

2019 Stack Overflow Developer Survey: Exploring Current and Emerging Programming Language Trends



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OUTLINE



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

EXECUTIVE SUMMARY



- Aims and Objectives of Data Contextualization and Analysis
- Explanation of employed methodology
 - Data collection
 - Data analysis
 - Data visualization
- Presentation of results by using graph and trend analysis
- Discussion of key findings and their implications
- Conclusive remarks and insights drawn from this research

INTRODUCTION



- This report is mainly based on the dataset from Stack Overflow's annual Developer survey, which is one of the most comprehensive surveys for the people around the world.
- This survey was participated by almost 0.1 million developers.
- The goal of this survey was to know the view of all the developers around the globe.
- Besides, another goal of this survey was to know the future trend regarding the programming languages.
 - To know the most desired languages and databases
 - To know which platforms are going to be most desired in the future

METHODOLOGY



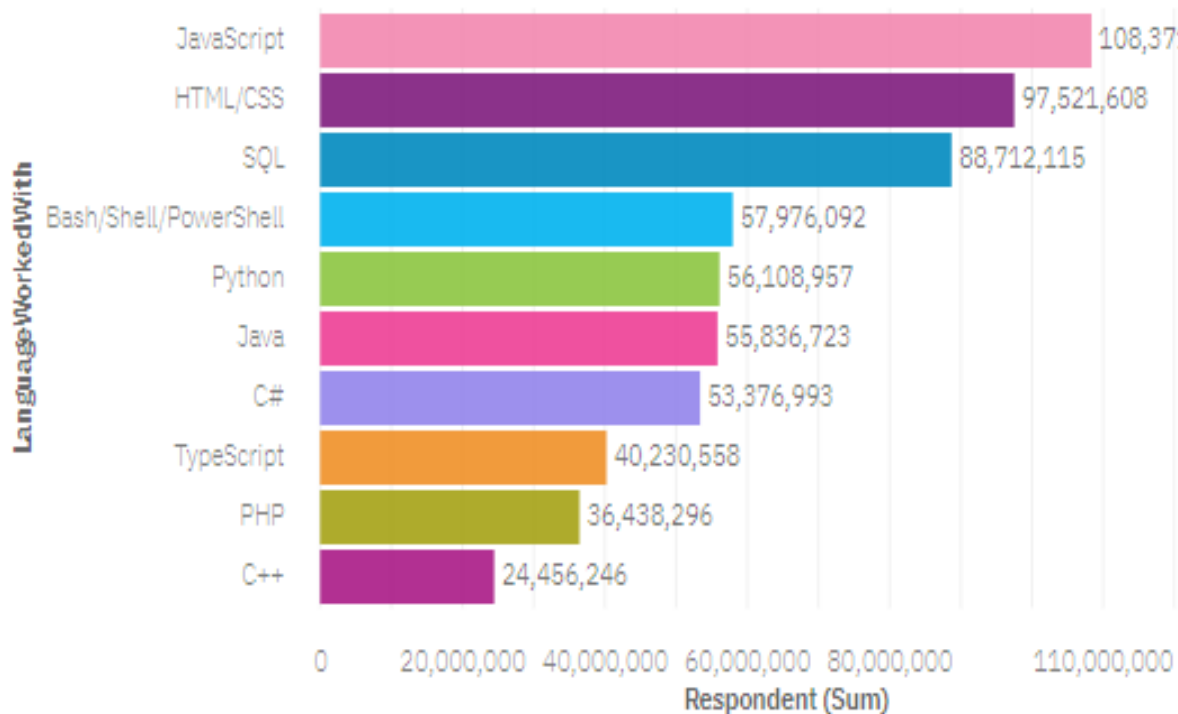
- Collect survey data & explore its content
 - Web Scraping
 - APIs
 - Request library
- Data Wrangling
- Exploratory data analysis
 - Analyzing data distribution
 - Handling outliers
 - Correlations
- Data Visualization
 - Highlight distribution of data, relationships, the composition and comparison of data
- Dashboards

RESULTS

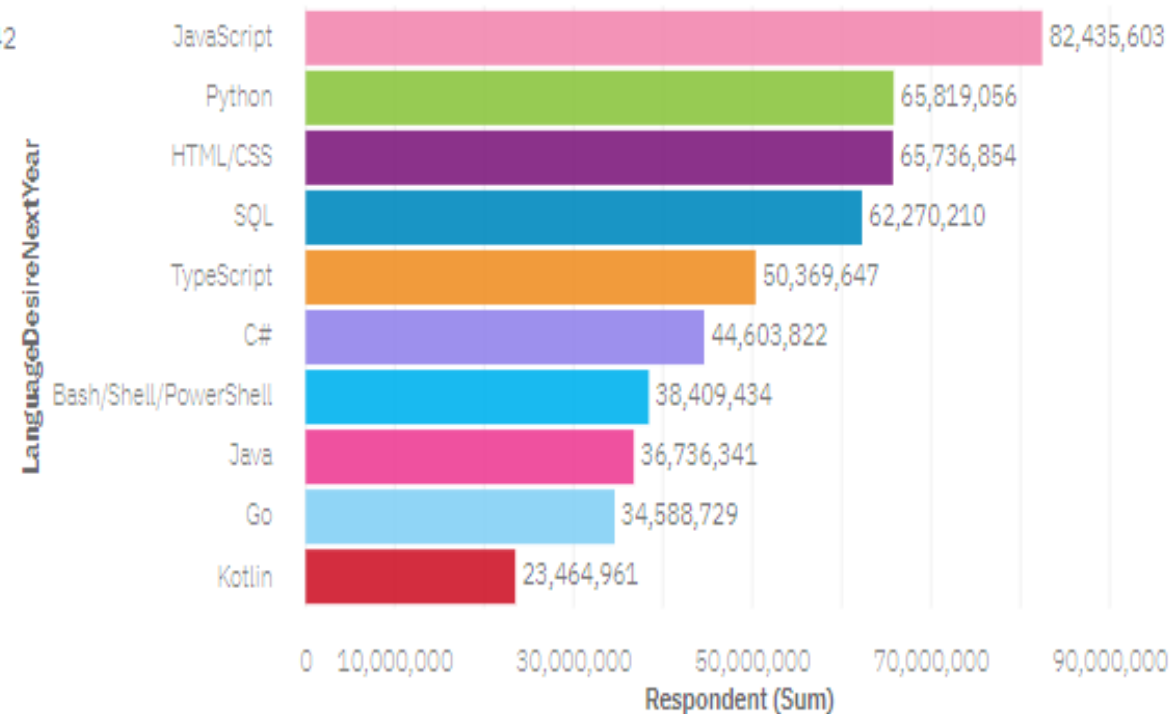


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

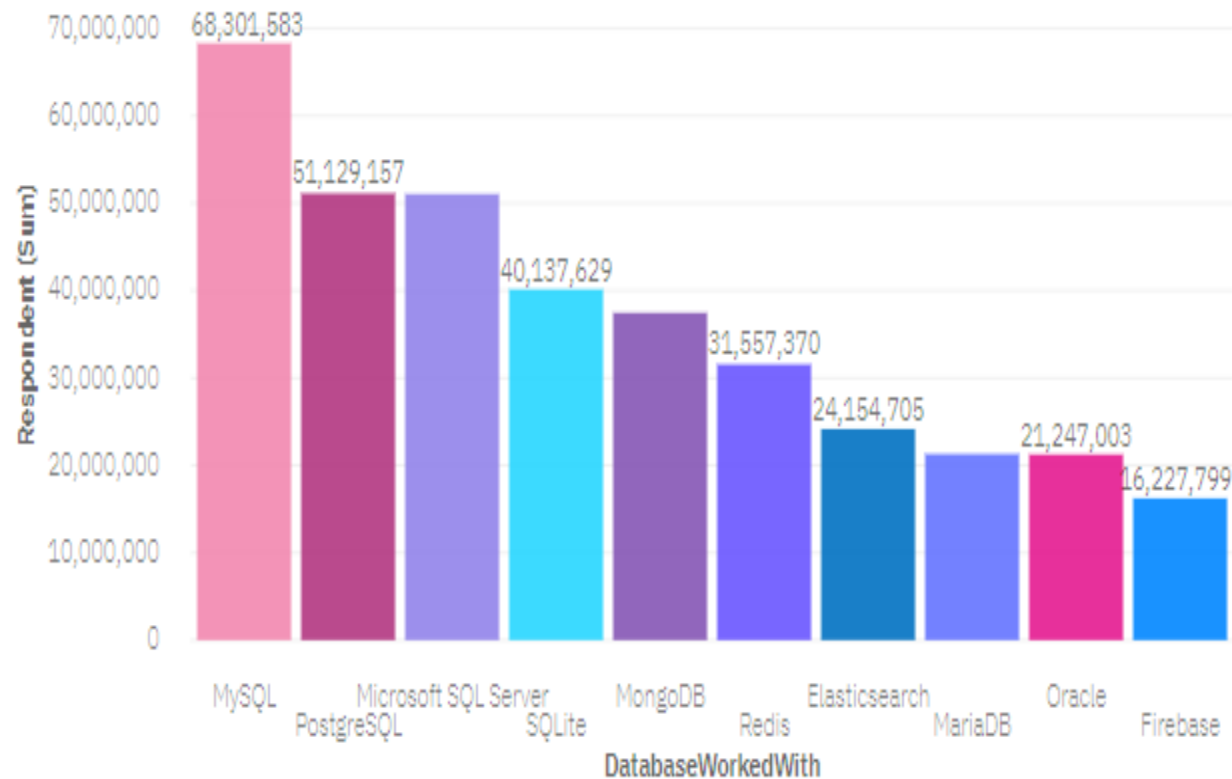
- **Javascript** tops in each case
- **Python** becomes second demanding language from fifth
- **PHP, C++** lose their places in top 10

Implications

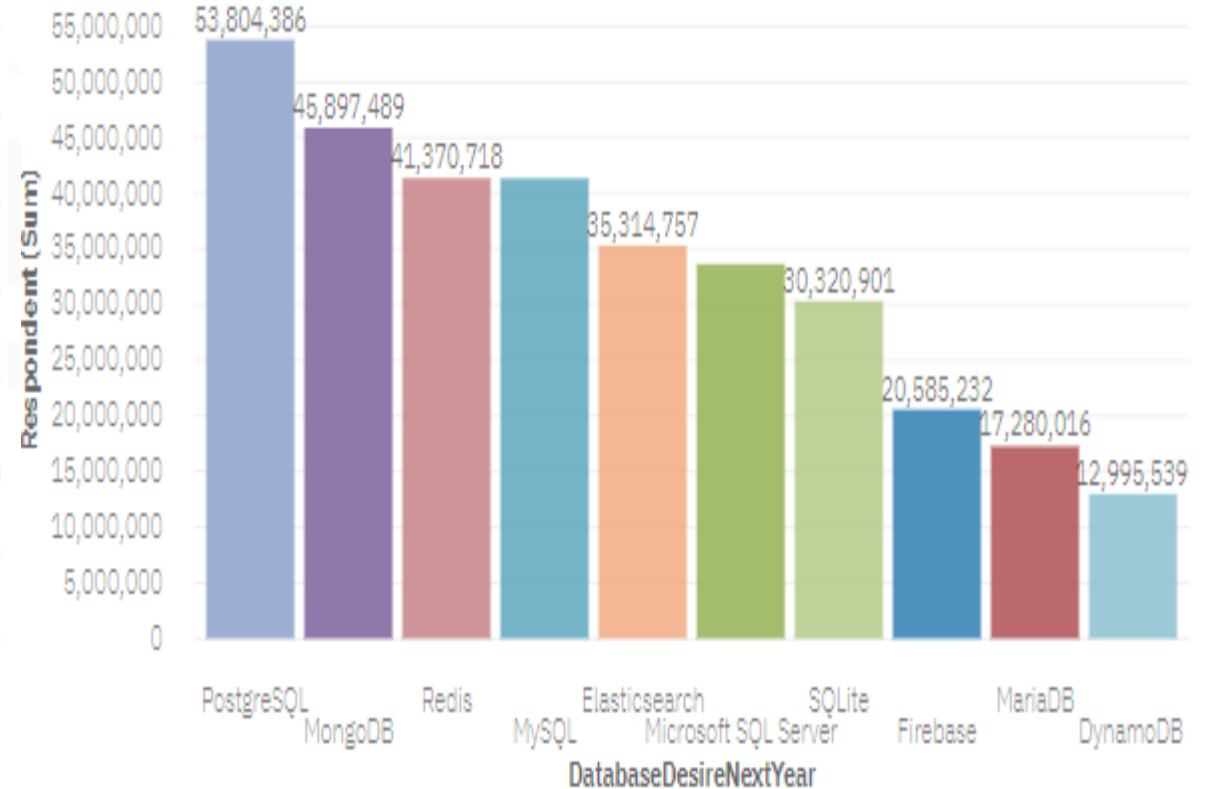
- **Javascript** is still people's top priority
- Demand for **Python** is growing very fast
- While **PHP, C++** are decreasing, the demand for **Go and Kotlin** is increasing

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- **PostgreSQL** tops in the future trend
- **MongoDB** becomes second from 5th
- **Oracle** loses spot from top 10

Implications

- **MySQL, SQLite** are losing their popularity
- While **MongoDB, DynamoDB** gaining importance, **MariaDB** is losing
- **Oracle** is losing its importance

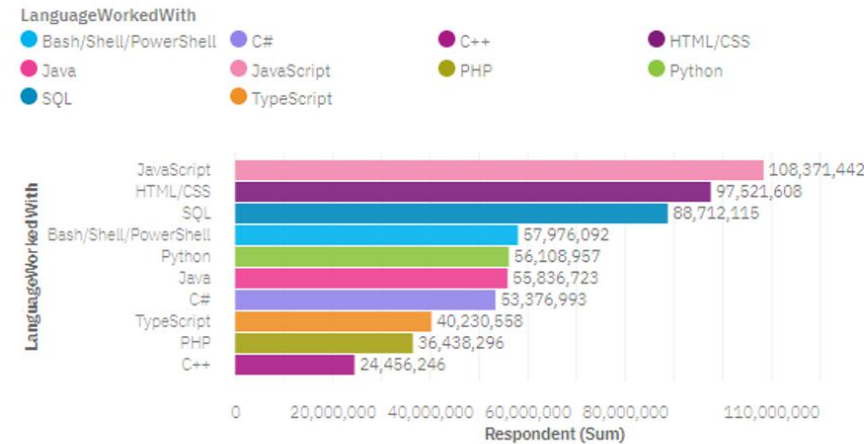
DASHBOARD



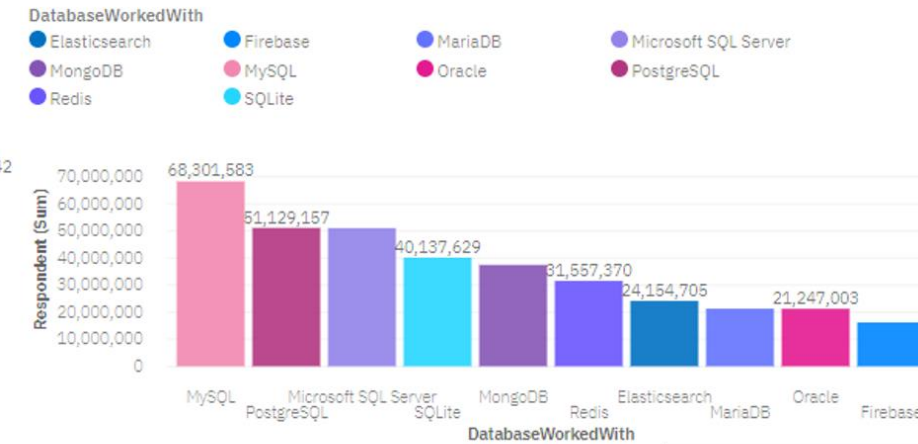
<https://dataplatform.cloud.ibm.com/dashboards/26f19bc6-e92f-4179-b341-f3c40092917a/view/5b26c7206f8f62f163d4ee4079078012b66240fb1bbd55287d67b490d627097f3601797c82b48098c195060f1b8150cc0>

CURRENT TECHNOLOGY USAGE

Top 10 Language People Have Worked With



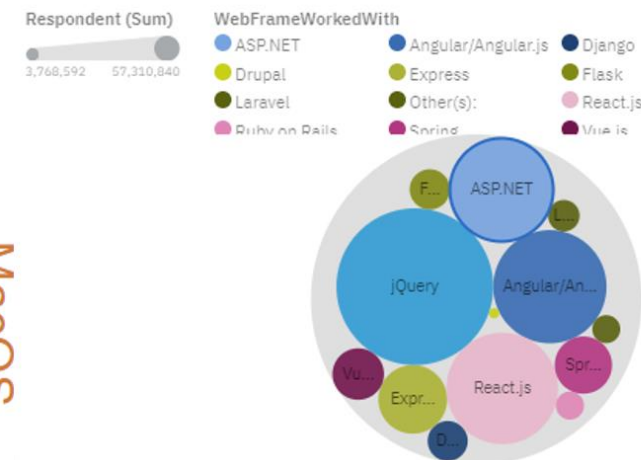
Top 10 Databases People Have Worked With



Platforms Utilized

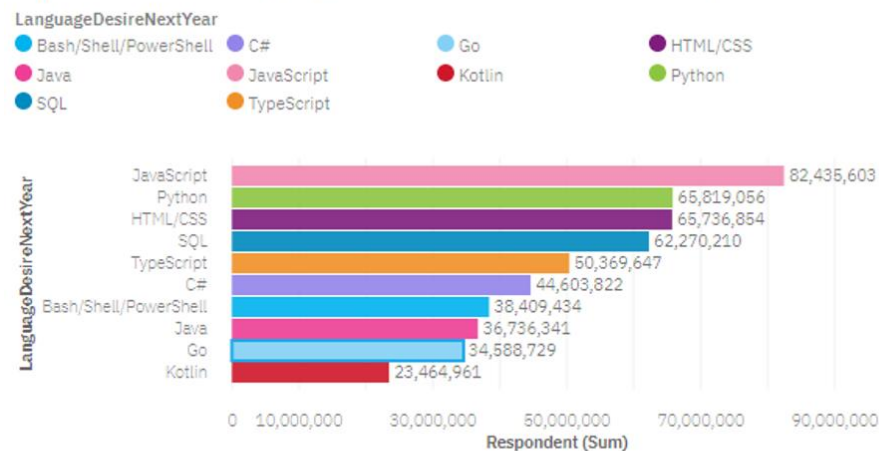


Top 10 Webframes Utilized

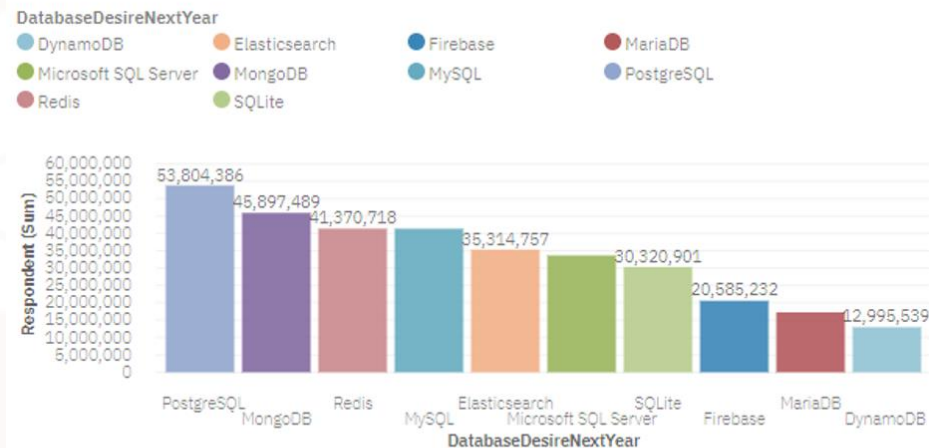


FUTURE TECHNOLOGY TREND

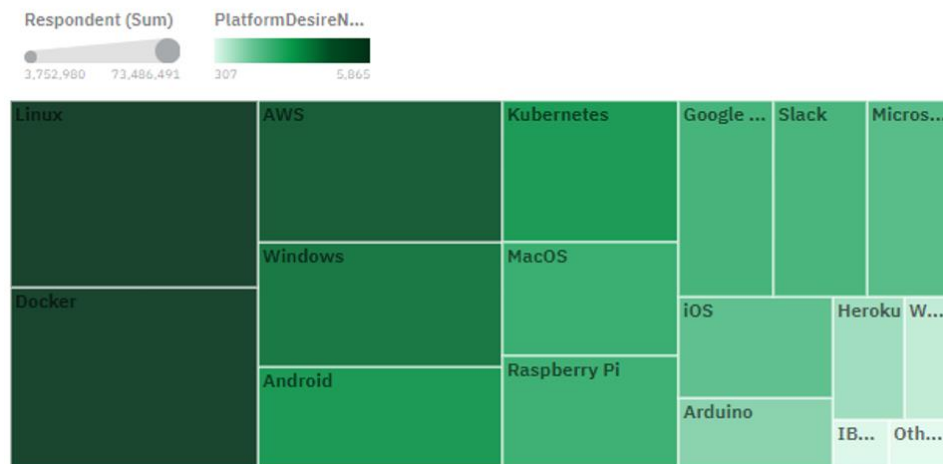
Top 10 Desired Languages to Learn Next Year



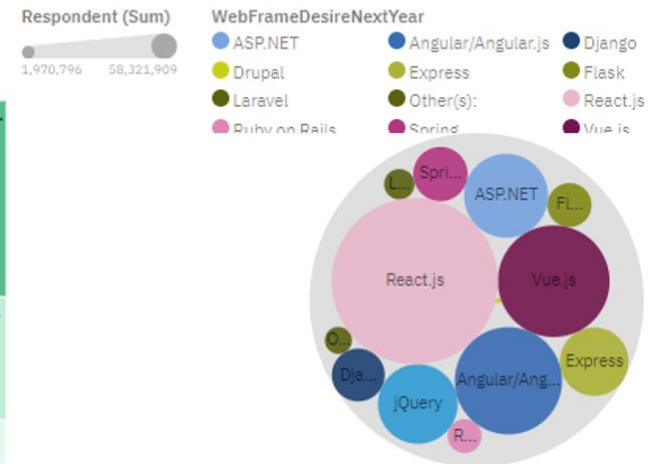
Top 10 Desired Databases to Learn Next Year



Platforms Desired Next Year



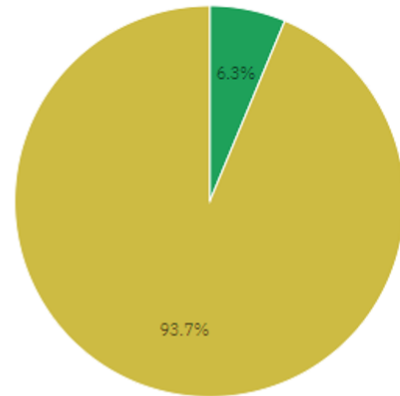
Top 10 Desired Webframes Next Year



DEMOGRAPHICS

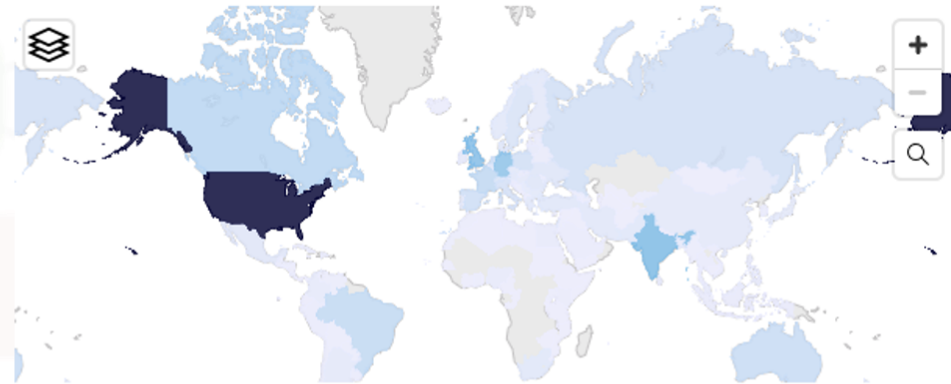
Respondent classified by Gender

Gender
● Woman ● Man

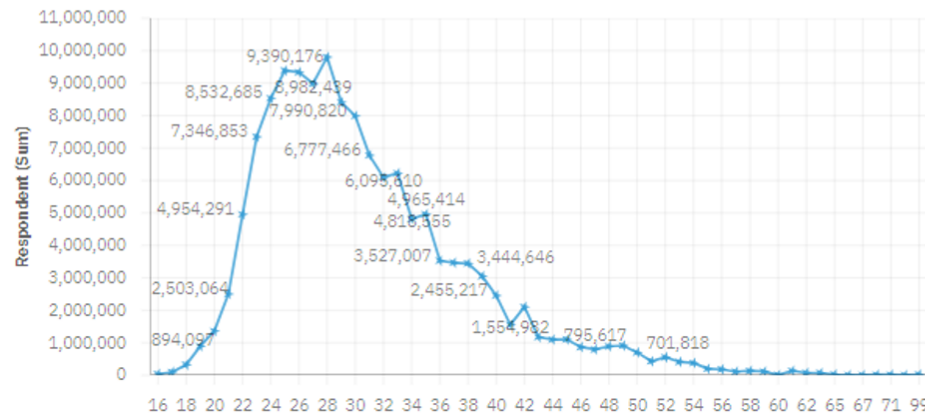


Respondent Counts for Countries

Respondent (Sum)
865 39,154,240

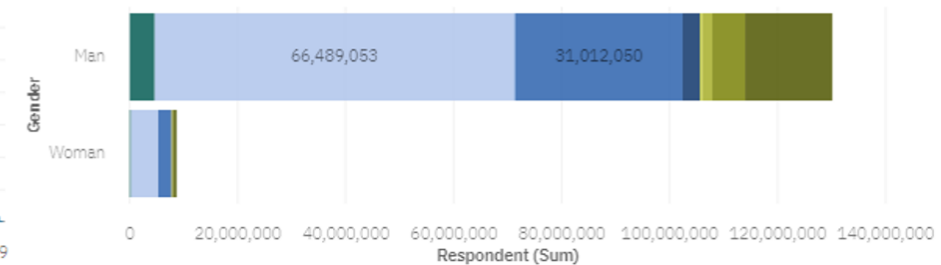


Number of Respondents by Age



Respondent Count by Gender, classified by Formal Education Level

EdLevel
● Associate degree ● Bachelor's degree (BA, BS, B.E...
● Master's degree (MA, MS, M.E... ● Other doctoral degree (Ph.D, E...
● Professional degree (JD, MD, e... ● Secondary school (e.g. Americ...
● I never completed any formal ... ● Primary/elementary school
● Some college/university study ...



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- **Linux and Docker** are two of the most desired platforms in the future
- **jQuery** is replaced by **React.js** as top desired webframe in future.
- Almost 94% of the **respondents** are man.

Implications

- **Windows** is losing its importance as a platform.
- **React.js** is gaining popularity as it will become the most desired webframe in future.
- **American men with bachelor's degrees** are most of the respondents.

CONCLUSION

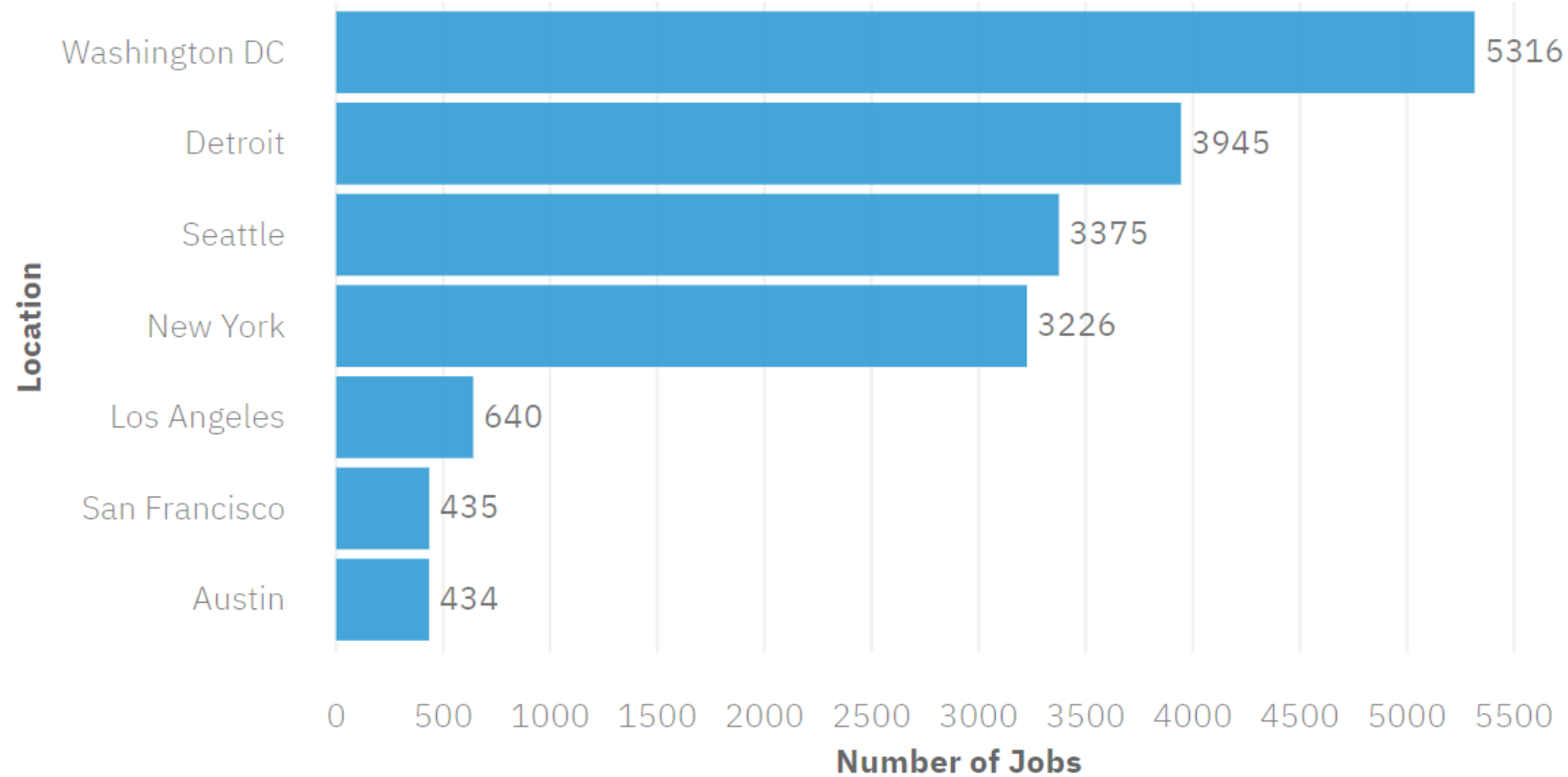


- The current and future trends of programming languages, platforms, databases and webframes **are very well captured by this dataset from stack Overflow.**
- Javascript is and will be at the top as the used **programming language** and also as the most desired language for future.
- **Windows is losing it's popularity** which is evident from the fact that Linux is most desired platform in the future.
- There is **gender inequality among the respondents.** Almost 94% are American men. Furthermore, this dataset **does not capture the trends in other countries in the world.**

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

