



STACK OVERFLOW DEVELOPER SURVEY 2019


Babatunde Olaleye

December 15, 2022



OUTLINE



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

EXECUTIVE SUMMARY



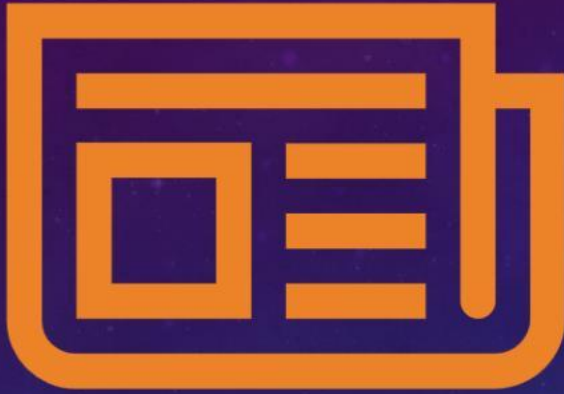
- Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- It is important to identify future skill requirements and trends to keep pace with changing technologies and remain competitive.
- This presentation will show current and future trends in Programming Languages, Databases, Platforms and WebFrames.
- Overall, the aim in identifying future skill requirements and trends is to help the firm make more informed data-driven hiring and budgetary decisions.

INTRODUCTION



- This presentation has been created for stakeholders and business decision makers within the global IT and business consulting services firm.
- The presentation will help identify future skill requirements in the global IT sector necessary for the firm to keep pace with changing technologies and remain competitive.
- Recommendations will be stated based on the analysis.

METHODOLOGY



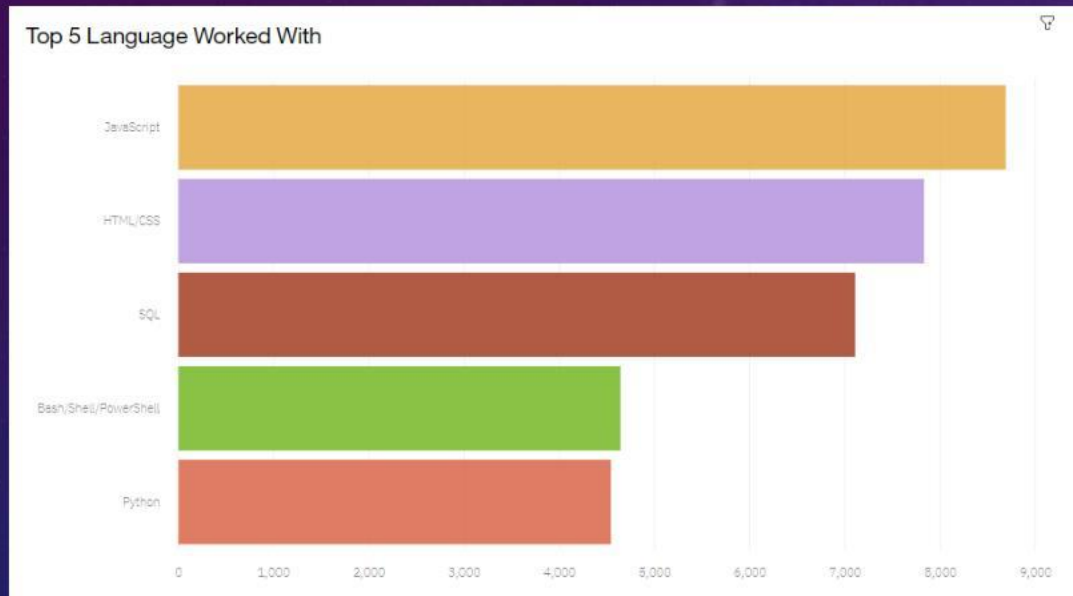
- Using a modified subset of the Stack Overflow dataset¹, the data was wrangled in order to remove duplicates, impute missing values and normalize data.
- Next, the data underwent exploratory analysis in order to find the distribution of data, presence of outliers and determine the correlation between different columns in the dataset.
- The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of data.
- Finally, after downloading two files², which are also a modified subset of the Stack Overflow dataset, Cognos Dashboard Embedded (CDE) was used to create the “Current Technology Usage”, “Future Technology Trends” and “Demographics” slides.
- Appendix
To obtain average annual salaries web scraping was used to extract information from a website then saved to a csv file.

RESULTS

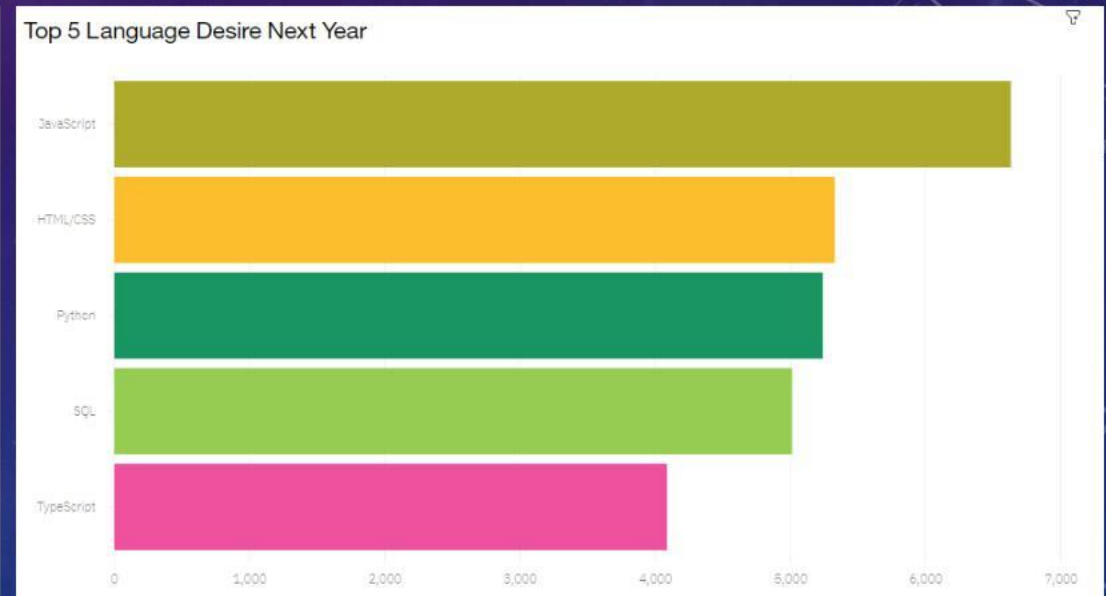
A thin, vertical pink line is positioned to the right of the word "RESULTS". It extends from approximately the middle of the text vertically down to about one-third of the way down the page.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Implications

Findings

- JavaScript and HTML/CSS continue to be the top two most popular programming languages for this year and next.
- Python and TypeScript have gained more interest for next year.
- Whereas interest in SQL and Bash/Shell/PowerShell has decreased.

1

Continue to employ a similar number of people skilled in JavaScript and HTML/CSS.

2

Employ more people skilled in Python and TypeScript.

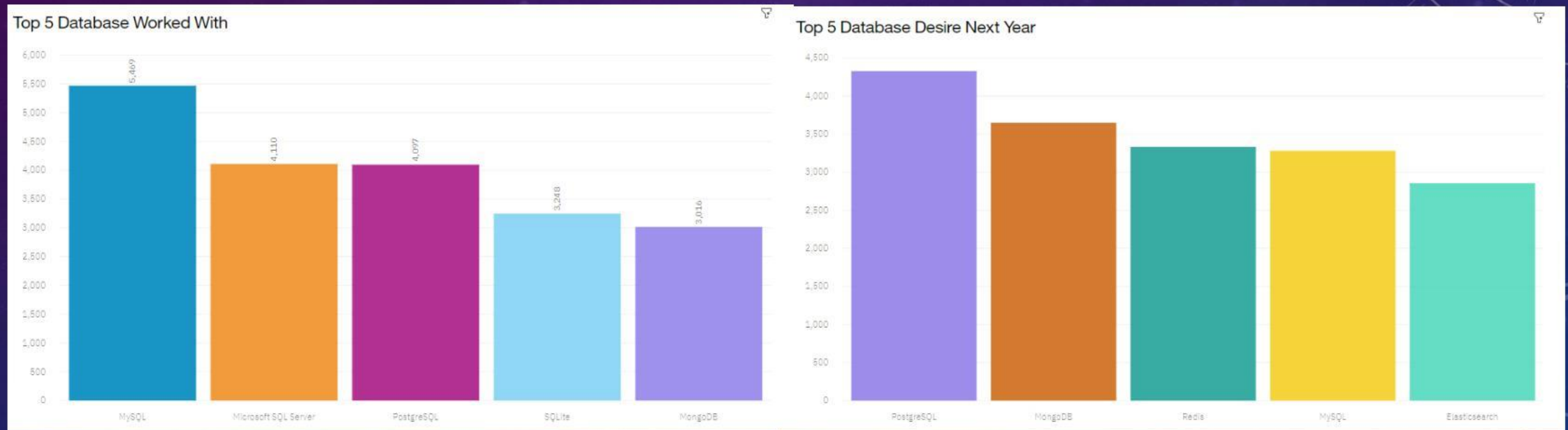
3

Employ less people skilled in SQL and Bash/Shell/PowerShell.

DATABASE TRENDS

Current Year

Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Interest in MySQL, Microsoft SQL Server and SQLite has decreased for next year.
- Interest in PostgreSQL and MongoDB have increased compared to the current year.
- There is gained interest in Redis and Elasticsearch for next year.

Implications

1

Employ less people skilled in MySQL, Microsoft SQL Server and SQLite.

2

Employ more people skilled in PostgreSQL and MongoDB.

3

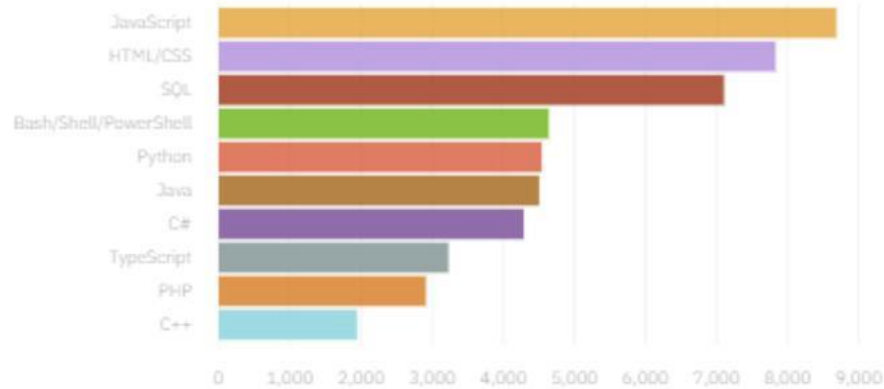
Employ more people skilled in Redis and Elasticsearch.



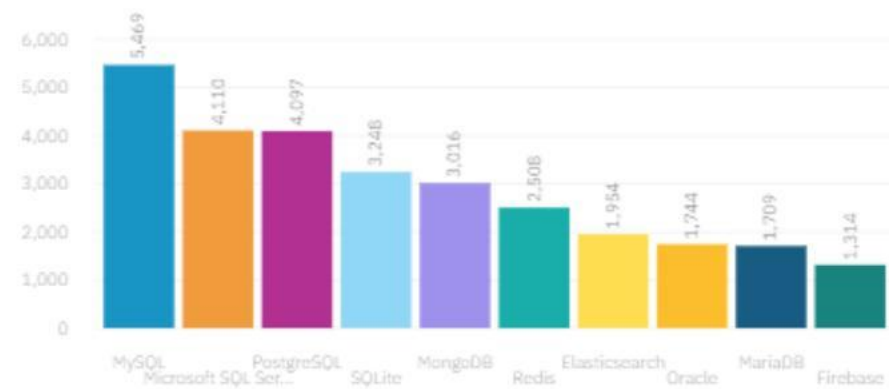
DASHBOARD

DASHBOARD TAB 1

Top 10 Language Worked With



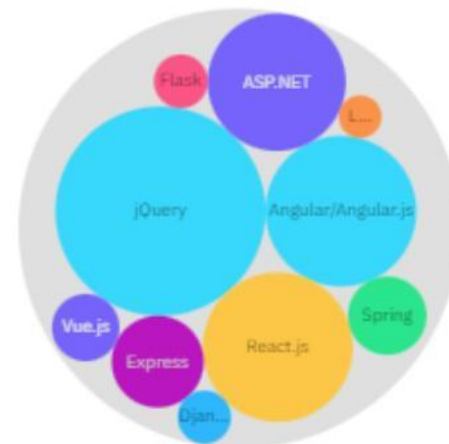
Top 10 Database Worked With



Platform Worked With

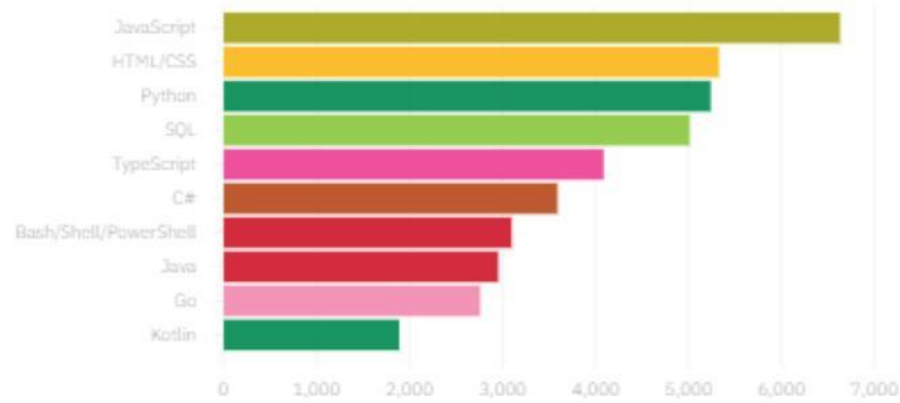


Top 10 Web Frame Worked With

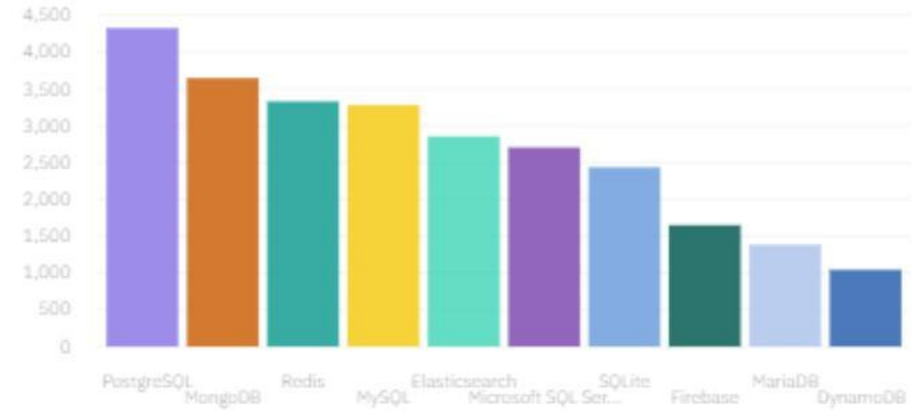


DASHBOARD TAB 2

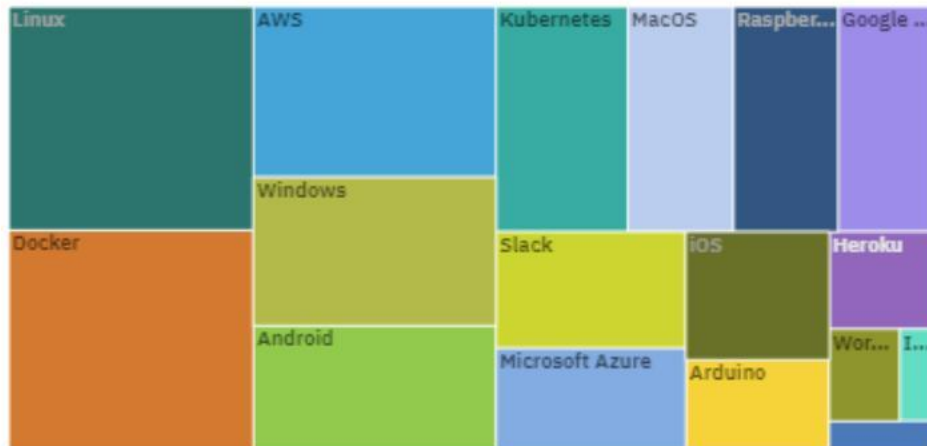
Top 10 Language Desire Next Year



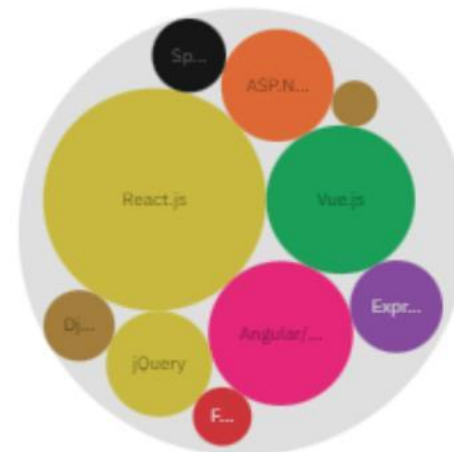
Top 10 Database Desire Next Year



Platform Desire Next Year



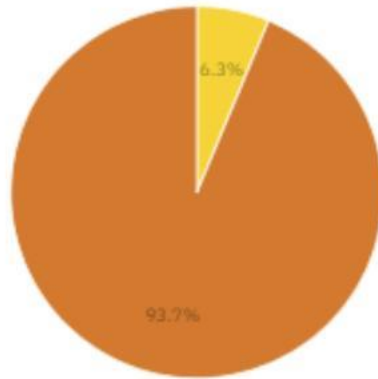
Top 10 Web Frame Desire Next Year



DASHBOARD TAB 3

Respondents by Gender

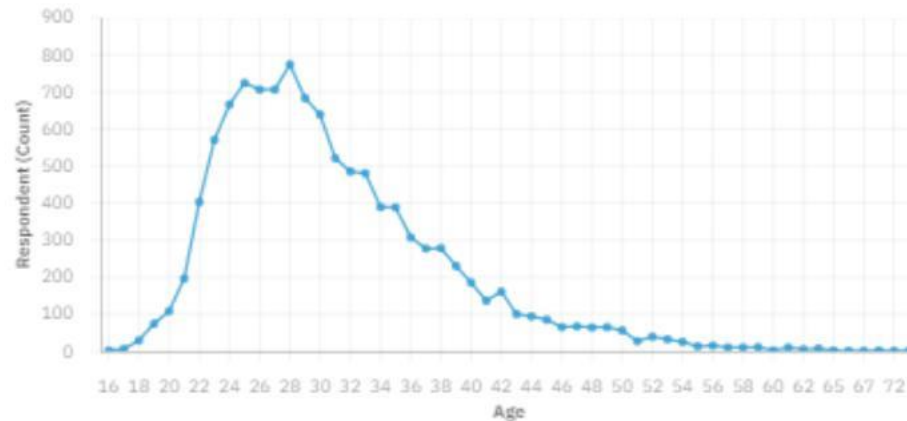
Gender
● Woman ● Man



Respondents by Country



Respondents by Age



Respondent Count by Gender, classified by Formal Education Level

EdLevel
● Associate degree ● Bachelor's degree (BA, BS, B.E...
● I never completed any formal ... ● Master's degree (MA, MS, M.E...
● Other doctoral degree (Ph.D. E... ● Primary/elementary school





DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Programming Languages - TypeScript is gaining significant interest and Python continues to grow as well.
- Databases - Redis, Elasticsearch, PostgreSQL and MongoDB are gaining more interest.
- Platforms - Interest Slack and Windows is dropping significantly.
- WebFrames - Vue.js is gaining substantial interest and React.js continues to grow as well.

Implications

1

Continue to staff enough JavaScript and HTML/CSS but employ more people skilled in TypeScript and Python.

2

Employ more people skilled in Redis, Elasticsearch, PostgreSQL and MongoDB.

3

Continue to staff enough ASP.NET but employ more people skilled in Vue.js and React.js.

4

Continue to staff enough Linux, employ more people skilled in Docker, AWS and Android, but make reductions to Slack and Windows.

CONCLUSION



1

Carve out budget in order to hire additional staff with skills needed to fill any gaps.

2

Set aside budget or put a program in place to upskill those already employed.

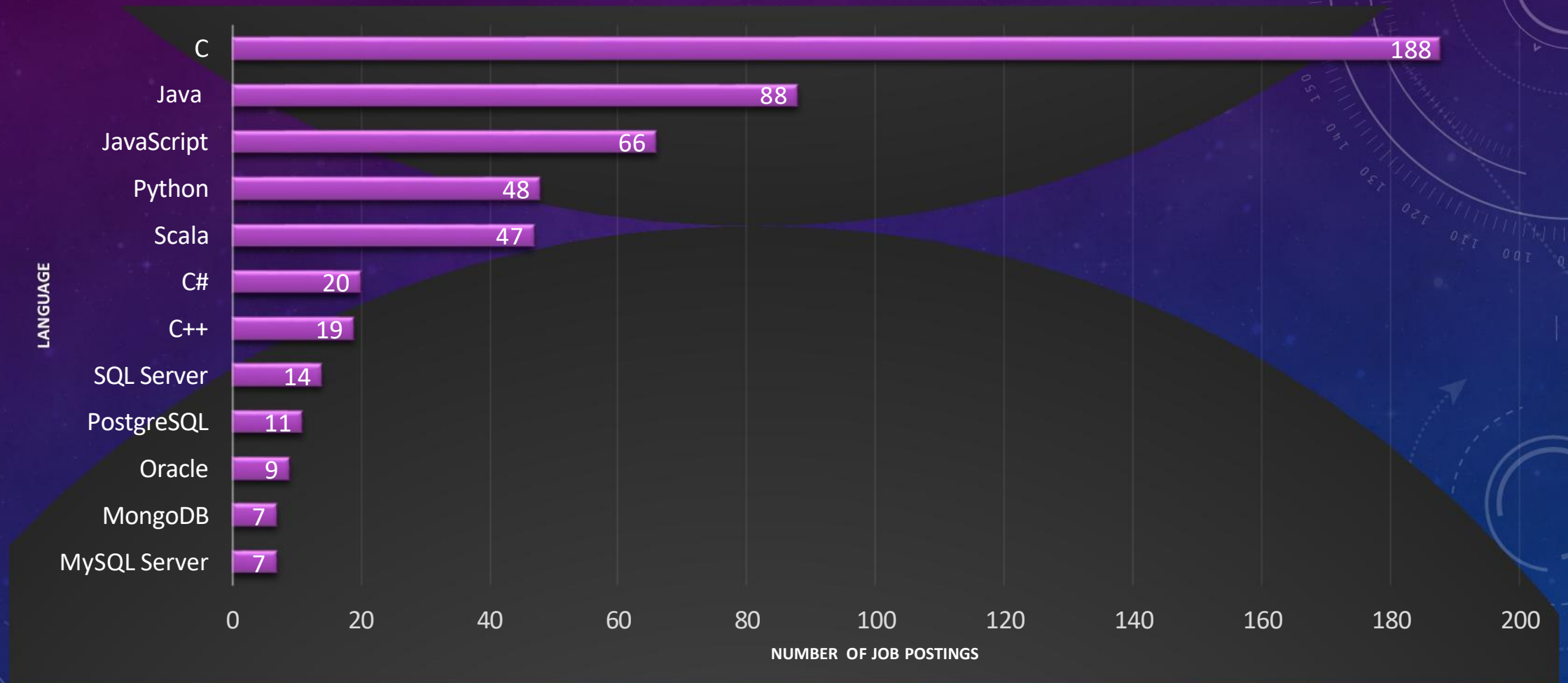
3

Make adjustments in staff for those skills no longer in demand.



APPENDIX

GITHUB JOB POSTINGS



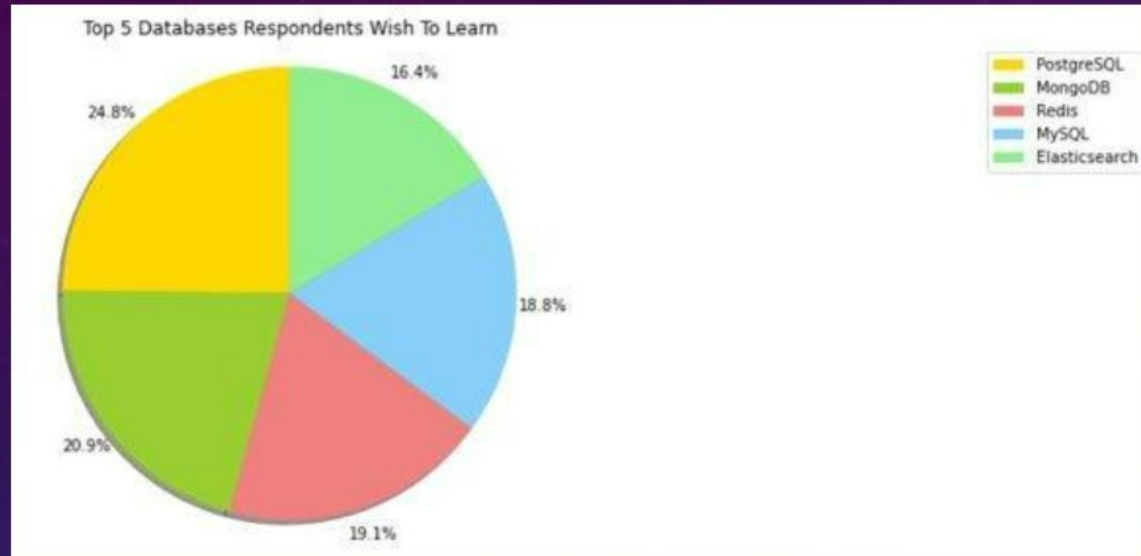
POPULAR LANGUAGES



RESOURCE

1. <https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>
2. [m5_survey_data_demographics.csv](#) and [m5_survey_data_technologies_normalised.csv](#)
3. <https://jobs.github.com/api>
4. [github-job-postings.xlsx](#)
5. https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html

ADDITIONAL VISUALS



Box Plot of Age of Survey Respondents

