Ares Marlonsson
Dr. Tisha Gaines
CSC 2110
11/15/20

Emphasize Human, Rather Than Computer, Needs

The end of 1995, brought with it the introduction of the programming language Ruby. Yukihiro Matsumoto is responsible for it’s conception and for releasing what many consider the first language someone should learn when being introduced to programming. Ruby is still prevalent today and continues to update and evolve, with each release proving to increase reliability and usability. Proof of it’s prevalence can be seen in the list of companies that are using Ruby on Rails, a server side web application framework written in Ruby, in 2020. That list includes revenue giants such as Airbnb, Twitch, Shopify, Hulu, Soundcloud, Bloomberg and more, all of which receive massive amounts of internet traffic everyday, with Bloomberg exceding 100 million users each month (Banaszek, 2019). Many notable languages were introduced near the turn of the century such as ADA, Java, PHP, Delphi and others, all of which along with Ruby helped shape what is commonly referred to today as the internet age. But with each decade brings new languages and the question is commonly asked, what differentiates programming languages besides the name listed on it. Ruby differentiates itself with it’s philosophy of fun.

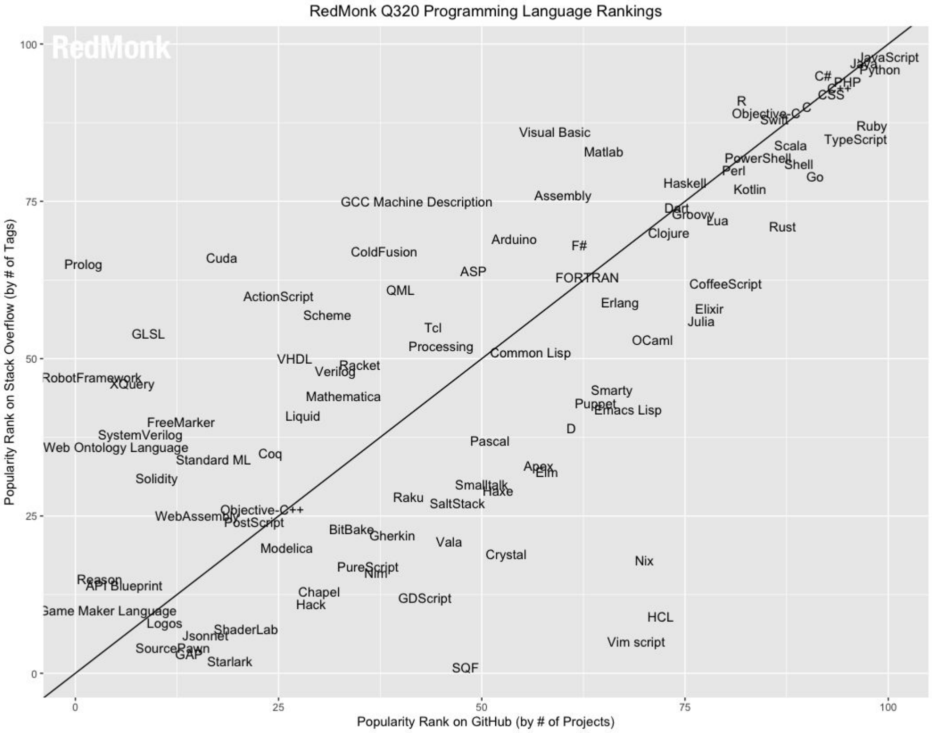
While Ruby is a dynamic, interpreted, object oriented, general purpose programming language that utilizes garbage collection, it was not created the same as other languages that may operate the same way. During its creation, Matsumoto put a particular emphasis on the fact that programming languages are supposed to work for the human user, not the other way around. He sought to eliminate any source of confusion and focus entirely on the user's experience. In an interview with Bill Venners, Matsumoto states that computer engineers focus too often on the machines, thinking in terms of if they do this, the machine will run faster, or if they do that the machine will run faster, and goes on further to claim computer engineers "are focusing on machines, but in fact we need to focus on humans, on how humans care about doing programming or operating the application of the machines." In the interview he goes on further to articulate the value of designing based on how a human interacts with the machine and claims "We are the masters. They are the slaves," referring to the computers we so often depend upon (Venners, 2003). And therein lies the purpose of Ruby, to focus more on how we as humans feel while using the language, rather than what can be done with a language. It's this philosophy that navigated Matsumoto's decisions while constructing the code, and is paramount in why many consider Ruby as one of the best languages for people to begin programming with.

Ruby's object oriented nature is one aspect that makes it such a likable language. Three of the most used programming languages in the world, Java, C++, and Python, all have similar object oriented configuration, in which they utilize inheritance, encapsulation, abstraction, and polymorphism. Benefits of object oriented programming include increased reusability and reproducibility due to simpler structures and inheritance, easier troubleshooting and debugging, and enhanced security through encapsulation. Ruby varies from more common object oriented languages though in that it is purely object oriented, everything from strings and integers to the classes themselves are viewed as objects. Unlike aspects of the previously mentioned object oriented languages though, Ruby does not support multiple inheritance and doesn't concern itself with the type of the objects. Instead the methods it defines are priority, checking for the presence of a given method rather than the type, also referred to as duck typing. It's this and other aspects Matsumoto considered integral in creating a viable language that people enjoyed using. Ruby is widely considered the language of choice for startups, as it’s relatively simple and intuitive, and utilizes software development and saves time. According to an analysis by Forbes, on average developers can build applications 30-40% faster than developers who utilize different languages (Tokareva, 2018). This was the main determinant in my choosing of Ruby, it’s philosophy of making the human user the priority, it’s industrial usage with a number of companies utilizing it, and the fact that having Ruby at your disposal could make you more of an asset to a company as time could be saved and efficiency maximized.

The most recent rankings from RedMonk placed Ruby in 7th out of all programming languages and considers Ruby as a Tier 1 programming language (O'Grady, 2017). While it has lost some traction with companies like Twitter who started with Ruby and switched away due to scaling demands, it is still very popular amongst developers in the programming community. Speed also hasn't been a strength of Ruby’s, but Moore’s law is making that less and less of a concern each year. The release of Ruby on Rails revolutionized web development and launched Ruby into the forefront of up and coming programming languages. That hype has decreased as of late though and 7th is actually the lowest ranking Ruby has received since 2012, which can be attributed mainly to the higher runtimes of languages like Java and Python (O'Grady, 2017). The rate of decline isn’t drastic but it is notable, and future updates will be very important in both Ruby and Ruby on Rails to turn the trajectory from descending to ascending. With its most recent version being released on Christmas day of 2019, it is expected another version will be released the same time this year. As long as the language continues to release updated versions and follows Yukihiro Matsumoto’s philosophy of emphasizing “human, rather than computer, needs,” it's hard to imagine Ruby being anything less than a mainstream, widely used, and prevalent programming language (Venners, 2003).

Appendix A.

Programming Languages Rankings



Appendix B.

Hello World Program Implementation

- Input: puts "Hello World."
- Output Hello World.

Also,

- Input: $stdout.puts "Hello World."
- Output Hello World.

Also,

- Input: STDOUT.write "Hello World."
- Output Hello World.

Works Cited

Banaszek, Ania. “Top 34 Companies Using Ruby on Rails in 2020.” *Netguru Blog on Ruby*, 12 Sept. 2019, www.netguru.com/blog/what-is-ruby-on-rails-used-for.

O'Grady, Stephen. “What Ruby Needs.” *Tecosystems*, RedMonk, 20 Dec. 2017, redmonk.com/sogrady/2017/12/15/what-ruby-needs/.

Tokareva, Julia. “Is Ruby A Dying Language?” *Forbes*, Forbes Magazine, 3 Apr. 2018, www.forbes.com/sites/quora/2018/04/03/is-ruby-a-dying-language/?sh=7e2a2ca56a3d.

Venners, Bill. “No Perfect Language.” *The Philosophy of Ruby*, 29 Sept. 2003, www.artima.com/intv/ruby.html.