



Technology Trend Analysis

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OUTLINE



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EXECUTIVE SUMMARY



- ▶ Relevant skills in the IT and Business industry are ever-changing and evolving.
- ▶ It is important to identify future trends in technology to keep pace with evolving technologies and remain competitive.
- ▶ This presentation will show current and future trends in programming languages, databases, platforms and web frameworks

INTRODUCTION



- This presentation has been created for stakeholders and decision makers within the IT and business consulting services firm.

Purpose

- This presentation will help to identify future skill requirements necessary for the global IT and business consulting services firm to keep pace with ever-changing technologies and remain competitive.

METHODOLOGY



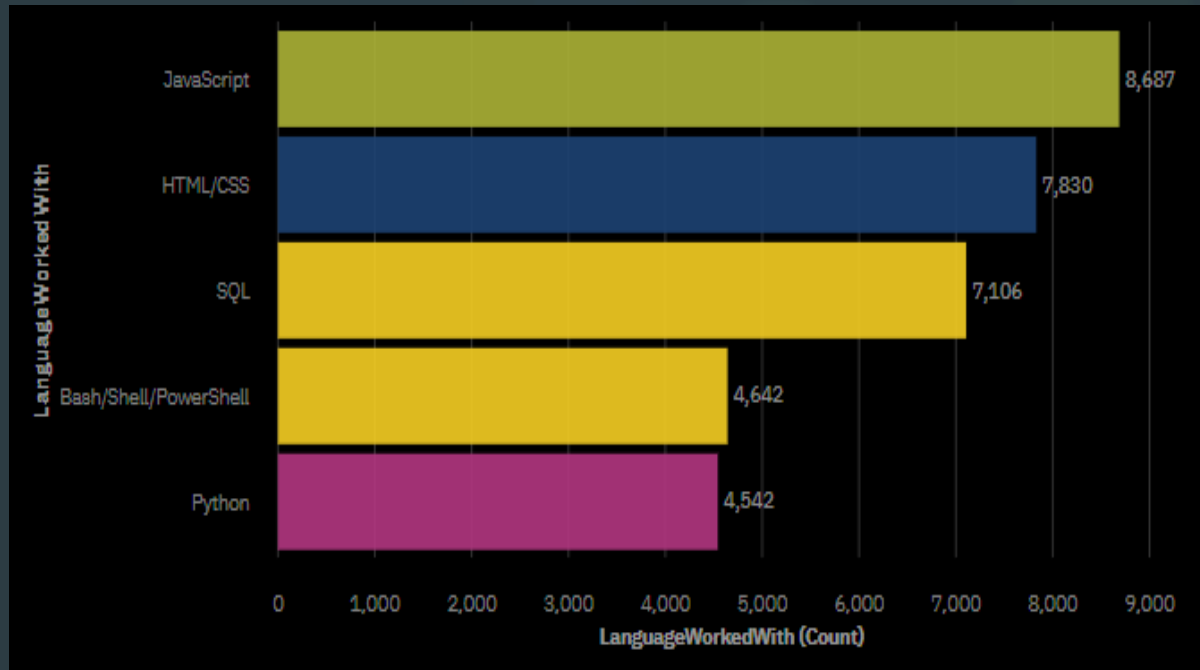
- ▶ Data was collected using APIs and web scraping. Sources used: Stack overflow developer 2019 survey, GitHub job postings.
- ▶ Data was wrangled to remove duplicates, impute missing values and normalize the data.
- ▶ Data underwent exploratory analysis to find the distribution, presence of outliers and correlation.
- ▶ Visualizations and Dashboards were created using Matplotlib, Seaborn and IBM Cognos Dashboard Embedded (CDE).

RESULTS

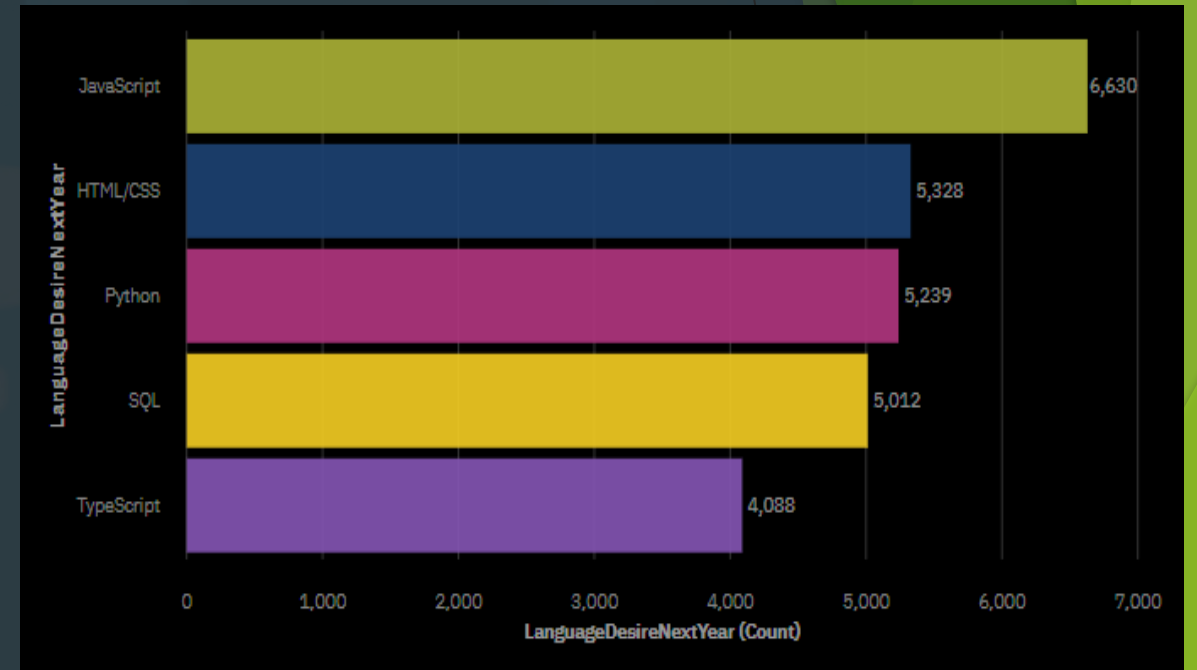
	Respondent	LanguageWorkedWith	LanguageDesireNext...	DatabaseWorkedWith	DatabaseDesireNext...	PlatformWorkedWith
1						
2	4	C	C	MySQL	MySQL	Linux
3	4	C++	C#	SQLite	SQLite	Windows
4	4	C#	JavaScript			
5	4	Python	SQL			
6	4	SQL				
7	9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS
8	9	C#	C	PostgreSQL	Redis	Docker
9	9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku
10	9	JavaScript	JavaScript			Linux
11	9	Python	Ruby			MacOS
12	9	Ruby	Rust			Slack
13	9	Rust	SQL			
14	9	SQL	TypeScript			
15	9	TypeScript	WebAssembly			
16	9	WebAssembly	Other(s):			

PROGRAMMING LANGUAGE TRENDS

Top 5 Languages This Year



Top 5 Languages Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

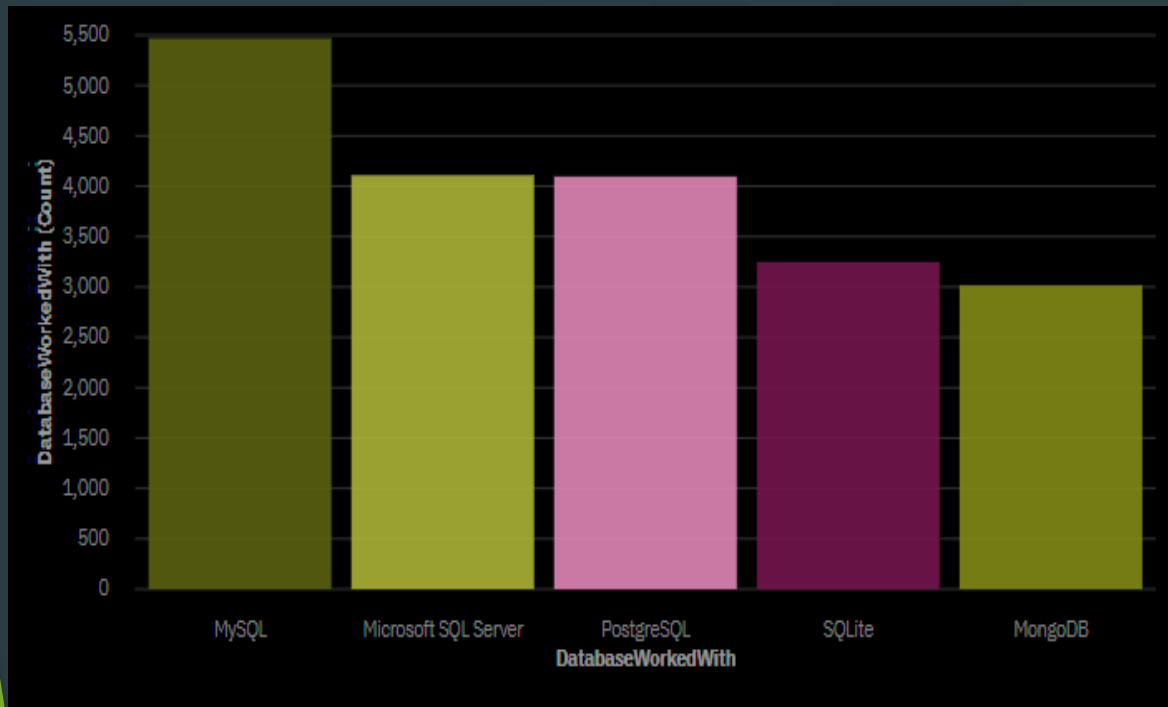
- ▶ JavaScript and HTML/CSS continue to be top two most popular for this year and next year.
- ▶ Python and Typescript have gained more interest for next year.
- ▶ Interest in SQL and Bash/Shell/PowerShell has decreased for next year.

Implications

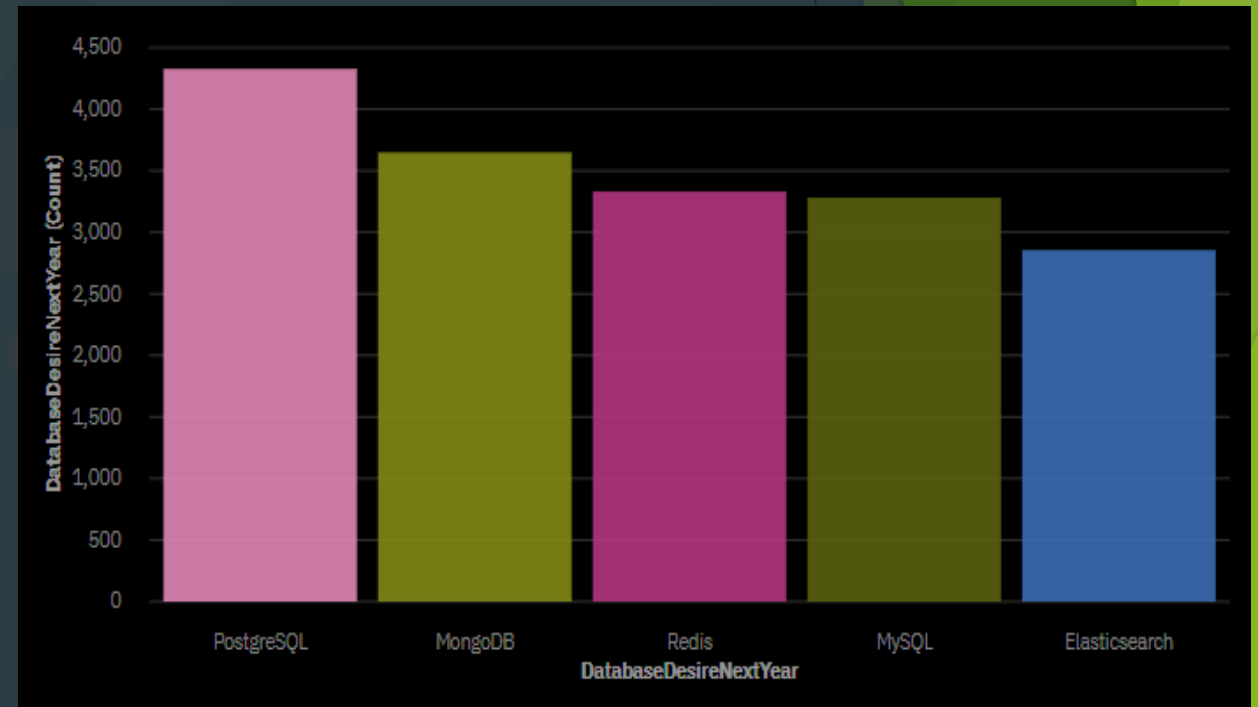
- ▶ Continue employment of web developers skilled in JavaScript and HTML/CSS.
- ▶ Employ more people skilled in Python and Typescript.
- ▶ Employ less people skilled in SQL and Bash/Shell/PowerShell.

DATABASE TRENDS

Top 5 Databases This Year



Top 5 Databases Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- ▶ Interests in PostgreSQL and MongoDB has increased for next year.
- ▶ Interest in MySQL, Microsoft SQL Server and SQLite has decreased for next year.
- ▶ Redis and Elasticsearch have gained more interest for next year.

Implications

- ▶ Employ more people skilled in PostgreSQL and MongoDB.
- ▶ Employ less people skilled in MySQL, Microsoft SQL Server and SQLite.
- ▶ Employ more people skilled in Redis and Elasticsearch.

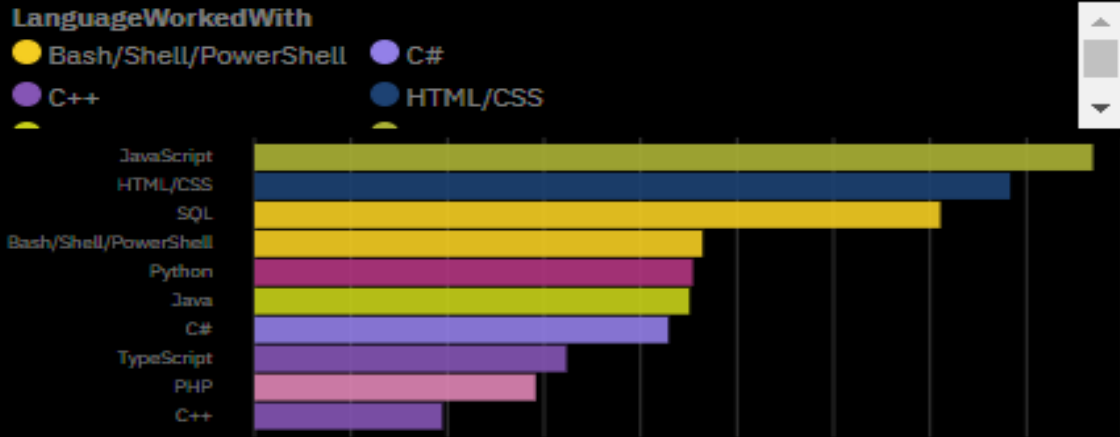
DASHBOARD



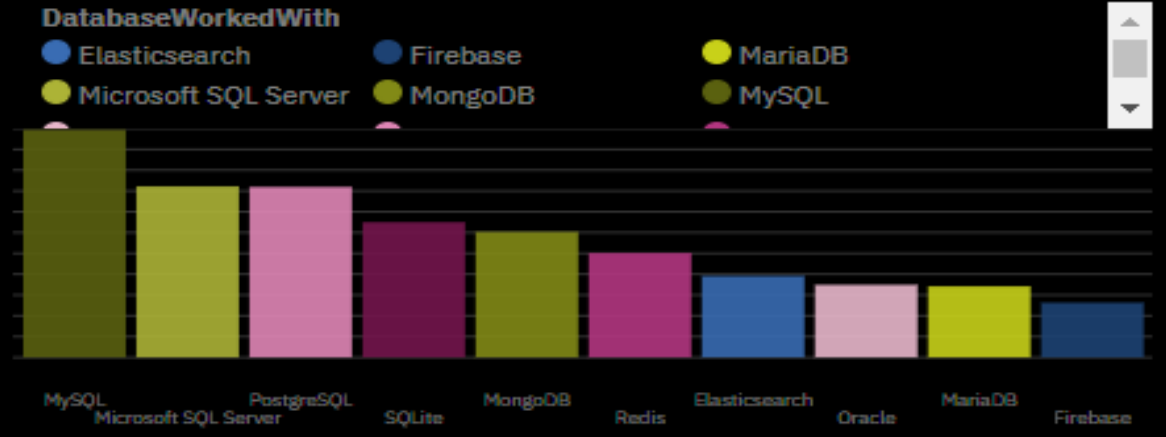
Click [here](#) to view the Dashboard

Current Technology Usage

Top 10 Languages Worked With



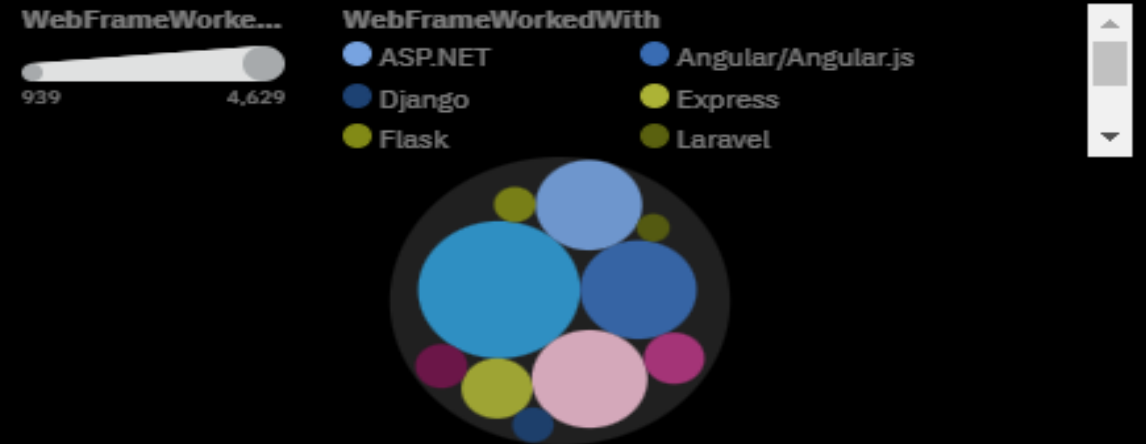
Top 10 Databases Worked With



Platforms Worked With

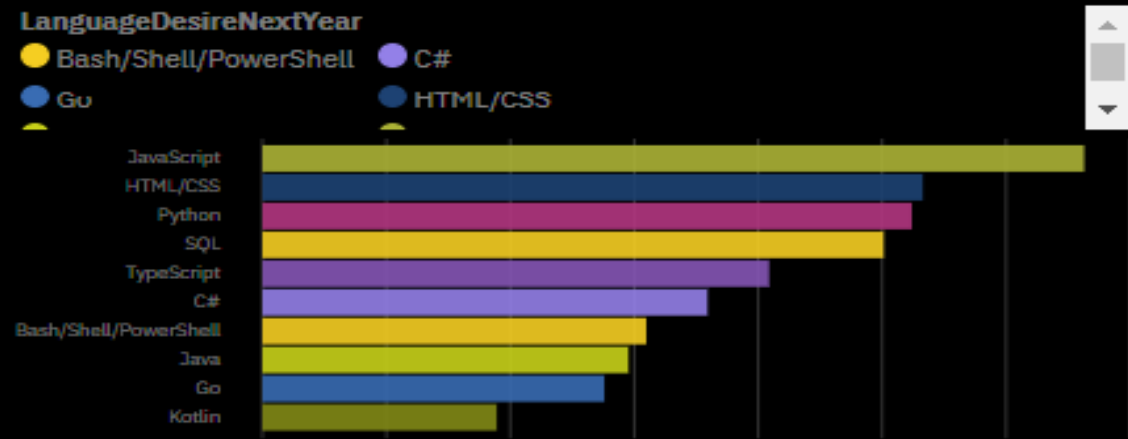


Top 10 Web Frameworks Worked With

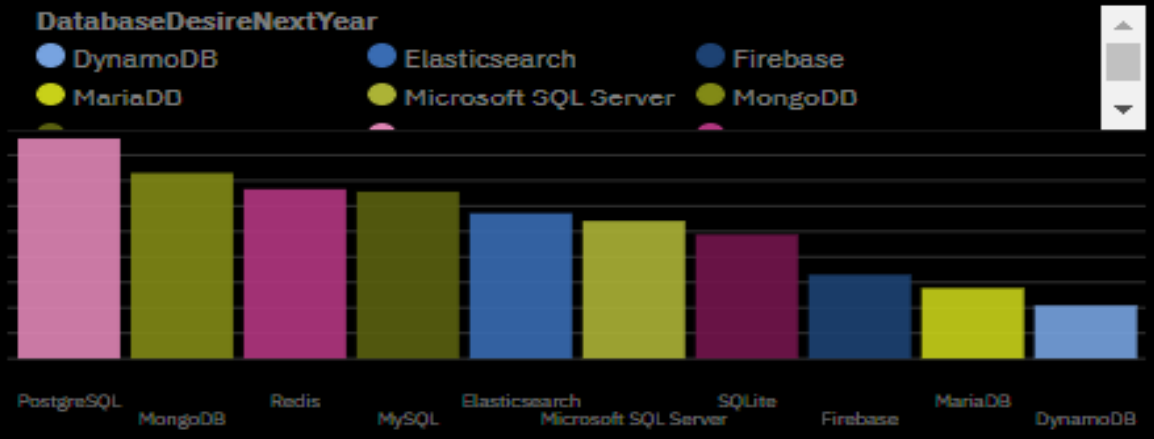


Future Technology Trend

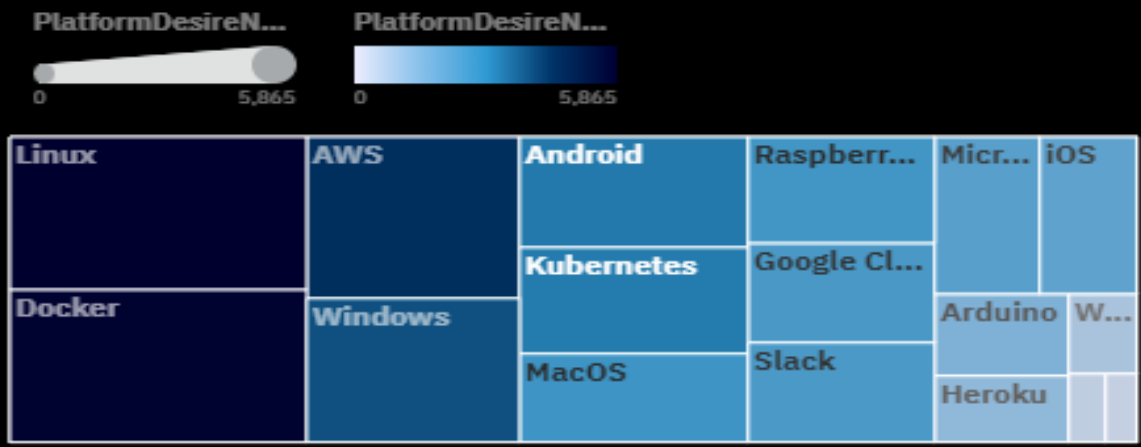
Top 10 Languages For Next Year



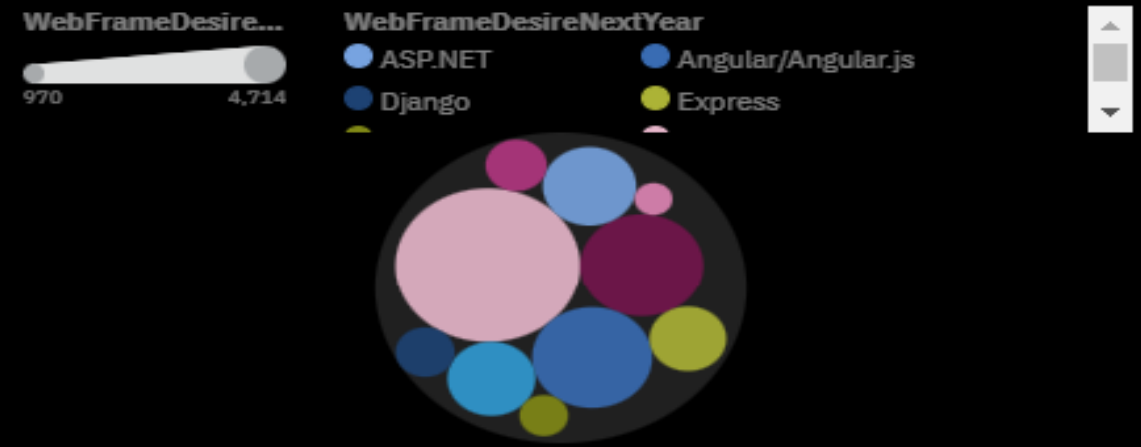
Top 10 Databases For Next Year



Platforms For Next Year



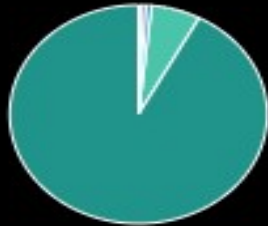
Top 10 Web Frameworks For Next Year



Demographics

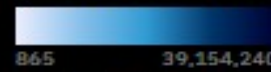
Respondent classified by Gender

- Gender
- Woman;Man;Non-binary, genderqueer, or g...
 - Woman;Non-binary, genderqueer, or g...
 - Non-binary, genderqueer, or g...
 - Woman
 - Woman;Man
 - Man;Non-binary, genderqueer,...
 - (no value)
 - Man

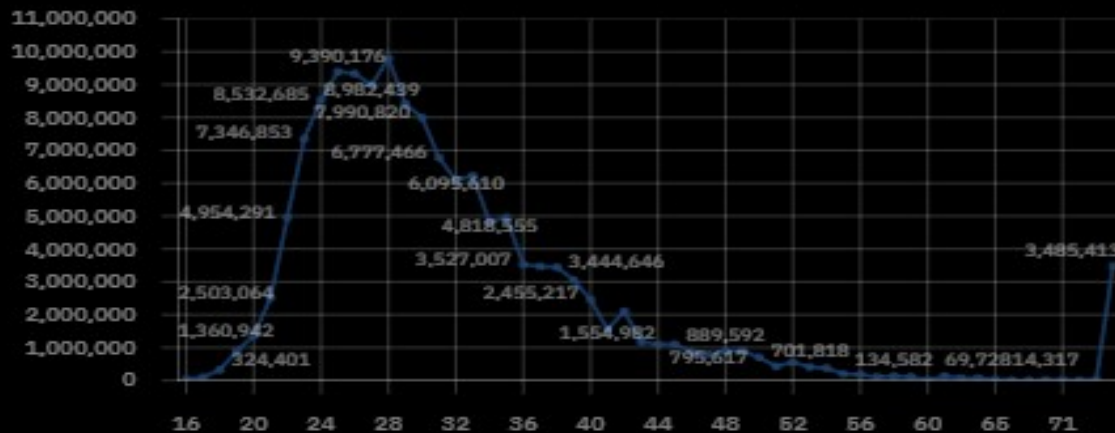


Respondent Count for Countries

Respondent (Sum)

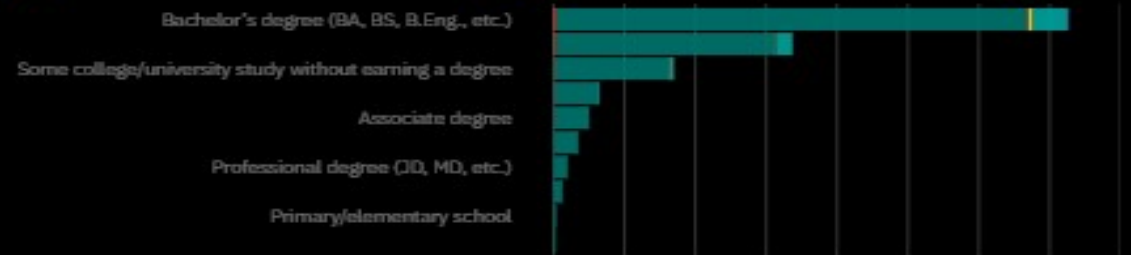


Respondent Count by Age



Respondent Count by Gender, Classified by Formal Education Level

- Gender
- (no value)
 - Man
 - Man;Non-binary, genderqueer,...
 - Non-binary, genderqueer, or g...



DISCUSSIONS



OVERALL FINDINGS & IMPLICATIONS

Findings

- ▶ **Languages:** Typescript and Python are gaining significant interests while JavaScript remains top.
- ▶ **Databases:** PostgreSQL, MongoDB, Redis and Elasticsearch are gaining more interests
- ▶ **Platforms:** Interest in Slack and Windows are dropping significantly.
- ▶ **Web frameworks:** Vue.js is gaining interest significantly while React.js continues to grow as well.

Implications

- ▶ Continue to staff enough JavaScript but employ more people skilled in Typescript and Python.
- ▶ Employ more people skilled in PostgreSQL, MongoDB, Redis and Elasticsearch.
- ▶ Continue to staff enough Linux but employ less people skilled in Slack and Windows.
- ▶ Employ more people skilled in Vue.js and React.js

CONCLUSION

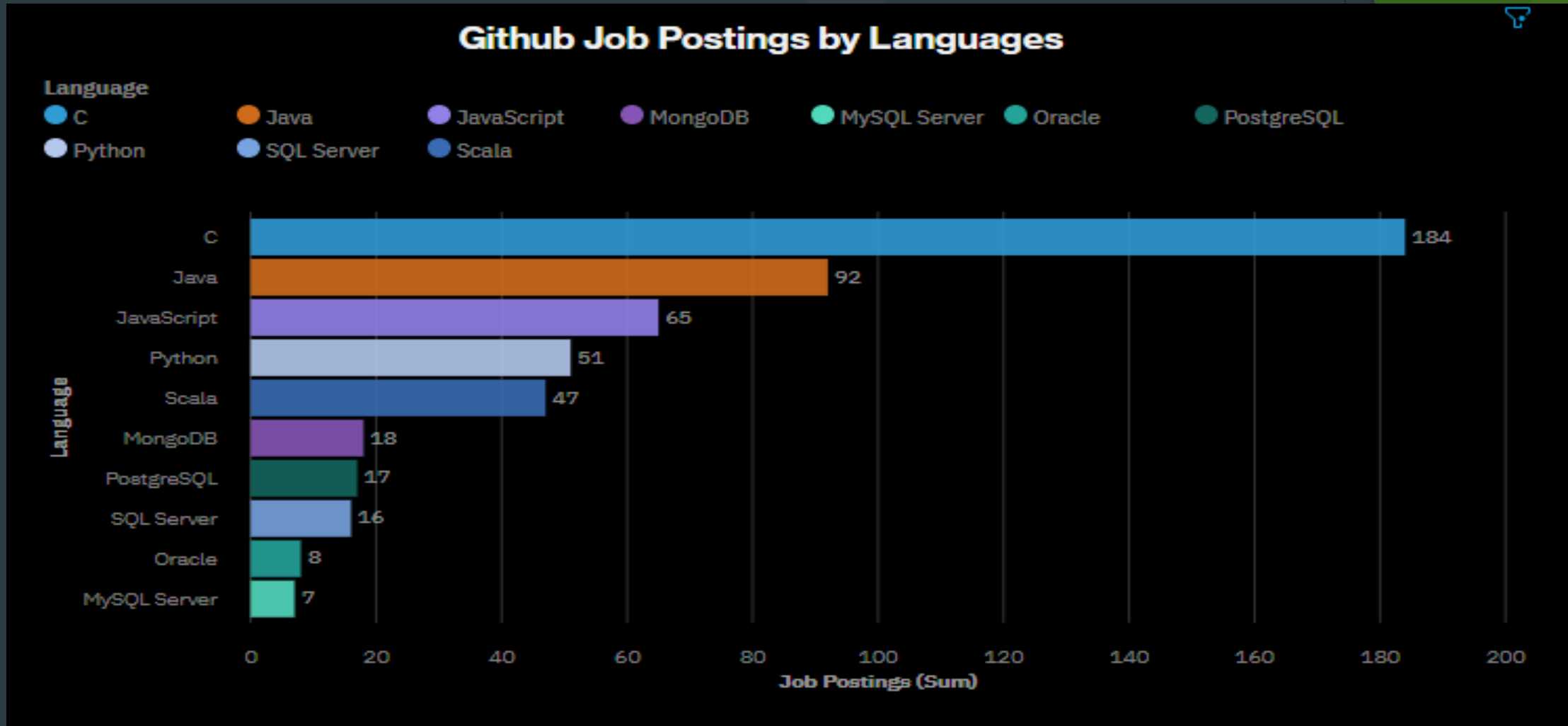


- ▶ Set aside budget to hire additional staff with skills needed to fill any gaps.
- ▶ Create a program to upskill those already employed.
- ▶ Reduce budget for skills with reductions in demand.
- ▶ Make adjustments in staff for those skills no longer in demand.

APPENDIX



GITHUB JOB POSTINGS



POPULAR LANGUAGES

