

Introduction

Hi, my name is Natalie Hong and I am a third year Software Engineering Student. I have chosen to take this course as I enjoy visualising data spread and am super interested in the graphics section of the course as I was able to brush over it in highschool, but was never able to further my knowledge in it. I also am heavily involved in a certain gaming community which has served as the main factor of choice for my visualization project decision.

What?

What I will be visualising will be Australian character data and usage throughout 2019 for the game Super Smash Bros. Ultimate for the Nintendo Switch. Since I am using an API and the data is always updating, I will be sorting each set of data into states and then into individual quarters of 2019 so that data is static rather than a dynamic approach. Data is stored as a JSON and CSV files and will be visualised on a webpage as I would like it to be publically viewed when the project is completed.

With six points of data to use (state, character name, players, elo gain per character, matches played, quarter), a comparison for each state per quarter can be graphed as well as the possibility 3-axis graphs. It will also be possible to compare the whole of Australia by quarters.

Possible graphs that could be used to display different data sets could be:

- Bubble graphs
- Bar graphs
- Line graphs
- Heat maps
- 3D plots in matlab

Why?

The reason that I want to undertake this project is to answer various questions about character data within Australia. These questions that I want to be able to answer at the end of this project are as follows:

- Does the amount of players influence the elo gain?
- Do more players mean better results?
- Which state has the best performing characters?
- Who are the top 5 most played characters in each state?
- What is the relation between top played characters and
- Which state has the most unique character usage?
- How did the 'meta' of character usage change between each quarter?

When mentioning character usage, a select top few characters (5 - 10) will be taken from the total list will be used rather than the 70+ characters in the game to allow for better viewing and less confusion.

How?

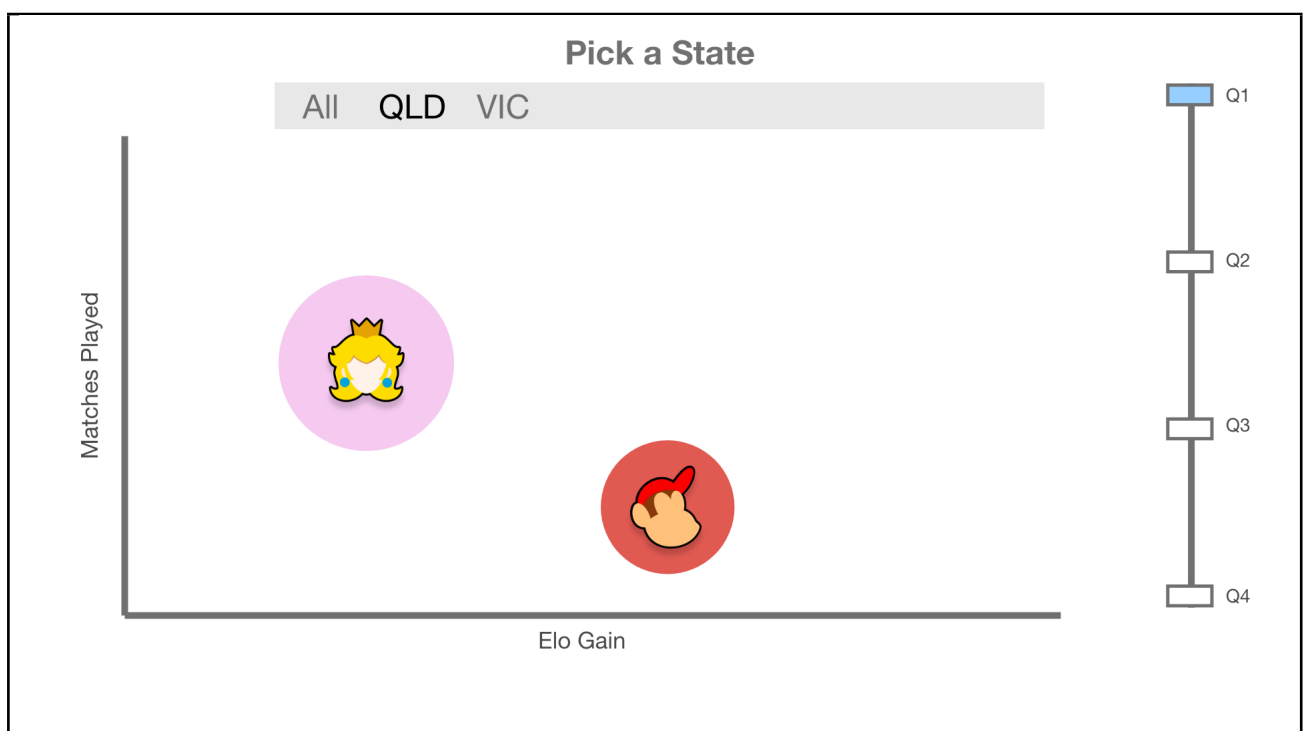
To achieve the visualization page that I want I will use the following tools:

- Python 3 to run API calls
- JS Chart library (to be decided)
- Ausmash API ([Click for Documentation](#))
- JQuery for Interaction display
- JSON and CSV files to store and display data

Example Visualization

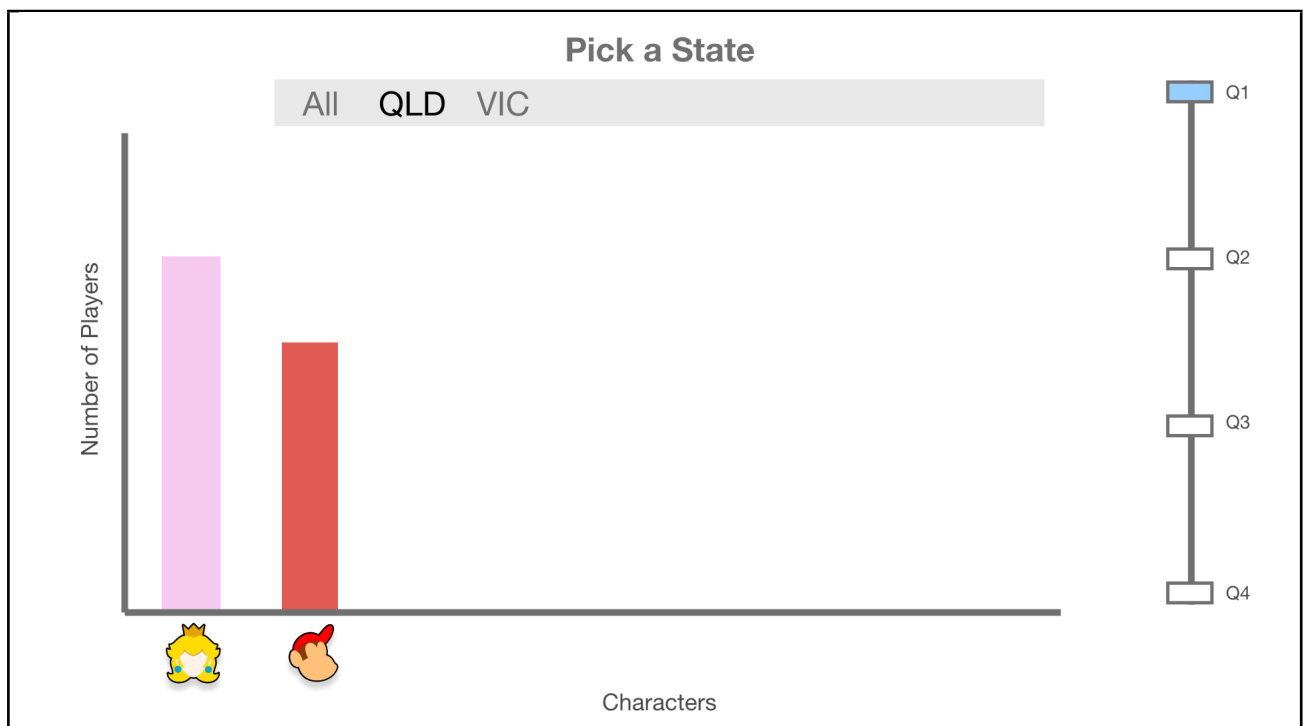
Before diving into the code, I decided to make some very basic designs for what the final visualisation could be. These designs were as follows:

Bubble Graph

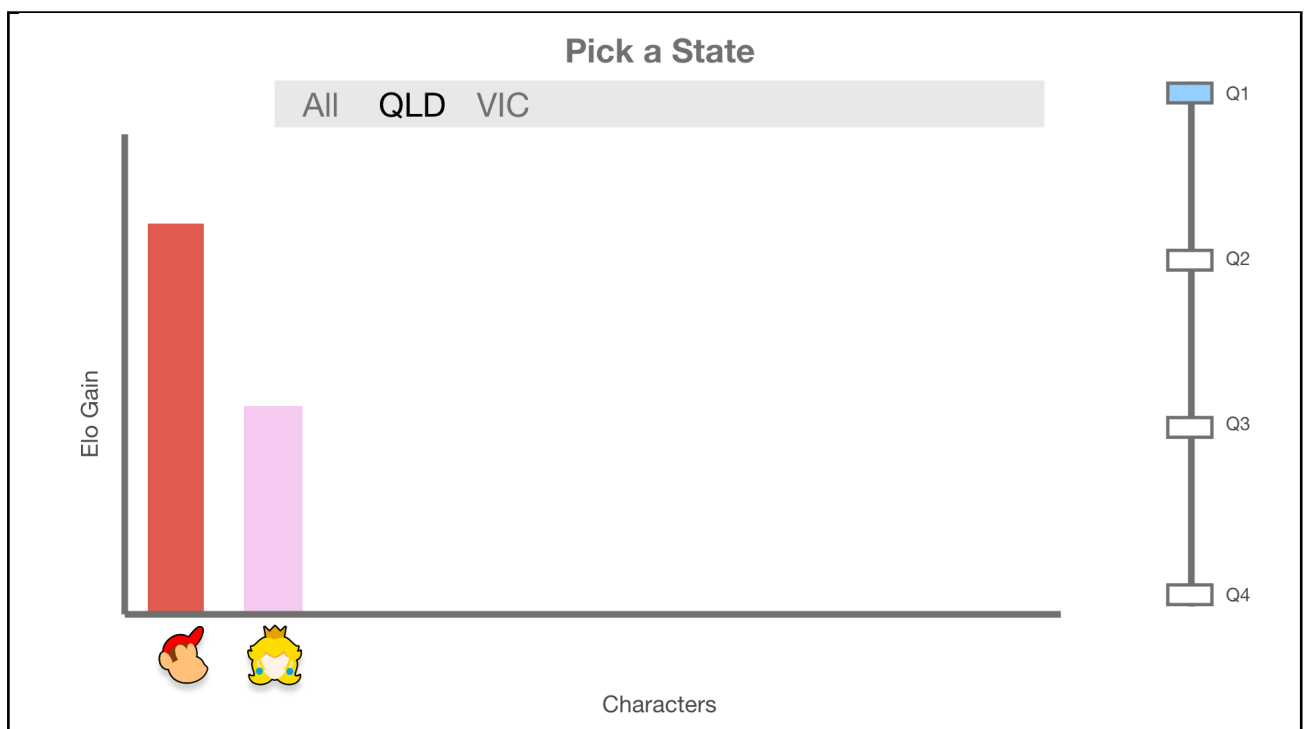


Bubble graphs were the original source of inspiration for this project.

Bar Graphs

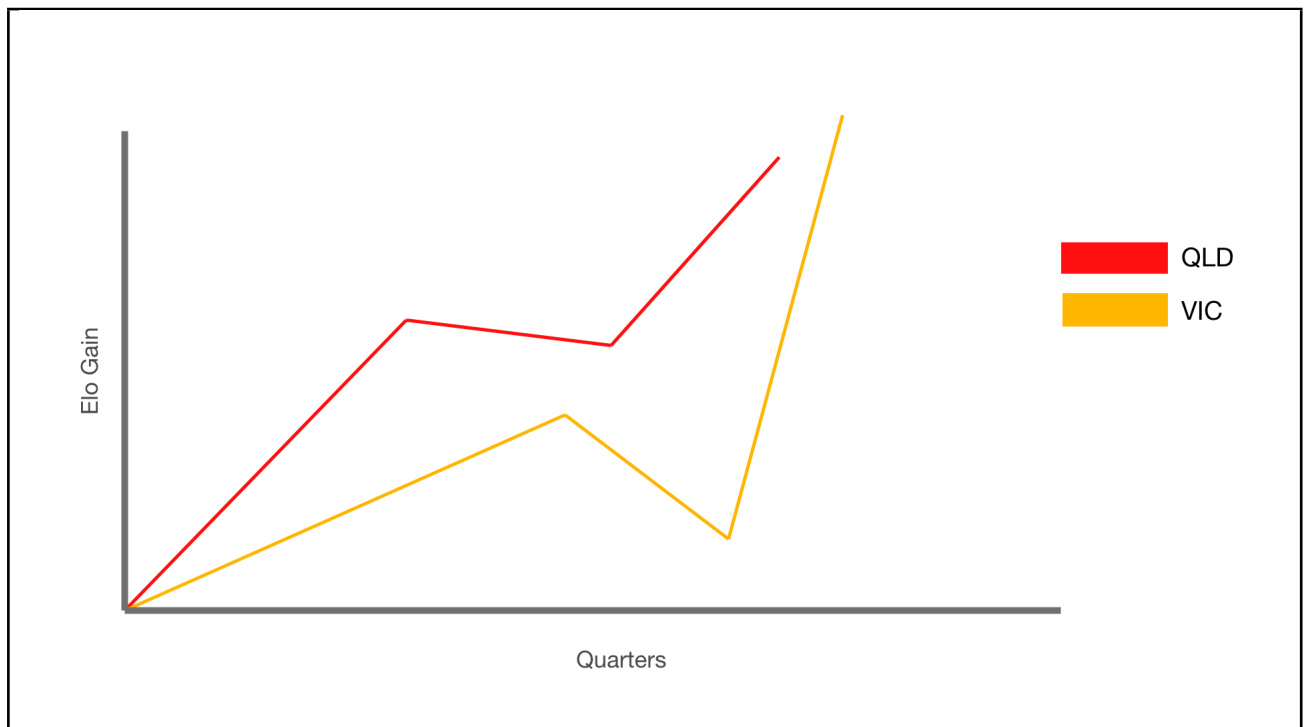


Description

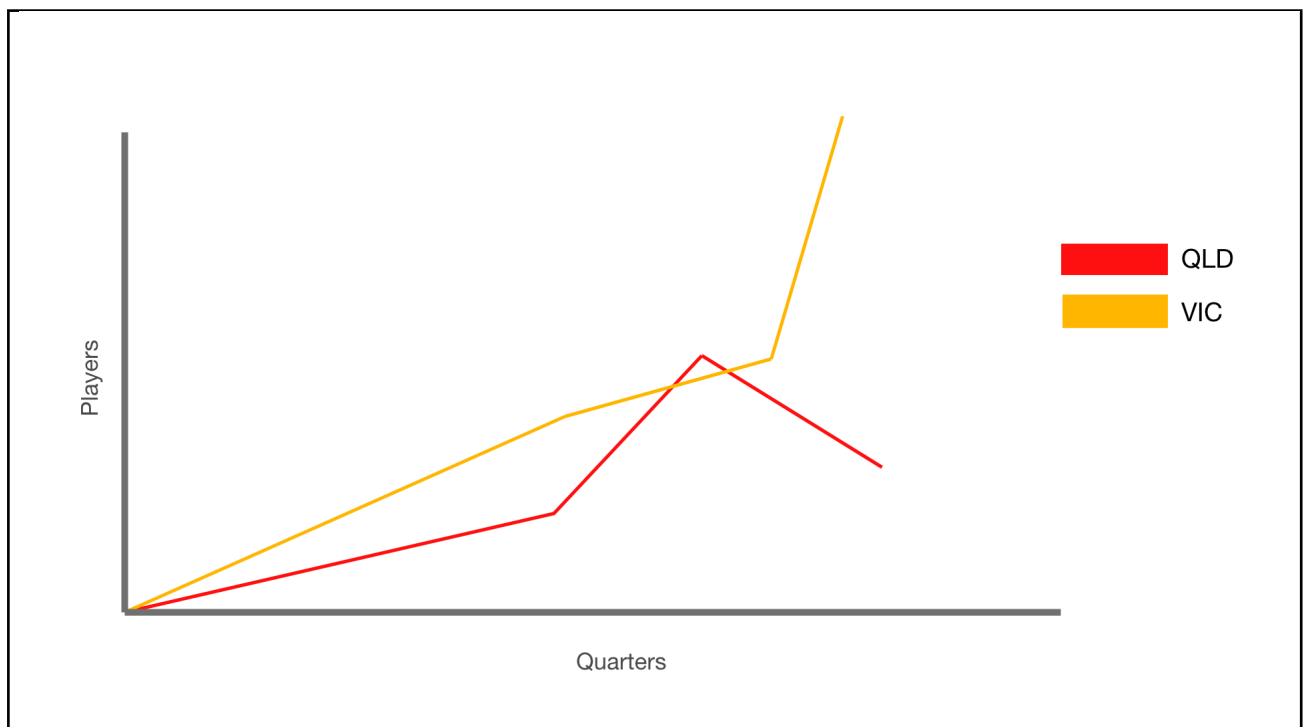


Bar charts 2

Line Graphs



Line Graph 1



Line graph 2 but players