

Homework: Pokemon

CP020001 Computer Programming
Khon Kaen University

(10 Points) Basic Dataframe

Homework: Pokémon Dataset Analysis

Objective:

In this assignment, you will practice data analysis using a Pokémon dataset. The dataset contains information about 100 Pokémon, and your task is to perform various operations and answer questions using **Pandas**.



Dataset:

You can download the Pokémon dataset from the following link:

https://github.com/kaopanboonyuen/CP020001_ComputerProgramming_2026s1/raw/main/dataset/pokemon_data.csv

Dataset Features:

The dataset contains the following columns for each Pokémon:

- **Name:** The name of the Pokémon (e.g., Pikachu, Charizard, Bulbasaur, etc.)
- **Type:** The type of the Pokémon (e.g., Electric, Fire, Water, Grass, etc.)
- **Level:** The level of the Pokémon (a number between 1 and 100).
- **HP:** The Health Points (HP) of the Pokémon.
- **Attack:** The Attack stat of the Pokémon.
- **Defense:** The Defense stat of the Pokémon.
- **Speed:** The Speed stat of the Pokémon.
- **Region:** The region where the Pokémon is from (e.g., Kanto, Johto, Sinnoh, etc.).

Instructions:

1. Load the dataset:

Download the dataset from the link above and load it into a Pandas DataFrame.

2. Data Exploration:

Begin by exploring the dataset. Use basic functions to view the first few rows of the data, check for missing values, and examine the data types.

3. Answer the following questions:

For each question, perform the necessary operations in **Pandas** to get the correct answer.

Questions:

Q1: Find the top 5 Pokémon with the highest attack values.

Q2: What is the average HP of Pokémon from the “Fire” type?

Q3: Find all Pokémon that have both Attack and Defense values greater than 100.

Q4: Which Pokémon has the highest speed in the “Water” type?

Q5: Calculate the sum of all Pokémon’s HP values for each region.

Q6: What is the median level of Pokémon with the “Electric” type?

Q7: Find the Pokémon with the highest sum of Attack and Defense.

Q8: Count the number of Pokémon in each region.

Q9: Find all Pokémon with a level between 50 and 80 that have a Speed greater than 100.

Q10: Add a new column ‘Attack_to_Defense_Ratio’ and find the top 3 Pokémon with the highest ratio.

Submission:

- Complete the data analysis in a **Python script** or **Jupyter Notebook**.
- Submit your script or notebook along with any findings and explanations to your GitHub repository or the provided submission platform.

Notes:

- The dataset provided is a mock dataset and is **not** representative of real Pokémon data.
- **Do not** include any code solutions in your report. Focus on presenting your findings and the steps taken to achieve the results.
- Ensure that your analysis is well-organized, with clear explanations of each step.



add your tagline here

