

Password Universe Visualiser

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Password Universe

Modelled on a web application, this visualisers allows the users to see a password database displayed as a “universe” where the entries are it’s “stars” and you are in the middle. As a user you choose a keyword, render the database based on that keyword. Distance of the stars from the middle are calculated based on the edit distance and color is based on the distance.

Usage

Project is mostly aimed towards password researchers and cyber security experts allowing them to see patterns thus helping them to gain further understanding of how passwords are related to one another. Currently it uses naive sorting algorithm sorting them alphabetically but it can be sorted in variety of ways such as frequency or length of passwords.



Future Work

I will aim to be:

- 1) Adding improved functionality with the zoom I would like to be able to zoom at specific areas.
- 2) Usage of multiple databases at the same time potentially even allowing the user to combine both databases with the same password into one.
- 3) Dynamic colours instead of hard coded, I would like the user to be able to choose which colours they want the graph to be in.
- 4) Faster and more efficient rendering so that the machine doesn't run out of memory whilst processing larger databases.

Examples of our visualiser

Below you will see 2 examples of the visualiser. I am using two different databases and entering the same password to be rendered on. As you can see one pattern has a lot more passwords with shorter edit distance, displayed by the colour of the “stars”.

Diagram 1

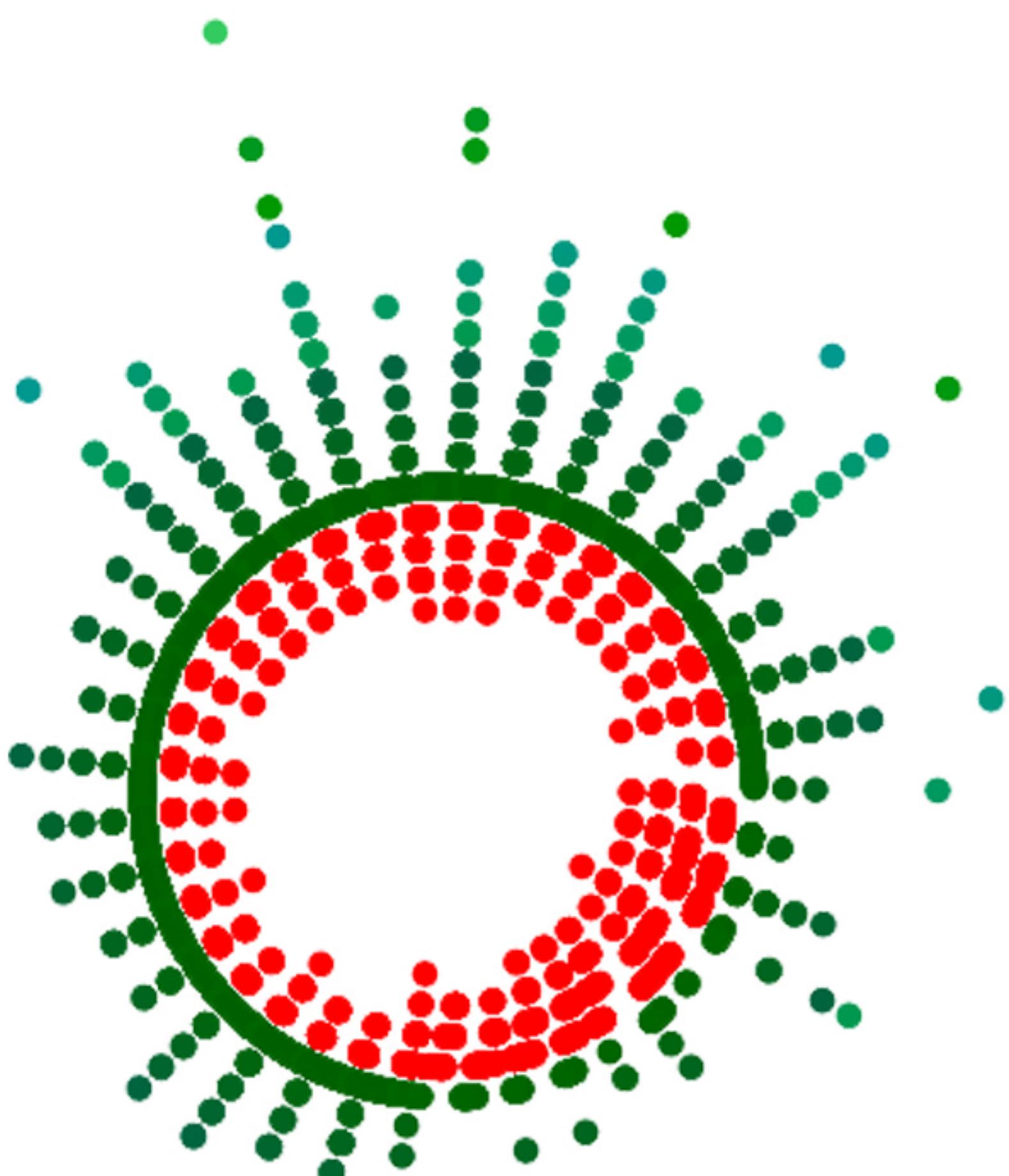


Diagram 2

