



Interactive-Pokédex Process Book

COM-480

Aayush Desai
Nivedita Rethnakar
Takeshi Kesaku

Our Project Goal

Our project began with the goal of creating an intelligent and interactive Pokédex that analyzes the strength of each Pokémon from a linguistic perspective. Since Pokémon is a globally popular franchise, we believed this unique angle could offer fresh insights.

As the project progressed, we also became interested in exploring how Pokémon strength, names, and generations relate to each other. Given that new Pokémon are introduced with every generation, uncovering these patterns became another key goal to make our project more engaging.



Related Work

Analyzing Pokémon names and their perceived strength from a linguistic perspective has already been done in Japanese, the original language of Pokémon.

Our project builds on a study by Shigeto Kawahara (2018), which found that voiced sounds in Japanese Pokémon names tend to signal strength and size. While this linguistic idea has been academically discussed, it hasn't been widely visualized or combined with broader stat data across all generations.

On the data side, we've seen YouTube creators use animation to explore Pokémon stats and size comparisons, but these are often informal and not interactive.

We aim to take that style of presentation and add analytical depth by connecting phonology to game stats.



Why Is Your Approach Original?

What makes our project original is its integration of linguistic features from Japanese name data with visualizations of stat and design trends across generations. To our knowledge, no existing visualization tool explores this specific intersection.

Dataset

We mainly used the following two datasets:

Pokédex for All 1025 Pokémon

This dataset, available on Kaggle, includes all Pokémon as of May 2025. It contains the following 10 columns:

ID: The dataset index, corresponding to the in-game Pokédex number

Name: The English name of the Pokémon

Height: Official Pokémon height

Weight: Official Pokémon weight

HP: Health points used in battle

Attack: Physical attack power

Defense: Physical defense power

Sp. Attack: Special attack power

Sp. Defense: Special defense power

Speed: Movement speed in battle



We mainly used this dataset to analyze the relationship between Pokémon strength and their names.

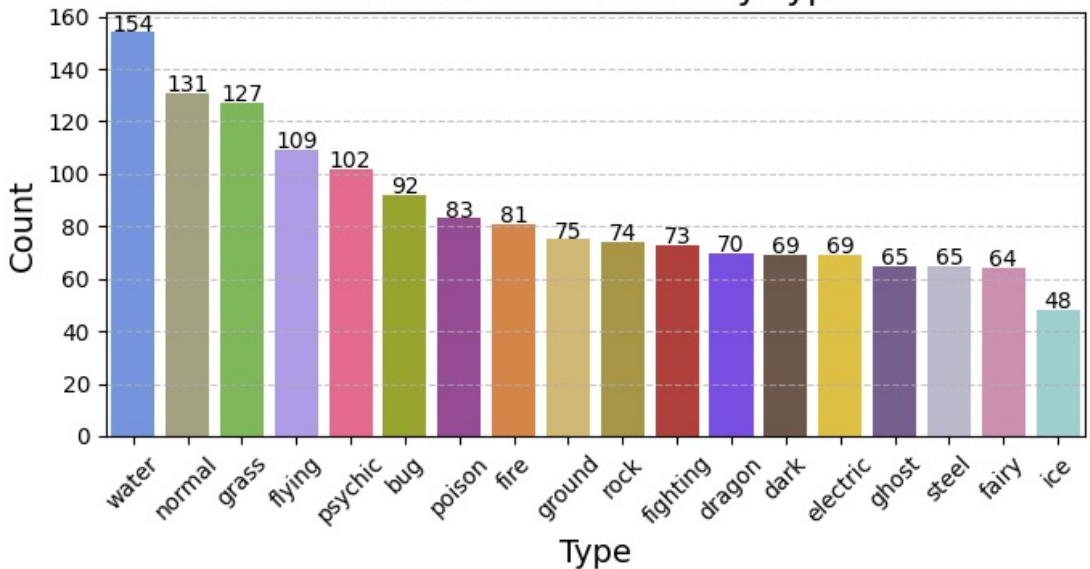
PokéAPI

This is a free API for accessing Pokémon data. We used it mainly to display images, types, and generation info for each Pokémon on our website.

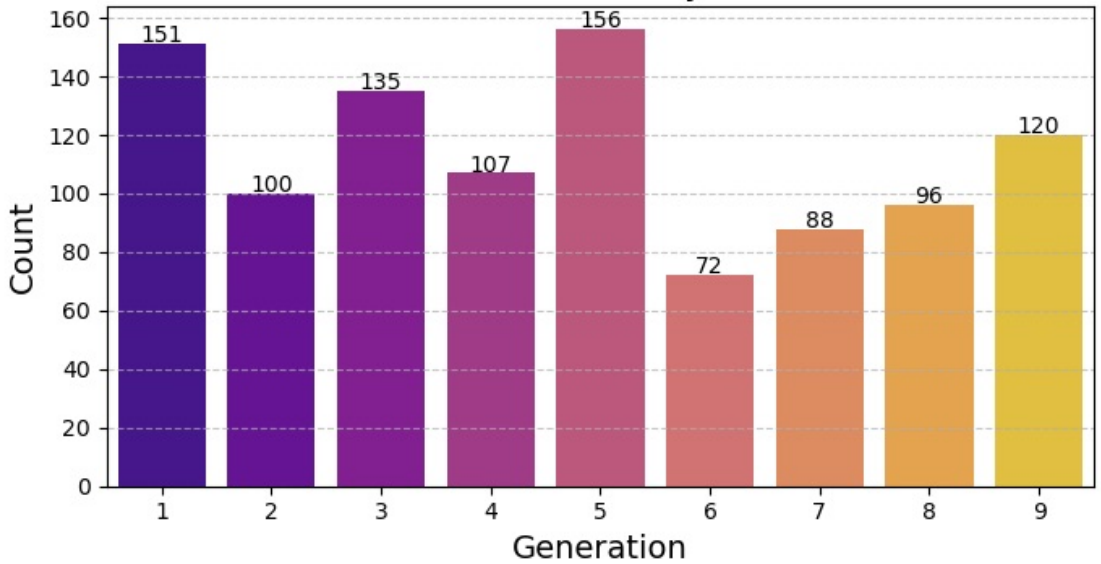
Data Analysis

Before diving into linguistic analysis, we conducted basic statistical analysis using the Pokédex dataset during Milestone 1.

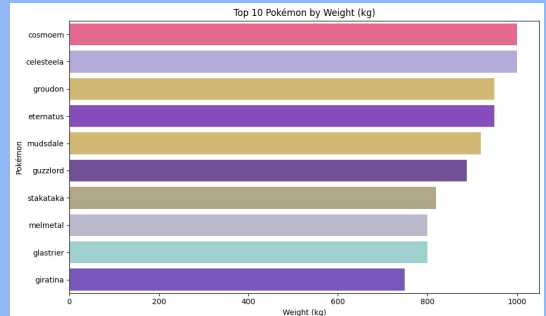
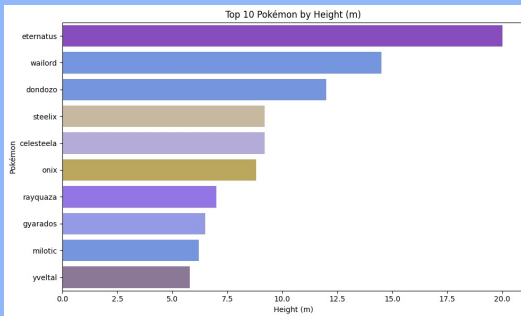
Number of Pokémon by Type

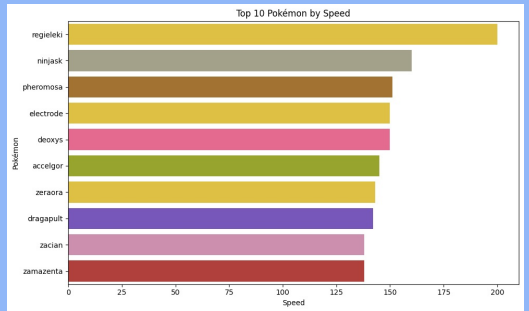
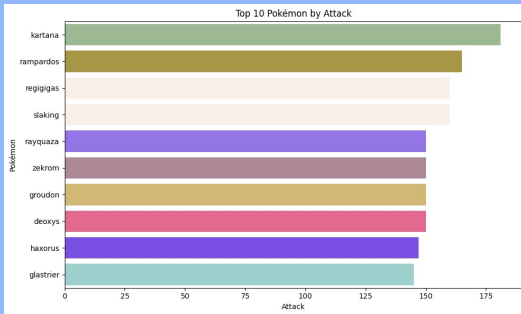


Number of Pokémon by Generation



Top 10 stats (excerpt)





Website Layout

In Milestone 2, we focused on turning our ideas into a real web layout.

To incorporate the concept of “generation,” we came up with the idea of displaying pixel-art images for each Pokémon generation using data from PokéAPI.

Since many users who played Pokémon as kids or teenagers have an emotional attachment to the generation they grew up with, we believed this would make our project more relatable and engaging.

Although we couldn't fully implement this idea by Milestone 2, we successfully did so in Milestone 3.

For the layout itself, we took inspiration from the design of the actual in-game Pokédex, making sure to capture the nostalgic look and feel that users remember from their childhood.

Between Milestones 2 and 3, we kept thinking about how to build a project that would spark users' sense of childhood wonder while also delivering a cool and interactive experience.



Interactive Pokédex

Explore Pokémon Stats and Linguistic Patterns

charizard



Charizard

リザードン

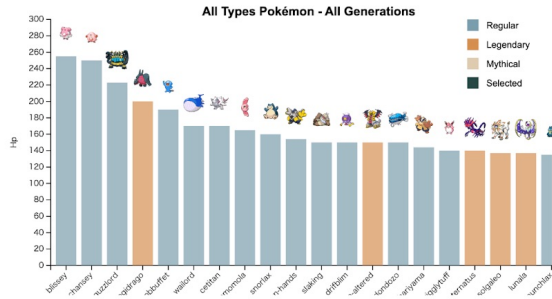
Generation: generation-i

Types: fire, flying

Status: Regular

HP 78
Attack 84
Defense 78

Type: All Types Generation: All Generations Stat: HP
Number of Pokémon: 20



Peer Assignment



Aayush Desai

- In Milestone 1, he selected data and performed basic EDA.
- In Milestone 2, he led the basic design of the website.
- In Milestone 3, he developed data visualization for the web.



Nivedita Rethnaker

- In Milestone 1, she led the creation of a sketchbook.
- In Milestone 2, she led the linguistic analysis of the back end.
- In Milestone 3, she led the final screencast and the interactive visualization of the web.



Takashi Kosaku

- In Milestone 1, he proposed the idea of adding a linguistic perspective to the dataset.
- In Milestone 2, he mainly conducted re-experiments of previous research analysis on the backend and adapted it to our dataset.
- In Milestone 3, he led the creation of a process book. He also made modifications to make the website more interactive.

