

# Homework: Pokemon

CP020001 Computer Programming  
Khon Kaen University

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(10 Points) Basic Dataframe

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## 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](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.
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## 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.

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### 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*

