Super Heroes/Villains

Team Members:
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"With Great Power Comes Great Responsibility"

UNCLE BEN - Spiderman

Story to be told:

The Strategic Homeland Intervention, Enforcement, and Logistics Division, better known by its acronym S.H.I.E.L.D. hired us to develop new methods and tools to supply timely, relevant, and useful information about the the Heroes and Villians on our Universe. As a new hire, you will be helping them out with an exciting new project!

The S.H.I.E.L.D. is interested in building a new set of tools that will allow them visualize superheroes/villains data. They collect a massive amount of data from all over the universe each day, but they lack a meaningful way of displaying it. Their hope is that being able to visualize their data will allow them to anticipate future threats on our planet.

Objective:

Create an API to visualizate key data about superheroes/villains from our universe. We intend to provide a geographic reference, and several charts comparing some characteristics from selected superheroes.

Primary data source (API)

Try SuperHeroe Api.
https://superheroapi.com/try-now.html

Description of the API:

- An access token is required
- The superhero API, is a quantified and programatically accessible data source of all supers from universe. The creators have taken all the stuff and put it together in a form that is easier to consume with software.
- The data is accessible through a REST API. Helper libraries are also provided so the API can be reached in several choices of language
- At the same time the API was extracted from
  - https://www.superherodb.com/

Preliminary process:

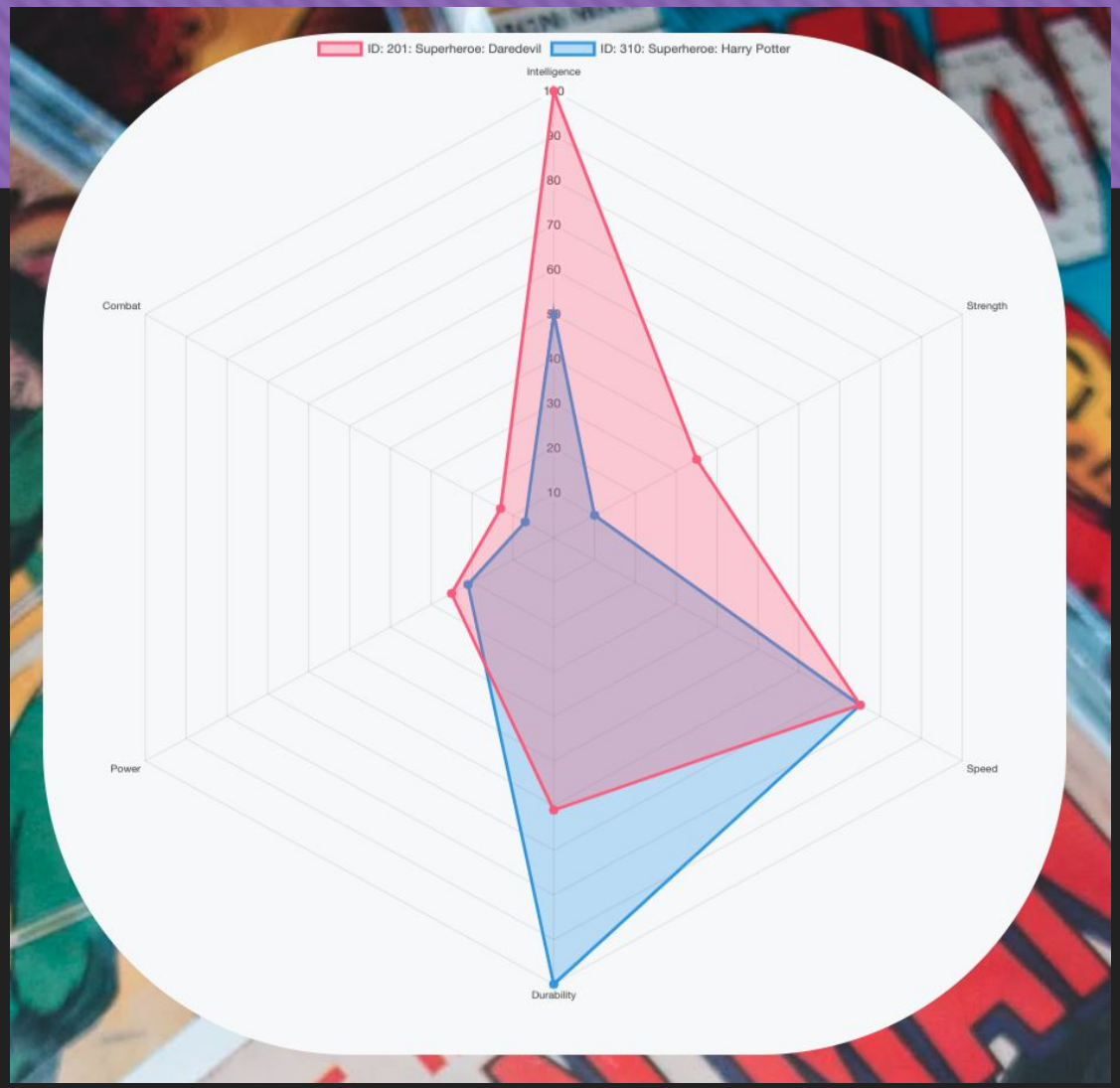
- Get the data set from Try SuperHeroe API.
- Clean the data set, using jupyter notebook
- Load data into a database (Mongo Atlas)
- Create a Python-Flask-powered API and visualization (HTML, CSS, JavaScript).
- Deploy the app in Heroku

```
{
  "appearance": {
    "eye-color": "Blue",
    "gender": "Male",
    "hair-color": "Blond",
    "height": [
      "6'1",
      "185 cm"
    ],
    "race": "Human",
    "weight": [
      "195 lb",
      "88 kg"
    ]
  },
  "biography": {
    "aliases": [
      "Warrior of Two Worlds",
      "Savior of Rann"
    ],
    "alignment": "good",
    "alter-egos": "No alter egos found.",
    "first-appearance": "Outsiders #6 (April, 1986)",
    "full-name": "Adam Strange",
    "place-of-birth": "Chicago, Illinois",
    "publisher": "DC Comics"
  },
  "connections": {
    "group-affiliation": "Omega Men, L.E.G.I.O.N., R.E.B.E.L.S., formerly Seven Soldiers of Victory",
    "relatives": "Alanna Strange (wife); Aleea Strange (daughter); Sardath (father-in-law); Janey Strange (sister); Todd Strange
    (brother, deceased); Bantteir (mother-in-law); Adam Strange II (descendent)"
  },
  "id": "8",
  "image": {
    "url": "https://www.superherodb.com/pictures2/portraits/10/100/626.jpg"
  },
  "name": "Adam Strange",
  "powerstats": {
    "combat": "50",
    "durability": "40",
    "intelligence": "69",
    "power": "37",
    "speed": "33",
    "strength": "10"
  },
  "response": "success",
  "work": {
    "base": "Rann, Alpha Centauri System",
    "occupation": "Adventurer, archaelogist, ambassador"
  }
```

Visualizations

- Radar Chart (Spider chart) for individual Character's power stats
  - Charts.js
- Scatter plot comparing heroes' powers stats to see if we can see a correlation
- Earth map with the place of origin or location of heroes/villains
  - Leaflet

Radar

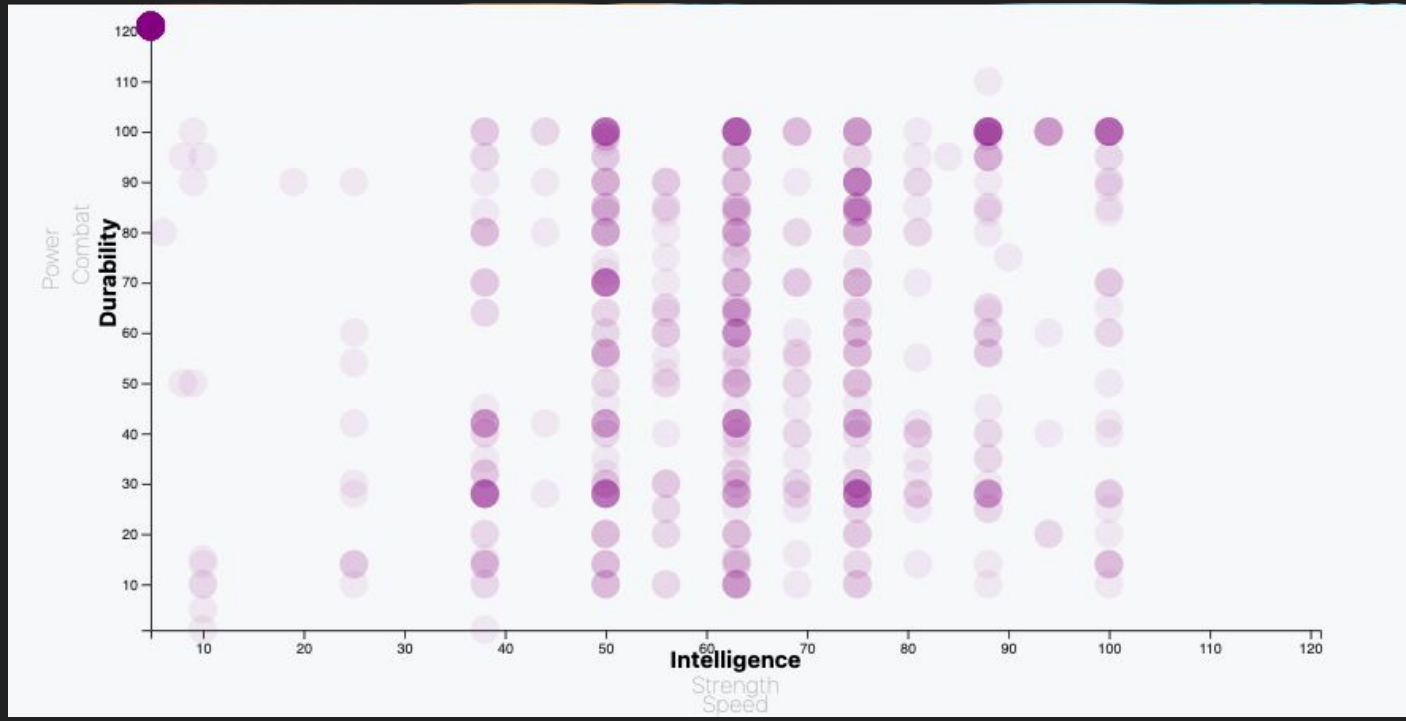

ID: 201: Superheroe: Daredevil
ID: 310: Superheroe: Harry Potter
Intelligence
100
90
80
70
60
50
40
30
20
10
Strength
Speed
Durability
Power
Combat

Scatter Plot

The power statistic contains six powers; Combat, Intelligence, Durability, Speed, Power and Strength.

These six powers are grouped between two groups. The first group contains; Power, Combat and Durability. and the second group contains; Intelligence, Strength and Speed.

The strongest correlation is between combat and intelligence = 0.768 and the weakest correlation is between combat & strength = 0.303.




Grayscale
Satellite
Outdoors
Heroes on
Arctic Ocean
Greenland Sea
Barents Sea
Laptev Sea
Beaufort Sea
Baffin Bay
Greenland
Iceland
Norwegian Sea
Sweden
Finland
Russia
Hudson Bay
Davis Strait
Labrador Sea
Canada
North Atlantic Ocean
North Pacific Ocean
Sargasso Sea
Caribbean Sea
Mexico
Cuba
Venezuela
Colombia
Ecuador
Peru
Brazil
Bolivia
Paraguay
Chile
South Atlantic Ocean
Ukraine
Kazakhstan
Mongolia
Uzbekistan
Afghanistan
Iran
Iraq
Pakistan
India
Nepal
Bangladesh
Myanmar (Burma)
Thailand
Philippine Sea
South China Sea
Arabian Sea
Bay of Bengal
Sri Lanka
Indonesia
Malaysia
Papua New Guinea
Australia
Spain
Italy
Egypt
Libya
Algeria
Morocco
Mauritania
Mali
Niger
Chad
Sudan
Nigeria
Cameroon
Ethiopia
Somalia
Kenya
Tanzania
Angola
Zambia
Mozambique
Namibia
Botswana
Madagascar
Saudi Arabia
Yemen
Oman
Indian Ocean

Work division

- Flask app, html skeleton, data promise, home page = Roberto Vera
- Radar visualization = Ana Juárez
- Location Database = Juan Cortez
- Supers Earth Map = Hussein Huesca
- Scatter Plot = Rafa Deyta

Specific Requirements

1. Your visualization must include a Python Flask–powered API, HTML/CSS, JavaScript, and at least one database (SQL, MongoDB, SQLite, etc.).
2. Your project should fall into one of the below four tracks:
    - A custom "creative" D3.js project (i.e., a nonstandard graph or chart)
    - A combination of web scraping and Leaflet or Plotly
    - A dashboard page with multiple charts that update from the same data
    - A "thick" server that performs multiple manipulations on data in a database prior to visualization (**must be approved**)
3. Your project should include at least one JS library that we did not cover.
4. Your project must be powered by a data set with at least 100 records.
5. Your project must include some level of user-driven interaction (e.g., menus, dropdowns, textboxes).
6. Your final visualization should ideally include at least three views.