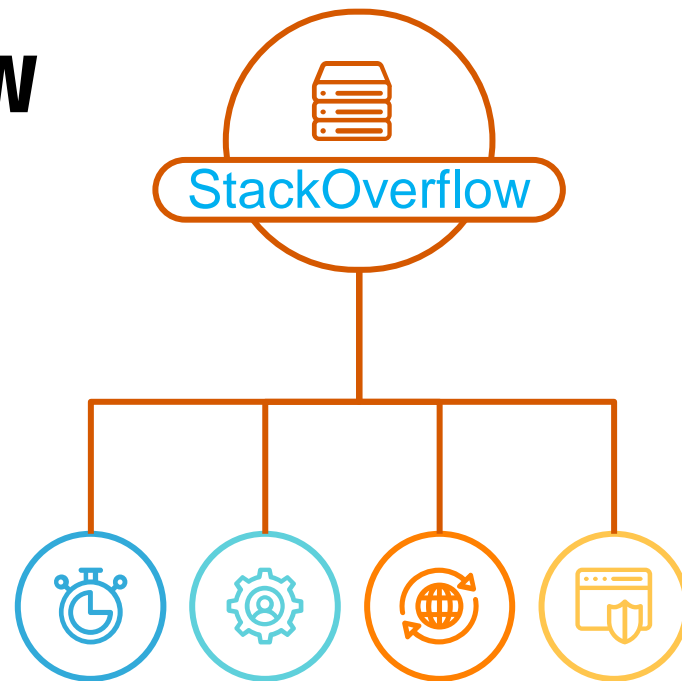


The 2019 Stack Overflow Developer Survey

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January 29, 2023



OUTLINE



- Executive Summary
- Introduction
- Methodology
- Results
 - Visualization – Charts
 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
- Appendix

EXECUTIVE SUMMARY



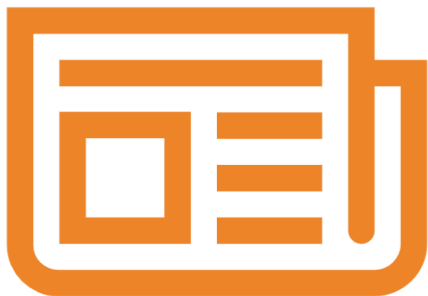
- The essential skills in IT and business consulting are continually evolving and changing.
- Staying updated on future skill demands and advancements is crucial to stay ahead in the constantly changing technology landscape.
- The presentation highlights the present (2019) and future (next year) trends in Programming Languages, Databases, Platforms, and WebFrames.
- The goal is to assist the company in making informed hiring and budgeting decisions based on data.

INTRODUCTION



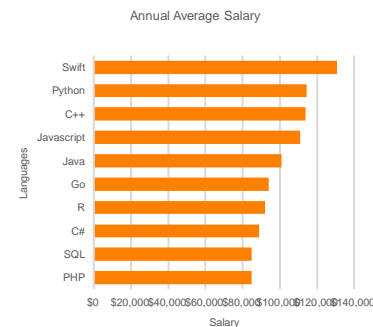
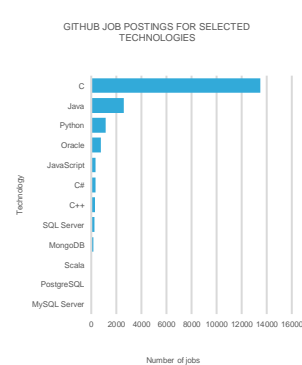
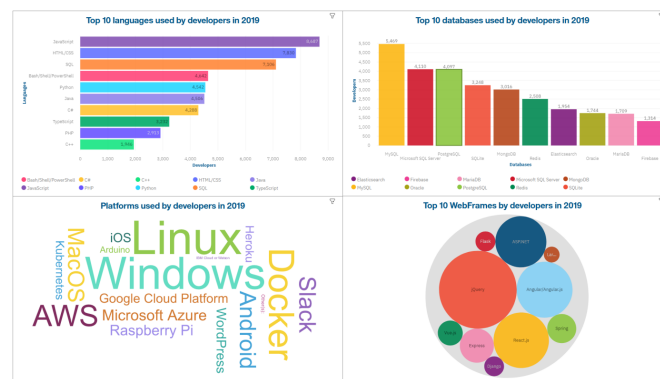
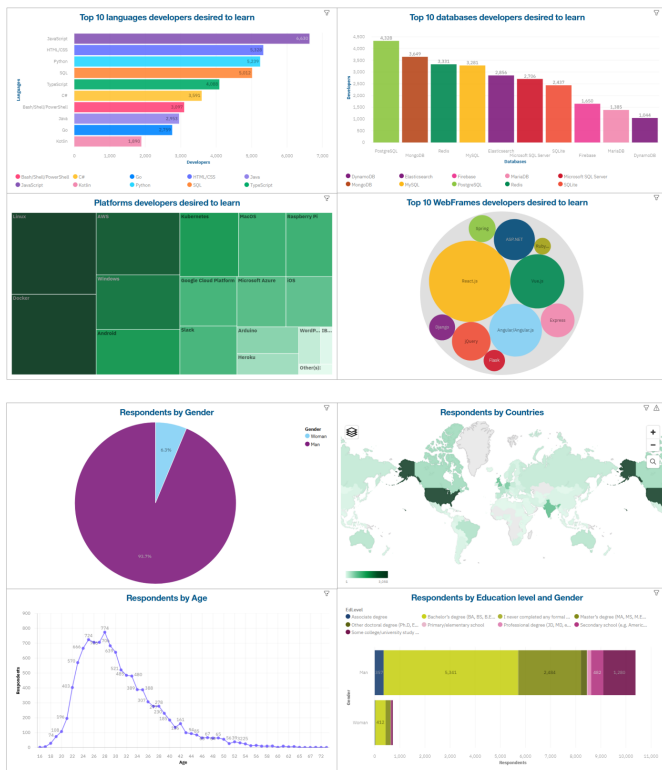
- The presentation highlight important results from a study of data obtained from the 2019 Stack Overflow Developer Survey. The findings include:
 - Most utilized languages, databases, and technologies (as of data collection)
 - Perceptions on the future's most popular technologies
 - Demographic information (e.g. gender disparity among developers)
- These results are particularly relevant for developers (current and aspiring), recruiters, educators, and decision makers within the global IT and business consulting services firm.
- The presentation aims to determine the future abilities required in the global IT industry for the company to stay current with technology and maintain competitiveness.
- Recommendations will be stated based on the analysis.

METHODOLOGY



- The 2019 Stack Overflow dataset was modified and a subset was used for data wrangling to eliminate duplicates, fill in missing values and normalize data.
- After that, exploratory analysis was performed to find data distribution, outliers, and the correlation between different columns in the dataset.
- The resulting data was then utilized to create visualizations to show distribution, the relationship between two variables, and the composition and comparison of data.
- Cognos Dashboard Embedded (CDE) was used to create the “Programming Language Trends”, “Database Trends”, “Current Technology Usage”, “Future Technology Trends” and “Demographics” slides.
- Appendix
 - GitHub job openings were collected from API and stored the data in an Excel spreadsheet.
 - For average annual salary information, web scraping was utilized to extract data from a website and saved in a CSV file.

RESULTS

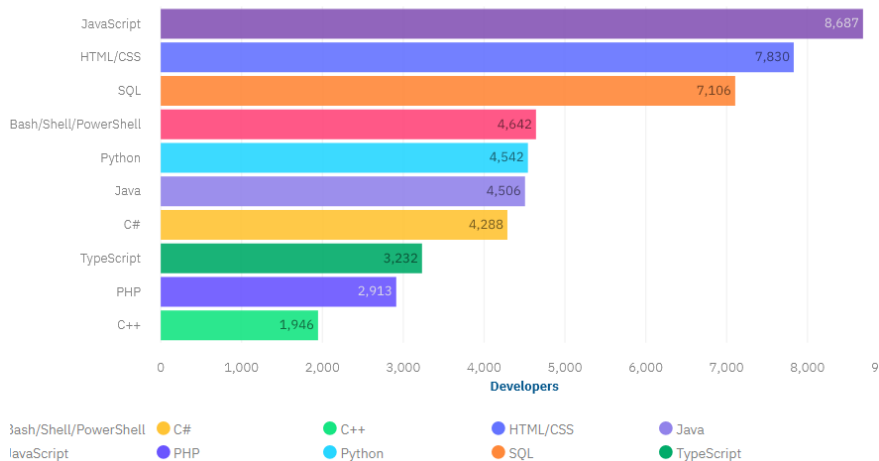


PROGRAMMING LANGUAGE TRENDS

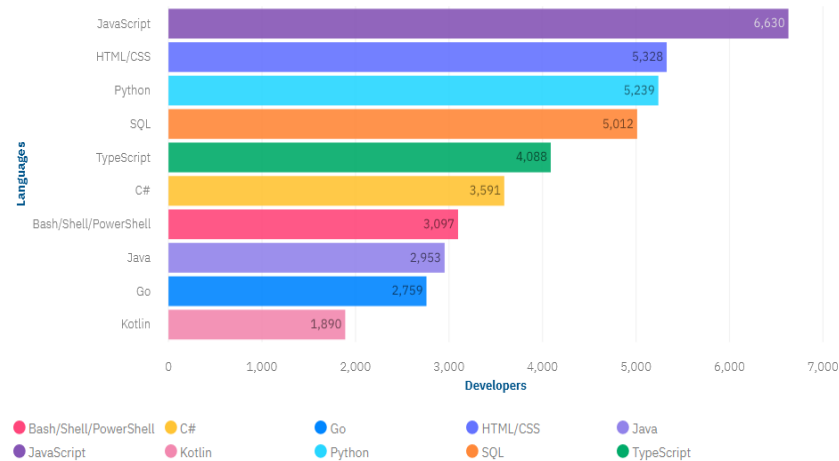
Current Year - 2019

Next Year

Top 10 languages used by developers in 2019



Top 10 languages developers desired to learn



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS remain the top two most in-demand programming languages in 2019 and next year.
- There has been increased interest in Python and TypeScript for the coming year, while interest in SQL and Bash/Shell/PowerShell has decreased.

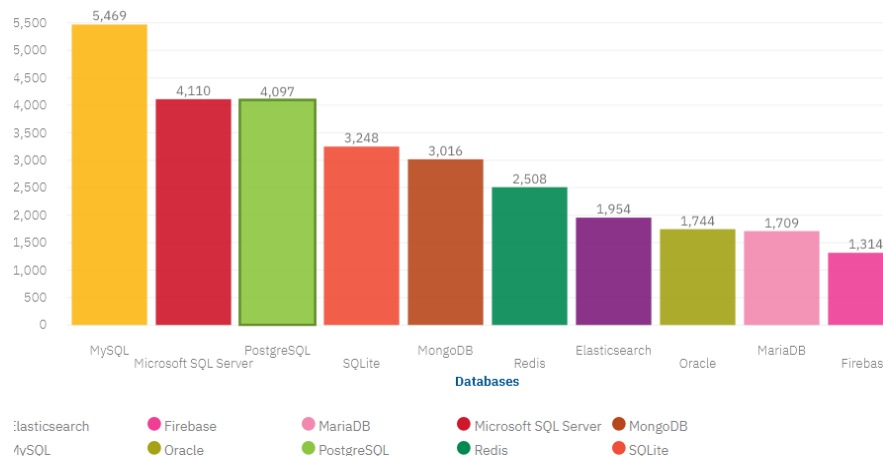
Implications

- Better to maintain a similar workforce with expertise in JavaScript and HTML/CSS.
- Would be wise to increase the workforce with knowledge in Python and TypeScript.
- Perhaps would be good to reduce the workforce with skills in SQL and Bash/Shell/PowerShell.

DATABASE TRENDS

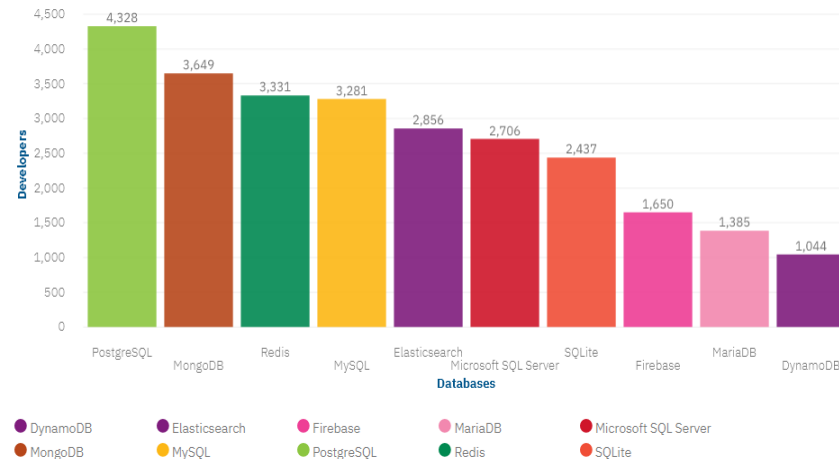
Current Year - 2019

Top 10 databases used by developers in 2019



Next Year

Top 10 databases developers desired to learn



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- There is a declined interest in MySQL, Microsoft SQL Server and SQLite for next year.
- Interest in PostgreSQL and MongoDB has risen compared to the current year.
- There has been an increase in interest for Redis and Elasticsearch for the upcoming year.

Implications

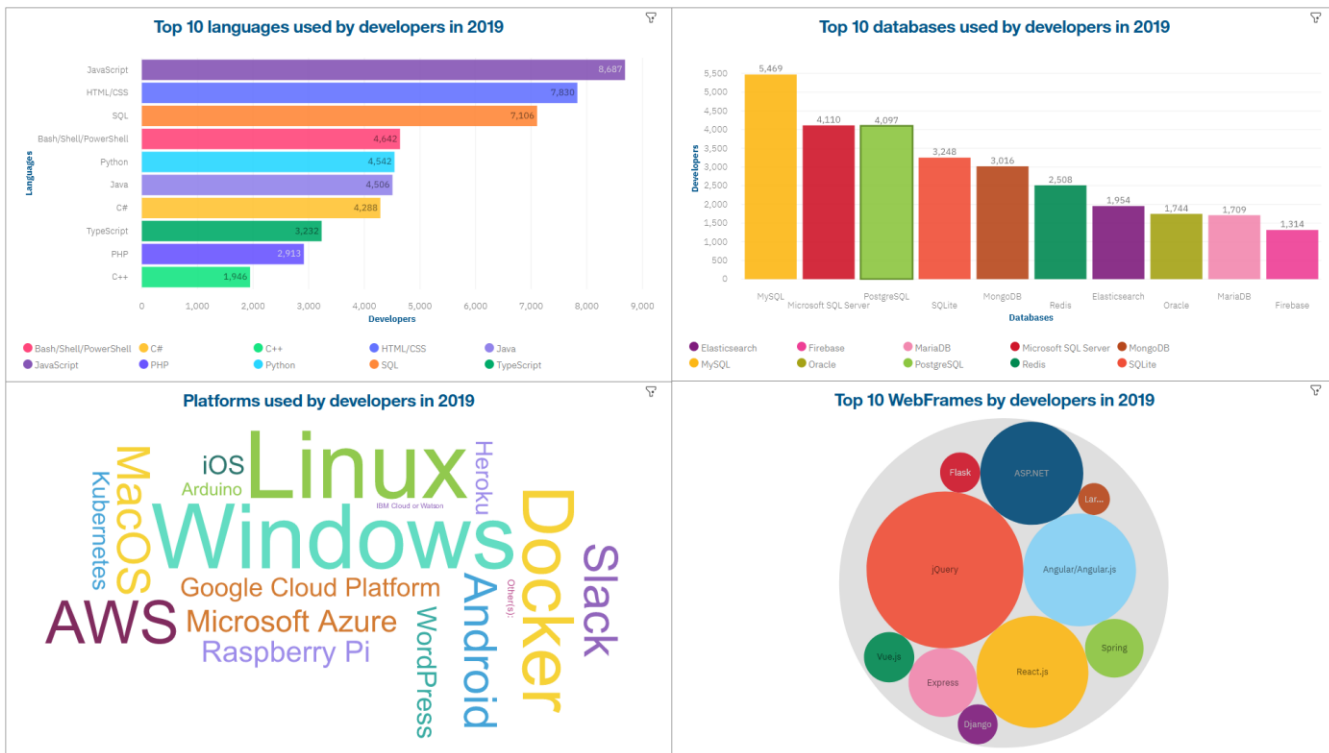
- Reduce the workforce with expertise in MySQL, Microsoft SQL Server, and SQLite.
- Increase the workforce with knowledge in PostgreSQL and MongoDB.
- Expand the workforce with skills in Redis and Elasticsearch.

DASHBOARD

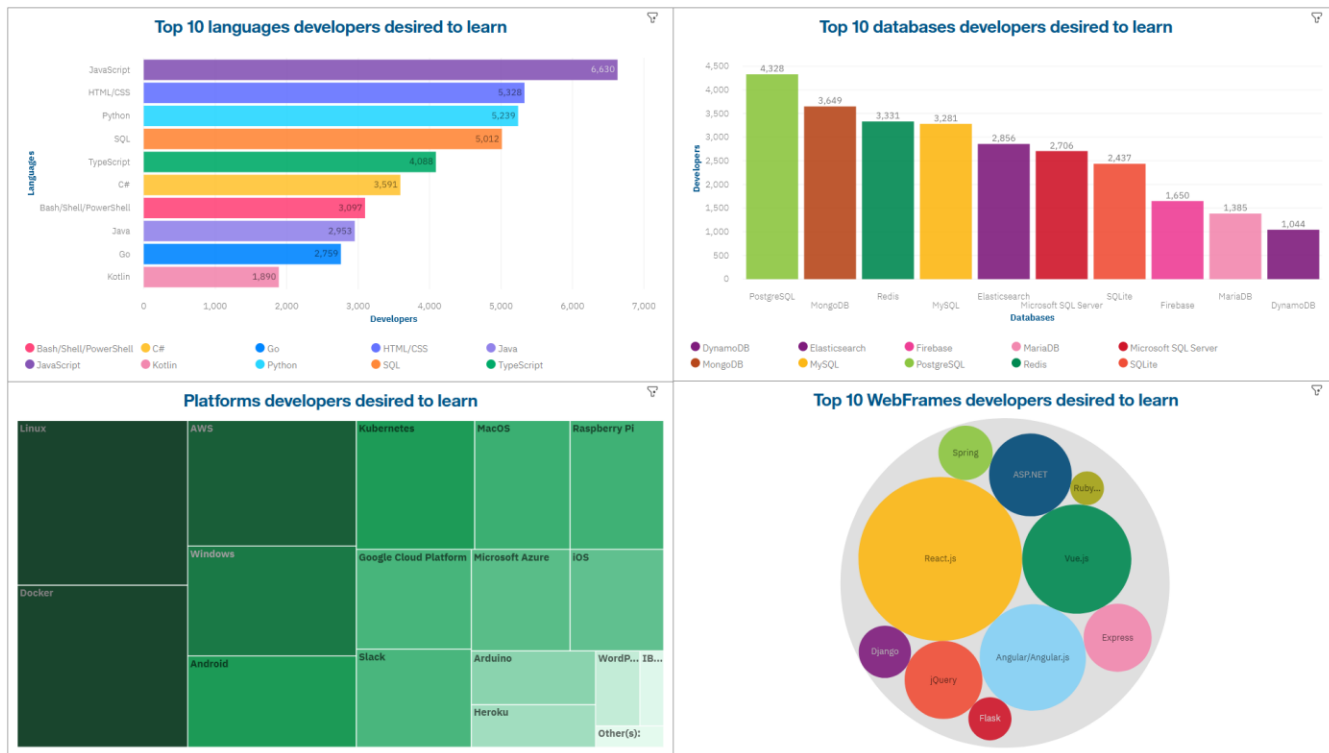


Click [here](#) to view the
Cognos dashboard

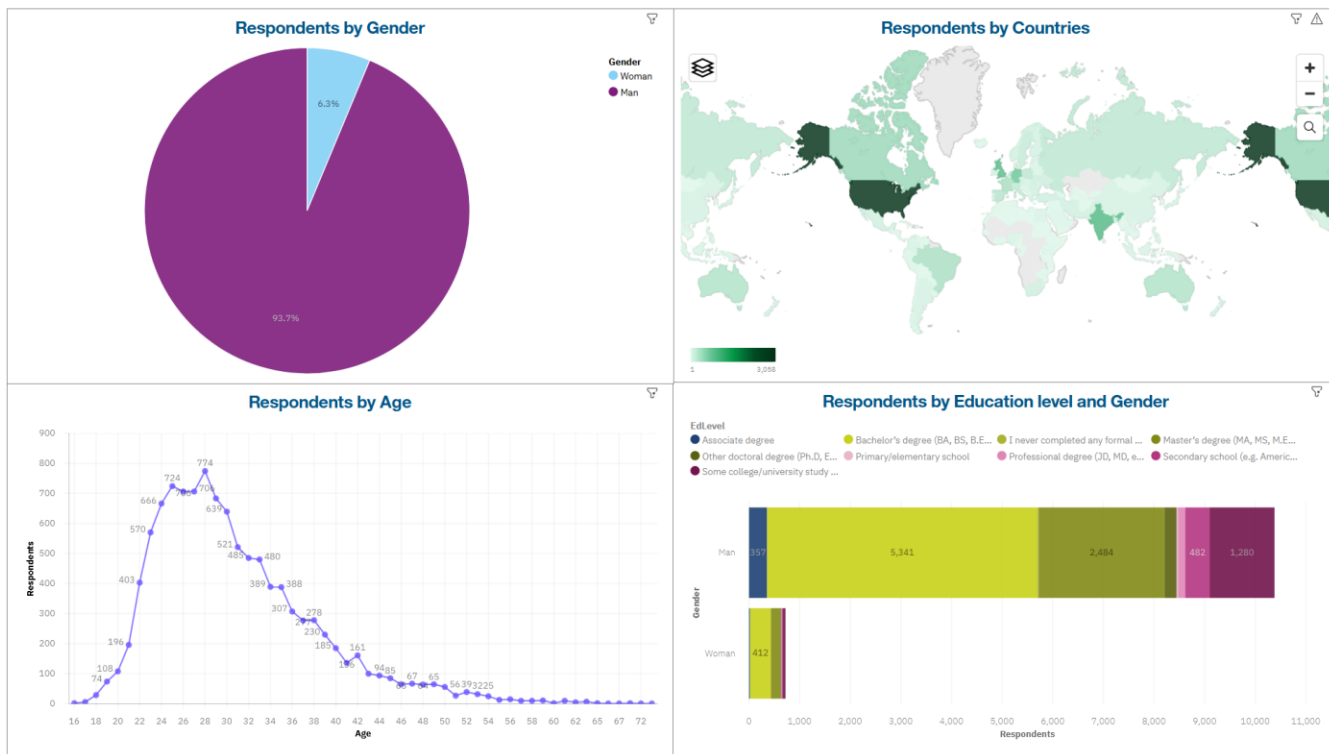
DASHBOARD TAB 1 - Current Technology Usage



DASHBOARD TAB 2 - Future Technology Trend



DASHBOARD TAB 3 - Demographics



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- Programming Languages - TypeScript is rapidly gaining popularity and Python's growth continues.
- Databases - Redis, Elasticsearch, PostgreSQL, and MongoDB are attracting more attention.
- Platforms - Slack's interest is rapidly declining.
- WebFrames - Vue.js is seeing substantial growth, and React.js continues to expand.

Implications

- Maintain a sufficient workforce with expertise in JavaScript and HTML/CSS and increase the workforce with knowledge in TypeScript and Python.
- Expand the workforce with skills in Redis, Elasticsearch, PostgreSQL, and MongoDB.
- Sustain a sufficient workforce with Linux proficiency, increase the workforce with expertise in Docker, AWS, and Android, and reduce the workforce with Slack and Windows skills.
- Maintain a sufficient workforce with ASP.NET skills and increase the workforce with proficiency in Vue.js and React.js.

CONCLUSION



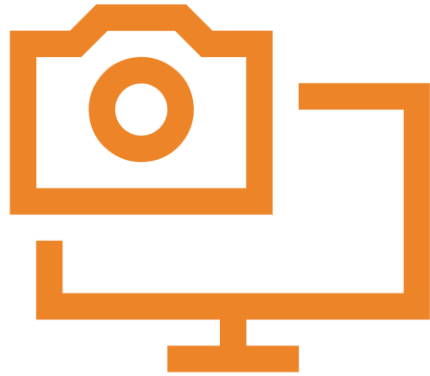
A subset of the 2019 Stack Overflow Developer Survey data was analyzed to gain insights into the most used and desired technologies and the developer demographic.

These findings are useful for developers seeking to stay competitive, companies wanting to upgrade their talent, educational organizations, and policymakers addressing gender and economic issues.

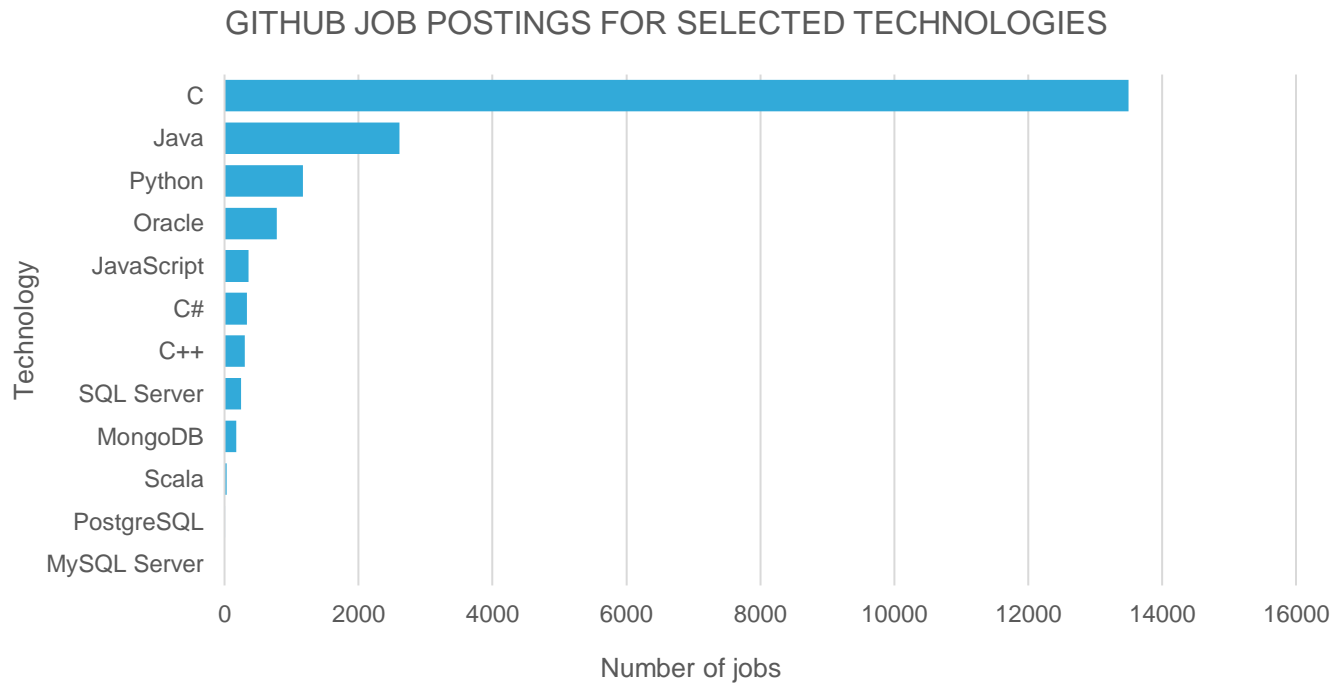
Need to take in account:

- Allocate budget to hire new personnel with the necessary skills to close any gaps.
- Budget for or establish a training program to enhance the skills of current employees.
- Reassign personnel with skills that are no longer in demand.

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

