**Hackathon Report**

**Team Name:** Team Hawks

**Problem Definition:** Use weather datasets to predict temperature, rainfall, or other conditions for specific regions. This can help in planning for agricultural or travel needs

**Aim:** Weather Data Analysis and Prediction

### **Datasets Overview**

#### **1. Dataset 1:** <https://docs.google.com/spreadsheets/d/1U3_PY6l4tmc285OujdxrU5L_PzAmpsMZ9OBJhT4DRbw/edit?gid=206377849#gid=206377849>

* **Description:** This dataset contains real-time weather information for various cities collected on January 20, 2025. It provides the data of current weather conditions, including:

Temperature: Current air temperature in degrees Celsius.

Weather Description: Textual description of the current weather conditions, such as "Cloudy," "Rainy," "Sunny," "Overcast," "Snow," "Fog," etc.

* **Methods of Collection:** Web scraping was performed to extract the weather data from [timeanddate.com](http://timeanddate.com).This technique involves using automated scripts.

Fetch web pages: The script accesses the specified URLs on [timeanddate.com](http://timeanddate.com) for each city.

Parse HTML: The script analyzes the HTML code of the fetched pages to locate and identify the specific elements containing the desired information (temperature and weather description).

Extract and Store data: The script extracts the relevant data from those identified elements. The extracted data is then organized and stored in a structured format, such as a CSV file, for further analysis.

* **Tools Used:** Python with package **requests**, **Beautiful Soup**, **Scrapy**, **Selenium** .  
   **Web Scraper (Chrome) ,  
   Data Scraper (Chrome).**

#### **2. Dataset 2:** <https://docs.google.com/spreadsheets/d/1KErABQXsGaR-xC3ofyUpphThwr6RSUBLO32rDLl2XOo/edit?gid=1362299547#gid=1362299547>

* **Description:** This CSV dataset presents average temperature data for the capital cities of Indian states. It encompasses three key fields: "State Name", "Average Temperature" and “Capital”.
* **Methods of Collection:** The dataset was collected using web scraping techniques from [timeanddate.com](http://timeanddate.com). This method involved extracting relevant information programmatically to ensure accuracy and efficiency in data acquisition. The process adhered to ethical web scraping practices, focusing solely on publicly accessible data.
* **Tools Used:** Python with package **requests**, **Beautiful Soup**, **Scrapy**, **Selenium** .  
   Survey reports,  
   **Web Scraper (Chrome) ,  
   Data Scraper (Chrome)**

#### **3. Dataset 3:** <https://docs.google.com/spreadsheets/d/1XToyR5NzmTZw1Fw7tusagoJQyMIRGljk07iATjR1VmE/edit?gid=0#gid=0>

* **Description:** The second dataset is a CSV file containing weather data for Nagpur over the past 1.5 years. The data is organized on a daily basis and includes the following fields:

**Minimum Temperature (Min Temp):** The lowest temperature recorded for the day.  
**Maximum Temperature (Max Temp):** The highest temperature recorded for the day.  
**Description:** Weather conditions such as fog, rain, etc.  
**Pressure:** Atmospheric pressure measured.  
**Wind Speed:** The speed of wind recorded during the day.  
This dataset provides a comprehensive overview of Nagpur's weather trends over the specified period.

* **Methods of Collection:** The weather dataset was collected from<https://www.worldweatheronline.com/>. It provides detailed daily weather data for Nagpur spanning the past 1.5 years. The dataset includes key attributes such as minimum and maximum temperatures, weather descriptions (e.g., fog, rain), atmospheric pressure, and wind speed, offering valuable insights into the city's historical weather trends.
* **Tools Used:** Web Scraper (Chrome) ,  
   Python packages such as pandas, numpy.  
   MS Excel tools