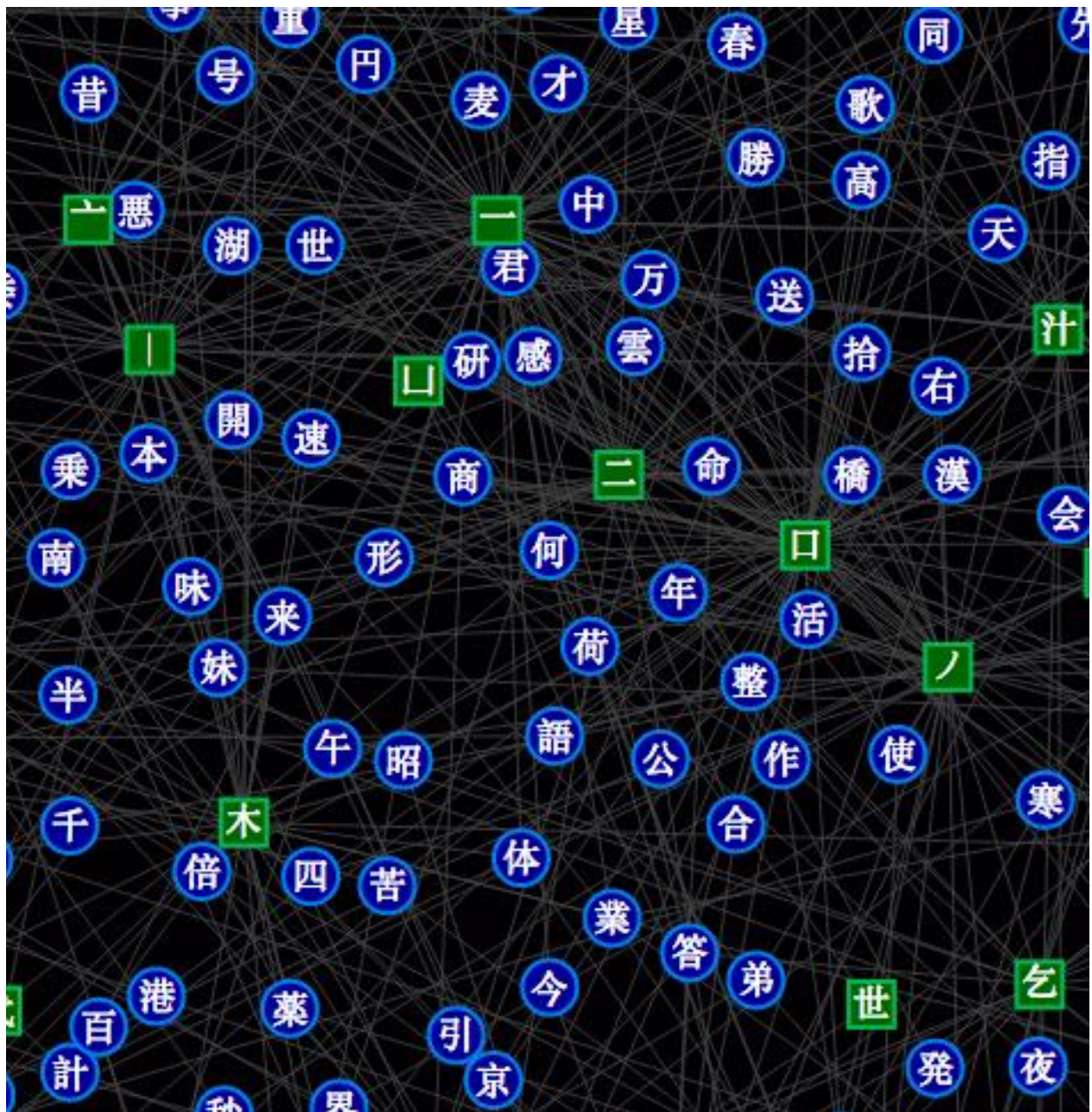


Adam Klein

Kanji Radicals in Japanese

For my project, I chose to visualize the radical makeup of kanji in the Japanese language. Kanji are the more complex characters in the Japanese writing system. 明 is an example of a single kanji. Kanji radicals are the component elements of a kanji. For example, the kanji 明 mentioned above is made up of the radicals 月 and 日. My primary dataset is the [KANJIDIC2](#) project from the Electronic Dictionary Research and Development Group (EDICT). This database maps each kanji in Japanese to its component radicals. I also used the JMDict by Jim Breen and EDICT, a database that includes far more detailed information about kanji which I used to trim the dataset down to a manageable size.

Because there are a lot of kanji and radicals in Japanese, I chose to give users the option to control the number of kanji that would be displayed in the visualization. I used a script to parse the full KANJIDIC2 dictionary into smaller files. This was implemented based on what grade the kanji is taught in the Japanese school system. Choosing a number such as 3 will display all the kanji taught in grades 1 through 3. It is recommended to make grade 5 or 6 the maximum grade to display. Beyond that, the visualization becomes extremely convoluted. The visualization used in the following screenshots uses kanji taught in grade 3 and below.



Displayed above is a screenshot of the view of my visualization before interaction. I chose to display the links between each radical and the kanji in which it appears. A radical is displayed as a green square, while a kanji is displayed as a blue circle. If a radical appears in a kanji, there will be a grey line linking the two nodes. Connected kanji and radicals will try to

In practice, this works when the node clicked is a radical. This is because radicals tend to be used in many kanji, while kanji are limited in how many radicals can be used inside of one. For this reason, increasing the pulling power of a single link has a large effect on a kanji node,

which have only a 3 or 4 other links to counteract the pull. However, even a significant increase in the pulling power on a radical node is significantly dampened when the same radical is also connected to 15 other nodes, which also exert a pull on the node. However, it is usually easy enough to see what radicals make up a kanji just from looking at it. For that reason, I would argue that it is more important to be able to clearly see which kanji use a chosen radical than the other way around.