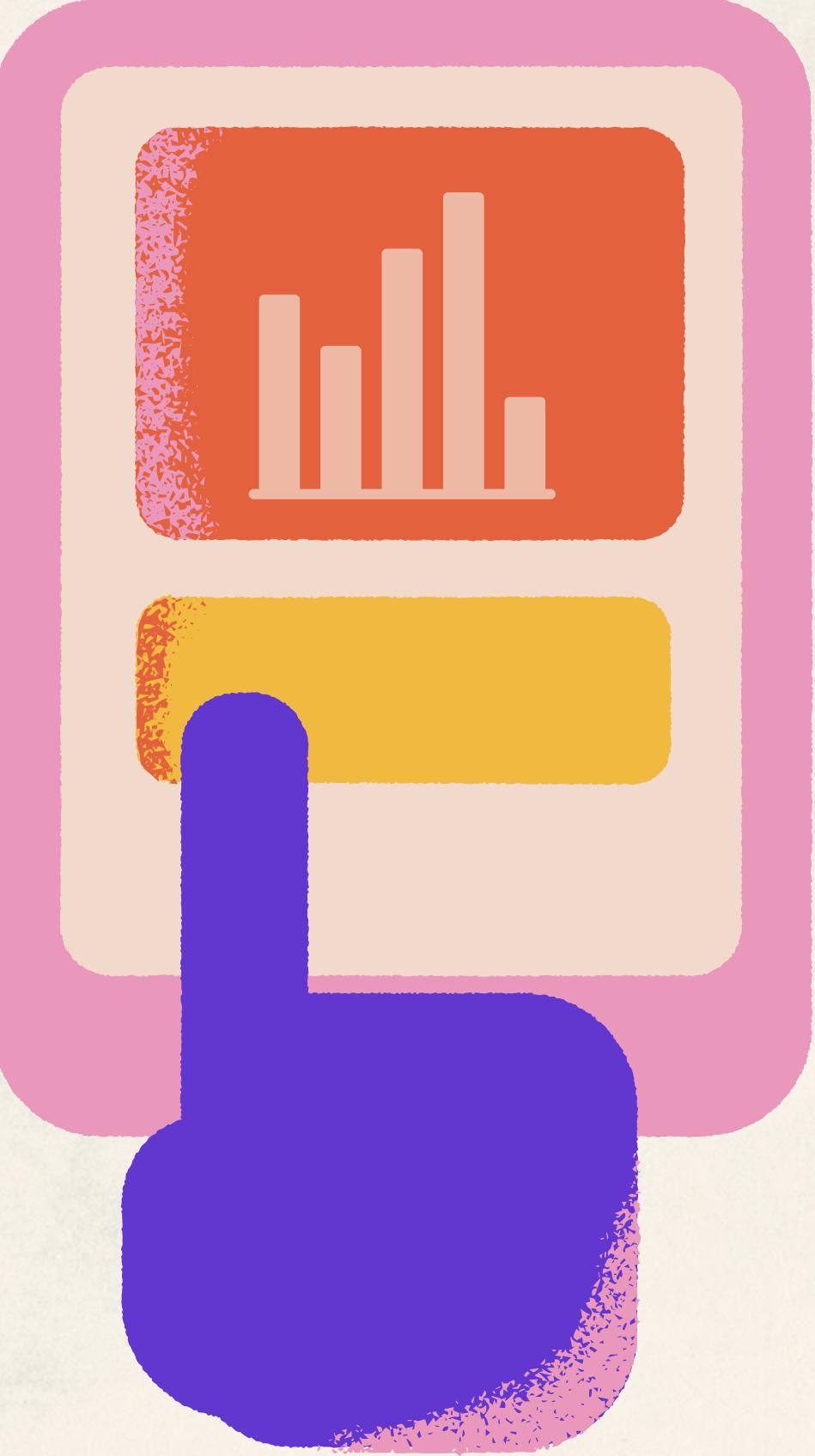




Future Programming Skill Trends



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9th January 2024



Outline

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Executive Summary

This presentation has been created to summarize the key findings from an analysis of data collected as part of the 2019 Stack Overflow Developer Survey.

A subset of the survey data was considered which consists of 2 datasets i.e. data technologies and demographic to identify the present and future data technologies trends among people of different age groups all across the world.

- Present technology trends were identified as JavaScript as popular language, MySQL as popular database, Linux as popular platform and jQuery as popular web frame.
- Future technology that people wanted to learn were identified as JavaScript language, PostgreSQL database, Linux platform and React.js web frame.
- Most of the respondents of the survey were male with a master's or bachelor's degree between the age group of 21 to 43 and most of the respondents reside in US

- There is a huge interest among developers in JavaScript and web development languages.
- NoSQL databases also saw a tremendous growth in interest with databases such as MongoDB and Redis.



Introduction

This report is about collecting data from various sources and identifying technology trends for this year's report on emerging skills.

This report yields insights regarding the following:

- Helps in identifying the current technology trends in the market.
- Helps in identifying which technology will be more used in the future or the technology people will shift to in the future.
- Helps in targeting prospective employees based on the demographic profile of the report.

Methodology

Data collection:

collected from 3 different sources:

- Subset of stack overflow developer survey 2019
- Collected number of job postings using Jobs API
- Collected annual average salary of programming languages using Webscraping

Data wrangling:

- Remove missing values
- Duplicates
- Normalizing data

Exploratory data analysis:

- Identify outliers
- Identify the data distribution of data
- Identify the correlation between different columns.

Data visualization:

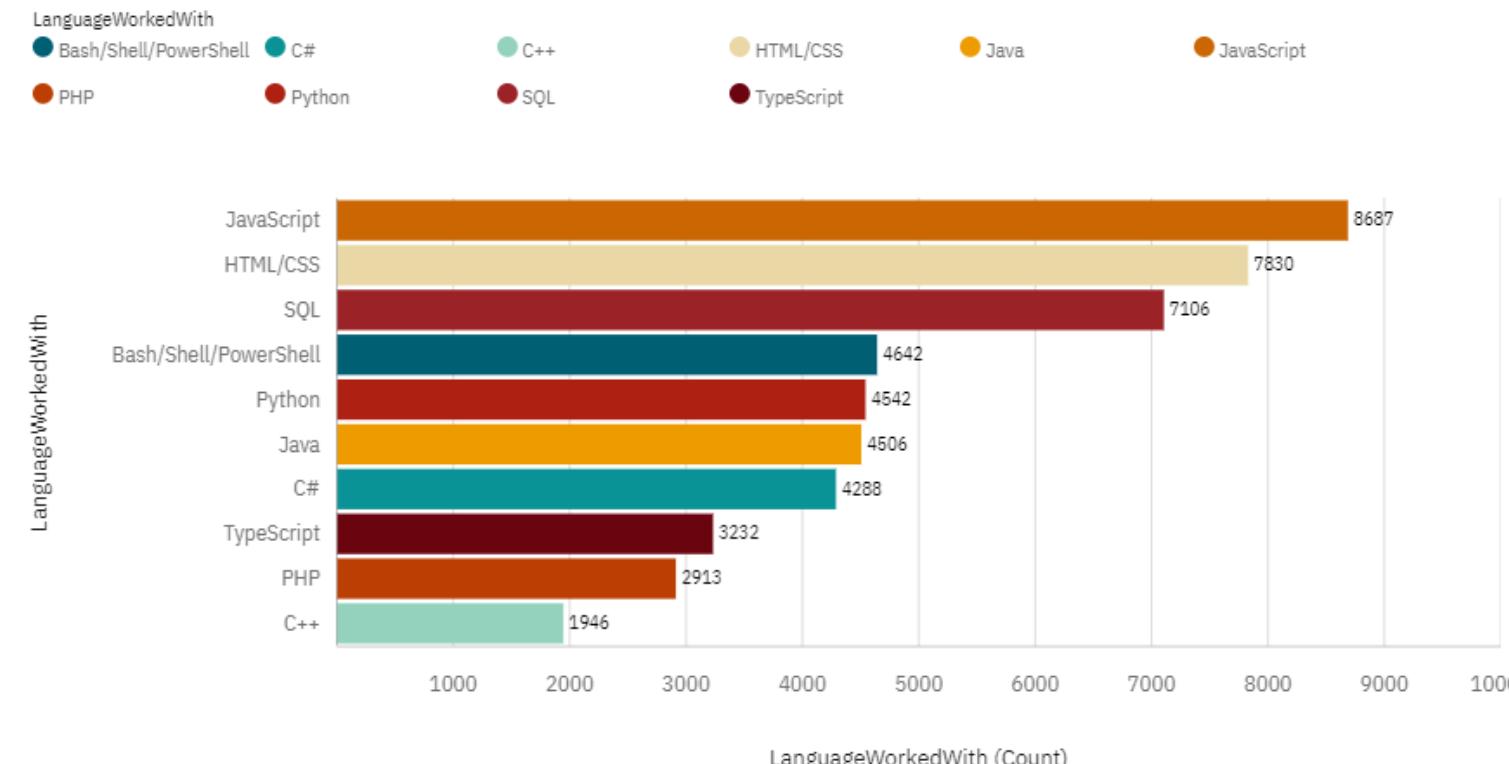
Using IBM Cognos

Result

Programming Language Trends

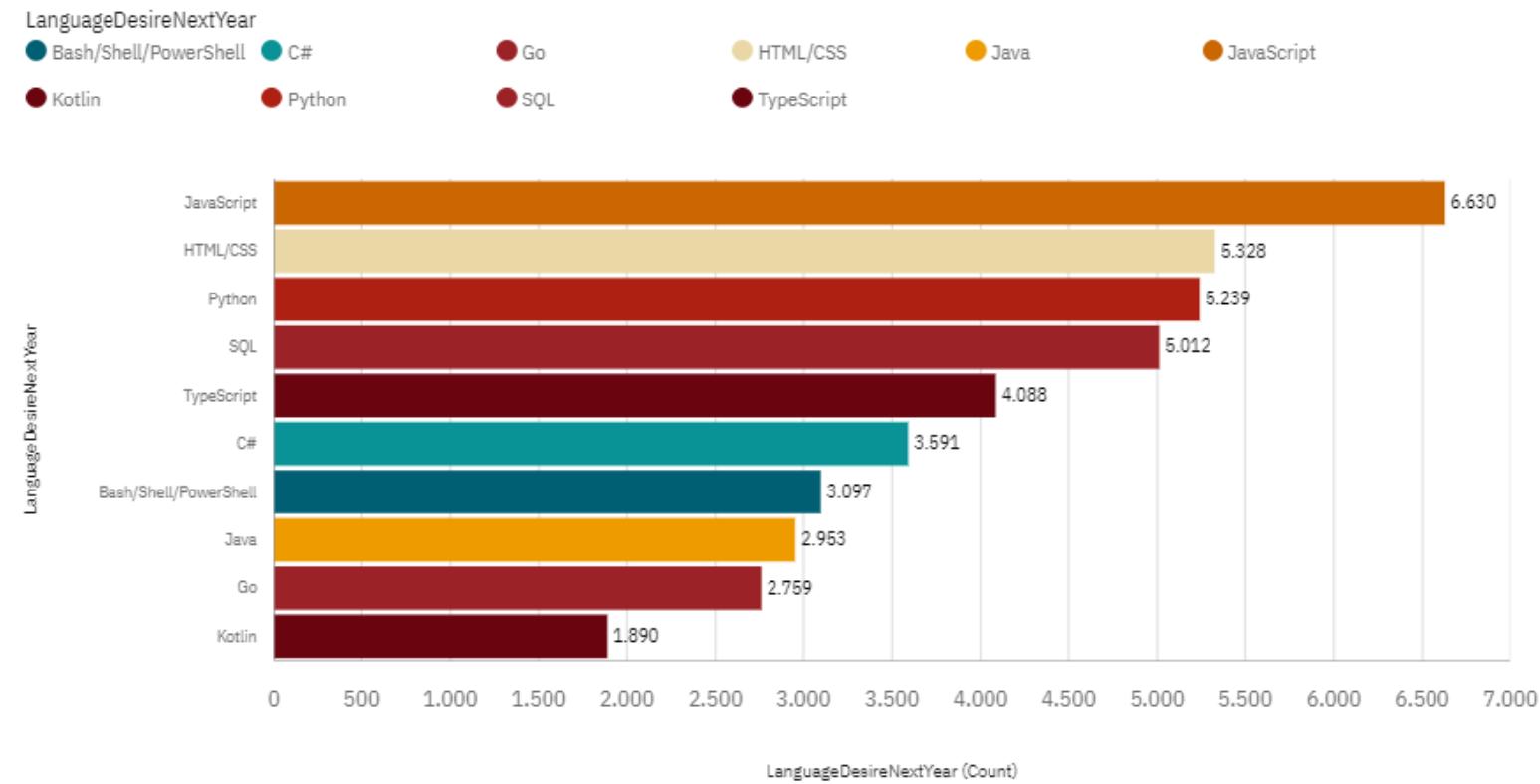
2019

Top 10 Language Worked With



Upcoming Year

Top 10 Language Desire Next Year



Discussion

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are popular languages among developers and will remain in the future.
- There is an increased interest in learning python and TypeScript in the upcoming year.
- SQL will likely remain as an important language among developers in 2019 and the upcoming year.
- There has been a decreasing interest in Bash/Shell/PowerShell.

Implications

- JavaScript and HTML/CSS will be still in the trends, especially for web development jobs.
- SQL will remain the preferred language for big data storage and querying.
- Python is useful in data analytics, AI and machine learning

Result

Database Trends

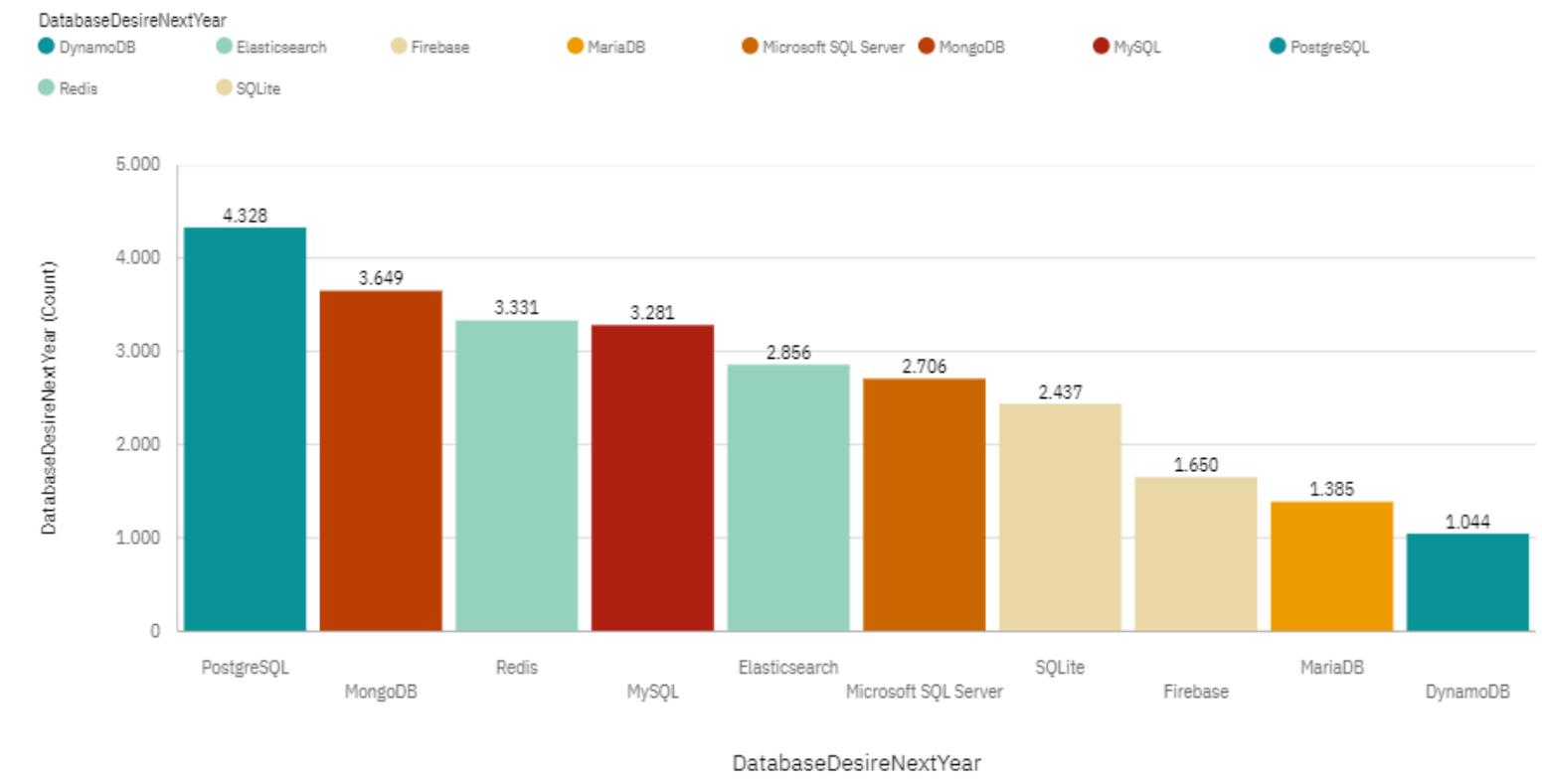
2019

Top 10 Database Worked With



Upcoming Year

Top 10 Database Desire Next Year



Discussion

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL was the most popular in 2019.
- However, for the upcoming year, PostgreSQL will gain a lot of popularity compared to other SQL databases

Implications

- MySQL will be the most required to use in database jobs
- Current developers need to learn NoSQL databases with relational databases to keep up with the trend.
- Developers need to focus both on relational database and non-relational.



Dashboard

The following link contains the interactive Cognos dashboard summarizing

- a) current technology usage**
- b) future technology trend**
- c) demographics**

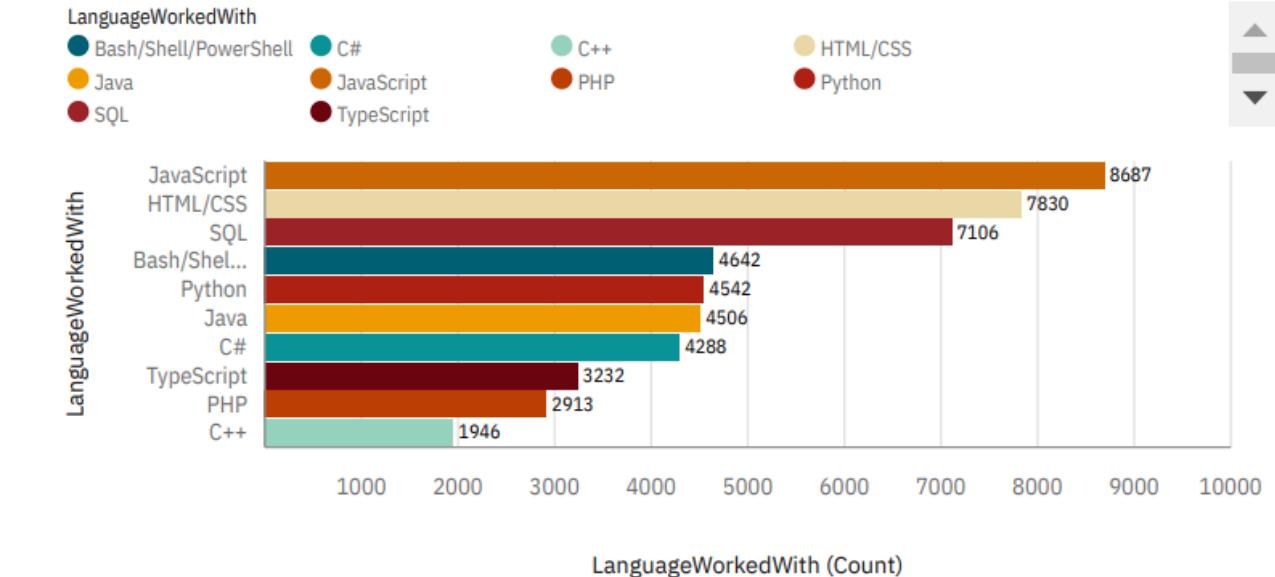
HERE

Dashboard A:

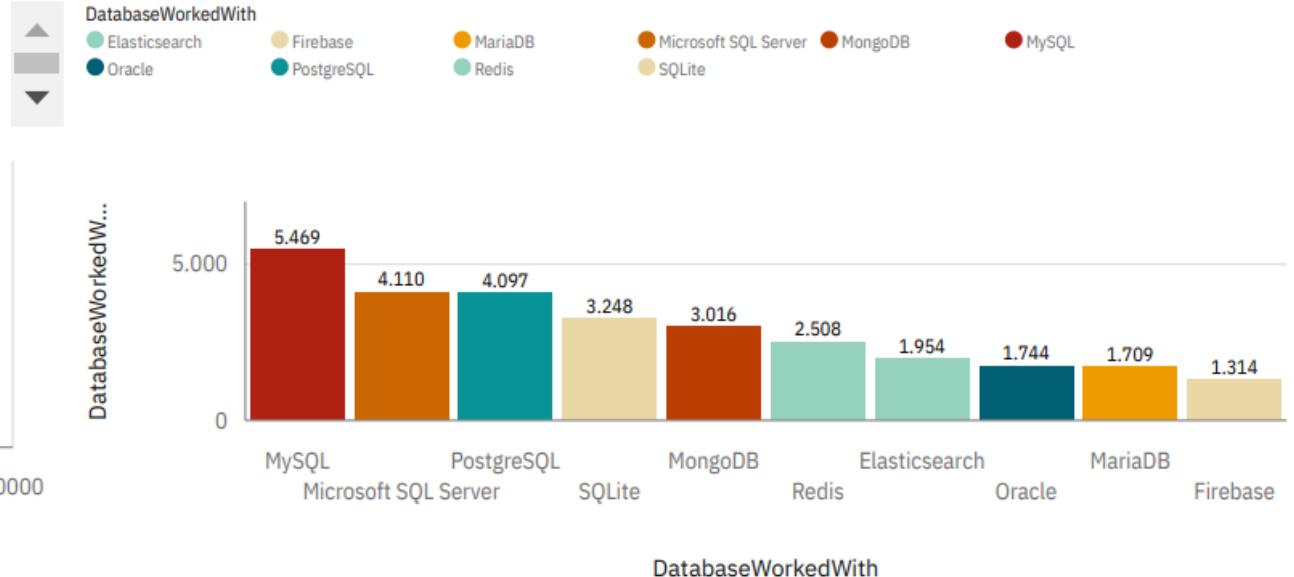
Current Technology Usage:

Current Technology

Top 10 Language Worked With



Top 10 Database Worked With



Platform Worked With



Top 10 Web Frame Worked With

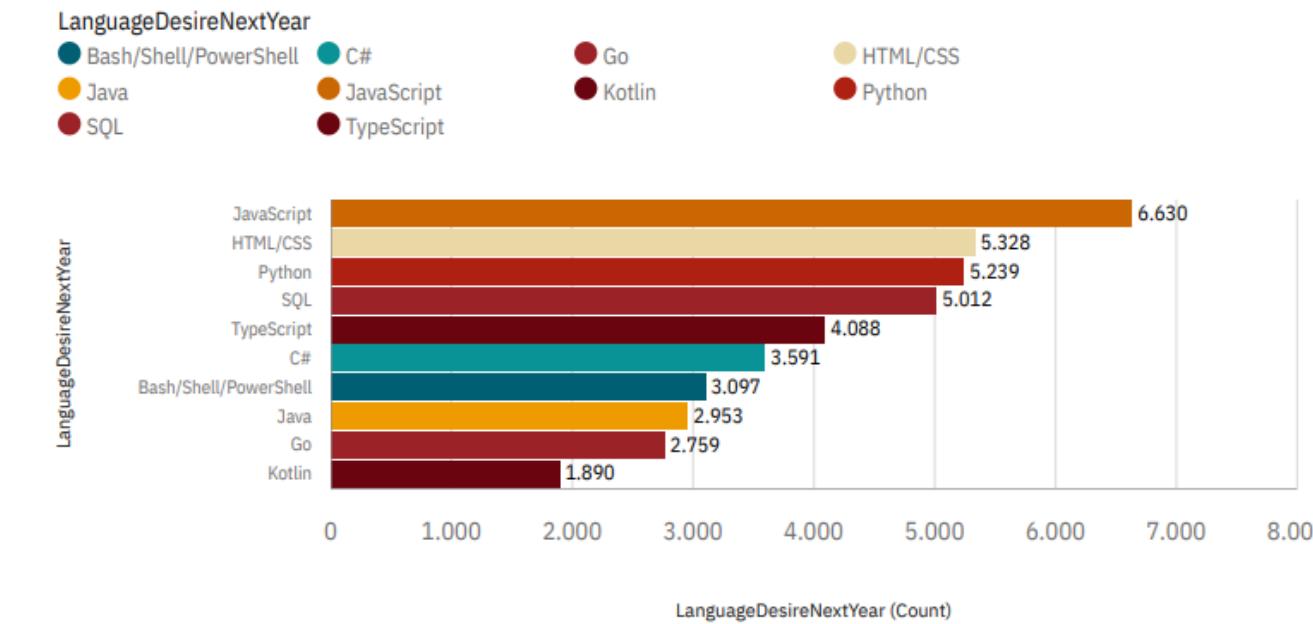


Dashboard B:

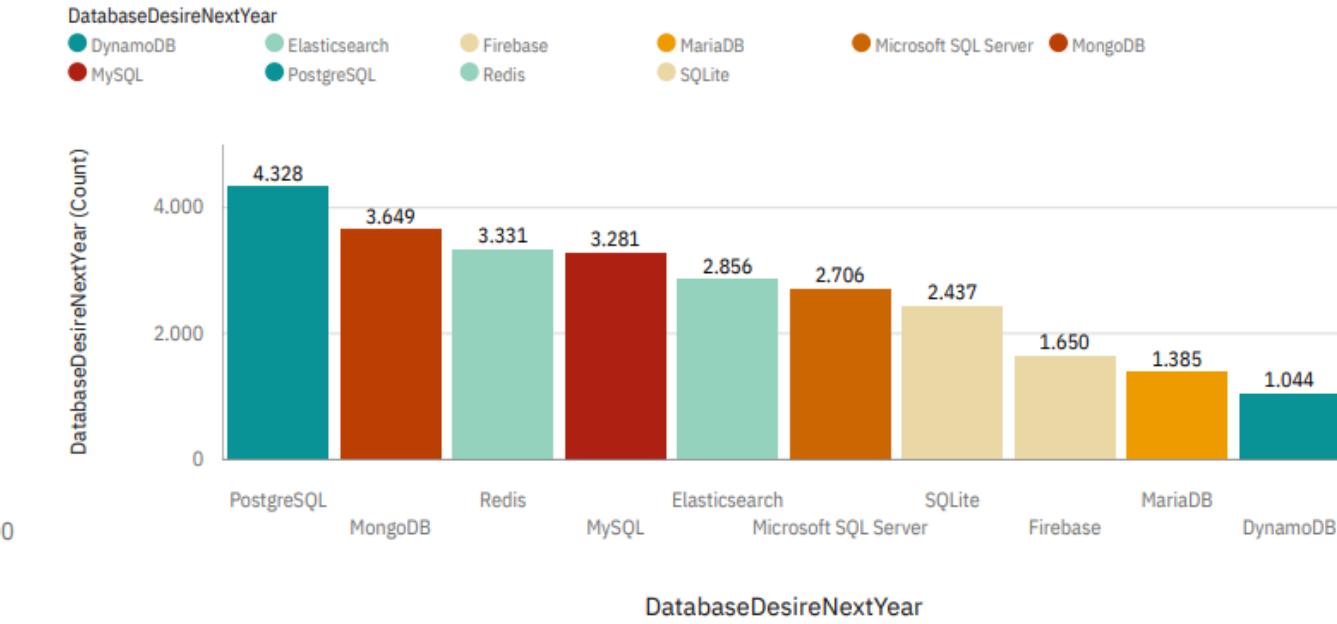
Future Technology Usage :

Future Technology Trend

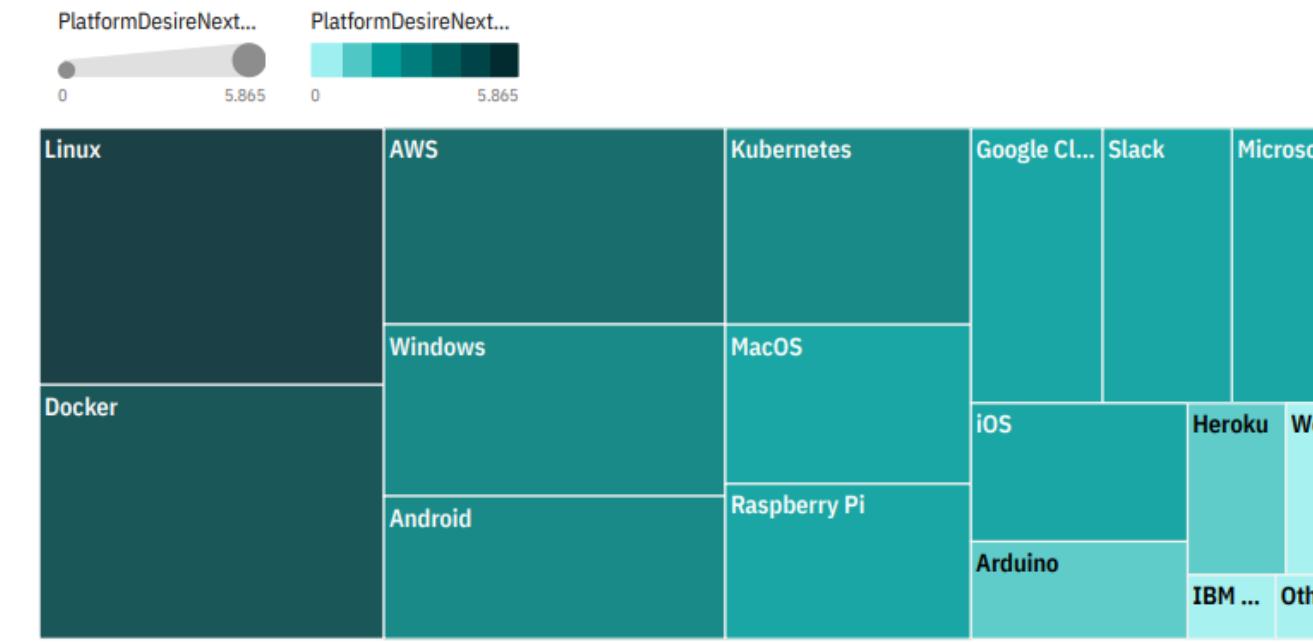
Top 10 Language Desire Next Year



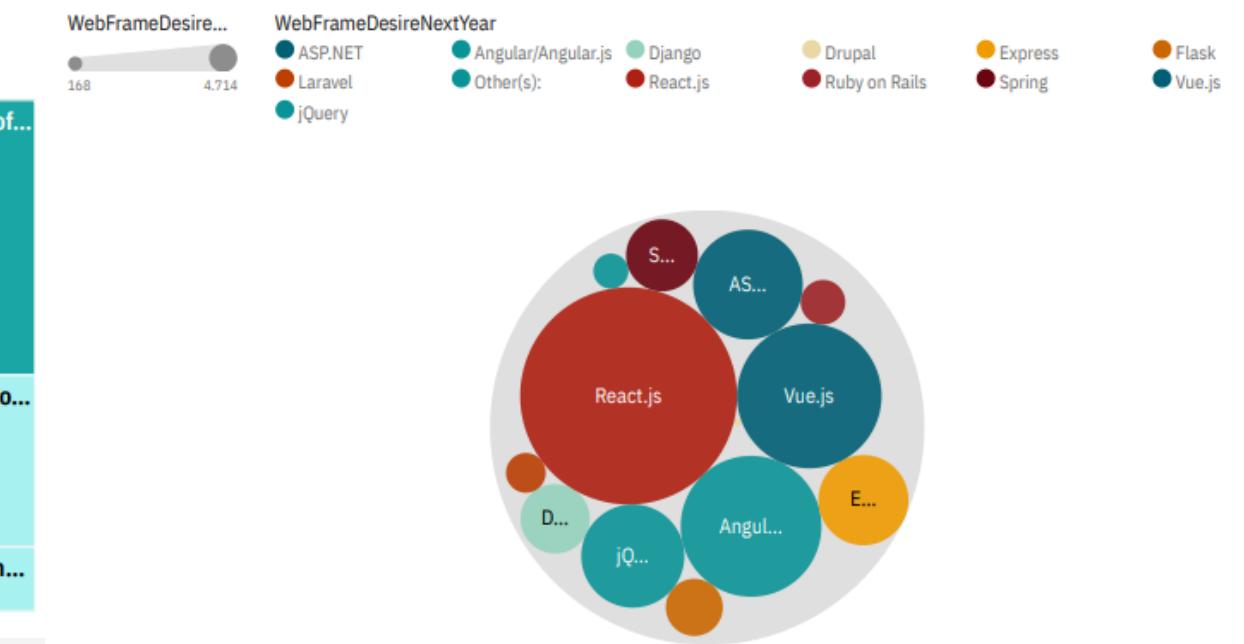
Top 10 Database Desire Next Year



Platform Desire Next Year



WebFrameDesireNextYear



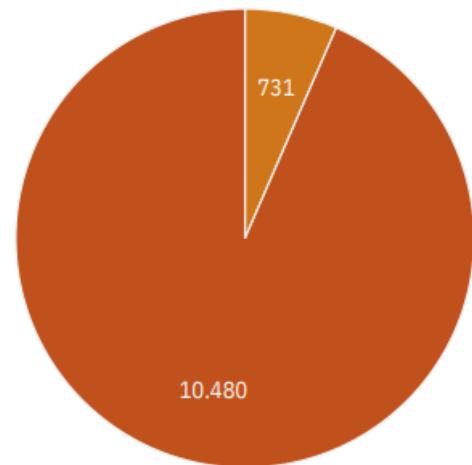
Dashboard C:

Demographics :

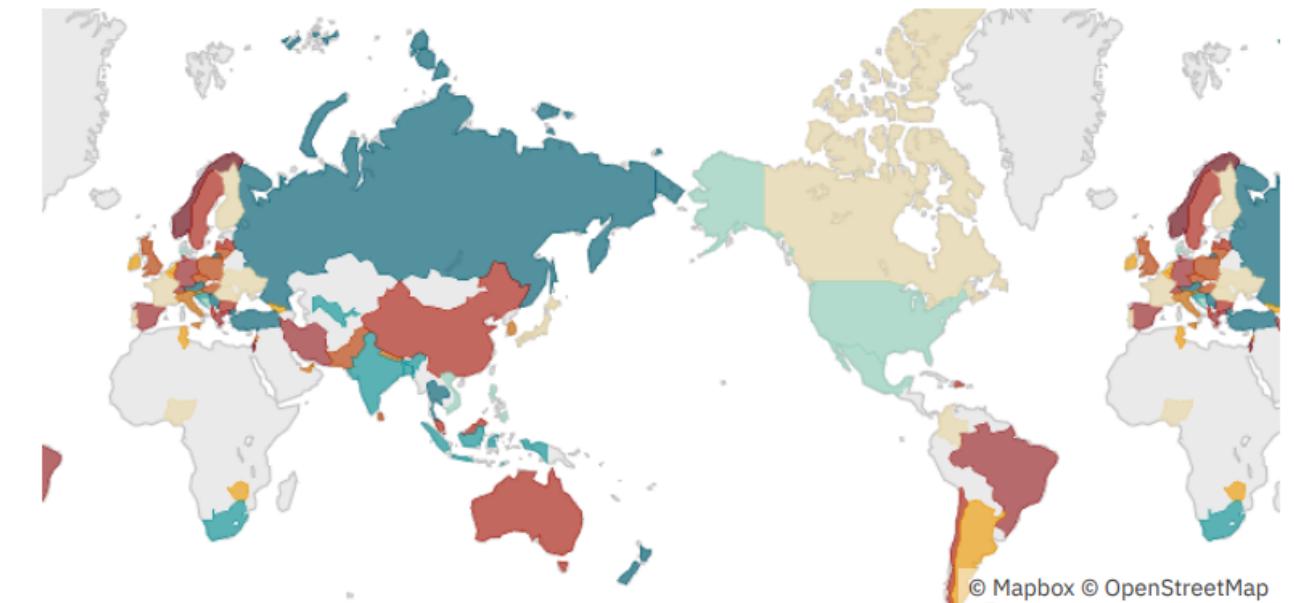
Demographics

Respondent classified by Gender

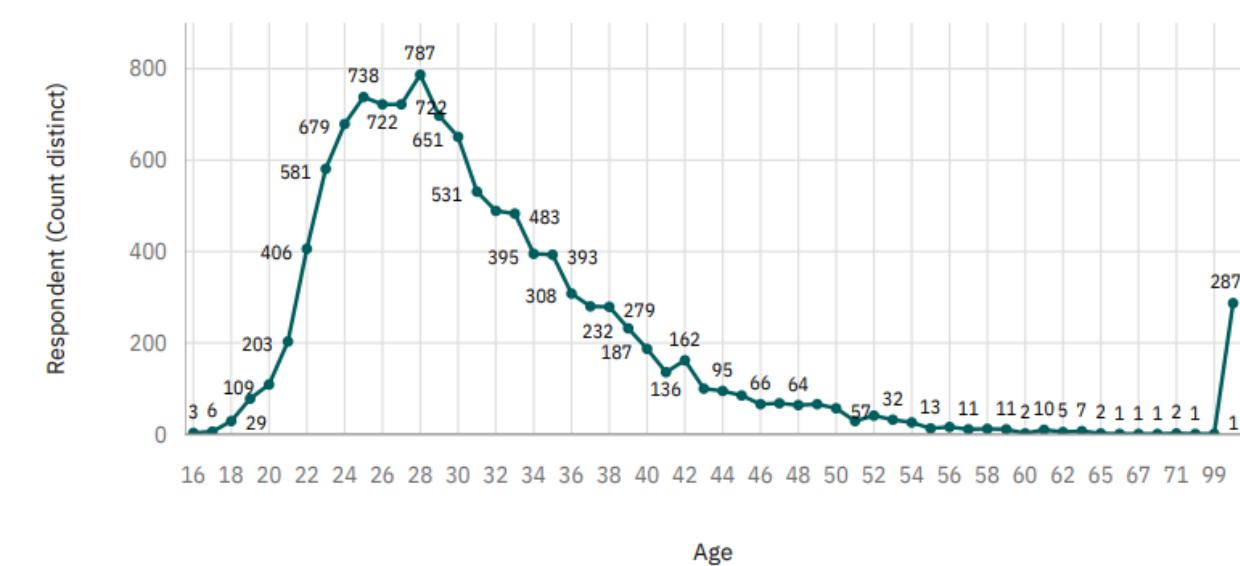
Gender
● Woman ● Man



Respondent by Country



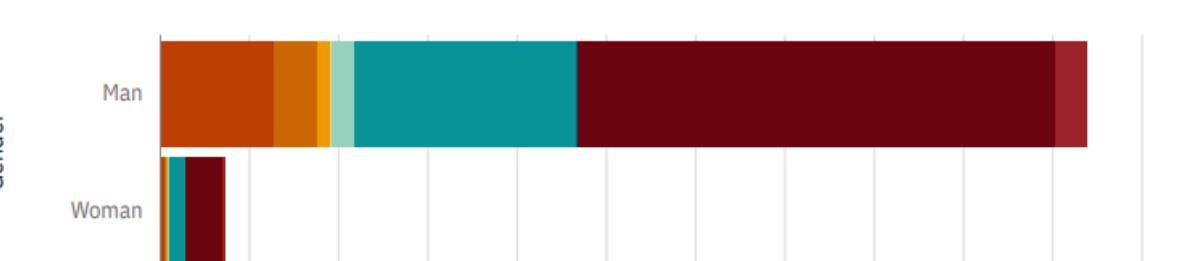
Respondent by Age



Respondent by Gender

EdLevel

| | | |
|---|--|--|
| Some college/university study without earn... | Secondary school (e.g. American high scho... | Professional degree (JD, MD, etc.) |
| Primary/elementary school | Other doctoral degree (Ph.D, Ed.D., etc.) | Master's degree (MA, MS, M.Eng, MBA, et... |
| I never completed any formal education | Bachelor's degree (BA, BS, B.Eng., etc.) | Associate degree |



Discussion

- 1.Which technologies should prospective developers and data professionals be learning?
- 2.Why is the popularity of MySQL declining so drastically?
- 3.Will NoSQL completely overtake relational databases?
- 4.Why is there such a huge gap in gender, age, and education in the IT industry?
- 5.What is the key value of HTML/CSS to be still required?

Overall

FINDINGS & IMPLICATIONS

Findings

- Technology trends change every year but JavaScript and HTML/CSS are the most used and popular languages among developers
- SQL and python languages were the most used in 2019 and for the next year as well they were the most desired language among developers to learn.
- MySQL was the most used database in 2019 but developers are showing more interest in PostgreSQL database to be used next year and NoSQL databases also will be more used in the coming years.
- There are extreme age and gender discrimination in IT industry.

Implications

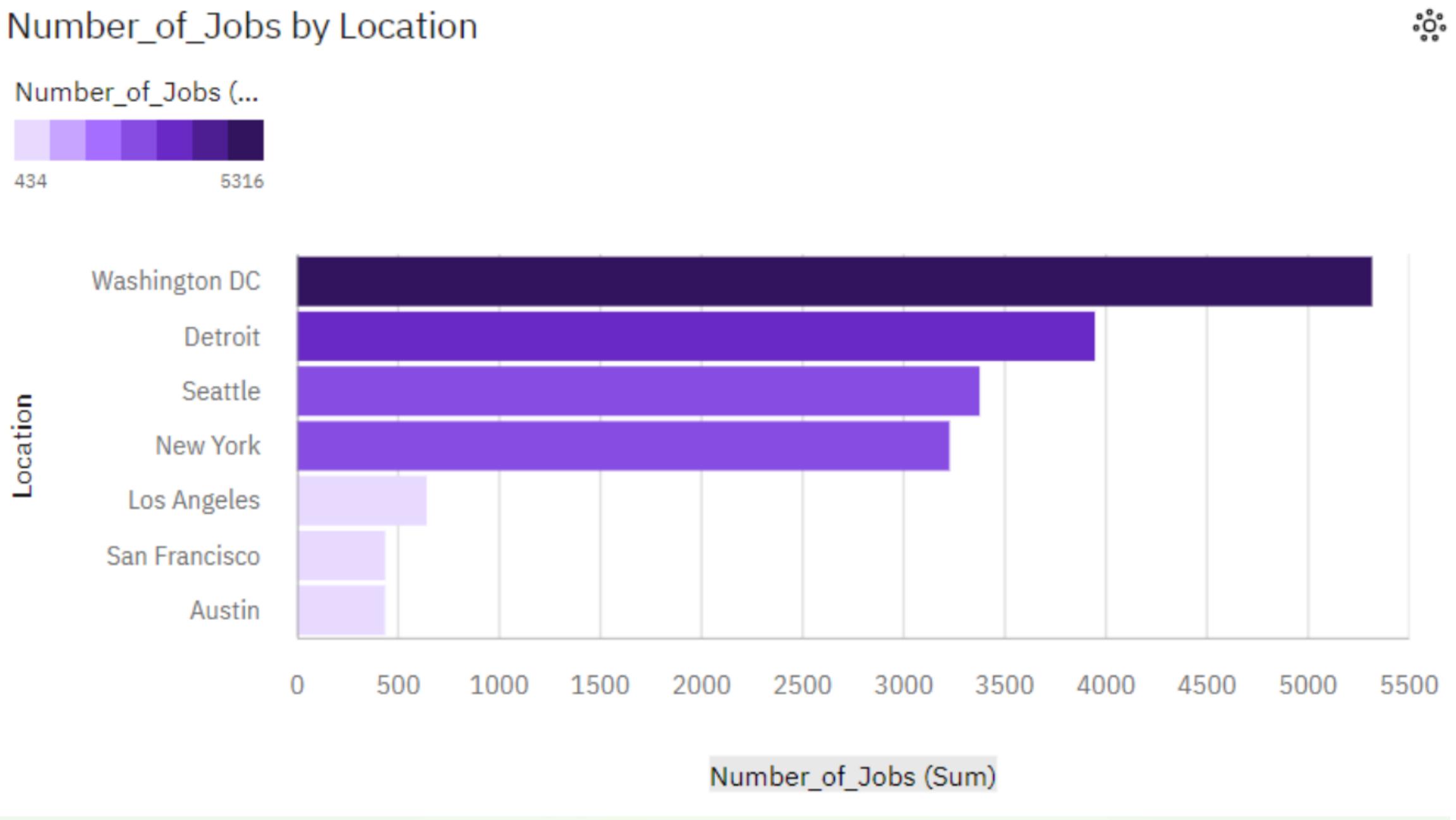
- Data professionals need to be competent with SQL as well as NoSQL databases to have a competitive edge in the market. They need to be good in python as well as its popularity is increasing.
- The gender discrimination should be removed from the industry and business leaders and HR professionals can contribute to that

Conclusion

- This report will be helpful to many business in keeping pace with the emerging trends, learners in understanding which technology to focus on and educators to know what matter to develop according to the trend.
- Businesses can also make adjustment in the work force for those skills no longer in demand and can also help employees upskill with the emerging trends.
- An effort can also be made from businesses and industries to reduce the gender difference.

Appendix A:

Job Postings :



Appendix B:

Annual Avarage Salary by Language Name :

Annual average salary by Language name

annual average sa...

