

# Research & Technical Plan

Maximilian Clarke\*

## ABSTRACT

This project aims to create a visualisation of the life-spans of key characters from the immense fictional world of Middle Earth, created by J.R.R Tolkien. The design will stay true to the central iconography prevalent throughout Tolkien's works, that of a ringed design. The output data for this project will be inferred from a dataset of character names, the birth and death dates of these characters, and the average life-span that the character would be expected to reach judging by their race. To produce the final image, the data will be used in an algorithm that will draw circular graphics for which circumference will be determined by the lifespan of a character calculated as a ratio of their expected life-span.

## 1 INTRODUCTION

In this section, the chosen topic will be introduced and a background analysis will be provided, including a description of the initial ideas that were conceived.

### 1.1 Background

For this project, the topic that was chosen is 'The World of Middle Earth'. Middle Earth is a fictional fantasy world that was created by renowned author J.R.R Tolkien primarily from his books 'The Hobbit' and 'The Lord of the Rings', the events of which are set in this world. Middle Earth is known throughout the world for its expansive lore and detail, most notably in terms of language; Tolkien was primarily a linguist, and his passion for language, etymology, and history led him to desire to create his own languages by the time he was 14. He had already created a number of languages before he wrote even a single word about Middle Earth, eventually he decided to begin writing about a fictional world for his languages rather than the other way round. Decades later, he had managed to write some of the greatest works of fiction of all time, becoming an international bestseller.

Apart from the stellar story-telling that is apparent in Tolkien's work, he succeeded in creating a coherent, layered, and fascinating history for his world, including the construction of a system of theology and mythology that were consistently implicit throughout the story, as well as detailed historical events in Middle Earth spanning thousands of years.

The characters that Tolkien created for Middle Earth are dealt with rich backstories, motives, and complexities, bolstered with the aforementioned attention to historicity. For example, there are a number of races that the characters of his world pertain to, including, but not limited to, Elves, Dwarves, Men, Hobbits and Orcs, each possessing their own history, culture and nature; in terms of the mythology, the Elves are the most favoured by the sub-deities known as the Valar (whom were created by 'the One' deity known as 'Eru Ilúvatar'), as such, they are gifted with immortality. The other races are favoured but to varying and lesser degrees, and are, therefore, mortals, but depending on the extent of their favour with the Valar, are granted lengthened existences. This is an example of the richness and complexity that exists in the world of Middle Earth.

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\*e-mail: mxc20bjg@bangor.ac.uk

Some of the immediate data visualisation ideas that are apparent with a topic such as this are the categorisation and relation of popular and notable elements within the stories and world, such as characters, weapons, locations, or languages. For example, one concept could be a visualisation of the journeys each of the characters take, another could be the population density of different races in a given area, and a further possible concept could be to represent the life-spans of characters as compared to the average life-expectancy for their particular race. These concepts could be expressed through a number of different styles, although, to keep the theme consistent with the topic of Middle Earth, the overall shape of the visualisation should be able to be reminiscent of something of that world, for example, a tree shape would be congruent with Tolkien's love of trees including his heavy emphasis on the role of trees in his world, the shape of rings could also be a suitable style, since the main icon of Middle Earth is encapsulated in the One Ring, a ring shape would also present data nicely.

## 2 TOPIC & DATA

The dataset that will be used for this project is a table containing a vast list of canonical characters within the world of Middle Earth by name, and, where applicable, lists the date of birth, date of death, gender, hair colour, height, race, realm, and spouse of these characters.

The dataset was uploaded to Kaggle by Paul Mooney who acquired it from a GitHub user called tianyigu. Paul Mooney notes that the data was scraped from the Lord of the Rings wiki page and the Age of the Ring website. The dataset has been used to create a number of visualisations by others, for example, Xavier Vivancos García uploaded a report to Kaggle which included many figures, mostly bar charts showing the prevalence of the races in Middle Earth, the difference in numbers of males and females, which realm has the most characters, and finally, another bar graph showing the most common hair colours. It is clear then from existing examples, that this dataset has great potential for use in visualisation. Some other ways this data could be used may include mapping the relations of realms over time, specifically by marriage arrangements. Some data processing may allow the average heights of certain races to be presented and compared to with the individual characters.

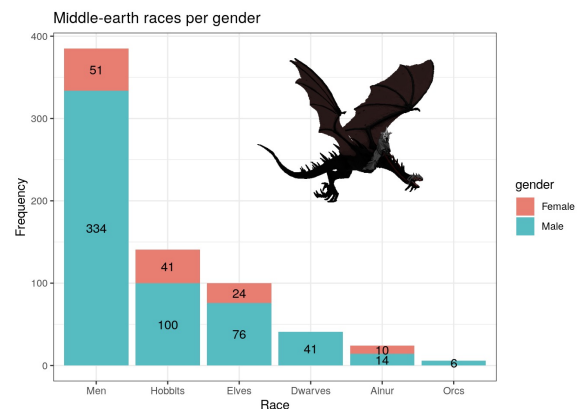


Figure 1: An example graph from Xavier Vivancos García's report

The initial dataset has a few issues that will need to be resolved before it can be used for the data visualisation, one issue being that many of the characters live through the Third Age and into the Fourth Age, meaning the year resets to 1 from 3021 at the start of the Fourth Age, therefore, this will need to be considered when calculating age of death. Another issue is that the dataset has no data on life-expectancy for the races. To solve the first issue, the following formula can be invoked during processing: Age of Death =  $((3021 - BD) + DD)$  where BD is a date of birth in the Third Age, and DD is a date of death in the Fourth Age. The second issue will be resolved by introducing new data to the dataset from Lord of the Rings wiki sites which have life-expectancy values for each race.

### 3 INSPIRATION RESEARCH

In order to gain some inspiration for the visualisation piece, some research into related data art was undergone. Figure 2 depicts the number of words spoken by each of the main characters of the Lord of the Rings films, depending on the location:

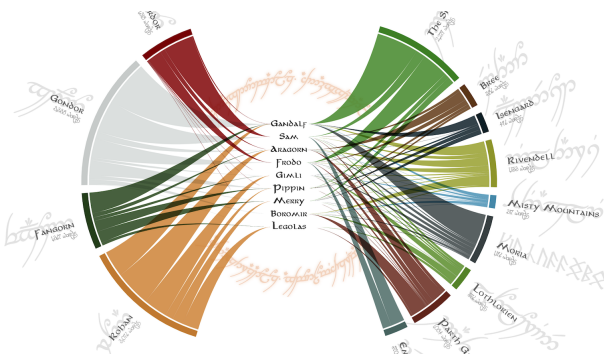


Figure 2: The Words Spoken in Middle Earth - by Nadieh Bremer

The designer produces a pleasing image with appropriate colours to the world. The overall shape seems to represent an eye, with the outline formed by the pointers that fittingly appear like tongues of fire, which is very reminiscent of the Eye of Sauron, a very well-known icon of Middle Earth in Tolkien's stories, the band of Black Speech from the One Ring seems to outline the iris and the names of the characters make up the reptilian style pupil, while not mentioned to be inspired by the Eye of Sauron in the description of the image, the overall structure of it is very well done, and suitable to the topic regardless. In terms of the representation of data, it offers an interesting revelation as to which characters are more prevalent in terms of how much they speak, viewers can easily distinguish that the larger pointers refer to those who have more words spoken, and the data is nicely divided by location as to not clutter the image, but to also add another dimension of intrigue.

### ACKNOWLEDGMENTS

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