Design & Implementation of 2 Visualisation Systems for Hiking Trails Data

The Residuals

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# Video Demonstration

Video demonstration of each visualisation system can be found at the link below.

**Zebra System:** link

**Giraffe System:** link

# Data Set Description

The Washington Hiking data set contains data on hiking trails in Washington State. The data set comes from the Tidy Tuesday community repository [1] and can be found at <https://github.com/rfordatascience/tidytuesday/tree/master/data/2020/2020-11-24>. It was obtained by scraping the Washington Trails Association website in November 2020 [2], however the data set is offline. The data set type is a 2-dimensional table, with static availability. The data item is a hiking trail, which is specified by name. The data attributes are location, length, gain, highpoint, user rating, and trail features. Hike trail description is of text data type [3].

|  |  |  |
| --- | --- | --- |
| Attribute | Attribute Type | Ordering Direction |
| location | categorical | - |
| length | quantitative | sequential |
| gain | quantitative | diverging |
| highpoint | quantitative | diverging |
| features | categorical | - |

Table 1: Classification of Data Attributes

# Visualisation Objective

[200 words]

* Actions and targets
* **Hiker should be able to find a hike trail that interests them based on attributes**
* Hiker should be able to find or select the region where they want to hike (for example, this is choosing which features we are presenting and discovering)
* The user rating should be conveyed by colour or size
* System charts make sense from a physical perspective (length is horizontal, peak height is vertical, forest inspired colour scheme)
* **Present** data – **discover** user rating, length, features
* Produce charts and derive which trails have the highest rating (transform data to have more meaning via the system)
* Discover features in the data (longest trails could be lowest rated, have highest gain)
* End user can identify which hike to take, allow the user to explore (1) or lookup (2) the hikes they want to take

# System Implementation

[reference code and video 60s each]

# Design Comparison

[6 decisions, 100 words each]

# User Evaluation

[400 words, data in Appendix A]

# Future Work

[100 words]

# Appendix

[user evaluation data]

# Bibliography

[1] Thomas Mock (2021). Tidy Tuesday: A weekly data project aimed at the R ecosystem. <https://github.com/rfordatascience/tidytuesday>.

[2] *tidytuesday/data/2020/2020-11-24 at master · rfordatascience/tidytuesday*. (n.d.). Retrieved July 21, 2021, from https://github.com/rfordatascience/tidytuesday/tree/master/data/2020/2020-11-24

[3] *TEXT data type - IBM Documentation*. (n.d.). Retrieved July 21, 2021, from <https://www.ibm.com/docs/en/informix-servers/12.10?topic=types-text-data-type>

[4]