ADVANCED DATABASE TOPICS

University of Windsor

Milestone 2

Temperature Data Visualization

Submitted By: Group 2

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Synopsis

We, the members of group 2, have tried modelling global Temperature Data in two ways for the Milestone 2 Submission: - “Include Prototype of your model (video) or screenshot of each completed steps and required sources”.

For each step previously mentioned for our project, we have finished the following things:

1. Finding appropriate dataset:

We have worked on two major datasets for this milestone:

1. Global Temperature Data: https://www.kaggle.com/sudalairajkumar/daily-temperature-of-major-cities
2. The dataset available on Canada’s Website month wise: https://climate.weather.gc.ca/prods_servs/cdn_climate_summary_e.html

Also, as we are working on visualizations, we have not limited ourselves to any one dataset, and might use more datasets for final submission.

2.Researching visualizations on datasets and deciding our own visualizations

As read in many datasets, we decided to visualize data for two scenarios:

1. For the World
2. Comparing temperature data before and after COVID-19 pandemic

3.Learning how to visualize data

We spent much time on this step, on learning Tableau, connecting datasets and how everything works

5. Cleaning the dataset and removing unnecessary values if needed and Converting the dataset into appropriate formats

Merged the monthly datasets available from https://climate.weather.gc.ca/prods_servs/cdn_climate_summary_e.html into a single dataset and included month and year fields

6.Feeding the dataset into the appropriate tool (Tableau, Kaggle etc):

We have shown the results of this step in the given below screenshots:

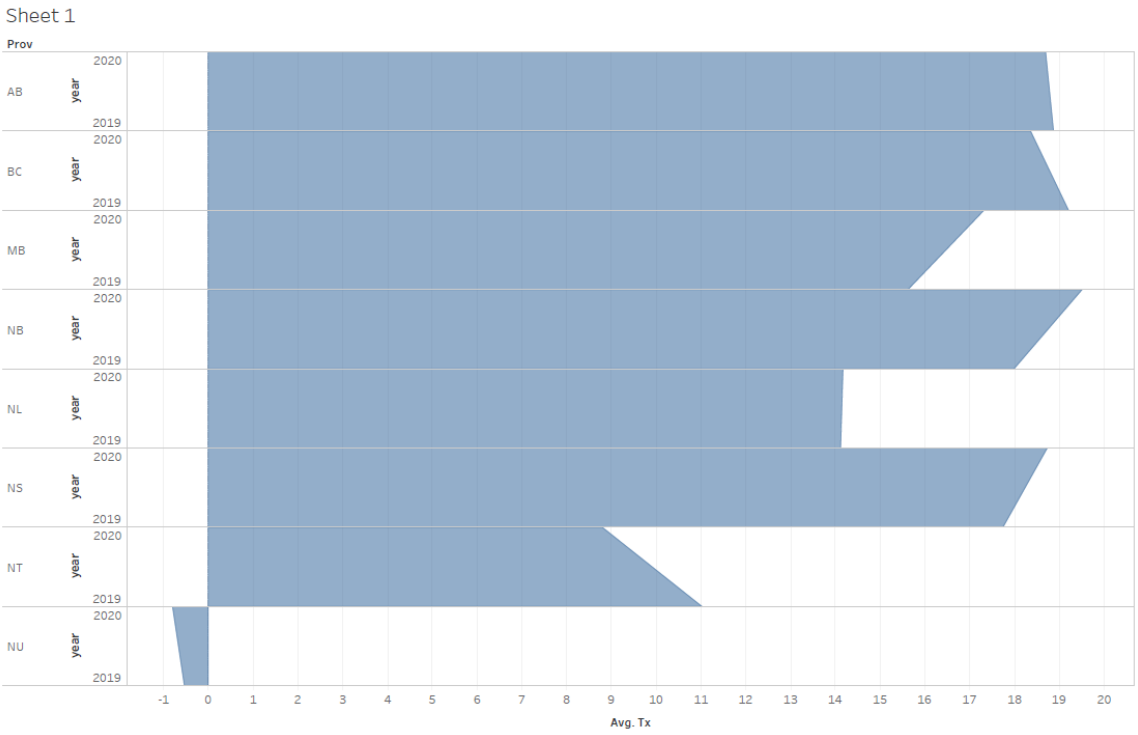
By using Tableau, we have generated two visualizations for prototype:

1. Global Temperature Data:
    - This dataset has daily average temperatures of major cities of the world.

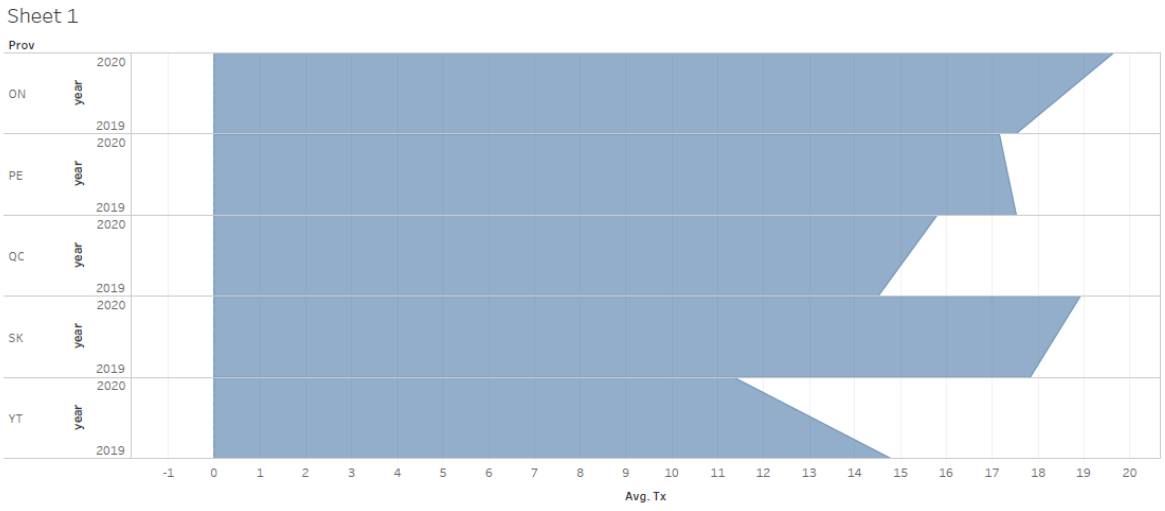
- Here we have map based on Longitude (generated) and Latitude (generated).
- Colour shows sum of AvgTemperature. Details are shown for Country.
- The data is filtered on Month, Year and Day. The Month filter ranges from 1 to 12. The Year filter ranges from 1995 to 2020. The Day filter ranges from 0 to 31.

Map based on Longitude (generated) and Latitude (generated). Color shows sum of AvgTemperature. Details are shown for Country. The data is filtered on Month, Year and Day. The Month filter ranges from 1 to 12. The Year filter ranges from 1995 to 2020. The Day filter ranges from 0 to 31.

2. Comparing Temperature data before and after pandemic for Canada:
    - We have taken temperature data month wise for January-July 2019 and 2020
    - We have the theory that as lockdown was imposed due to less pollution, there can be temperature decrease in many states as compared to previous years
    - This is seen from the derived visualizations



The plot of average of Tx for year broken down by Prov. The view is filtered on year, which ranges from 2019 to 2020.



The plot of average of Tx for year broken down by Prov. The view is filtered on year, which ranges from 2019 to 2020.

NOTE: We have also submitted the pdf versions of our visualizations.

GITHUB URL: https://github.com/Dhairya715/adt-project