Scala - Gabriel Browning

1. My chosen language for the term project is Scala. The name comes from its ability to be a *scalable* language, able to reach extreme proportions.
2. Scala is extremely well-suited for dealing with big data sets. It was made from the ground up as a functional and object-oriented language meant to handle large-scale data processing. It uses Java’s virtual machine framework, but only shares a handful of similarities to how it actually runs its code.
3. I intend to write a program that will do various time-consuming tasks on a large data set, likely one or more .json files, but I may begin by trying out a text file. These tasks will likely include but are not limited to: finding the number of occurrences of an inputted string throughout the file, reversing the order of items in the file (if it is text, may go word-by-word), and finding each unique entry in the file (again, word-by-word in a text file). I intend to make similar versions of the script in either Ruby, Python, and/or C(++) to make comparisons primarily on the speeds of the languages. How much of that I do depends on the time I will provide myself.

At minimum, I want to make a couple functions capable of parsing one **large** input file for various purposes and give a runtime for each action. This would require learning to output to the screen, use runtime to capture the time spent on a task, use functions in Scala intended for data manipulation, parse through files as strings (and possibly json files which would likely require a library), and finding a file big enough to show all that off—ordered from easiest to hardest. If I have extra time, I want to make at least one rough copy of the code in another language and capture the runtime of that to show off the speed differences.

1. Scala is great for this application because it was specifically designed to deal with large sets of data and supposedly has many concise methods of dealing with data manipulation
2. From what I’ve found, there is only one type of Scala (unlike Ruby) with its latest version being Scala 3 and Visual Studio Code will be more than capable of providing an IDE with a few plugins slapped on top.