**REPORT**

### Find all the unique 'Wind Speed' values in the data.

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* Here, the code n unique () gives 34 number of unique values of a weather data of a windspeed column. The unique () gives the unique values of wind speed.

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

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### Here, the code represents the number of occurences of weather condition when “weather is exactly Clear”.

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

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### This code tells to select rows when the wind speed is 4 km/h and then counts the number of such rows, storing the count in the variable windspeed count.

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

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### In code it provides to find out how many null values are there in each column of the data frame and counts the null values of each column. Here it returns all sum of null value columns in weather data.

### 5.Rename the column name 'Weather' of the data frame to 'Weather Condition'.

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### This code tells renaming operation does not modify the original data frame but creates a new data frame with the modified column name. Here weather column is renamed as weather condition.

### 6. What is the mean 'Visibility' ?

### It computes the average visibility in kilometeres based on values present in the visibility column.

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

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### In above code , it tells about the standard deviation of atmospheric pressure values in “pressure” column.

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

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### It calculates the variance of the relative humidity values in the “ Rel Hum\_%” column of the weather data. Variance provides insight into how much the humidity values deviate from their mean value , giving a measure of the dispersion or spread of the relative humidity datapoints.

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

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### In above it computes to find all rows where snow was recorded in weather column.

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### In above code ,it is a data frame that contains only the rows from the “Weather “column where the weather is “Snow”.

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

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### The resulting data frame contains only the rows where the windspeed is greater than 24 km/h and visibility is 25km.

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### It computes data frame that contains only the rows where “Wind speed\_ km/h” and “visibility\_ km” columns where the wind speed is greater than 24 km/h and visibility is 25 km.

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

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### It is a data frame with column would calculate the mean only and provide a Series with the mean values for those columns.

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

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### The result is a data frame where each column contains two rows-one representing the minimum value and the other representing the maximum value for corresponding column “weather”.

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

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### It interprets a data frame containing only the rows where the weather condition is “fog”. It shows all the rows where weather condition is fog.

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### It computes a data frame that contains only the rows from the “weather” column where the weather condition is fog.

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

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### The resulting data frame contains only the rows where the weather condition is “Clear” or the visibility is greater than 40 km.

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### It represents a data frame that contains only 2 columns from the weather and visibility\_ km columns where the weather condition is “Clear” or the visibility is greater than 40 km.

### 15. Find all instances when:

#### **A. 'Weather is Clear' and 'Relative Humidity is greater than 50'**

#### **or**

#### **B. 'Visibility is above 40'**

### 

### It represents a data frame containing only the rows where either the weather condition is “ Clear ” and relative humidity is greater than 50% or the visibility is greater than 40km.

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* It computes data frame containing only the rows from the "Weather", " Rel Hum\_%", and "Visibility\_ km" columns where either the weather is 'Clear' and relative humidity is greater than 50% or visibility is greater than 40 km.