Climate Change

Claire Lee, Samyu Krishnasamy, Bianca Linares, Semin Ahn

Data Selection - Climate Change: Earth Surface Temperature Data

Global Land Temperatures By Major City

- dt (date)
- Average Temperature
- Average Temperature Uncertainty
- City
- Country
- Latitude
- Longitude

Global Land Temperatures By State

- dt (date)
- Average Temperature
- Average Temperature Uncertainty
- State
- Country

Goal: Analyze long-term climate trends to uncover regional variations in surface temperatures across major cities and states, focusing on:

- Identifying global warming patterns by observing changes in average temperatures over time.
- Comparing temperature trends between urban areas (major cities) and broader regions (states) to understand the impact of urbanization and industrialization.

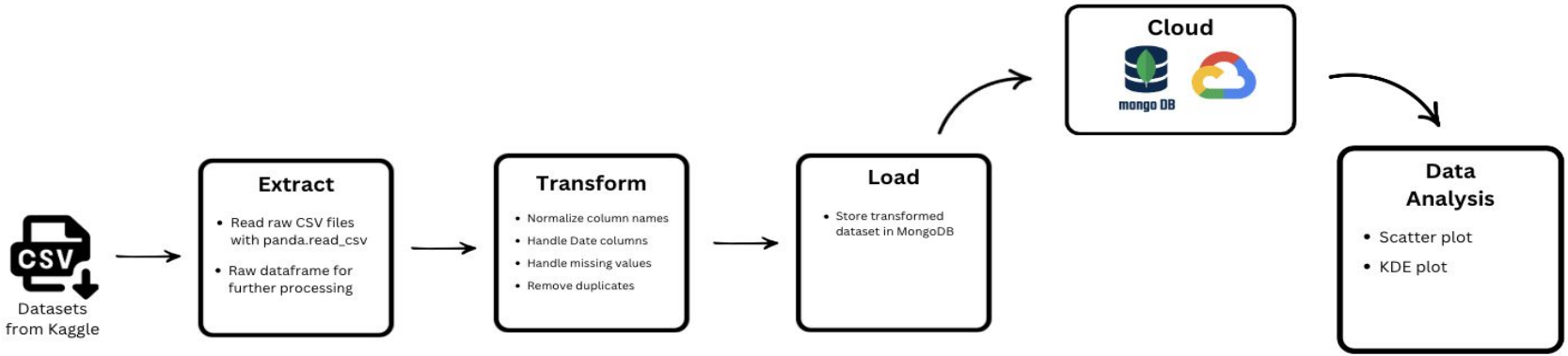
Difficulties

- Finding datasets that were both relevant to the assignment and had enough data.
- Another difficulty was finding a dataset that was made by a credible source

Provenance: Berkeley Earth Surface Temperature Study

https://github.com/claireylee/DataScienceFinalProject

ETL Pipeline



Cloud Storage

Project Creation:

- Created a Google Cloud project to manage resources and permissions
- Enabled necessary APIs

BigQuery Dataset Setup:

- Navigated to BigQuery Console in the Google Cloud
- Created new datasets to organize and store transformed data

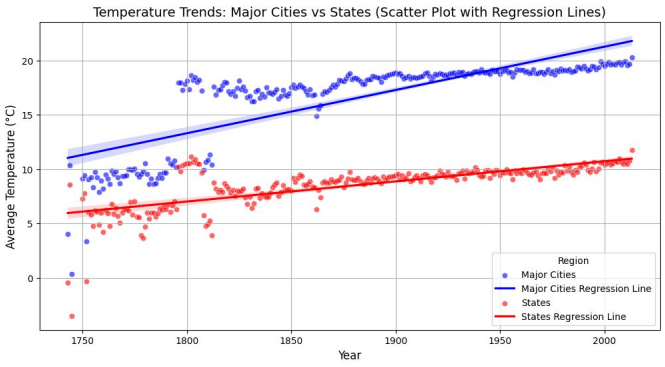
Data Upload:

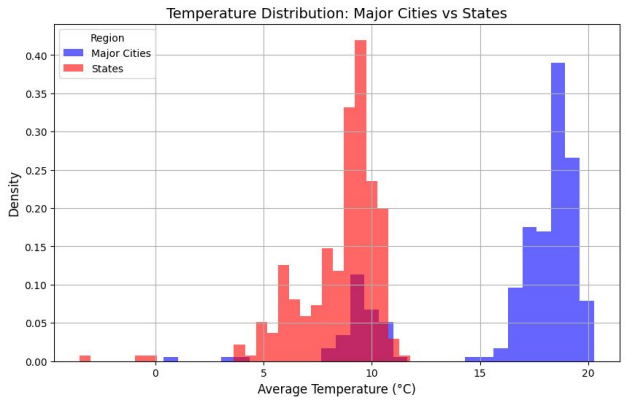
- Uploaded transformed datasets directly to BigQuery tables
- Defined table schemas to match the structure of the transformed data

Data Accessibility:

- Ensured the data is securely stored and accessible for analysis

Analysis





=======Major City=======

	averagetemperature	averagetemperatureuncertainty
count	228175	228175
mean	18.125969	0.969343
std	10.024800	0.979644
min	-26.772000	0.040000
25%	12.710000	0.340000
50%	20.428000	0.592000
75%	25.918000	1.320000
max	38.283000	14.037000

=======State=======

	averagetemperature	averagetemperatureuncertainty
count	620027	620027.000000
mean	8.993111	1.287647
std	13.772150	1.360392
min	-45.389000	0.036000
25%	-0.693000	0.316000
50%	11.199000	0.656000
75%	19.899000	1.850000
max	36.339000	12.646000