

## Group Team Build: Final Project 14

### Dataset : Seattle Weather Dataset

- This dataset comprises daily weather records for Seattle, Washington, containing information on precipitation(in inches),maximum and minimum temperatures, wind speed and categorical weather conditions.it serves purposes like weather prediction, climate analysis, and urban planning, aiding meteorologists, researches and urban planners in understanding and utilizing historical weather patterns.

### Part 1: Three ideas for problem statement:

- Meteorological Prediction: Depending upon history climate information, build an automatic learning technique for predicting everyday climate variables in Seattle, Washington, comprising rainfall, temperature, and speed of the wind. Submit a review of the algorithm's precision and give insight into how it performs during various times of year.
- Analyse the overall trends and variations in meteorological information from Seattle during the last few years to see how global warming has impacted the region. Examine the historical trends in humidity, precipitation, and other atmospheric factors, as well as any prospective regional effects of global warming.
- Develop a method for detecting anomalous conditions or sudden occurrences within the Seattle temperature dataset by utilizing artificial intelligence methods. Give information on the occurrence and impact of phenomena such as intense rains, extreme temperatures, or unexpected decreases in temperature.

### Part 2: what company would hire me:

- A local power provider corporation named "Seattle Energy Solutions" is one that might probably acquire me according to its description relating with the Seattle weather dataset. Here are some of the reasons companies might hire me and some strategies for using the data:
- Seattle Energy Solutions might hire me since exact weather estimation and climate assessment are essential for streamlining processes and improving client relations. To arrive at educated choices in multiple areas of an organization, they need knowledge about climate patterns and abnormalities.
- Weather predictions can be used by the business to maximize energy output. For example, when a severe heat wave is expected, companies can get ready for higher cooling demand and change their power production appropriately.
- The data might be utilized for establishing fresh laws for power generation and transmission because of severe weather, thereby enhancing the power system's dependability.

### Part 3:

- The following query returns the average temperature every day for every month.

#### select

```
extract(month from date) as month,  
avg(temp_max) as average_max_temperature,  
avg(temp_min) as average_min_temperature
```

#### from

```
weather
```

#### group by

```
month
```

#### order by

```
month;
```

- The following query used to determine which days are raining every year above the value 0.1

#### select

```
extract(year from date) as year,  
count(*) as rainy_days
```

#### from

```
weather
```

#### where

```
precipitation >= 0.1
```

#### group by

```
year
```

#### order by

year;

- The query includes the date and highest temperature for the warmest day ever recorded.

```
select
    date,
    temp_max
from
    weather
order by
    temp_max desc
limit 1;
```

- This query determines the windiest periods and computes the monthly average velocity of the wind.

```
select
    extract(month from date) as month,
    avg(wind) as average_wind_speed
from
    weather
group by
    month
order by
    average_wind_speed desc;
```

- The query returns the time and highest temperatures for any days that were hotter than 90° Fahrenheit.

```
select
    date,
    temp_max
from
    weather
where
    temp_max > 90
order by
    date;
```

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