Reading Challenge

Week 2

This reading challenge is worth 20% of your grade. It will assess your ability to read texts about programming and websites by applying the following strategies:

1. Vocabulary
2. Skimming
3. Scanning
4. Reference Words
5. General Reading Comprehension
6. Main Idea of the Text

Good luck!

Comparison of 10 Programming Languages

An experiment comparing the speed of 10 most commonly used programming languages namely, C, C++, C#, Golang, Java, JavaScript, Kotlin, Python, Ruby and Rust.

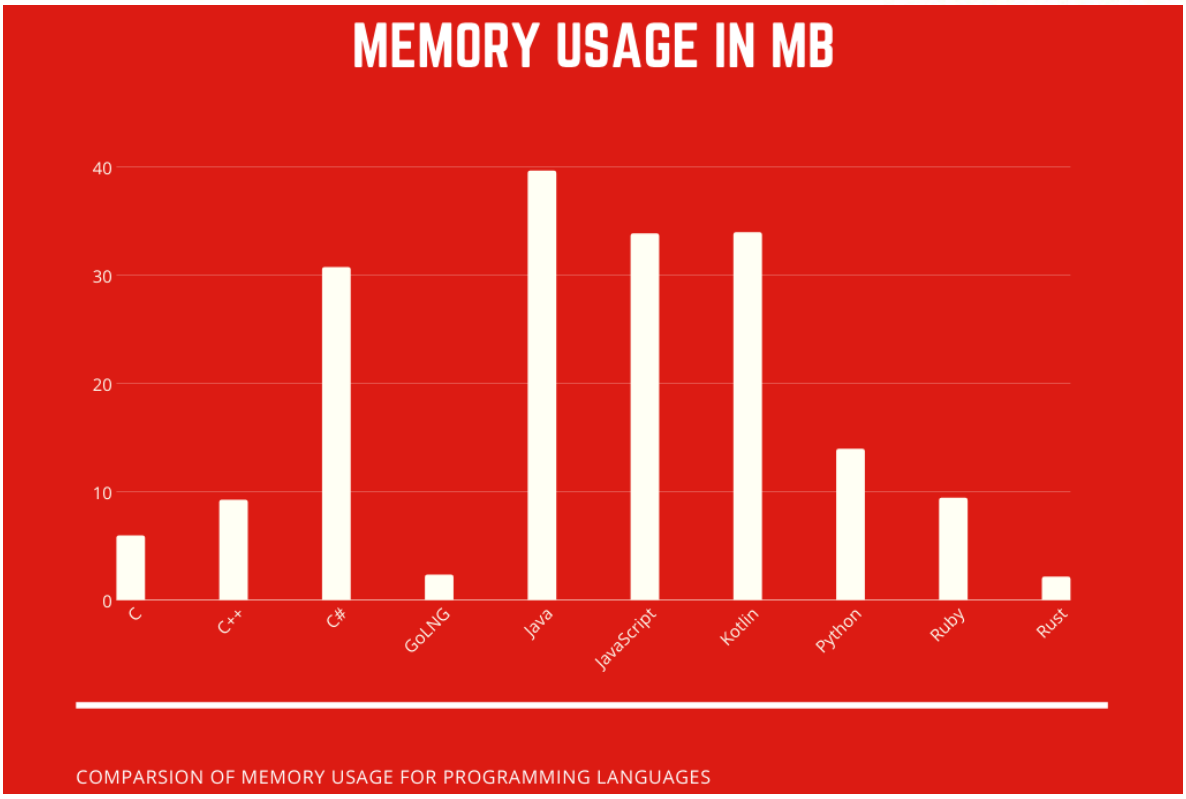
Taken and adapted from:

https://reubenrochesingh.medium.com/comparison-of-10-programming-languages-f43b0ac337a4

Q1_____

I tried solving ***Kids With the Greatest Number of Candies problem*** (https://leetcode.com/problems/kids-with-the-greatest-number-of-candies/) present on *LeetCode*. In this problem we are given with an array candies and an integer *extraCandies*. We have to find for each kid if there is a way to distribute *extraCandies* among the kids such that he/she can have the **greatest** number of candies among them.

This particular problem had 103 test cases. You can refer to the problem linked to check out the input-output files and constraints, and, of-course if you wish to solve **this**. Since I am not very well familiar with all these programming languages, it took a lot of googling the syntax for this comparison. Overall comparisons of these languages:

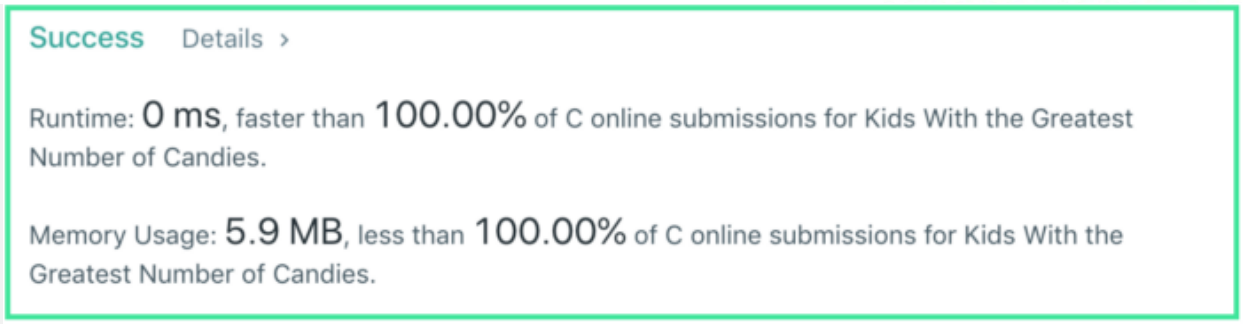


Graphic 1 - Memory Usage Comparisons

Now, let us delve deeper into the performance of each of these languages and also knowing about **them** briefly!

C

This is a powerful general-purpose programming language. It can be used to develop software like operating systems, databases, compilers, and so on. **C programming is an excellent language to learn to program for beginners.** Following are the stats when using C.

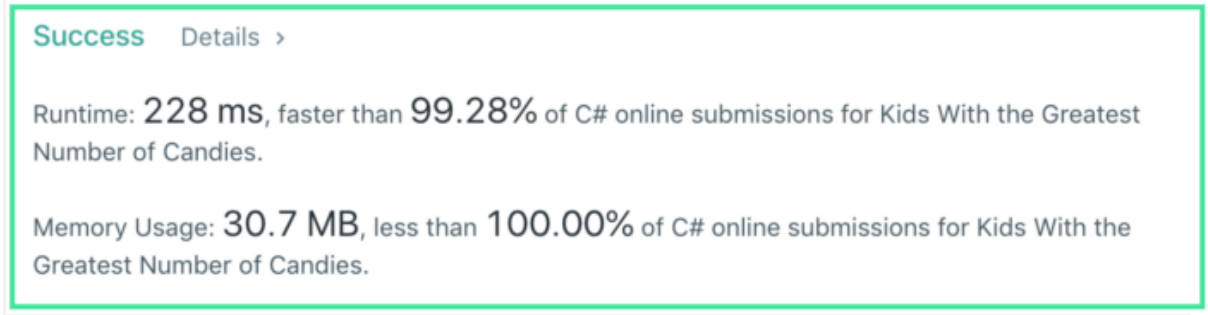


Q2_____

This is a powerful general-purpose programming language. It can be used to develop operating systems, browsers, games, and **so on**. C++ supports different ways of programming like procedural, object-oriented, functional, and so on. This makes C++ powerful as well as flexible. Following are the stats when using C++

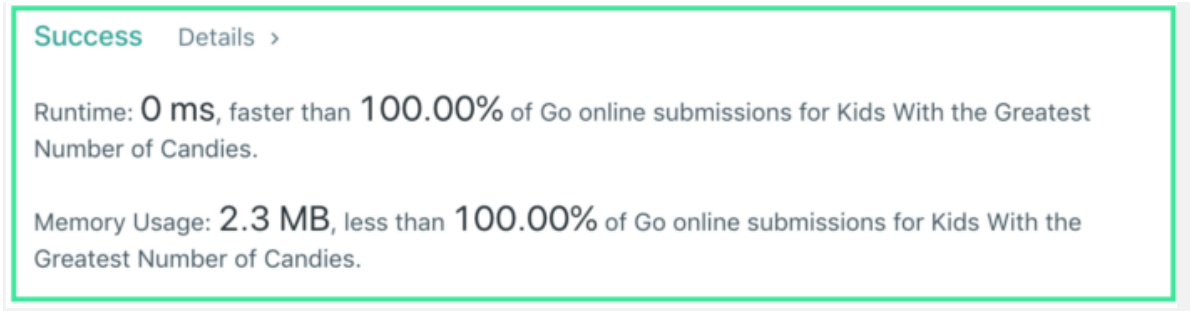
Q3_____

This is a general-purpose, object-oriented programming language. It is one of the most popular languages used for developing desktop and web applications. Being a C based language, C# is **closer** to C++ and C. Syntactically, it is similar to Java. Following are the stats when using C#



Golang

Golang, is an open source programming language. It's statically typed and produces compiled machine code binaries. Developers say that Google's Go language is the C for the twenty-first century when it comes to syntax. However, this new programming language includes tooling that allows you to safely use memory, manage objects, collect garbage etc. Let's look at the stats:



Java

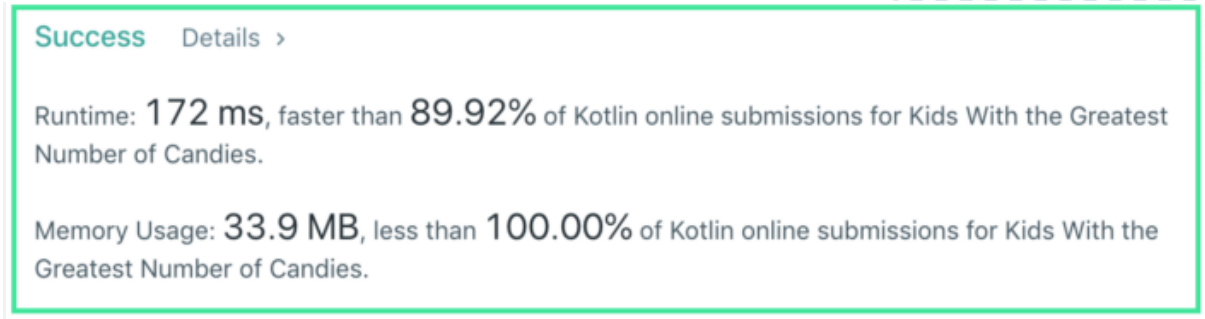
Java is a powerful general-purpose programming language. It is used to develop desktop and mobile applications, big data processing, embedded systems, and so on. According to Oracle, the company that owns Java, Java **runs** on 3 billion devices worldwide, which makes Java one of the most popular programming languages.

Q4_____

This is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. **While it is most well-known as the scripting language for Web pages, many non-browser environments also use it.**

Kotlin

Kotlin is a relatively new programming language developed by JetBrains for modern multiplatform applications. Nowadays, Kotlin is **widely** used for Android development instead of Java. It is because Kotlin is safe, concise, and fun to read and write.

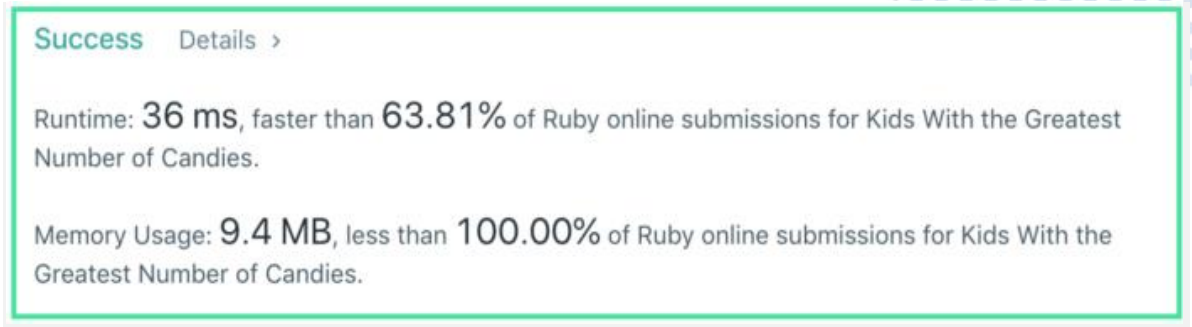


Python

Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language. It was created by Guido van Rossum during 1985- 1990.

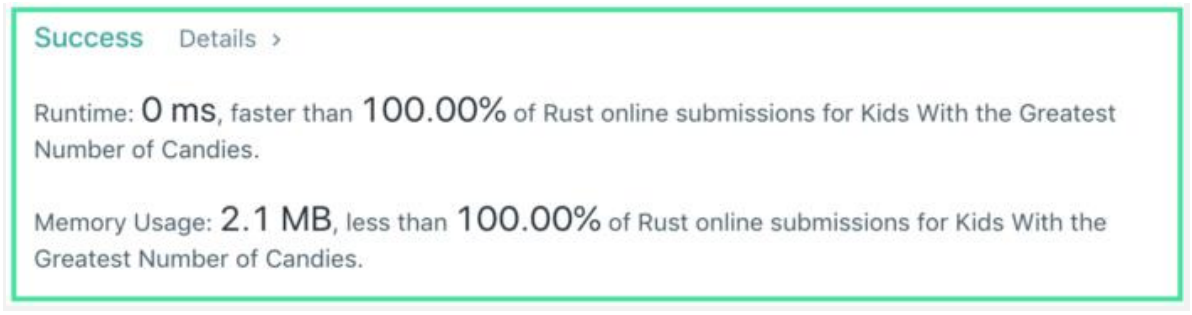
Ruby

A dynamic, open source programming language with a focus on simplicity and productivity. It has an elegant syntax that is natural to read and easy to write.



Rust

Rust is a multi-paradigm programming language focused on performance and safety, especially safe concurrency. Rust is syntactically similar to C++, but provides memory safety without using garbage collection.



Note that, the test cases against which problems are tested are language specific and also the code that I wrote might not be performing the exact same operations in each of the language variants. Moreover, such things are IDE dependent as well. These are just my findings which could be different from yours or the actual values.

Stay updated for more!