DAY 2

Sub-types of Data

1. **Geographical** (geospatial data or geodata): Data that has a location and descriptive attributes.

**Application**: Navigation & Mapping,Environmental Monitoring, etc.

1. **Financial**: information related to money, investments, economic activities, and business performance.

**Application**: Investment Analysis, Risk Management, Corporate Decision-Making, etc.

1. **Natural**: refers to raw, unprocessed data collected from real-world sources without any modifications, transformations, or filtering.

**Application**: Artificial Intelligence & Machine Learning, Healthcare & Medicine, Business & Marketing, Smart Cities.

1. **Cultural**: any information related to culture, art, and humanities. This data can come from private collections, publications, letters, websites, social media, events, interviews, etc.

**Application**: Cultural Chatbots & Virtual Assistants, Digital Archives, Smart Tourism.

1. **Scientific**: consists of measured, observed, or simulated data from experiments and research.

**Application**: Drug Discovery, Biodiversity Conservation, Robotics & Automation, Renewable Energy Development.

1. **Statistical**: a collection of facts, measurements, or observations that are used to analyze and make decisions.

**Application**: Risk Assessment, Weather Predictions, Clinical Trials.

1. **Meteorological**: information about the weather collected over a period of time at a specific location.

**Application**: Weather Forecasting & Climate Studies, Flight Safety & Navigation, Disaster Management and Pollution Control.

1. **Transport data**: refers to information related to the movement of people, goods, and vehicles, collected from various sources like GPS, traffic sensors.

**Application**: Real-Time Traffic Monitoring, Route Planning, Self-Driving Cars.

Research and gather data of your choice with clear goals and objective with proper and valid information

Goal:

To understand the relationship between global temperature anomalies,rising CO₂ levels, and notable climate events to assess the impact of climate change and support informed decision-making.

Objectives:

1. Identify Trends
   * Analyze the year-over-year increase in temperature anomalies and **CO₂** concentration levels.
   * Detect patterns in extreme climate events.
2. Examine Correlation
   * Investigate how rising CO₂ levels are associated with temperature increases.
   * Assess whether specific climate events (e.g., wildfires, hurricanes) correspond with temperature anomalies.
3. Predict Future Climate Risks
   * Use historical data to forecast potential temperature anomalies for future years.
   * Predict the likelihood of extreme weather events based on trends.
4. Support Climate Mitigation Strategies

* Provide data-driven insights for policymakers to develop climate adaptation measures.
* Encourage sustainable practices by highlighting the impact of CO₂ emissions on global temperatures.

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| **Year** | **Global Temperature Anomaly (°C)** | **CO₂ Concentration (ppm)** | **Notable Climate Events** |
| 2013 | 0.62 | 395.4 | Heat waves |
| 2014 | 0.74 | 397.2 | Polar ice melt |
| 2015 | 0.93 | 399.4 | Extreme drought |
| 2016 | 1 | 404.2 | Strong El Niño |
| 2017 | 0.91 | 406.5 | Hurricane activity |
| 2018 | 0.82 | 408.5 | Wildfires |
| 2019 | 0.95 | 411 | Ocean acidification |
| 2020 | 0.98 | 414.2 | Sea level rise |
| 2021 | 0.84 | 416.5 | Arctic ice loss |
| 2022 | 0.86 | 419 | Flooding |
| 2023 | 1.17 | 420 | Record global heat |
| 2024 | 1.29 | 422.2 | Extreme storms |