ECS 272

Report for Project 1

Title:

Visualization of Pokemon dataset through Sunbursts and bar chart

Implemented Views:

This visualization contains three graphs, all representing a different view of the dataset. The views are interactive. Hence, an action on the main graph triggers an action on the other views. The views have been implemented using the D3 library in javascript, HTML and CSS. There are three views in this visualization:

1. An overview of all pokemons using Zoomable Sunburst
2. Details of a specific pokemon using Sunburst
3. The number of pokemons per type for each generation using Bar Chart

1. An overview of all pokemons using Zoomable Sunburst

The main view is of all pokemons using a Zoomable Sunburst graph. The reason for selecting this graph is because it arranges items in a hierarchical manner and the graph arranges the pokemons in a hierarchy. The lowest level is “All Pokemons” or the root. The next level of hierarchy is the generation. Since there are six generations, there are six arcs, one for each generation. The next level of hierarchy is the type of pokemon. Each pokemon has at least one type. The next level of hierarchy is the name of the pokemon itself or the second type, if it exists. See fig a.

Clicking on any arc expands all the children under it. For instance, clicking on any type 1 would first expand the generation it’s under and then it would expand all the type 2s and pokemons under it. See fig b.

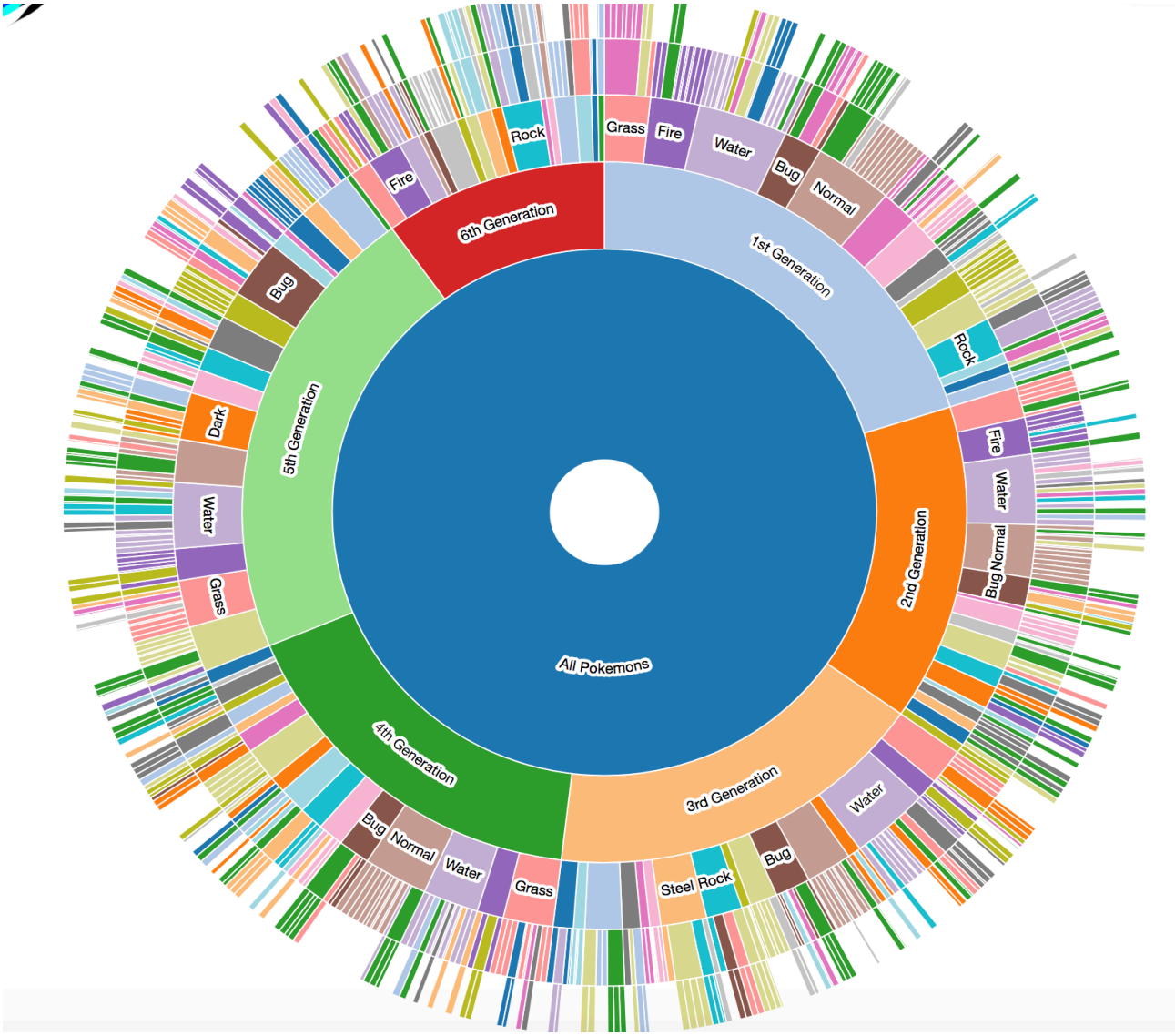

Fig a: Zoomable Sunburst showing all pokemons

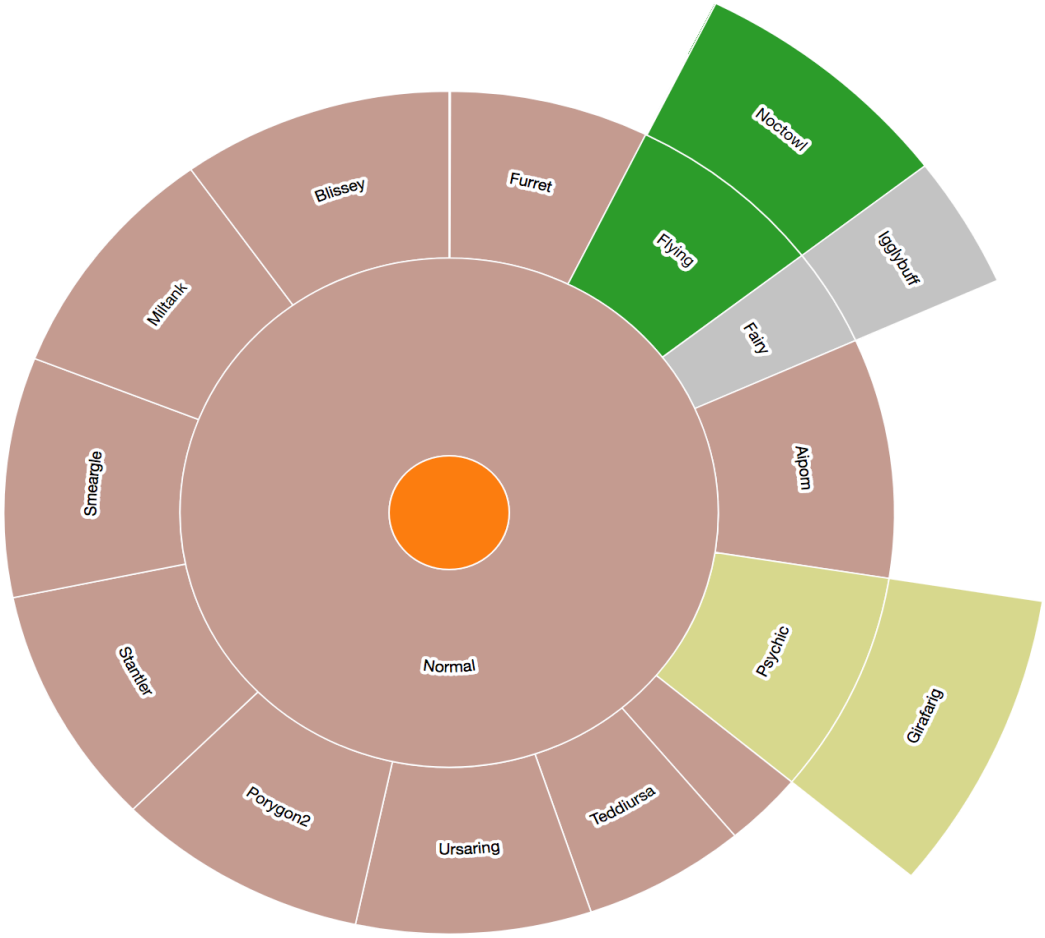

Fig b: Normal type under generation 2

2. Details of a specific pokemon using Sunburst

Clicking the outermost arc on the main view shows the details of that pokemon on the second chart. This chart is a simple sunburst because it is the best way to show details that lie on the same level. See fig c.

3. The number of pokemons per type for each generation using Bar Chart

This bar chart gives the number of pokemons for each type in a given generation. Once an arc has been clicked, this graph displays the count of pokemons for every type for the generation of the selection. I selected a bar graph to view this data since the comparison is direct and based on one value. See fig d.

Fig c: Details for the selected pokemon

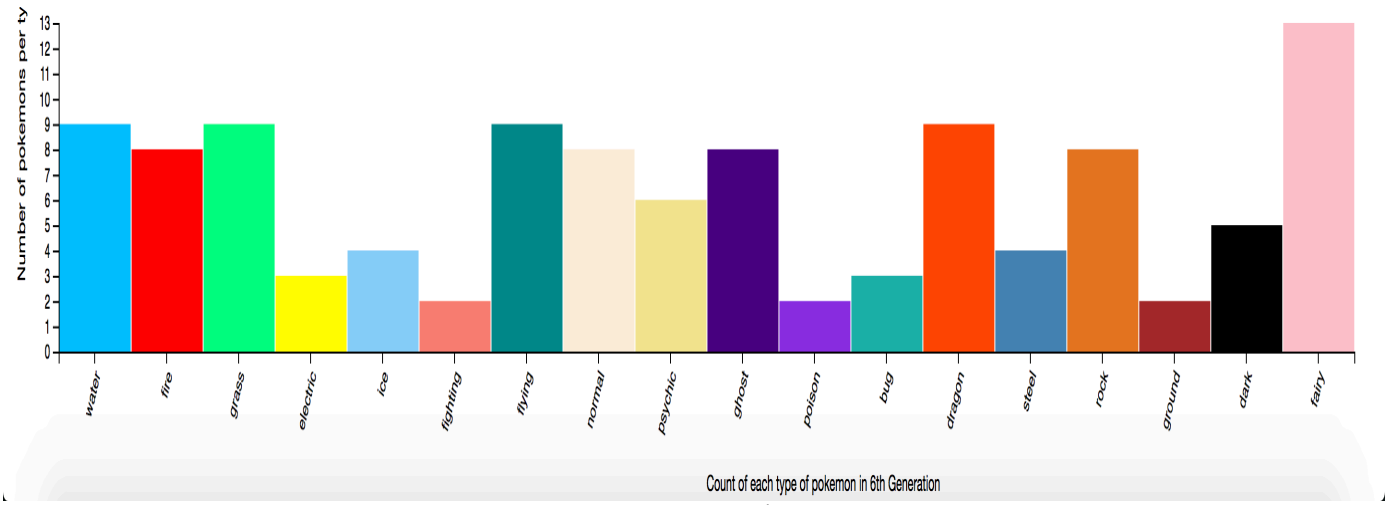

Fig d: Number of pokemons for 6th generation

ECS 272

Usage:

The user first needs to select a generation to display, which will trigger an action on the bar chart. Next, the user can select from a variety of types under that generation, which will expand the pokemons and the second types within that type. The user can then finally select a pokemon of their choice that will trigger an action on the sunburst chart.

Insights:

The most important takeaway for me from this project was how strong data visualization tools are in visualizing data. The data I have implemented was originally in a csv format, where things were hard to find and make sense of. However, data visualization gives data a proper structure, and eases the user into the understanding the data. Data visualization also reveals more information than any textual data could.

Moreover, this was my first time using any kind of data visualization technique, so I think starting with d3 was the right place to start comprehending visualization.

Selection of charts:

I selected zoomable sunburst for three reasons:

1. It is capable of showing hierarchical data
2. It takes up comparatively less space on the page to display the same amount of data
3. It is highly interactive

I wanted to fit the three views on one page, and for that, I needed something that gave out a lot of information without utilizing a lot of space. The fact that zoomable sunburst allows the user interaction without any prior knowledge of the graph also was one of the driving factors in the selection of this graph.

Student Evaluation:

I had my graph evaluated by Ayush Jain, and by my TA, Tarik.

Tarik had asked me to make my static graphs more interactive by adding mouseover functions that displayed information regarding that graph. Tarik also asked me to try and fit all the views in the same page, something I hadn't done previously. I have incorporated these changes that Tarik asked me to do.

Ayush pointed out that the text in my detailed sunburst chart wasn't perfect. It's a good observation by him, and something that would have certainly enhanced the visual appeal of the page. Ayush and Tarik both asked me to add a legend to the bar chart, but that's something I left out since the x-axis already gives information regarding the type of data. Ayush also pointed out a bug in my detailed sunburst chart where the tooltip wasn't getting updated when the pokemon changed. I have also fixed this bug.

For future improvements, I would like to add to the pokemon information through images of respective pokemons, and also adding their evolution charts. Since some pokemons evolve differently under different evolution stones, I think an evolution chart would add to the views.