

Favorite Programming Language amongst students

Anwar Jawhar, Harrisburg University, Ajawhar@my.harrisburgu.edu



Introduction

It started off at the beginning of the semester where we were given a task to create our own statistical study that is related to our major, for my case I had to create one based off computer science. I decided finding out the most favorited programming language throughout students and alumni would be nice to see, I personally was curious to see what the answer would be.

Hypothesis

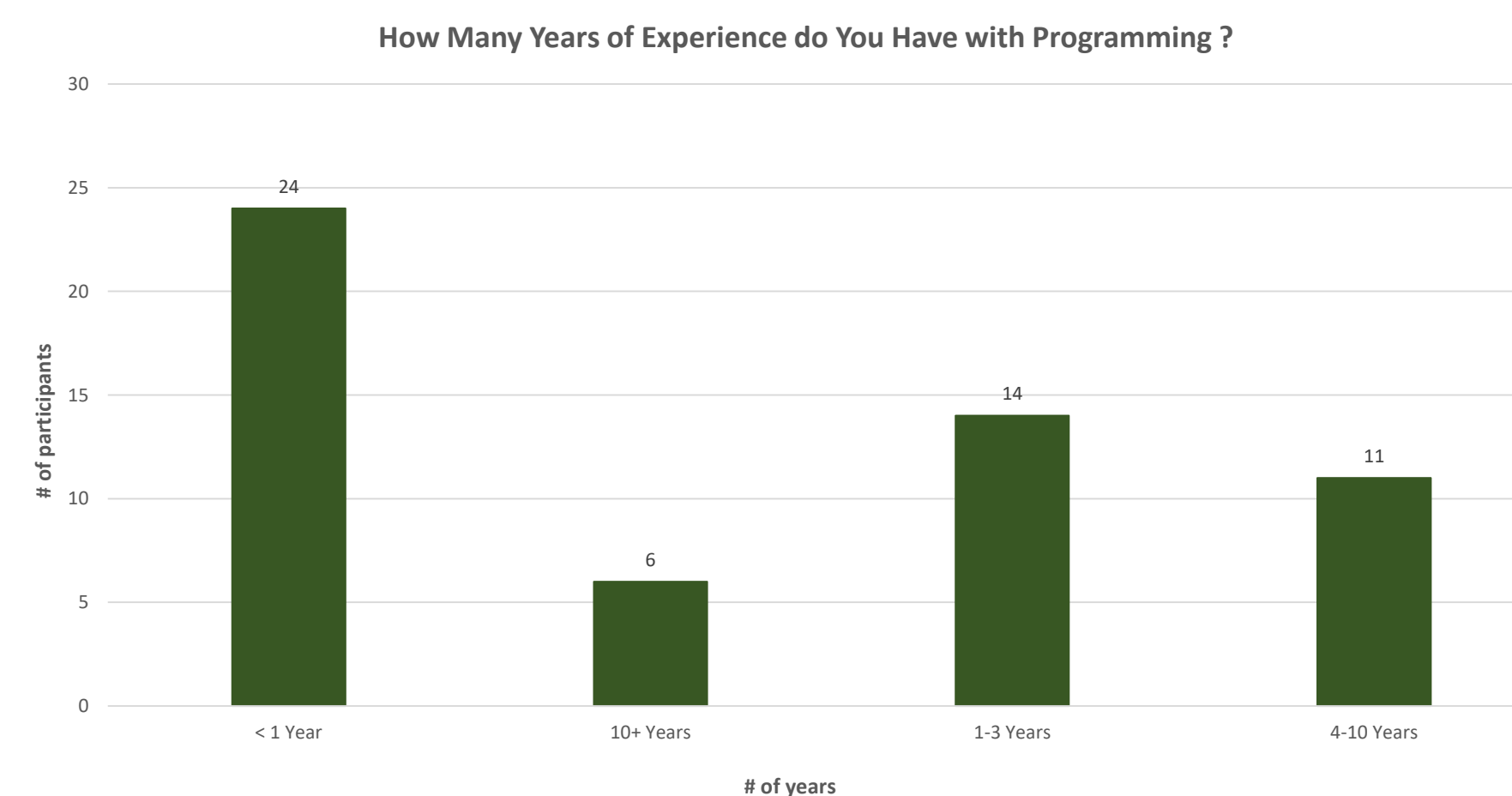
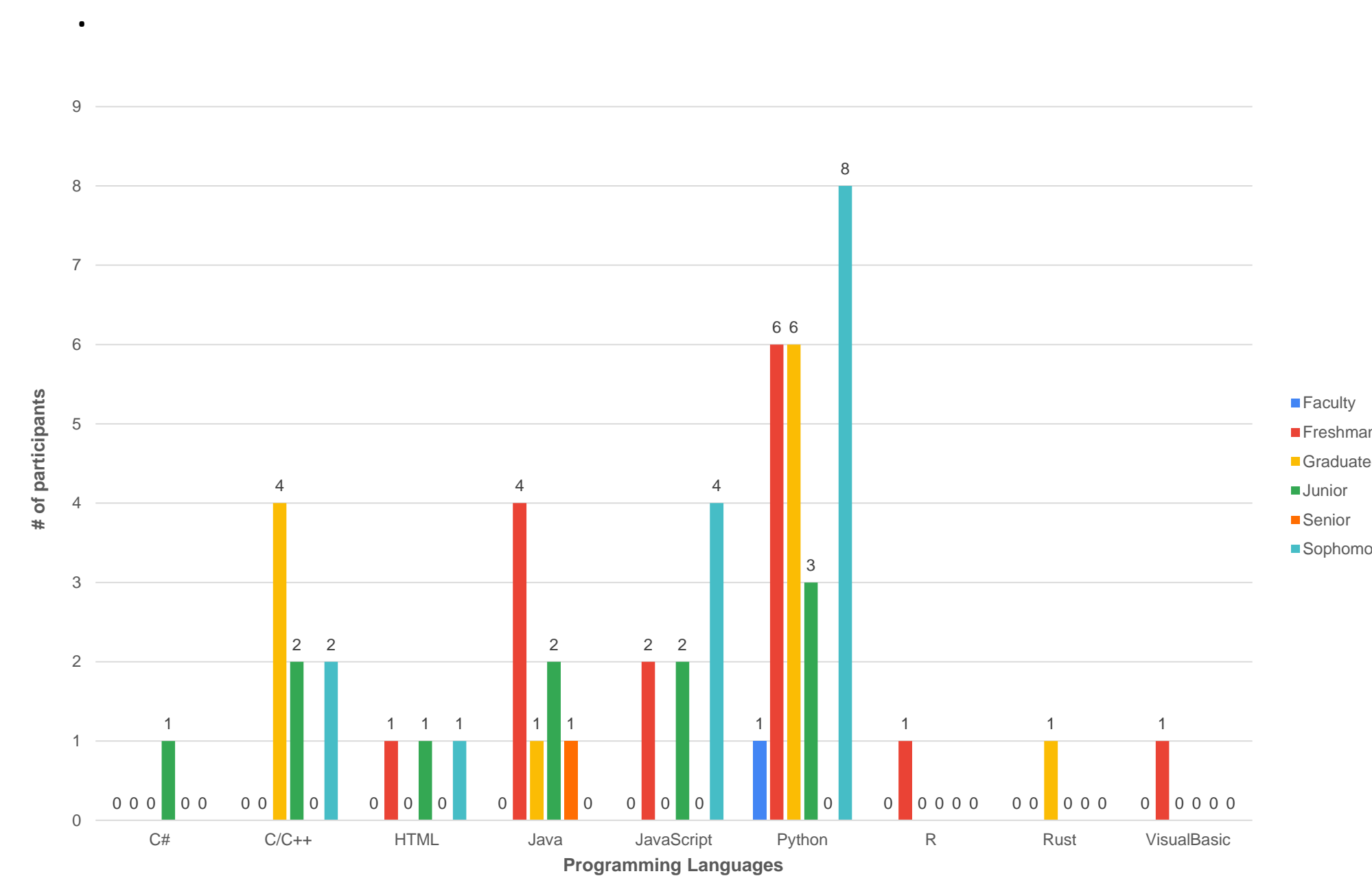
Based off my references and previous knowledge on popular programming languages, I hypothesize that the true percentage of all my surveyors will have python as their favorite programming language would be 40% of the total sample.

Methods

I finished off with a total of 55 participants for my survey. The main demographic of my project was directed towards anyone affiliated with their school, so for example students, teachers, etc. I started off with getting my surveys at Harrisburg university, but I felt as if the survey I was handing out was somewhat specific towards intermediate-expert programmers, so I opened to near by universities. I found that Google forums was the most efficient way of handing out surveys to other students and printing out a QR code for a quicker way of getting responses.

Results

76.4 % of the 55 individuals I interviewed were men, while 23.6 % were women. This is prevalent in the programming industry; we see a lot of males who code and program, so this number didn't surprise me. Because I had an equal number of responses from freshman's or a sophomore's, the average year for a student from our poll was both freshman and sophomore



Statistical Analysis

In a sample of 55 surveys, 24 of them picked python as their favorite programming language. This means that my statistic was 43.6% of the total 100%. My margin of error was 13.1% due to the low survey count. With 95% confidence, my confidence interval was (30.5%, 56.7%). I started with my null hypothesis at 40%. My test statistic was 0.55. My P-value was 0.7088 and by using the two tailed test, I found out that we failed to reject our hypothesis.

Conclusion

I am 95% confident that the true percentage of all my participants who selected python as their favorite programming language is between 30.5% and 56.7%. With 95% confidence, I do not have evidence to conclude that the true percentage of all my participants who selected python as their favorite programming language is significantly different from my guess of 40%. My guess was reasonable and failed to reject my hypothesis. I discovered how specific my survey was when distributing it. It's because I wanted everyone's input on what their favorite programming language was, and I only sought individuals who understood how to program to comment.

References

Larson, Q. (2021, April 28). *The 2020 stack overflow developer survey – 65,000 DEVS share their salaries, top programming languages, and more.* freeCodeCamp.org. Retrieved April 6, 2022, from <https://www.freecodecamp.org/news/stack-overflow-developer-survey-2020-programming-language-framework-salary-data/amp/>
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.95.5272&rep=rep1&type=pdf>