



Technology Trends & Analysis

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OUTLINE



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EXECUTIVE SUMMARY



- Current trends in programming languages, databases, platforms, and web frames.
- Future technology usage.
 - Top 10 languages desired
 - Top 10 databases desired
 - Top 10 platforms desired
- Demographic survey spotlighting gender gap, age gap, and education.

INTRODUCTION



- Task: Analyze trends in software development.
- Purpose:
 - Identify top skill requirements for the future
 - Identify top demands in programming languages
 - Identify top database skills in demand.
- Audience: HR/IT Team

METHODOLOGY



- Data Sources:
 - 2019 Stack Overflow Developer Survey which holds 74,588 software developers from 179 countries
 - GitHub Job Openings
 - Programming Language Annual Salary
 - Demographic Survey
- Data Exploration/Wrangling
- Data Cleaning
- Data Visualization
- Presentation

RESULTS

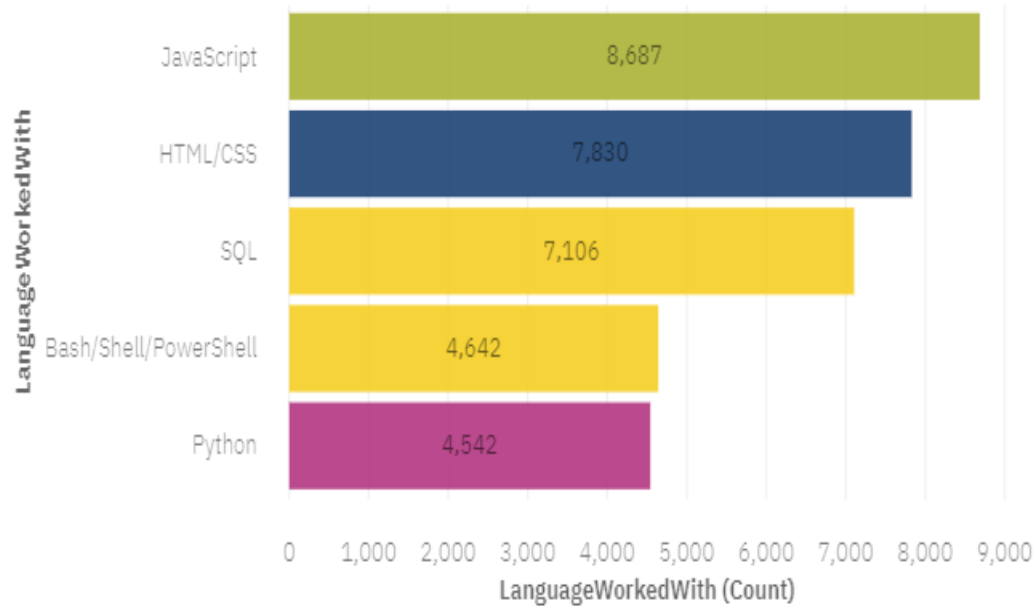
Results are derived from the data set below.

	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...
74584	25142	Go	Python	NaN	NaN	NaN
74585	25142	HTML/CSS	R	NaN	NaN	NaN
74586	25142	PHP	NaN	NaN	NaN	NaN
74587	25142	Python	NaN	NaN	NaN	NaN
74588	25142	R	NaN	NaN	NaN	NaN

PROGRAMMING LANGUAGE TRENDS

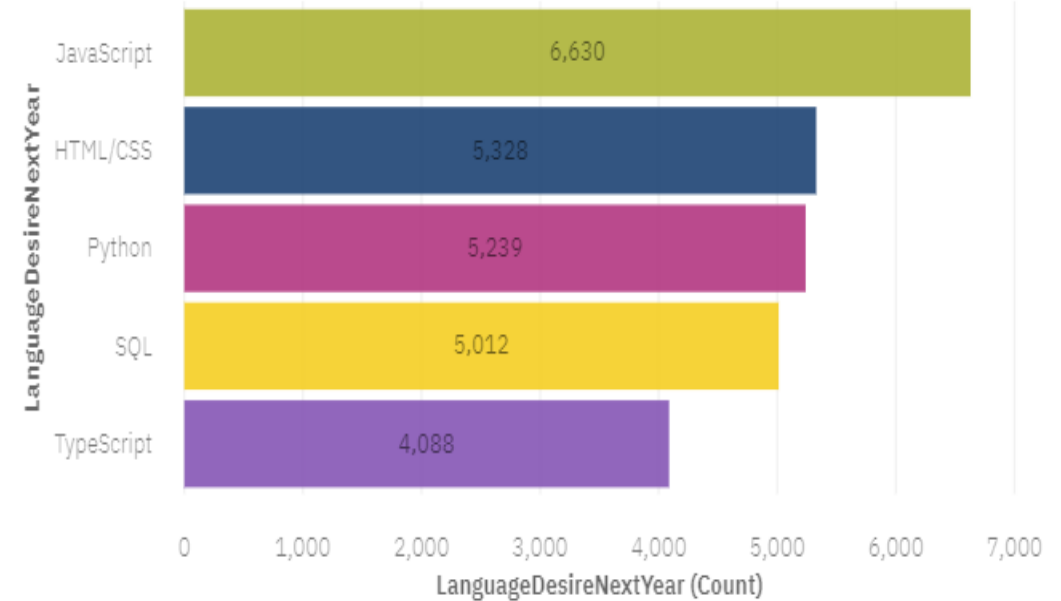
Current Year

Top 5 Languages Worked With



Next Year

Top 5 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL are the top three languages in 2019.
- Next year Python takes the third place, bumping SQL down to four.
- Bash/PowerShell is edged out by TypeScript which gains popularity.

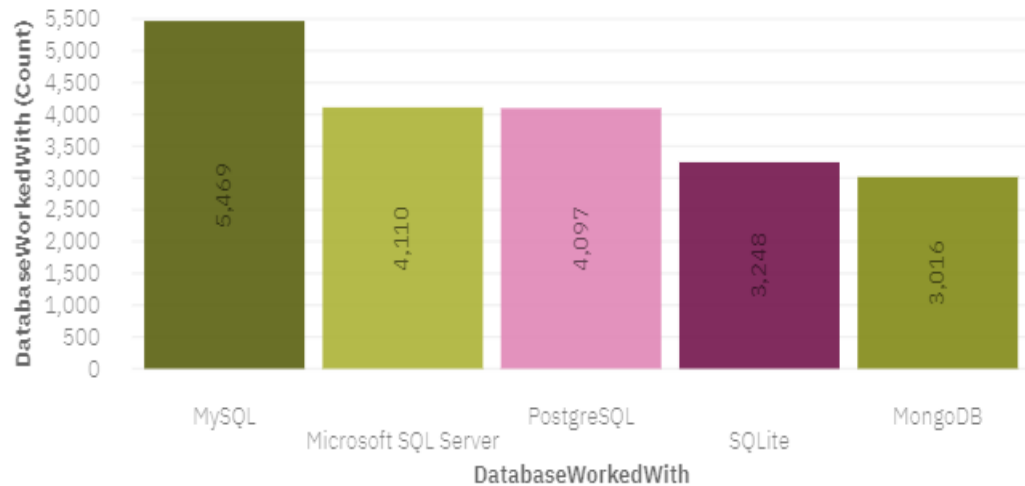
Implications

- JavaScript and HTML/CSS will continue to be the top two programming languages.
- Python could be gaining popularity due to machine learning and AI.
- The top five languages next year look to be more even and rounded across the board.

DATABASE TRENDS

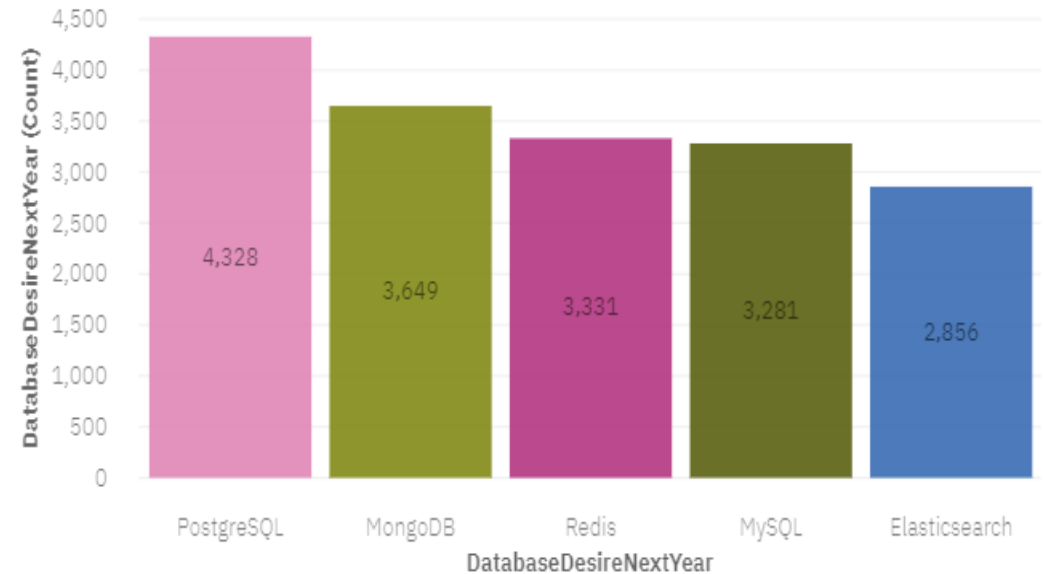
Current Year

Top 5 Databases Worked With



Next Year

Top 5 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL and Microsoft SQL Server are top two databases with PostgreSQL close behind in third.
- PostgreSQL and MongoDB are upcoming favorites, taking first two spots for databases desired next year.
- Elasticsearch moves up from seventh to fifth.

Implications

- Open-source databases are still preferable for developers.

DASHBOARD

IBM COGNOS LINK TO DASHBOARD

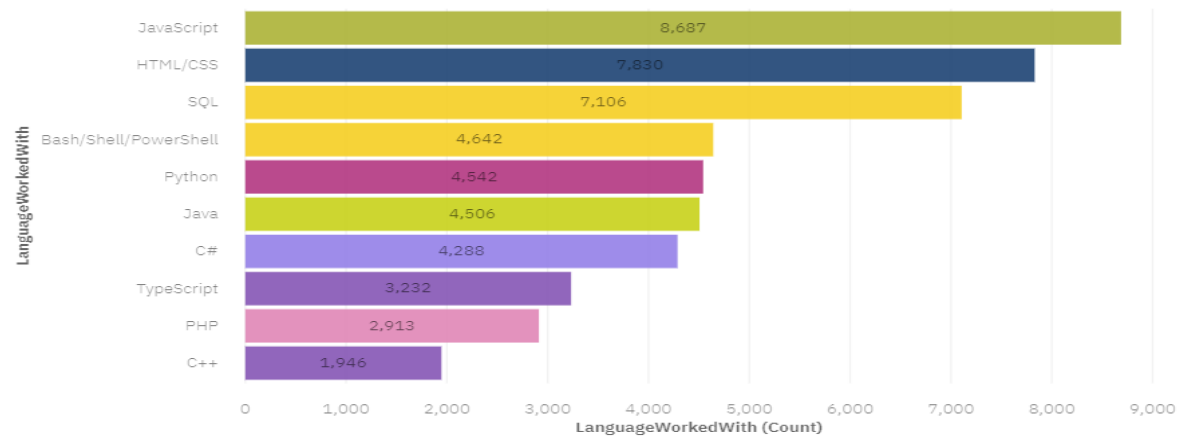


<https://dataplatform.cloud.ibm.com/dashboards/1d864b5b-2f2a-41ed-bc39-934f908850a4/view/5439f124659f6ec312d0f6e407cc79577b347755e3bbd55785847b495e657997a8614792c828435cde165760fbb9120acf>

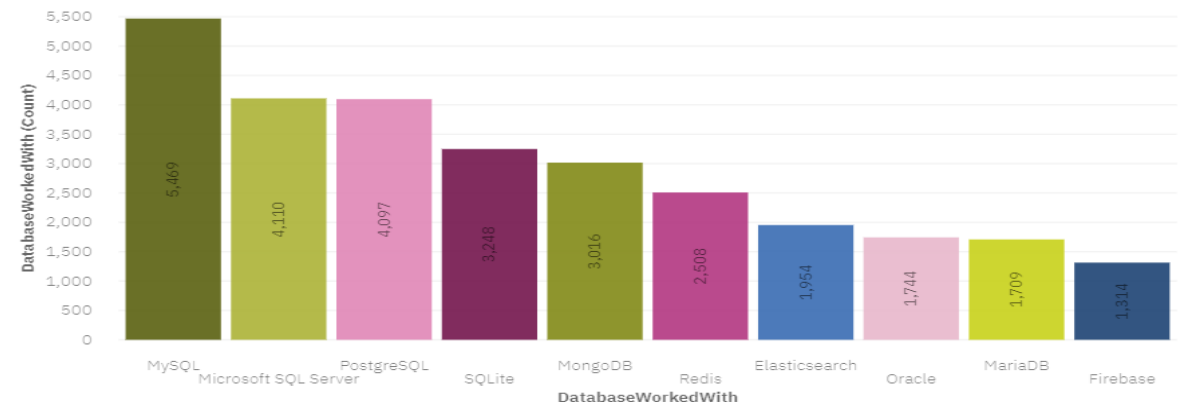
DASHBOARD TAB 1

Current Technology Usage Future Technology Usage Demographics

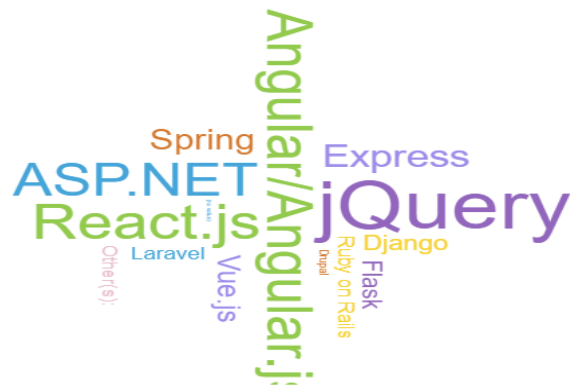
Top 10 Languages Worked With



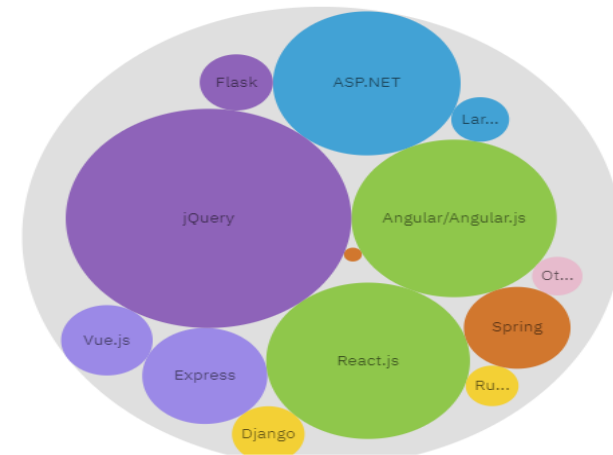
Top 10 Databases Worked With



Platforms Worked With



Top 10 Web Frames Worked With

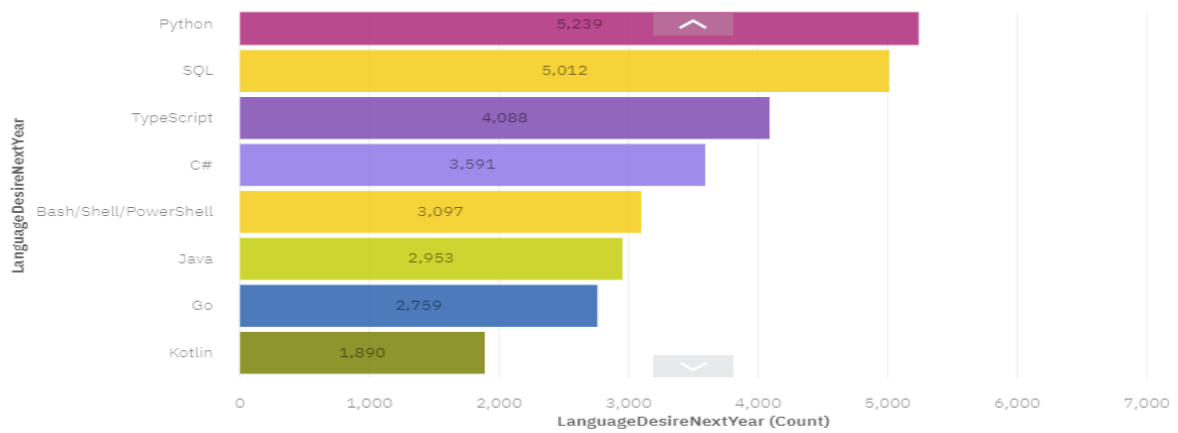


DASHBOARD TAB 2

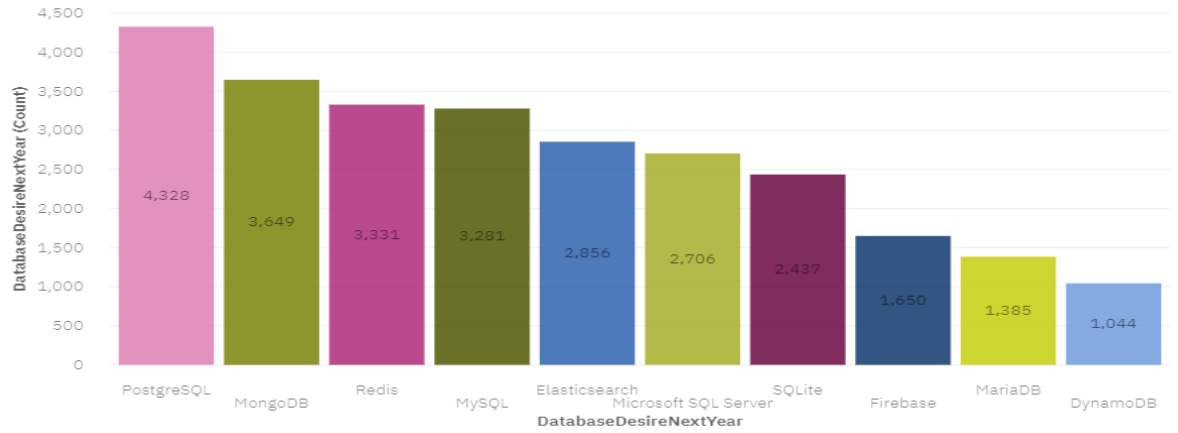
Filters

Current Technology Usage **Future Technology Usage** Demographics

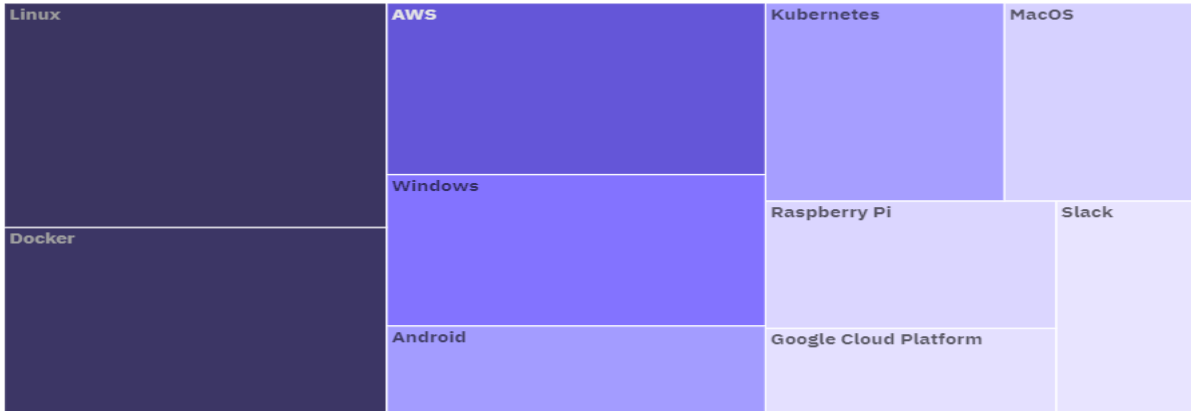
Top 10 Languages Desired Next Year



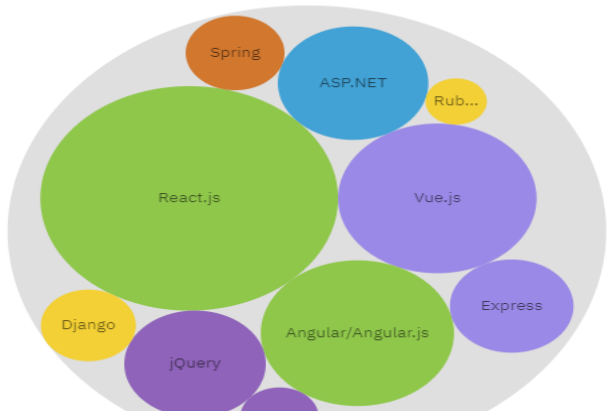
Top 10 Databases Desired Next Year



Top 10 Platforms Desired Next Year



Top 10 Web Frames Desired Next Year



DASHBOARD TAB 3

Filters

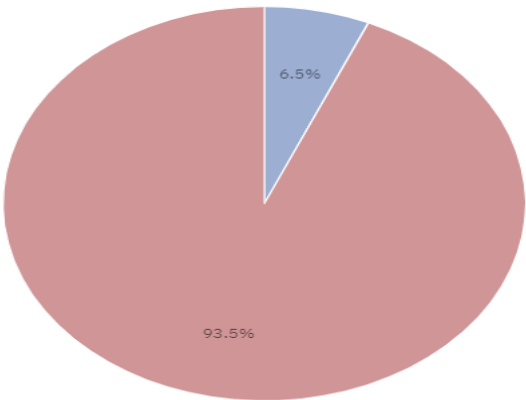
Current Technology Usage

Future Technology Usage

Demographics

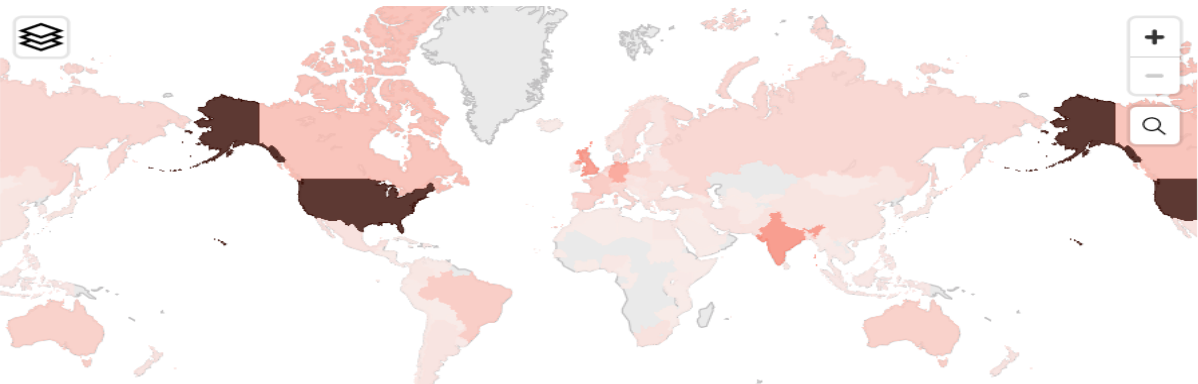
Survey Respondent Gender

Gender
● Woman ● Man

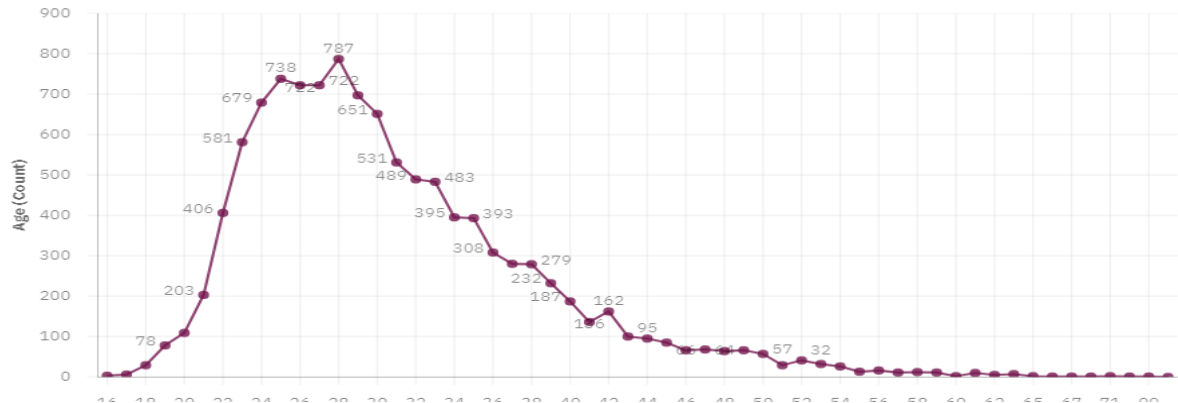


Respondent Countries

Country (Count)
1 3,127




Respondent Count by Age



Respondent Count by Gender, Classified by Formal Education Level



DISCUSSION

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- Topics of discussion
 - Addressing the gender gap
 - Retraining workers in upcoming technology
 - Future hiring
 - Tackle age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Highest talent found in USA and India
- Big gender gap in tech jobs
- Majority of respondents hold bachelor degrees
- Javascript staying strong and wanted
- Docker and Linux are growing in popularity

Implications

- Companies will need to be flexible in order to adapt to shifting trends in tech
- Need to spread technology out to countries lagging
- Companies will need to address the gender gap in tech jobs

CONCLUSION

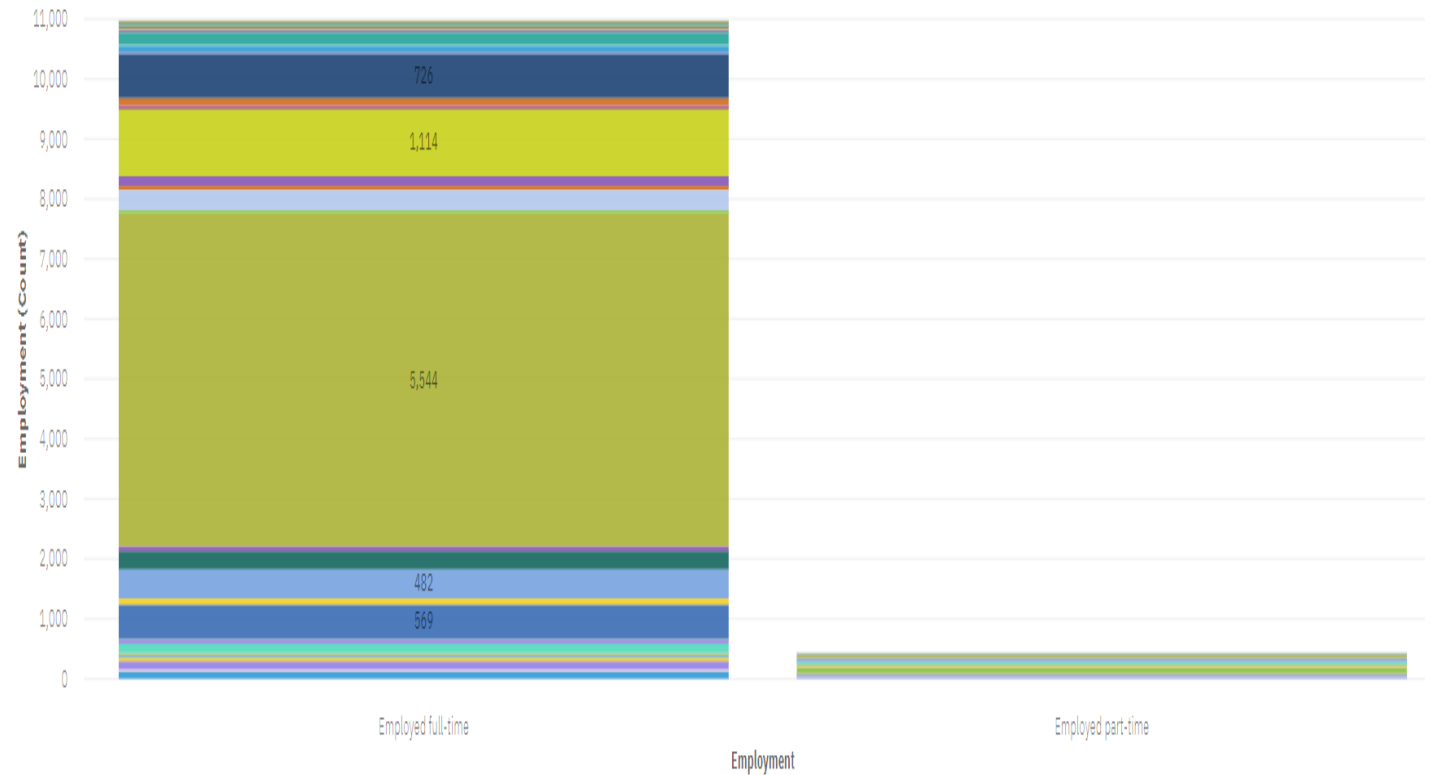


- Technology trends are rapidly changing
- Demographics, specifically gender will need to be addressed
- Technology will need to be spread to countries that lack those tools

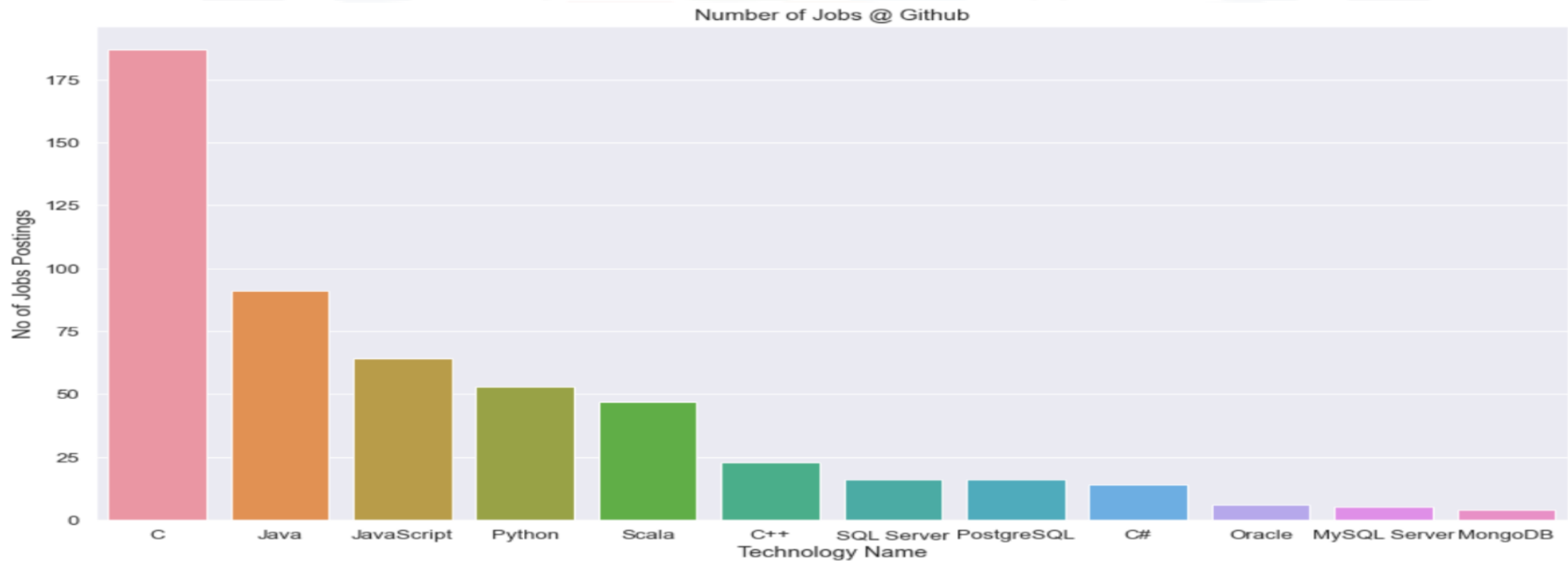
APPENDIX



Employment Type, Classified by Work Week Hours



GITHUB JOB POSTINGS



POPULAR LANGUAGES and Annual Salaries

