TCC DATA PROGRAM - PROJECT 3

Pokédex

Gotta catch ‘em all!

Your Pokémon Trainers

Project Team

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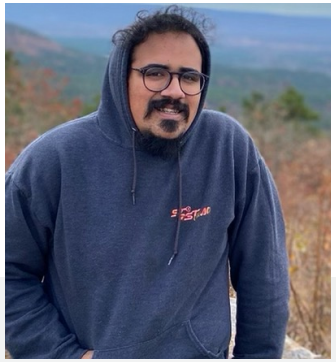

FRANCISCO LARA LOZA

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Project GitHub: https://github.com/isabellajade/Project3_Pokemon

Pokémon Dataset

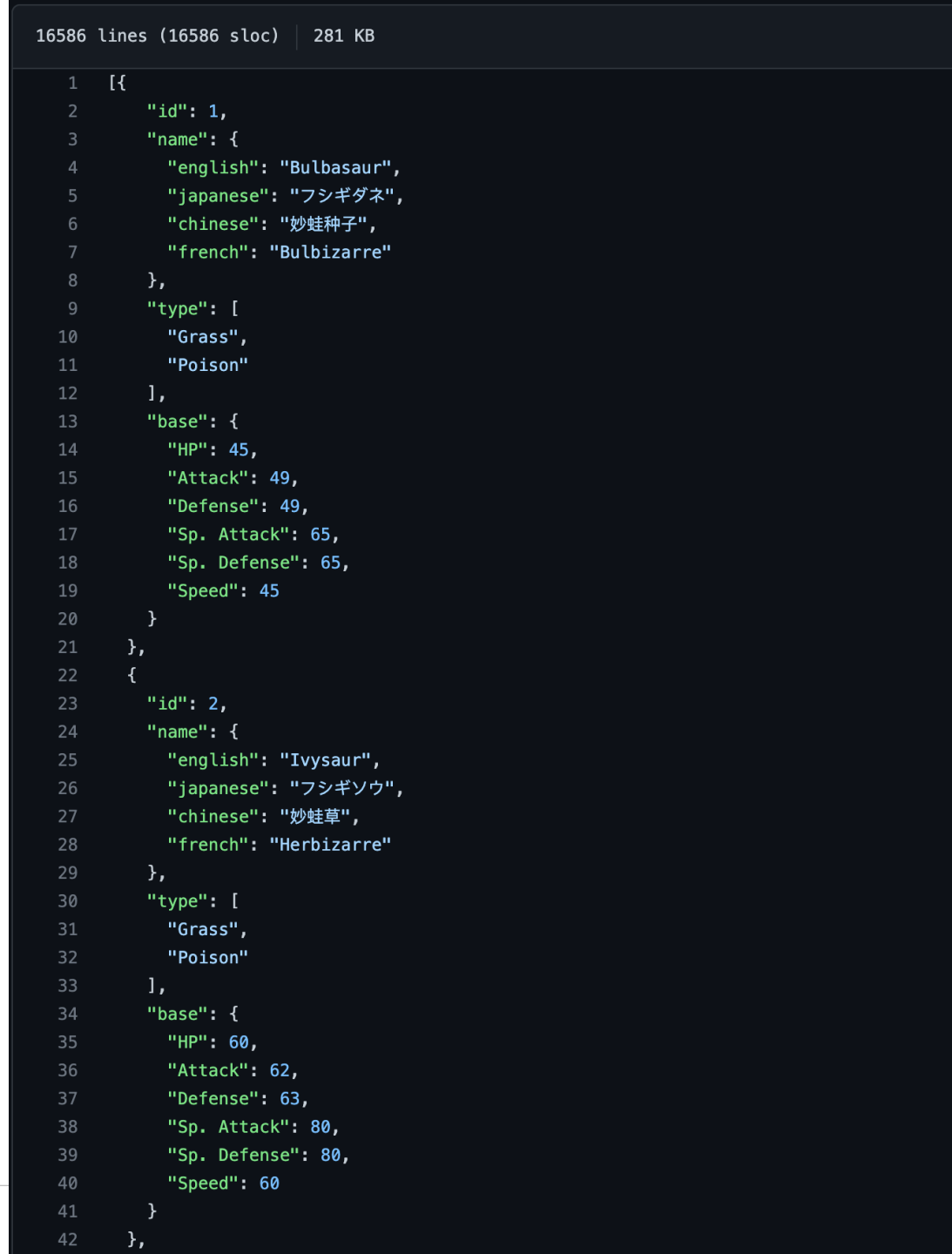
https://github.com/fanzeyi/pokemon.json

Why Pokémon?

Pokémon, at its core, is an exceptionally designed 90s JRPG with a core gameplay concept that most of us can identify. It combines a variety of play styles including something for almost everyone, and a very nice, cute theming that by now evokes nostalgia. But why use it as the basis of a data science project? Two reasons…

1. It appeals to people's desire to **categorize** and **collect**. Two things central to data science.

2. Pokémon are just damn cute…



16586 lines (16586 sloc) | 281 KB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    "name": {
      "english": "Bulbasaur",
      "japanese": "フシギダネ",
      "chinese": "妙蛙种子",
      "french": "Bulbizarre"
    },
    "type": [
      "Grass",
      "Poison"
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    "base": {
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      "Poison"
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      "Sp. Defense": 80,
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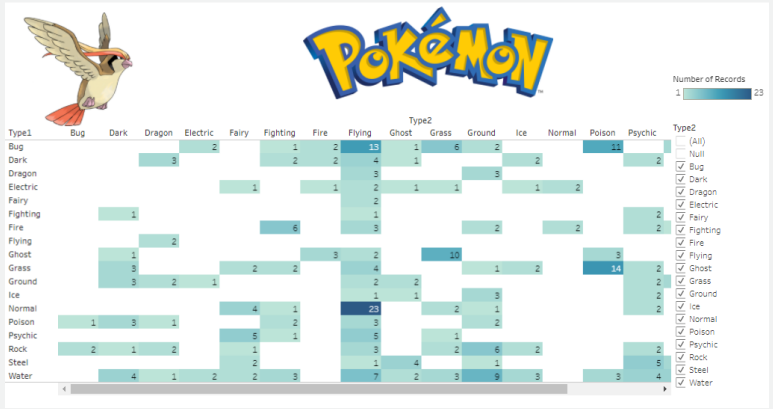
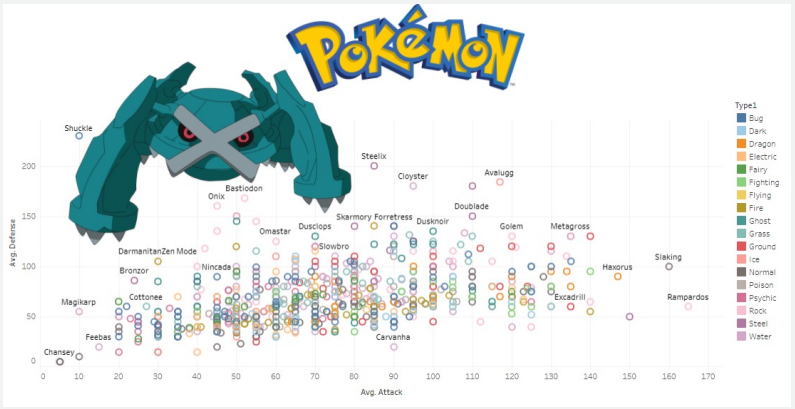
  },
```

Type1	Avg. Attack	Avg. Defense	Avg. HP	Avg. Sp.Atk	Avg. Sp.Def	Avg. Speed	Avg. Total
Bug	65.5	68.7	56.1	54.3	63.0	59.3	366.9
Dark	84.4	66.0	64.8	65.7	65.5	72.6	419.0
Dragon	96.6	71.1	69.1	65.2	74.0	67.9	443.9
Electric	65.1	64.0	56.1	82.9	71.1	81.9	421.2
Fairy	57.2	63.9	70.9	75.3	83.9	45.4	396.5
Fighting	94.7	64.3	70.2	48.6	63.7	62.9	404.4
Fire	77.9	62.0	66.2	80.9	66.5	72.7	426.1
Flying	50.0	57.5	62.5	71.0	60.0	89.0	390.0
Ghost	68.3	79.4	58.5	73.4	73.2	59.8	412.5
Grass	70.2	68.8	65.3	73.7	67.4	58.5	403.9
Ground	88.0	79.8	70.8	47.8	59.6	59.8	405.7
Ice	71.0	68.3	70.4	73.6	67.9	61.3	412.5
Normal	70.9	56.9	75.9	53.7	61.0	69.4	387.8
Poison	74.7	68.8	67.3	60.4	64.4	63.6	399.1
Psychic	51.6	60.0	68.0	84.8	78.1	66.6	409.1
Rock	86.8	96.1	63.8	58.9	69.9	50.6	426.1

STATS



TYPES



DISTRIBUTIONS

Rich Data

Pokémon datasets are quite rich. The above visualizations were done with Tableau, which we will be covering in this program in the near future. We plan to graphically display Pokémon stats (Attack, Defense, HP, etc.), visually categorize them by type (Fire, Grass, etc.), and use bubble charts/scatterplots to show type distributions.

Mock Up

Select Pokémon

- Bulbasaur
- Pikachu
- Charizard
- etc....

STATS

HP 60

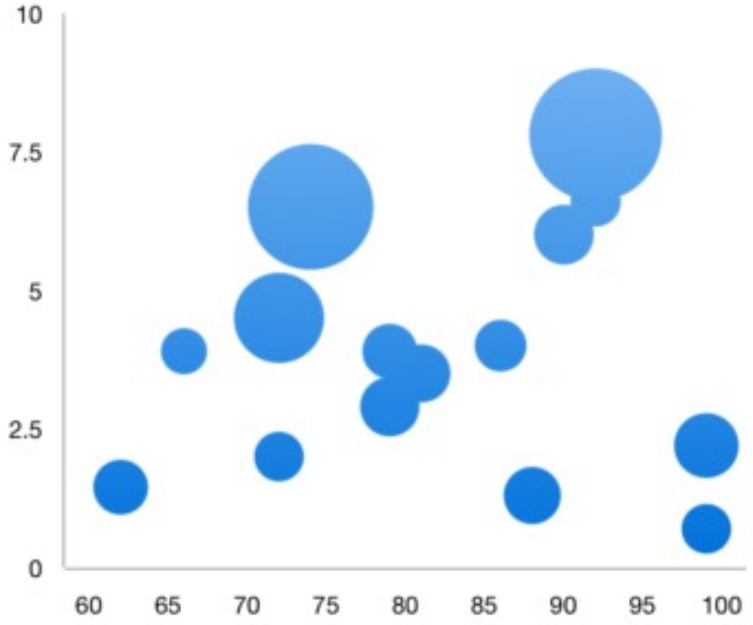
Attack 80

Defense 45%

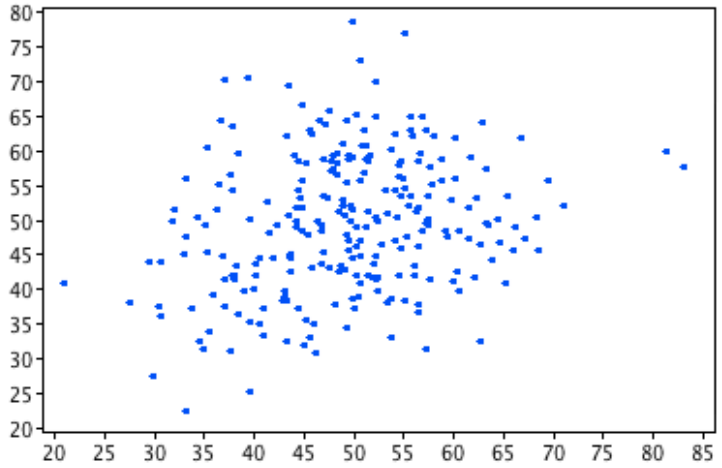
Sp. Attack 45%

Sp. Defense 45%

TYPES



ATTACK / DEFENSE DISTRIBUTION (by type)



Project Data Source

Converting our JSON data into a MongoDB cloud data source

POKEDEX.JSON

16586 lines (16586 sloc) | 281 KB


```
[{
    "id": 1,
    "name": {
      "english": "Bulbasaur",
      "japanese": "フシギダネ",
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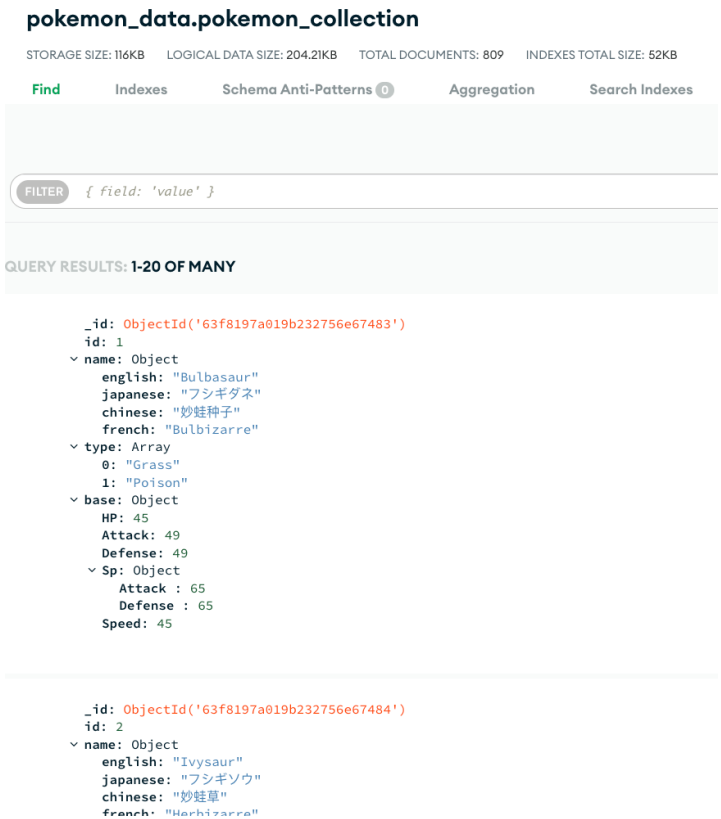
      "japanese": "フシギソウ",
      "chinese": "妙蛙草",
      "french": "Herbizarre"
    },
    "type": [
      "Grass",
      "Poison"
    ],
    "base": {
      "HP": 60,
```


>>> CONVERSTION PROCESS <<<

JSON to MongoDB

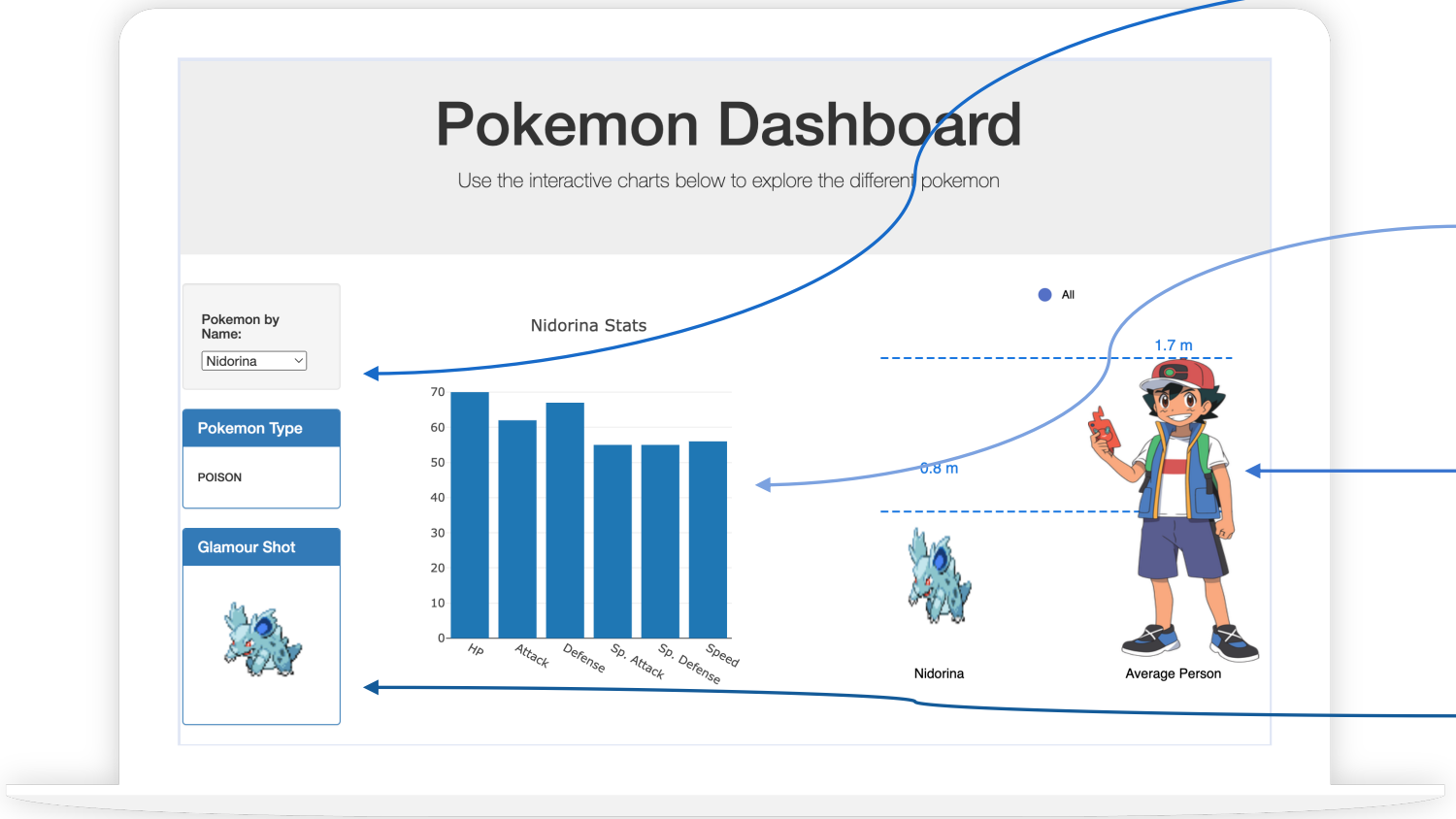
- JSON objects are associative containers, wherein a string key is mapped to a value
- JSON's ubiquity made it the obvious choice for representing data structures in MongoDB's document data model.
- BSON stands for "Binary JSON". BSON's binary structure encodes type and length information, which allows it to be traversed much more quickly compared to JSON.

POKEDEX MONGODB



Pokédex Dashboard

Interactive Pokémon Visualizations



Pokémon Selection & Type

User selects a specific Pokémon and gets its type(s)

Pokémon Battle Stats

The selected Pokémon's HP, Attack, Defense, etc. are displayed on a bar chart.

Size Comparison

The selected Pokémon's size is compared to the trainer for reference.

Glamour Shot

The selected Pokémon's picture is displayed in the glamour shot.

Pokémon Data Visualizations

Data Analysis

Pokémon Types

Bubble chart shows the weight of Pokémon types across the data set.

Attack / Defense Distributions

Scatterplot chart shows the distribution of Pokémon across attack and defense scores.