Pokemon Characteristics Assessment

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Introduction

We utilized a dataset based on PokemonGo, an app that is widely used to capture Pokemon around the globe, to answer complex questions relating to Pokemon characteristics.

The variables we used from this dataset were:

- height
- main type
- defense
- stamina
- attack
- capture rate

Coding Languages

For our project, we installed various packages to meet the needs of data manipulation for both R and Python programming languages.

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In R, the following:

- library(tidyverse)
- library(readxl)
- library(boxplotdbl)
- library(skimr)

In Python, the following:

- pandas
- numpy
- mathplotlib.pyplot

Question 1: Which Pokemon are considered powerful?

- Ran summary statistics on the data
- Used the 75% of stamina, defense, and attack
- If a Pokemon meets all parameters, it is powerful
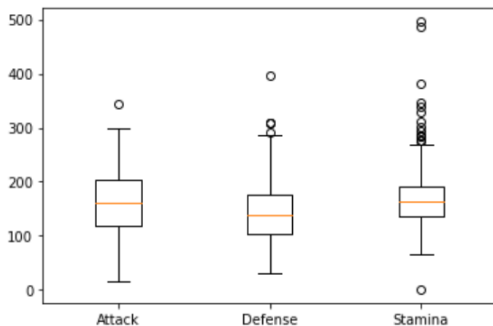- Counted the number of powerful Pokemon

Figure: Distribution of 3 variables

After running a set of code that counts the number of powerful
Pokemon, we can conclude that 54 Pokemon are powerful meaning
that only 54 Pokemon are in the 75th percentile or above for all
three categories.

- Grouped the data by "main type" to find the mean capture rate
- Used this data to create a bar plot with the height being the means
- Increase the size to make the table readable

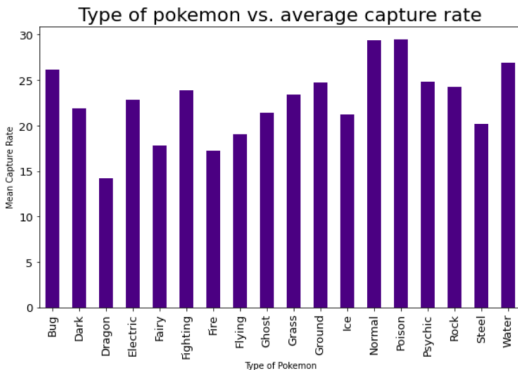Figure: The types of Pokemon and their average capture rate

We conclude that the top three most easy to capture Pokemon include Poison, Normal, and Water types. The three least easy to capture Pokemon include Dragon, Fire, and Fairy types.

Question 3: Which types of Pokemon tend to be the tallest? Which tend to be the smallest?

- Grouped each column by the main types of Pokemon
- Created a boxplot based on this grouping
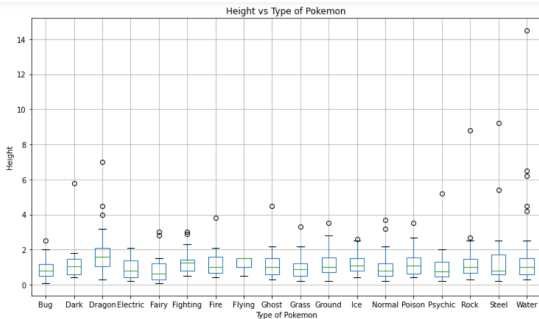- Increase the size to make the table readable and determined the distribution of Pokemon

Figure: Types of Pokemon and average heights distribution

After looking at the graph of height distributions, we determined that based on each median, the main type of dragons tends to be the tallest type of Pokemon and the main type of fairy tends to be the shortest Pokemon.

We conducted our research to determine how the physical characteristics of Pokemon types affected their power, ability to be captured, and size. Pokemon trainers can use this information to better understand their Pokemon's strengths and weaknesses as well as formulate an approach for future encounters.