupby('Weather').mean() In [122... C:\Users\INDIA\AppData\Local\Temp\ipykernel_10632\3094402736.py:1: FutureWarning: The default value of numeric_only in DataFrameGroupBy.mean is deprecated. In a future version, numeric_only will default to False. Either specify numeric_only or select only columns which should be valid for the function. data.groupby('Weather').mean() Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[122]: Weather 6.825716 64.497738 10.557315 0.089367 30.153243 101.587443 Clear 7.970544 69.592593 26.625752 100.911441 Cloudy 2.375810 16.127315 88.243902 Drizzle 7.353659 5.504878 16.097561 17.931707 100.435366 11.862500 Drizzle,Fog 8.067500 7.033750 93.275000 5.257500 100.786625 20.000000 Drizzle,Ice Pellets,Fog 0.400000 -0.700000 92.000000 4.000000 100.790000 10.500000 100.890000 Drizzle,Snow 1.050000 0.150000 14.000000 93.500000 0.693333 0.120000 95.866667 5.513333 99.281333 Drizzle, Snow, Fog 15.533333 6.248000 101.184067 4.303333 3.159333 92.286667 7.946667 Fog **Freezing Drizzle** -5.657143 -8.000000 83.571429 16.571429 9.200000 100.202857 Freezing Drizzle,Fog -2.533333 -4.183333 88.500000 17.000000 5.266667 100.441667 -8.000000 2.666667 100.316667 Freezing Drizzle, Haze -5.433333 82.000000 10.333333 -5.109091 Freezing Drizzle, Snow -7.072727 86.090909 16.272727 5.872727 100.520909 87.750000 0.650000 102.320000 -7.575000 -9.250000 4.750000 **Freezing Fog** -3.885714 **Freezing Rain** -6.078571 84.642857 19.214286 8.242857 99.647143 Freezing Rain,Fog -2.225000 -3.750000 89.500000 15.500000 7.550000 99.945000 -4.900000 -7.450000 82.500000 7.500000 2.400000 100.375000 Freezing Rain, Haze 92.000000 8.000000 100.950000 -3.700000 Freezing Rain, Ice Pellets, Fog -2.600000 28.000000 98.560000 Freezing Rain, Snow Grains -5.000000 -7.300000 84.000000 32.000000 4.800000 -0.200000 -2.975000 81.625000 10.437500 7.831250 101.482500 Haze **Mainly Clear** 12.558927 4.581671 60.667142 14.144824 34.264862 101.248832 0.800000 1.700000 94.000000 17.000000 6.400000 99.980000 Moderate Rain, Fog -5.525000 -7.250000 87.750000 33.750000 0.750000 100.275000 **Moderate Snow** -6.500000 92.500000 0.600000 100.570000 Moderate Snow, Blowing Snow -5.450000 40.000000 10.574287 31.253842 101.025288 **Mostly Cloudy** 3.131174 62.102465 15.813920 18.856536 100.233333 9.786275 7.042810 83.624183 19.254902 Rain 22.816489 100.404043 **Rain Showers** 13.722340 9.187766 75.159574 17.132979 12.100000 13.000000 6.400000 99.830000 Rain Showers, Fog 12.800000 96.000000 21.700000 101.100000 2.150000 -1.500000 76.500000 22.500000 Rain Showers, Snow Showers 14.793103 Rain,Fog 8.273276 7.219828 93.189655 6.873276 100.500862 4.633333 2.066667 83.333333 11.666667 6.700000 100.540000 Rain, Haze 24.000000 0.600000 -0.600000 92.000000 9.700000 100.120000 Rain,Ice Pellets 1.055556 -0.566667 89.000000 28.388889 11.672222 99.951111 Rain, Snow 75.000000 1.900000 -2.100000 25.000000 100.600000 **Rain, Snow Grains** 26.000000 Rain, Snow, Fog 0.800000 0.300000 96.000000 9.000000 6.400000 100.730000 Rain, Snow, Ice Pellets 6.000000 100.105000 1.100000 -0.175000 91.500000 23.250000 11.171795 100.536103 -4.524103 -7.623333 79.307692 20.038462 **Snow** 35.000000 -6.400000 59.000000 2.400000 99.700000 **Snow Pellets** 0.700000 20.158333 100.963500 -3.506667 -7.866667 72.350000 19.233333 **Snow Showers** Snow Showers, Fog -10.675000 -11.900000 90.750000 13.750000 7.025000 101.292500 **Snow,Blowing Snow** -7.621053 84.473684 34.842105 4.105263 99.704737 -5.410526 -5.075676 -6.364865 17.324324 4.537838 100.688649 Snow,Fog 90.675676 -4.020000 4.640000 100.782000 -6.860000 80.600000 5.000000 Snow, Haze -1.883333 -3.666667 23.833333 7.416667 100.548333 **Snow,Ice Pellets** 87.666667 24.550000 100.230000 **Thunderstorms** 24.150000 19.750000 77.000000 7.500000 Thunderstorms, Heavy Rain Showers 10.900000 9.000000 88.000000 9.000000 2.400000 100.260000 Thunderstorms, Moderate Rain Showers, Fog 18.500000 93.000000 15.000000 3.200000 100.010000 19.600000 18.533333 89.000000 19.833333 100.420000 20.433333 15.666667 Thunderstorms, Rain 15.893750 100.233750 20.037500 17.618750 86.375000 18.312500 Thunderstorms, Rain Showers 84.000000 Thunderstorms, Rain Showers, Fog 21.600000 18.700000 19.666667 9.700000 100.063333 Thunderstorms, Rain, Fog 20.600000 18.600000 88.000000 19.000000 4.800000 100.080000 data.head(2) In [125... Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[125]: **0** 1/1/2012 0:00 -1.8 -3.9 86 8.0 101.24 Fog **1** 1/1/2012 1:00 -3.7 101.24 Fog data.groupby('Weather').min() In [126... Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[126]: Weather 1/11/2012 1:00 0 Clear -23.3 -28.5 20 11.3 99.52 18 98.39 Cloudy 1/1/2012 17:00 -21.4 -26.8 11.3 0 97.84 Drizzle 1/23/2012 21:00 1.1 -0.2 74 6.4 Drizzle,Fog 1/23/2012 20:00 85 1.0 98.65 0.0 -1.6 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 92 9.7 100.63 0.9 0.1 Drizzle,Snow,Fog 12/18/2012 21:00 7 0.3 -0.1 92 2.4 97.79 1/1/2012 0:00 80 0 0.2 98.31 Fog -16.0 -17.2 **Freezing Drizzle** -12.2 78 1/13/2012 10:00 -9.0 6 4.8 98.44 Freezing Drizzle,Fog 1/1/2012 2:00 -6.4 -9.0 82 3.6 98.74 9 100.28 Freezing Drizzle, Haze 2/1/2012 11:00 -5.8 -8.3 81 2.0 Freezing Drizzle, Snow 1/13/2012 3:00 -10.4 79 99.19 -8.3 2.4 71 0 101.97 **Freezing Fog** 1/22/2012 6:00 -19.0 -22.9 0.2 Freezing Rain 1/13/2012 11:00 -9.0 81 2.8 98.22 -6.5 Freezing Rain,Fog 1/17/2012 23:00 -6.1 -8.7 82 7 2.8 98.32 2/1/2012 14:00 82 100.34 Freezing Rain, Haze -4.9 -7.5 2.0 92 28 100.95 Freezing Rain, Ice Pellets, Fog 12/17/2012 3:00 -2.6 -3.7 8.0 Freezing Rain, Snow Grains 84 32 1/13/2012 9:00 -5.0 -7.3 4.8 98.56 68 0 100.35 Haze 1/22/2012 12:00 -11.5 -16.0 4.8 **Mainly Clear** 1/10/2012 11:00 -22.8 -28.0 20 0 12.9 98.67 17 **Moderate Rain, Fog** 12/10/2012 8:00 1.7 8.0 94 6.4 99.98 1/12/2012 15:00 83 26 0.6 99.88 **Moderate Snow** -6.3 -7.6 Moderate Snow, Blowing Snow 12/27/2012 10:00 -5.5 -6.6 92 39 0.6 100.50 -28.5 18 0 98.36 **Mostly Cloudy** 1/1/2012 16:00 -23.2 11.3 1/1/2012 18:00 0.3 -5.7 40 0 4.0 97.52 Rain -7.2 37 98.51 **Rain Showers** 1/1/2012 22:00 1.6 6.4 Rain Showers,Fog 10/20/2012 3:00 12.8 12.1 96 13 6.4 99.83 **Rain Showers, Snow Showers** 75 17 19.3 101.09 11/4/2012 8:00 2.1 -1.8 83 0 Rain,Fog 1/23/2012 18:00 0.0 -1.2 2.0 98.61 3/13/2012 7:00 Rain, Haze 4.0 1.0 81 4.0 100.50 Rain,Ice Pellets 12/18/2012 5:00 0.6 -0.6 92 24 9.7 100.12 1/10/2012 5:00 81 13 Rain, Snow 0.6 -1.7 2.4 98.18 12/21/2012 0:00 26 100.60 **Rain, Snow Grains** 1.9 -2.1 75 25.0 0.3 100.73 Rain, Snow, Fog 12/8/2012 21:00 8.0 96 6.4 Rain, Snow, Ice Pellets 12/21/2012 1:00 0.9 -0.7 88 17 4.8 99.85 1/10/2012 1:00 -16.7 -24.6 1.0 97.75 Snow 99.70 **Snow Pellets** 11/24/2012 15:00 0.7 -6.4 59 35 2.4 **Snow Showers** 1/12/2012 7:00 -13.3 -19.3 52 2.4 99.49 Snow Showers, Fog 7 12/26/2012 9:00 -11.3 -12.7 89 4.0 100.63 **Snow,Blowing Snow** 1/13/2012 21:00 -12.0 -16.2 70 24 0.6 98.11 -12.0 77 99.38 **Snow,Fog** 12/16/2012 15:00 -10.1 4 1.2 80 4.0 100.61 Snow, Haze 2/1/2012 17:00 -4.3 -7.2 19 **Snow,Ice Pellets** 12/10/2012 3:00 -5.9 76 2.8 99.40 -4.3 19.4 67 24.1 99.84 **Thunderstorms** 7/16/2012 1:00 21.6 Thunderstorms, Heavy Rain Showers 5/29/2012 6:00 10.9 9.0 88 9 2.4 100.26 18.5 93 15 3.2 100.01 Thunderstorms, Moderate Rain Showers, Fog 7/17/2012 6:00 19.6 5/25/2012 20:00 100.19 19.4 18.2 83 4 16.1 Thunderstorms, Rain 5/29/2012 16:00 7.0 68 6.4 99.65 Thunderstorms, Rain Showers 11.0 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 data.groupby('Weather').max() In [127... Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[127]: Weather Clear 9/9/2012 5:00 32.8 20.4 99 33 48.3 103.63 Cloudy 30.5 22.6 99 54 48.3 103.65 9/9/2012 23:00 Drizzle 9/30/2012 3:00 18.8 17.7 96 30 25.0 101.56 Drizzle,Fog 9/30/2012 2:00 19.1 100 28 9.7 102.07 19.9 Drizzle,Ice Pellets,Fog 20 12/17/2012 9:00 0.4 -0.7 92 4.0 100.79 11.3 Drizzle,Snow 12/19/2012 18:00 1.2 0.2 95 19 101.15 Drizzle, Snow, Fog 12/22/2012 3:00 1.1 0.6 98 32 9.7 100.15 9/22/2012 0:00 20.8 19.6 100 22 103.04 9.7 Fog 26 **Freezing Drizzle** 2/1/2012 5:00 -2.3 -3.3 93 12.9 101.02 12/10/2012 5:00 -2.3 94 33 8.0 101.27 Freezing Drizzle,Fog -0.3 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 94 24 12.9 101.18 -3.3 -4.6 **Freezing Fog** 3/17/2012 6:00 -0.1 -0.3 99 9 8.0 102.85 2/1/2012 7:00 -1.7 92 28 16.1 101.00 Freezing Rain 0.3 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 28 12/17/2012 3:00 -2.6 -3.7 92 8.0 100.95 Freezing Rain, Snow Grains 1/13/2012 9:00 -7.3 84 32 4.8 -5.0 98.56 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 8.0 94 17 6.4 99.98 12/27/2012 9:00 -6.7 93 39 8.0 100.67 **Moderate Snow** -4.9 Moderate Snow, Blowing Snow 12/27/2012 12:00 -5.4 -6.4 93 41 0.6 100.64 100 83 103.65 **Mostly Cloudy** 9/9/2012 2:00 32.4 24.4 48.3 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 78 28 101.11 2.2 -1.2 24.1 Rain,Fog 9/30/2012 23:00 21.7 19.5 100 46 9.7 101.77 3/13/2012 9:00 86 17 9.7 100.61 Rain,Haze 5.5 2.9 Rain,Ice Pellets 12/18/2012 5:00 0.6 -0.6 92 24 9.7 100.12 4/23/2012 3:00 0.5 94 52 101.07 1.7 25.0 Rain, Snow Rain, Snow Grains 12/21/2012 0:00 1.9 -2.1 75 26 25.0 100.60 12/8/2012 21:00 8.0 0.3 96 100.73 Rain, Snow, Fog 6.4 Rain, Snow, Ice Pellets 12/21/2012 5:00 1.3 0.1 94 28 6.4 100.47 4/27/2012 9:00 0.3 96 57 102.73 3.7 25.0 Snow Snow Pellets 11/24/2012 15:00 0.7 -6.4 59 35 2.4 99.70 37 102.50 3/4/2012 21:00 2.9 -0.7 94 48.3 **Snow Showers 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 3/14/2012 19:00 1.1 8.0 99 35 9.7 102.07 Snow,Fog -3.6 -6.4 81 15 100.99 Snow, Haze 2/1/2012 21:00 6.4 **Snow,Ice Pellets** 3/3/2012 4:00 8.0 -1.7 92 33 11.3 100.96 7/4/2012 16:00 20.1 87 15 25.0 100.62 **Thunderstorms** 26.7 2.4 Thunderstorms, Heavy Rain Showers 5/29/2012 6:00 10.9 9.0 88 9 100.26 19.6 18.5 93 15 3.2 100.01 Thunderstorms, Moderate Rain Showers, Fog 7/17/2012 6:00 7/23/2012 18:00 21.3 19.1 93 30 24.1 100.83 Thunderstorms, Rain Thunderstorms, Rain Showers 25.5 23.1 98 32 25.0 101.06 9/8/2012 4:00 Thunderstorms, Rain Showers, Fog 7/31/2012 20:00 22.9 21.3 91 35 9.7 100.64 7/17/2012 5:00 Thunderstorms, Rain, Fog 20.6 18.6 88 19 4.8 100.08 #weather Fog In [136... data[data['Weather'] == 'Fog'] Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[136]: 1/1/2012 0:00 -3.9 86 101.24 -1.8 4 8.0 Fog 1 1/1/2012 1:00 -1.8 -3.7 87 8.0 101.24 Fog 1/1/2012 4:00 -3.3 7 101.23 -1.5 88 4.8 Fog 1/1/2012 5:00 -1.4 -3.3 87 6.4 101.27 Fog 1/1/2012 6:00 7 6 -1.5 -3.1 89 101.29 6.4 Fog 12/29/2012 4:00 8716 -16.0 -17.2 90 6 9.7 101.25 Fog 8717 12/29/2012 5:00 -15.9 101.25 -14.8 Fog 8718 12/29/2012 6:00 -13.8 -15.3 88 101.25 4 9.7 Fog 8719 12/29/2012 7:00 -16.4 88 8.0 101.22 -14.8 Fog **8722** 12/29/2012 10:00 -12.0 -13.3 90 7 6.4 101.15 150 rows × 8 columns data.head(2) In [140... Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Weather Out[140]: **0** 1/1/2012 0:00 -1.8 -3.9 101.24 Fog **1** 1/1/2012 1:00 -3.7 87 101.24 -1.8 8.0 Fog data[(data['Weather'] == 'clear') & (data['Rel Hum_%'] >50) | (data['Visibility_km'] > 40)] Date/Time Temp_C Dew Point Temp_C Rel Hum_% Wind Speed_km/h Visibility_km Press_kPa Out[141]: 1/5/2012 10:00 107 1/5/2012 11:00 -10.2 -5.6 70 48.3 100.41 Mainly Clear 1/5/2012 12:00 -9.6 Mainly Clear 108 -4.7 69 20 48.3 100.38 1/5/2012 13:00 -4.4 -9.7 66 26 48.3 100.40 Mainly Clear 109 100.46 Mainly Clear 110 1/5/2012 14:00 -10.7 65 22 48.3 **8748** 12/30/2012 12:00 -12.2 -15.7 75 26 48.3 100.91 Mostly Cloudy **8749** 12/30/2012 13:00 -16.2 73 37 -12.4 48.3 100.92 Mostly Cloudy Mainly Clear **8750** 12/30/2012 14:00 -11.8 -16.1 70 37 48.3 100.96 **8751** 12/30/2012 15:00 -15.6 70 48.3 101.05 Mainly Clear -11.3 **8752** 12/30/2012 16:00 -11.4 -15.5 72 26 48.3 101.15 Mainly Clear 2014 rows × 8 columns