Assignment 1

CST8333 19F

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## Research

* 1. **The TIOBE index**  
     The TIOBE index ranks programming languages based on search engine results, and the number of engineers, courses and vendors using the language.

Pros:

* + - Updated Monthly
    - Has data for programming language popularity dating to 2001

Cons:

* + - Is based on raw search results (number of web pages), perhaps not the most accurate metric with similarly named languages (C, Objective C, C#, etc. ). Also could cause some languages (i.e. Python) to be ranked higher due to “python” having other meanings.

[1]"TIOBE Index | TIOBE - The Software Quality Company", *Tiobe.com*, 2019. [Online]. Available: https://www.tiobe.com/tiobe-index/. [Accessed: 12- Sep- 2019].

* 1. **PYPL PopularitY of Programming Language**  
     The PYPL index is based on the search trends for tutorials for each language on Google. More searched languages are assumed to be more popular.

Pros:

* + - Based on popularity of learning resources
    - Based on Google Trends (i.e. popularity of search queries), not search result hits.

Cons:

* + - No historical data/comparison besides how ranking exactly one year ago
    - Limited to 22 languages.

[2]"PYPL PopularitY of Programming Language index", *Pypl.github.io*, 2019. [Online]. Available: http://pypl.github.io/PYPL.html. [Accessed: 12- Sep- 2019].

* 1. **Stack Overflow Developer Survey Results**The annual Stack Overflow Developer Survey Results provides insights on languages, frameworks, libraries, tools and more. The rankings are based on survey responses.

Pros:

* + - Based on responses from actual developers, not search results or search trends.
    - Large number and variety of responses (88883 responses, 179 countries represented)

Cons:

* + - Bias towards users of Stack Overflow (of which a large majority are either full-stack or front-end developers) which causes a heavy bias for JavaScript, for instance.

[3]"Stack Overflow Developer Survey 2019", *Stack Overflow*, 2019. [Online]. Available: https://insights.stackoverflow.com/survey/2019#technology. [Accessed: 12- Sep- 2019].

I would not say that any of the 3 websites was the “best”, it’s definitely a better idea to use all 3 to make an informed opinion as all 3 have different methodologies for ranking languages. If I had to pick one, it would be the one with the most “interesting” data, which would be the TIOBE index simply due to the fact that you can browse the data all the way back to 2001, but that doesn’t make it the overall best.

## Language Selection

I will be studying Go. I have from one to 3+ years of professional experience using all other languages listed on a day-to-day basis, since I’ve been working in an enterprise setting first as a Junior Applications Developer (8 months), followed by Intermediate Applications Developer (for 2 years), and now work as a DevOps engineer (last 7-8 months). (I had taken a break from Algonquin since the strike to focus on work, and I’m looking at a promotion to a Team Lead role around next May, which my boss has told me could be mine if I finished my diploma. I only have 3 courses + a PLAR left. My employer is sponsoring my return to school.)

Go is a language I have some familiarity with (but by no means proficiency) because of my current role (lots of interaction with Go-backed tools like Terraform, Hashicorp Vault, Kubernetes, Helm, and various others), and knowing Go is a definite asset when working with those tools, or extending them.

## Unit Testing

## Tool Availability

## Project