



Capstone Project

*STACK OVERFLOW'S
ANNUAL DEVELOPER
SURVEY-2019*

Nishita Parmar

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OUTLINE



- ▶ Executive Summary
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- ▶ Discussion
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- ▶ Conclusion
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EXECUTIVE SUMMARY



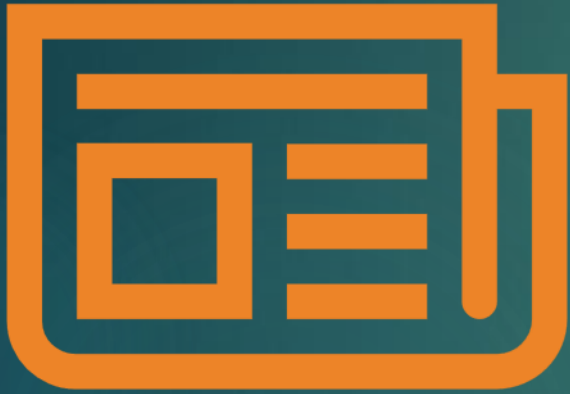
- ▶ Stack overflow survey 2019 datasets were used to analyze the current and future trending technologies among different age groups.
- ▶ **Current Technology Usage:**
 - ▶ JavaScript, HTML/CSS, SQL are the most used programming language this Year.
 - ▶ Linux and windows are the most used platform this Year.
 - ▶ jQuery is the most used Web Frame this year.
- ▶ **Future Technology Trend:**
 - ▶ JavaScript is the most desire language and PostgreSQL is the most desire database next year.
 - ▶ Linux and Docker are the most desire platform next year.
 - ▶ React.js is the most desire Web Frame next year.
- ▶ **Demo Graphics:**
 - ▶ 93.5% respondents are males, residing in USA and INDIA.
 - ▶ Majority of respondents have Bachelor's Degree or Master's Degree.

INTRODUCTION



- Stack Overflow, conducted a survey amongst developers around the world, to analyze the trends in software development.
- **Purpose:**
 - Identify the skill requirements for future
 - What are the top programming language in demand?
 - What are the top database in demand?
 - What are popular Web Frame?
- **Audience:**
 - IT Professionals
 - Anyone interested in IT

METHODOLOGY



- ▶ Data Collection Sources
 - ▶ Stack Overflow Developer Survey 2019
 - ▶ GitHub Job Postings
 - ▶ Programming Language Annual Salary
- ▶ Data Exploration
- ▶ Data Cleaning
 - ▶ Python
- ▶ Data Visualization
 - ▶ IBM Cognos Analytics
- ▶ Presentation

RESULTS

- ← JavaScript is the most popular language of this year.
- ← MySQL is the most used Database this year.
- ← Linux and windows are the most used platform
- ← jQuery is the most popular Web Frame this year.

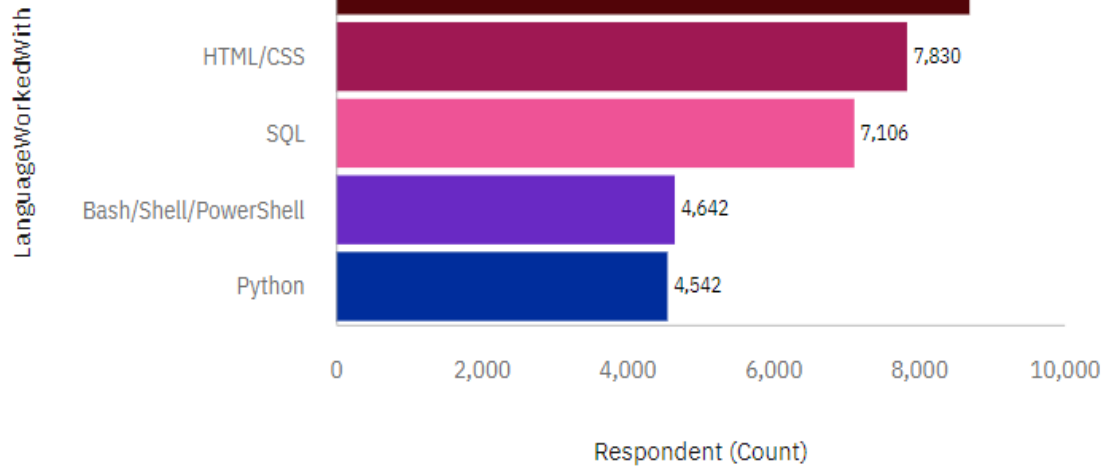
PROGRAMMING LANGUAGE TRENDS

Current Year

Top 5 Programming Languages for the current year

LanguageWorkedWith

● Bash/Shell/PowerShell ● HTML/CSS ● JavaScript
● Python ● SQL

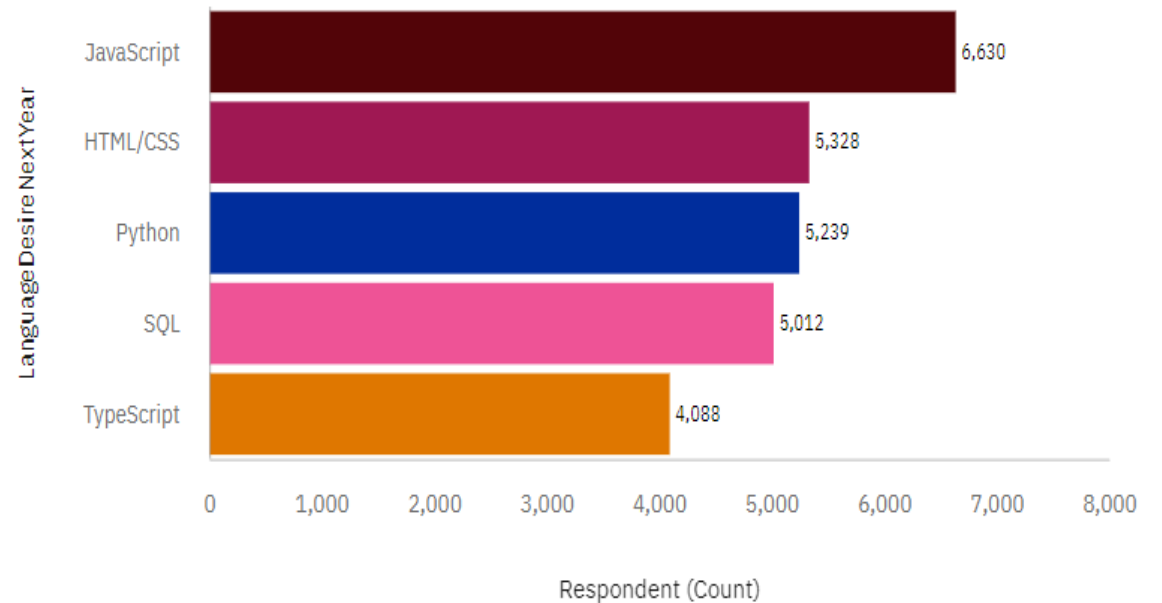


Next Year

Top 5 Programming Languages for the next year

LanguageDesireNextYear

● TypeScript ● SQL ● Python ● JavaScript ● HTML/CSS



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- ▶ JavaScript, HTML/CSS and SQL were the most demanded languages in 2019 and will likely remain popular in the following year.
- ▶ Python and TypeScript have gained more interest for next year.
- ▶ Bash/Shell/PowerShell are becoming less desire for next year.

Implications

- ▶ Web Development is still high in demand as JavaScript and HTML/CSS remain dominant languages, TypeScript may rise popularity in Future.
- ▶ Python has risen the rank in top programming language, will increase demand for AI and Machine learning skills.
- ▶ SQL is still the most relevant language for the field of Big data.

DATABASE TRENDS

Current Year

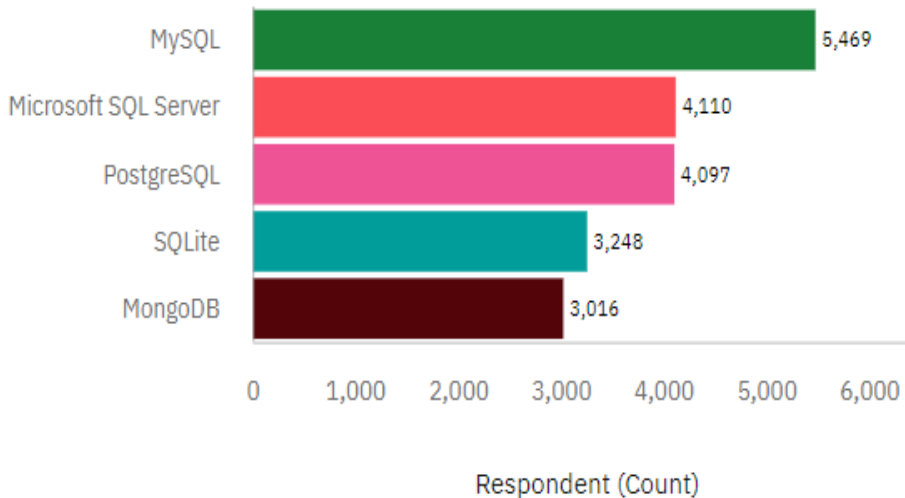
Top 5 Database for the current year



DatabaseWorkedWith

Microsoft SQL Server MongoDB MySQL
PostgreSQL SQLite

DatabaseWorkedWith



Next Year

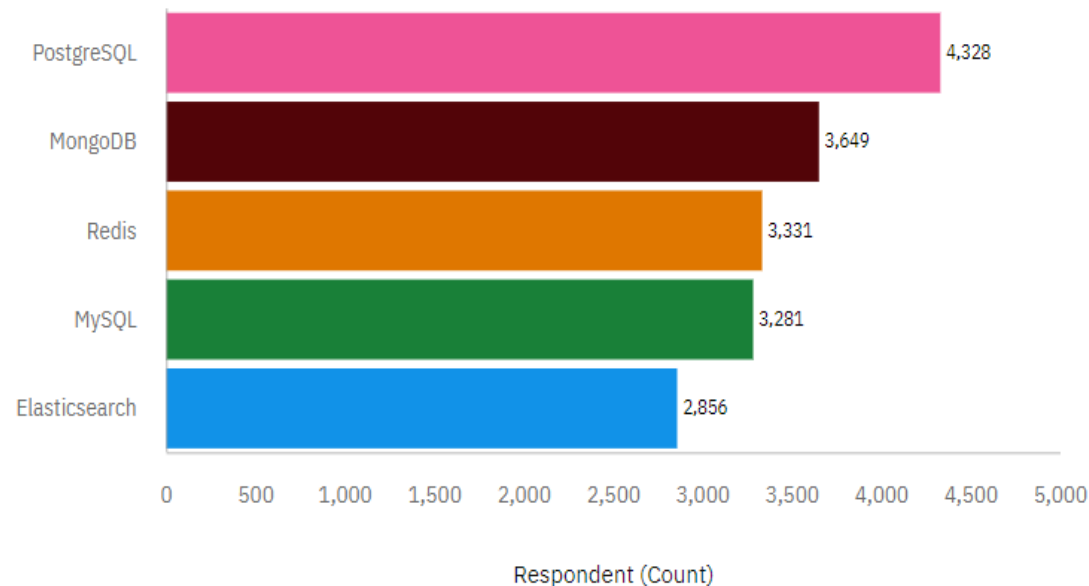
Top 5 Database for the next year



DatabaseDesireNextYear

Elasticsearch MongoDB MySQL PostgreSQL Redis

DatabaseDesireNextYear



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- ▶ SQL database is most used database in 2019.
- ▶ PostgreSQL will be most popular for next year.
- ▶ MongoDB, Redis gaining popularity next year.
- ▶ Elasticsearch will be raising rank for next year.

Implications

- ▶ Developer prefer Open Database Sources.

DASHBOARD

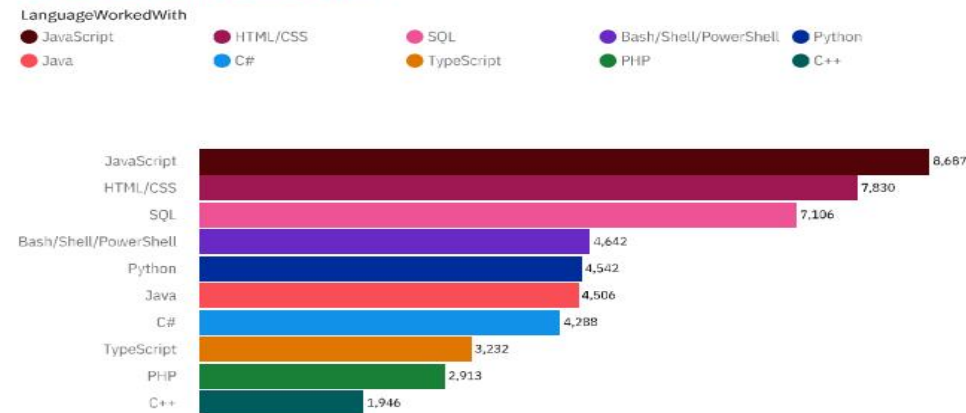


<https://github.com/nishitaparmar/Capstone/blob/da89389f4ffec3e689e836d8131fca60ba57db5c/Dashboard%20with%20cognos.pdf>

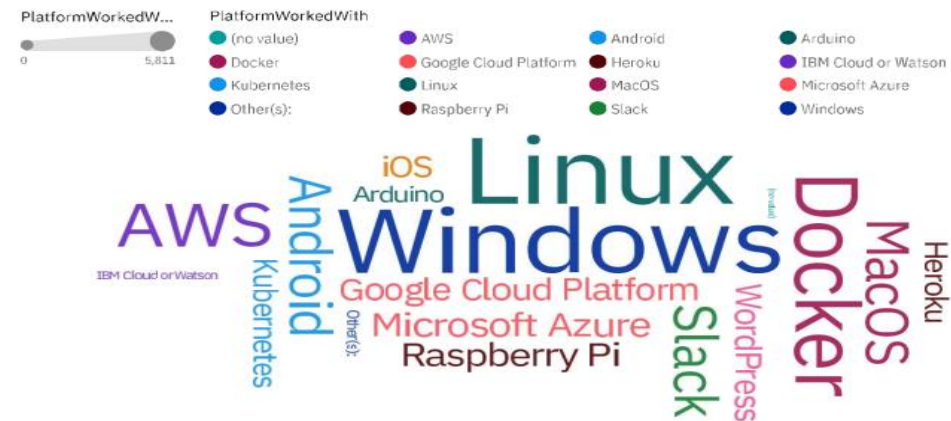
DASHBOARD TAB 1

Current Technology Usage

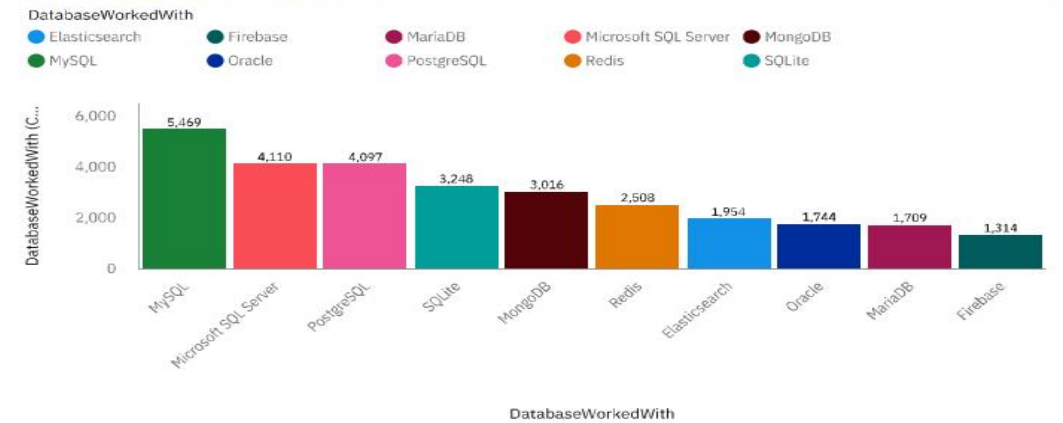
Top 10 Language Worked With



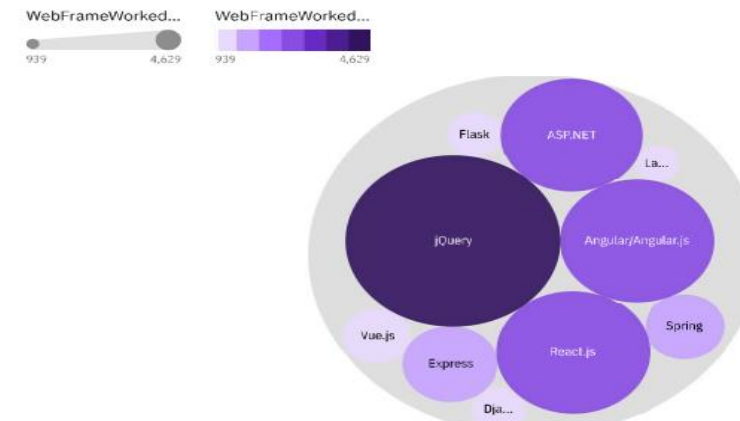
Platform Worked With



1 Top 10 Database Worked With



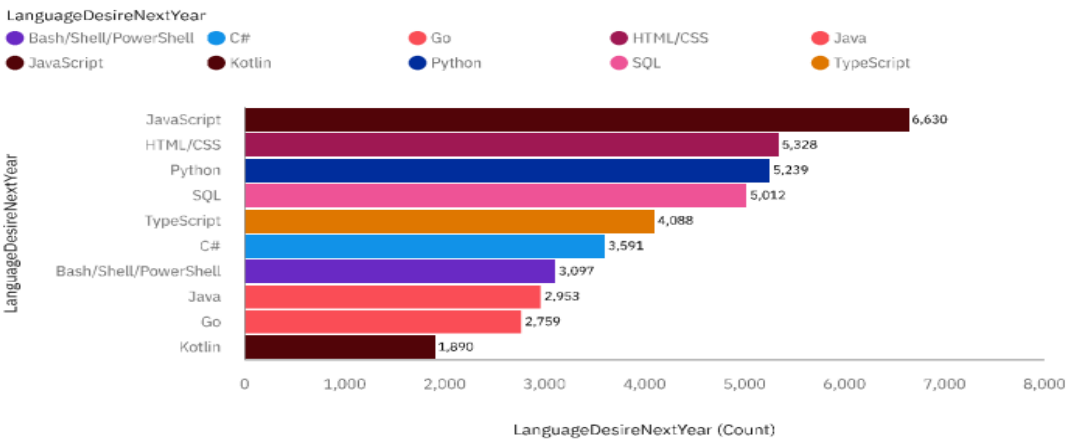
Top 10 WebFrameWorkedWith



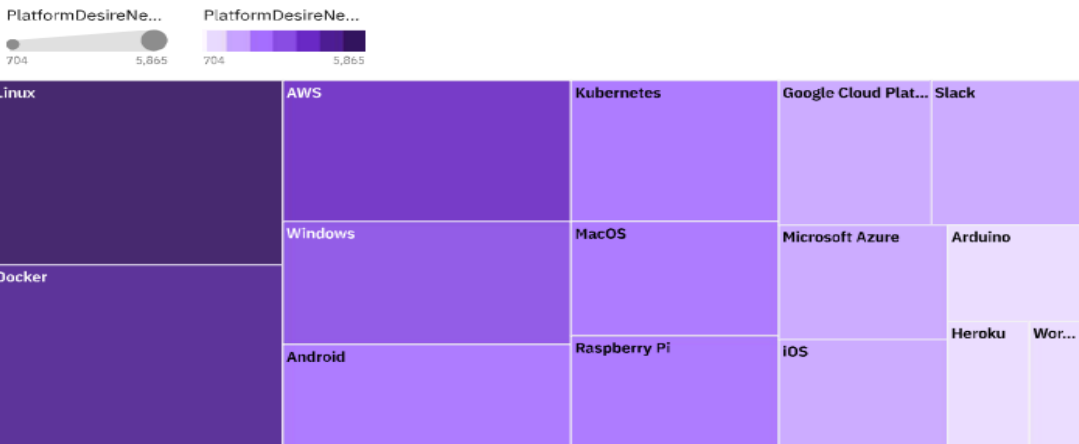
DASHBOARD TAB 2

Future Technology Trend

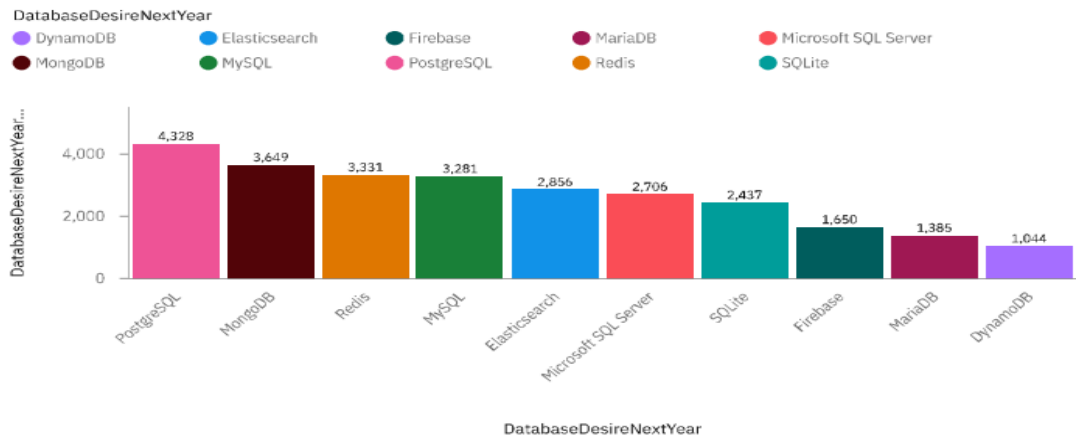
Top 10 Language Desire Next Year



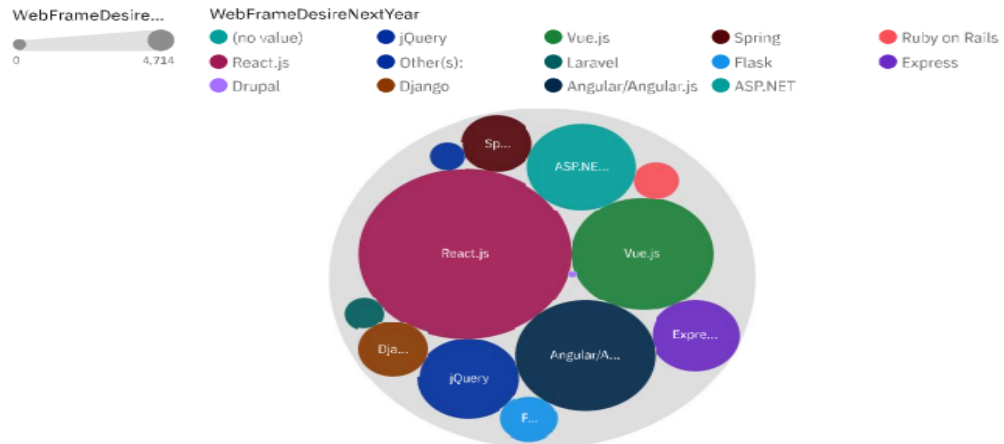
Platform Desire Next Year



1 Top 10 DatabaseDesireNextYear



3 Top 10 Web Frame Desire Next Year

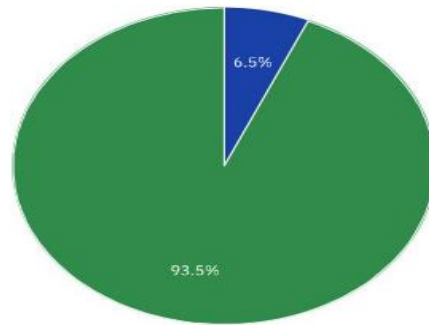


DASHBOARD TAB 3

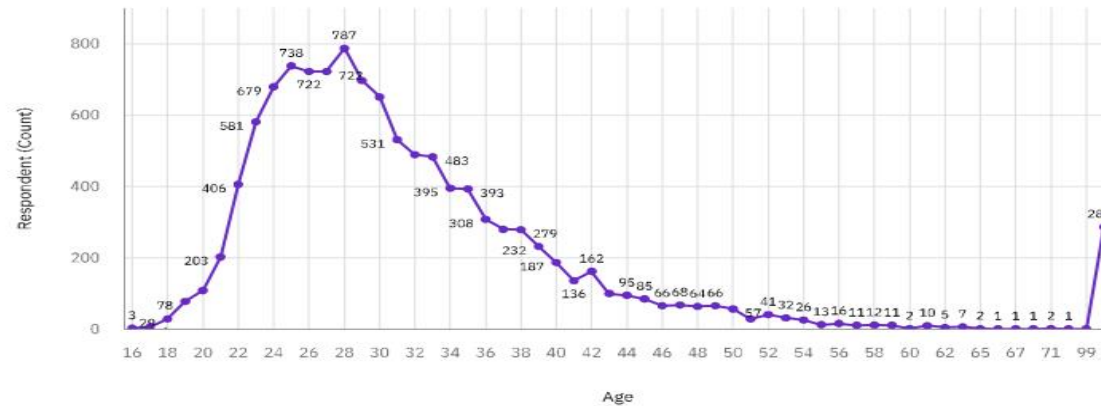
Demographics

Respondent by Gender

Gender
● Woman ● Man



Respondent Count By Age



1 Respondent Count for Countries

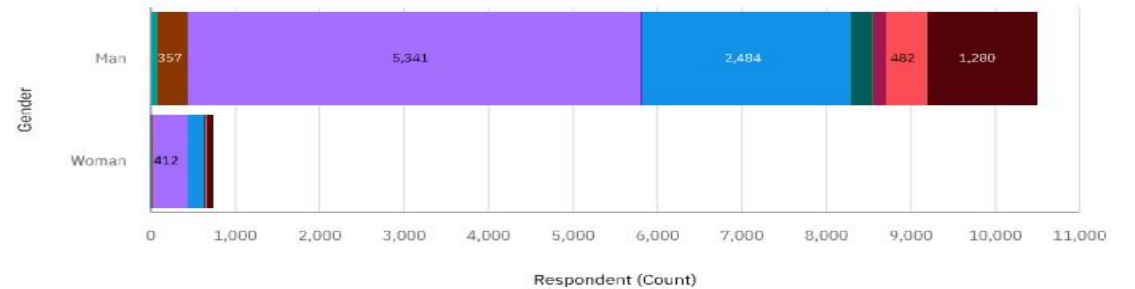
Country (Count)



Respondent By Gender and Education Level

EdLevel

● (no value) ● Associate degree ● Bachelor's degree (BA, BS, B.Eng., ...)
● I never completed any formal edu... ● Master's degree (MA, MS, M.Eng., ...)
● Primary/elementary school ● Professional degree (JD, MD, etc.) ● Other doctoral degree (Ph.D, Ed.D., ...)
● Some college/university study wit... ● Secondary school (e.g. American ...)



DISCUSSION



- ▶ What kinds of developer technologies are in top demand?
- ▶ Which technologies should educators place more emphasis on teaching in upcoming years?
- ▶ How do we close the wide gender gap in the technology industry?

OVERALL FINDINGS & IMPLICATIONS

Findings

- ▶ JavaScript and HTML/CSS will be in demand in future.
- ▶ Python rank will rise over the next year.
- ▶ There is a huge gender gap in the IT industry.
- ▶ Linux and Docker will be popular next year.
- ▶ React.js gaining popularity for next year.

Implications

- ▶ Companies should take preventive steps to increase Female work participation in IT Field.
- ▶ Web Development is still high in demand.
- ▶ Less developed Countries need more access to tech trainings and education.

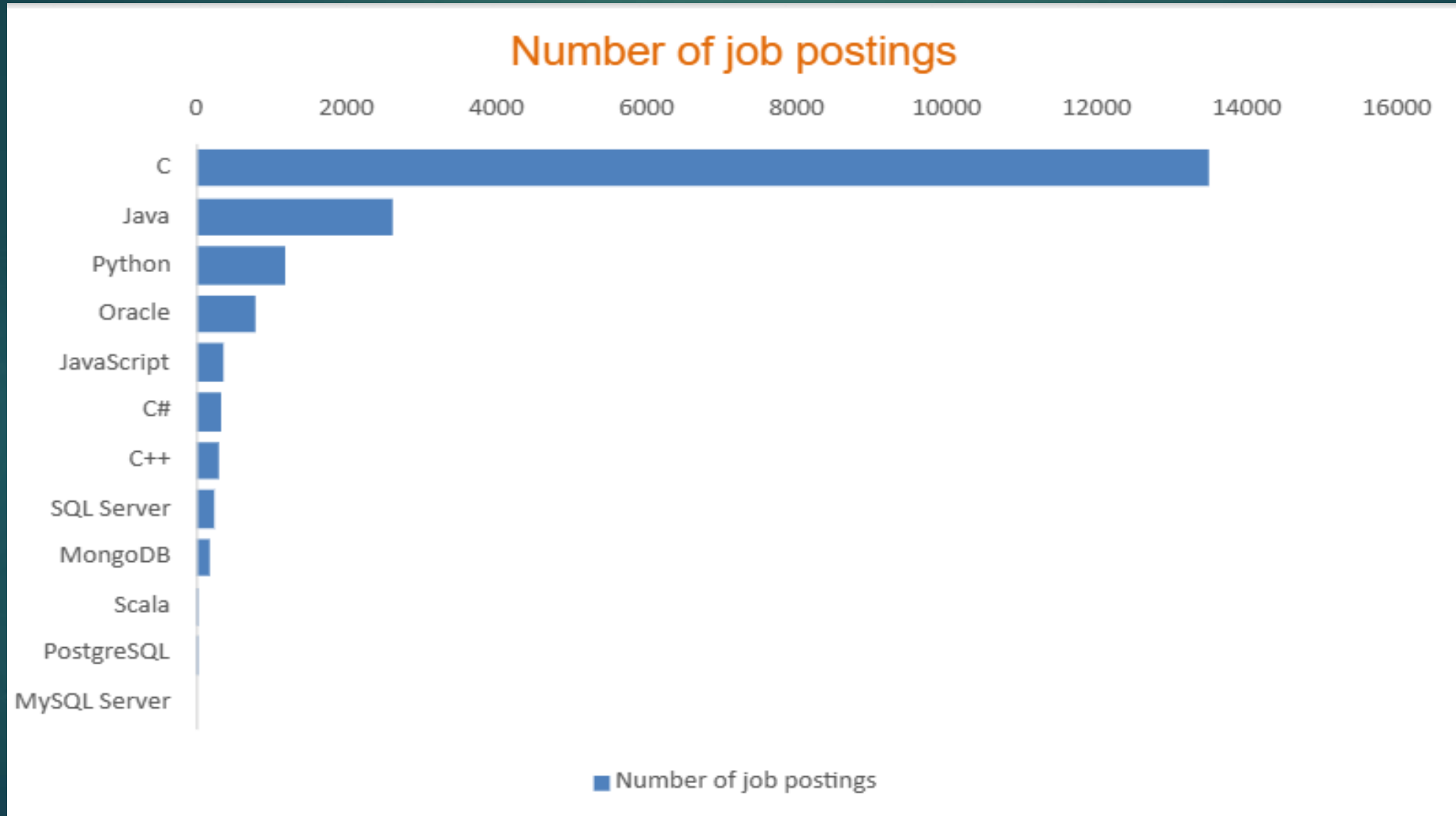
CONCLUSION

- ▶ Analyzing dataset we are able to understand current and future trends in technologies application and usage
- ▶ From the data visualization, Popular languages like JavaScript and HTML will remain the most preferred languages to be worked within the future due to its multipurpose use and applications.
- ▶ Among Databases, the popularity of MySQL is decreasing and which may be replaced by PostgreSQL and MongoDB.
- ▶ From the data visualization in demographics, it is clear that the data technologies trends are affected by young age groups.
- ▶ There is a major contribution of Male in this field.

APPENDIX



GitHub Job Postings



POPULAR LANGUAGES

