21CSA523A Data Engineering for AI

Mid Review Report

Weather pattern study of major cities in India

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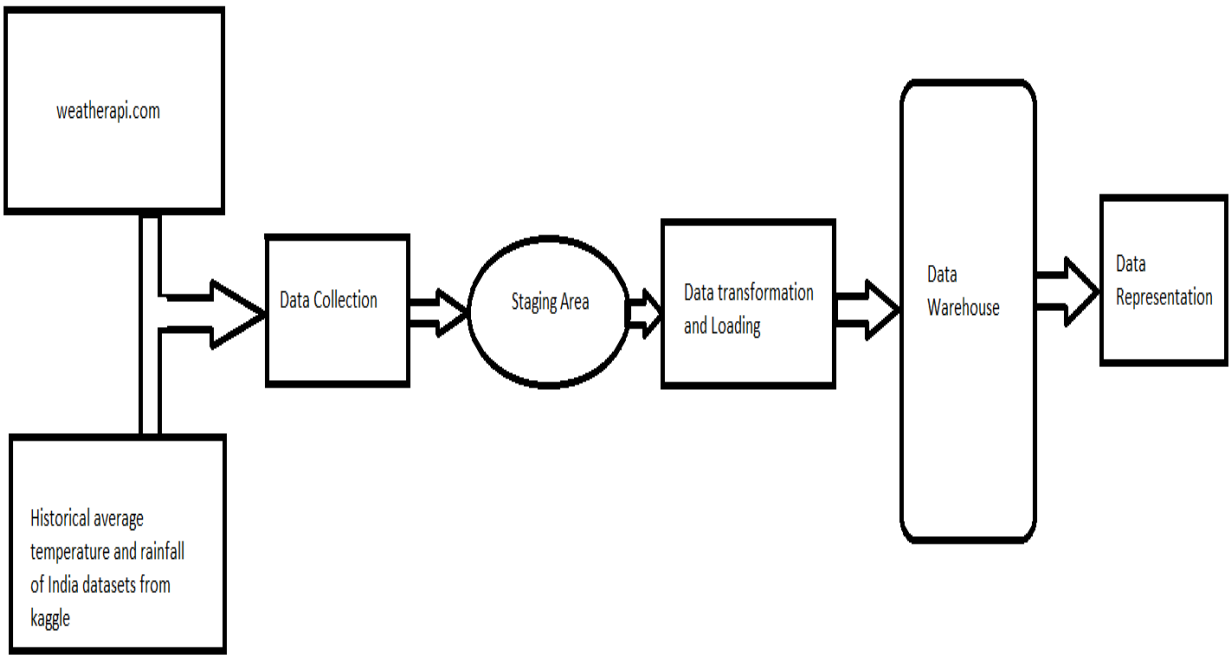
March 2023

Objective: Weather factors like rainfall, temperature affects almost every field of human life like agriculture, traffic management, water supply management and others. Objective of this project is to extract available weather data (2010 to present) of state capital cities/major cities of India from weatherapi.com, store it in database and present the main parameters like rainfall, avg temp using graphs and charts. Also average of rainfall and temperature of cities of India will be compared with historical average rainfall and temperature dataset of India to get approximate idea of changes in weather patterns if any.

Block Diagram: [Specific components. How are they connected?]



Tools Used: Python, Postgres, Mongodb(Depending on data imported from weatherapi), databricks and airflow (will try to use these technologies as per requirement)

Dataset details: Weather data of major/state capital cities from weatherapi.com (https://www.weatherapi.com/docs/), historical mean temperature of india Kaggle dataset (https://www.kaggle.com/datasets/mahendran1/weather-data-in-india-from-1901-to-2017), rainfall of india Kaggle dataset (https://www.kaggle.com/datasets/rajanand/rainfall-in-india)

Plan to Execute:

1) Data structure study of information receiving from weatherapi.com and database architecture design required to store that data along with Kaggle datasets.
2) Code to import data from weatherapi to staging area and transform it.
3) Store transformed data in data warehouse.
4) Represent main parameters from transformed data.