INSIGHTS INTO THE DEVELOPER ECOSYSTEM: A COMPREHENSIVE ANALYSIS OF THE 2019 STACK OVERFLOW DEVELOPER SURVEY

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21ST MAY 2024

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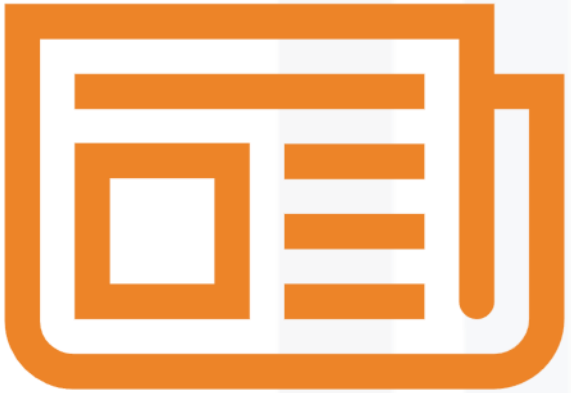
EXECUTIVE SUMMARY

- Introduction to the Stack Overflow Developer Survey 2019, highlighting the number of respondents and geographical coverage
- Identification of the most widely used development platforms and trends in platform adoption
- Most popular programming languages among developers and trends in language preferences, including emerging languages;
  - Java
  - Go
  - Kotlin
- Analysis of developers' preferences for work environments, tools, and technologies used
- Trends in continuous learning and professional development activities among developers
- Comparison of salaries across different developer roles and experience levels

INTRODUCTION

- This report analyzes the 2019 Stack Overflow Developer Survey to understand key trends in developer demographics, preferences, and behaviors, focusing on salaries, platform usage, programming languages, developer optimism, and coding habits.
- The Stack Overflow Developer Survey is an annual survey that provides valuable insights into the developer community, influencing industry trends and guiding stakeholders such as employers, educators, and policymakers.
- The survey collected data from a large sample of developers worldwide, detailing their backgrounds, experiences, and preferences through an online questionnaire.
- The report aims to answer key questions such as current salary trends, developer optimism, popular platforms and programming languages, using
  - Well laid out charts and graphs,
  - Presenting detailed findings and implications of the survey dataset

METHODOLOGY



- The survey collected responses from over 90,000 developers across 179 countries and regions. The sample was diverse, including developers of different ages, genders, and professional backgrounds, providing a comprehensive view of the global developer community.
- The survey data was analyzed using data wrangling and data visualization techniques. Descriptive statistics were used to summarize key findings, while inferential statistics were used to identify trends and patterns in the data.
- The analysis focused on key variables such as developer salaries, platform usage, programming language preferences, developer optimism.
- While the survey provided valuable insights into the developer community, it had some limitations;
  - The sample may not be fully representative of all developers worldwide
  - The survey was conducted in English, which may have limited participation from non-English-speaking developers.

RESULTS

1. Programming Languages:

- The top 3 most used languages currently are JavaScript, HTML/CSS, and SQL.
- The top 3 most desired languages for the next year are JavaScript, HTML/CSS, and Python.

2. Databases:

- The top 3 most used databases currently are MySQL, Microsoft SQL Server, and PostgreSQL.
- The top 3 most desired databases for the next year are PostgreSQL, MongoDB, and Redis.

3. Platforms:

- The most used platforms currently are Windows, Linux, Docker, and AWS.
- The most desired platforms for the next year are Linux, Docker, AWS, Windows, and Android.

RESULTS

4. Demographics:

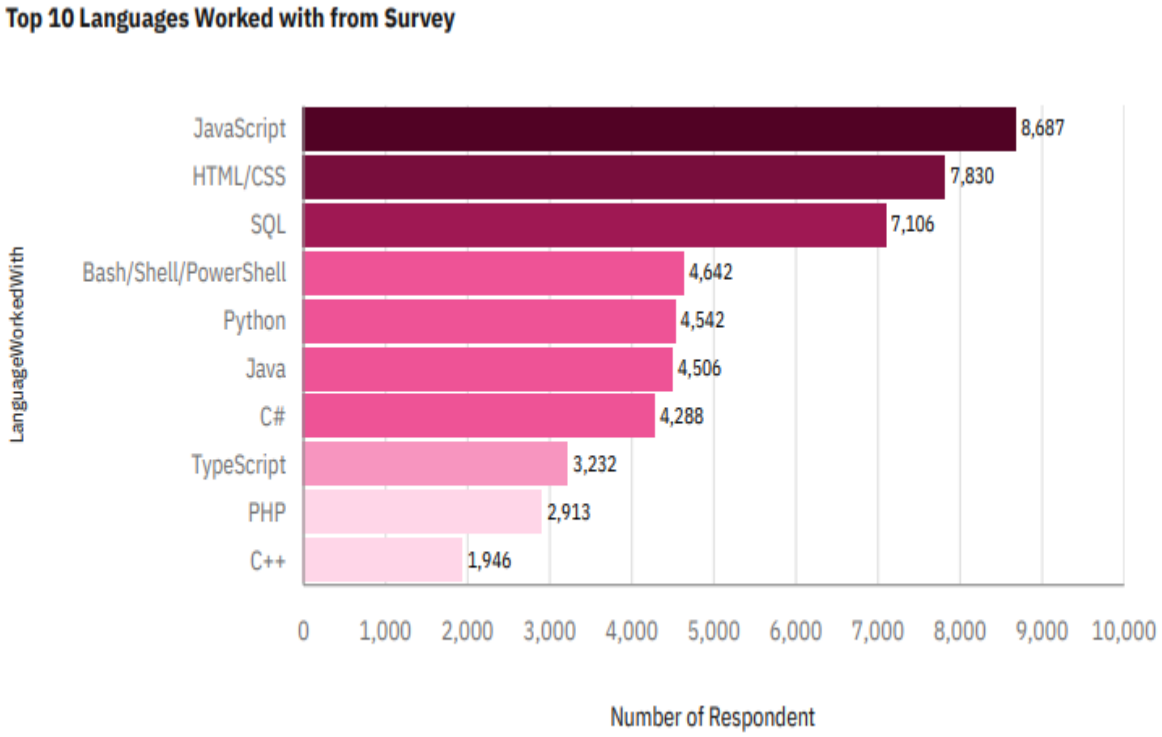
- Over 90 percent of the survey respondents were men.
- The majority of respondents were from the United States.
- Respondents aged 18-42 represented the largest age group.
- The majority of respondents had a bachelor's degree of some kind.

5. Salary:

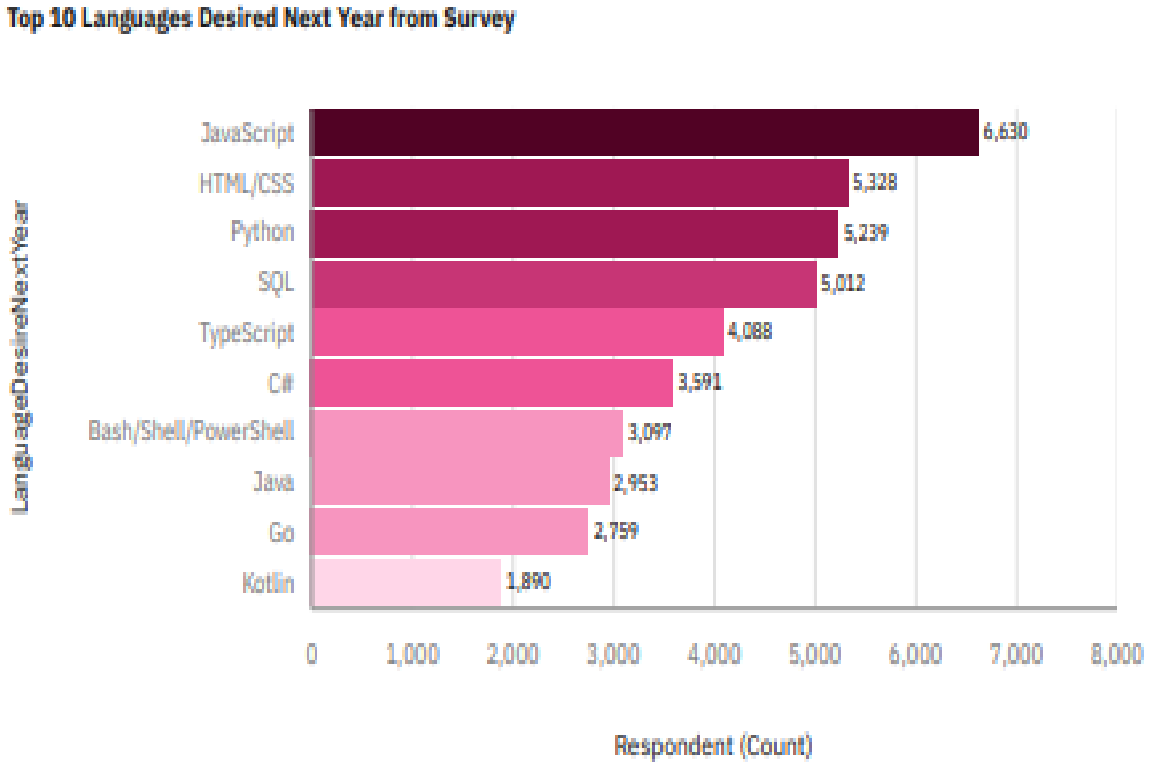
- Swift is the language associated with the highest annual salary.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

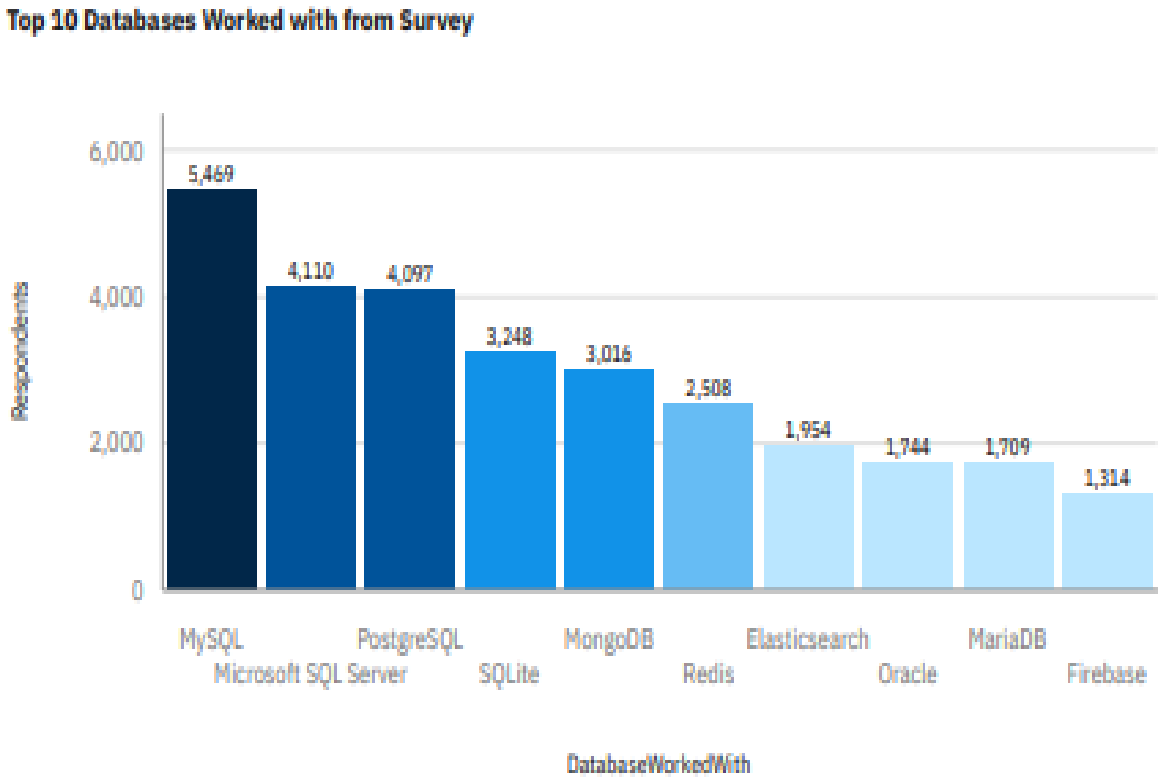
- Continued Dominance of Web Development
- Growing Importance of Data Science and Machine Learning
- Stability of HTML/CSS

Implications

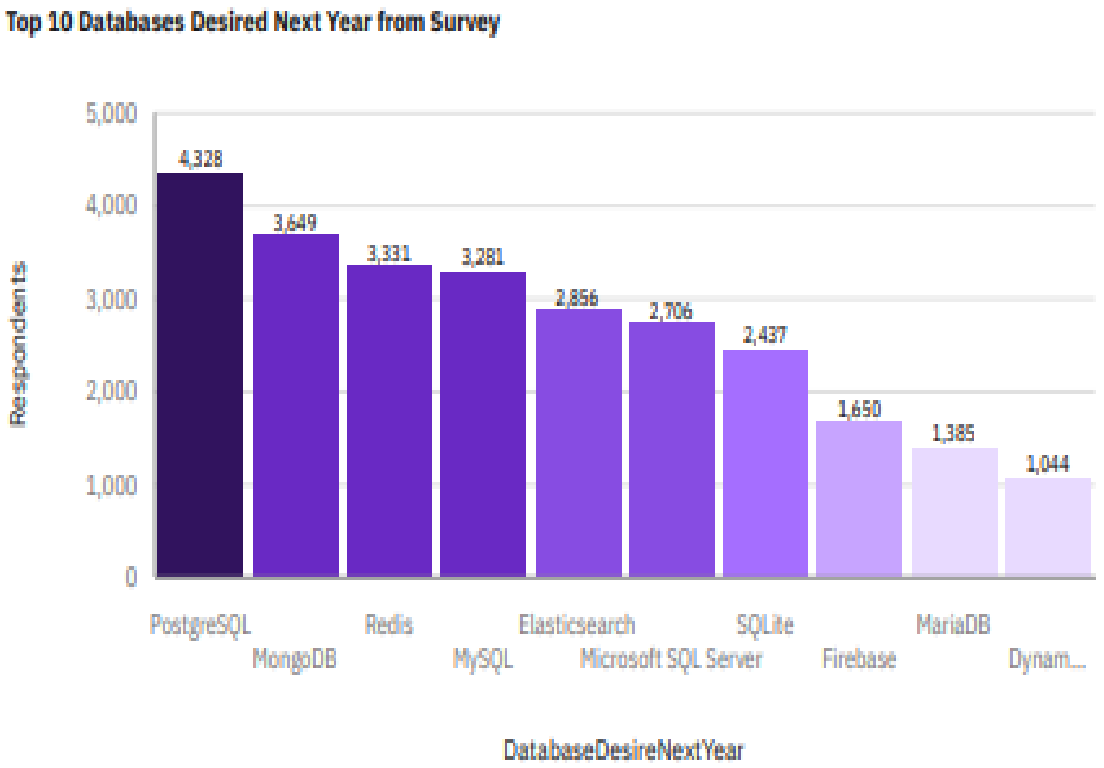
- The popularity of JavaScript and HTML/CSS shows a strong demand for web development skills, suggesting businesses will keep investing in web applications, ensuring a strong job market for web developers.
- The high demand for Python highlights its importance in data science, machine learning, and AI. As these fields grow, the need for Python expertise will rise, prompting educational programs to focus on it.
- The consistent popularity of HTML/CSS highlights the enduring importance of foundational web technologies. Ensuring proficiency in these languages remains essential for developers involved in any web-related projects.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Shift Towards more Modern Databases
- Increased Focus on NoSQL and NewSQL Technologies
- Continued Growth and Adoption of PostgreSQL

Implications

- The growing interest in PostgreSQL, MongoDB, and Redis suggests a shift towards modern, flexible, and scalable database solutions. This trend may increase their adoption in new projects and lead to more migrations.
- The rising popularity of MongoDB and Redis highlights a shift towards NoSQL databases for managing unstructured data and high-speed access. This trend indicates a demand for database solutions that support diverse data types and high performance, especially in big data, IoT, and machine learning applications.
- PostgreSQL's popularity and high demand highlight its reputation for reliability, rich features, and open-source flexibility. This suggests PostgreSQL will continue to grow, as organizations see its ability to handle complex queries, diverse data types, and SQL standards compliance.

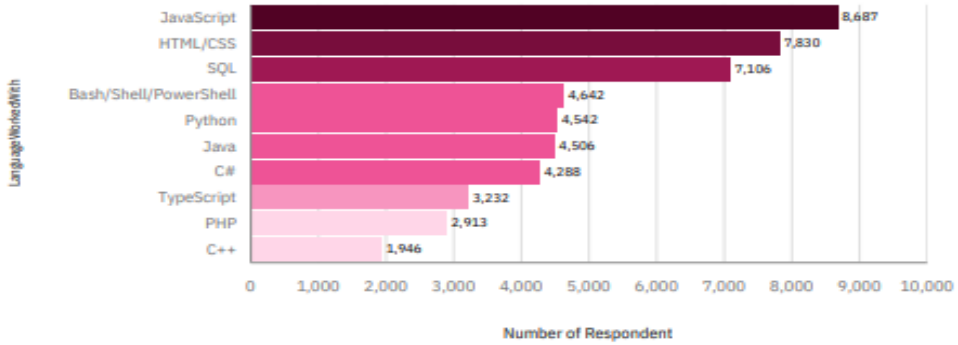
DASHBOARD

https://github.com/teeify/Job-Lisitng/blob/main/_%20Survey%20Visualization.pdf

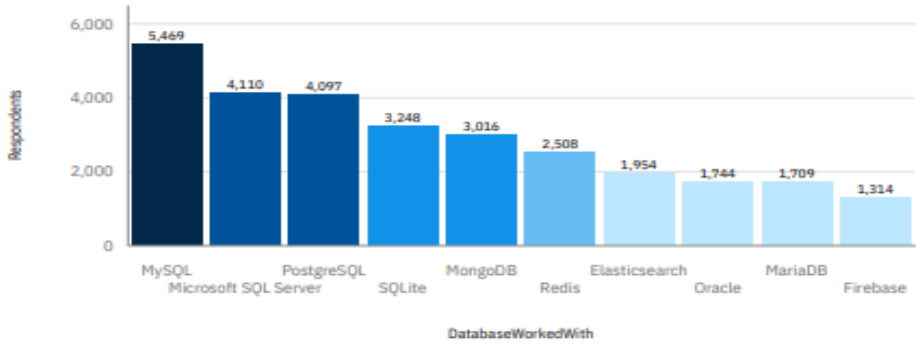
DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Worked with from Survey



Top 10 Databases Worked with from Survey



Top 10 Platform Worked with from Survey

Top 10 Web-Frame Worked with from Survey

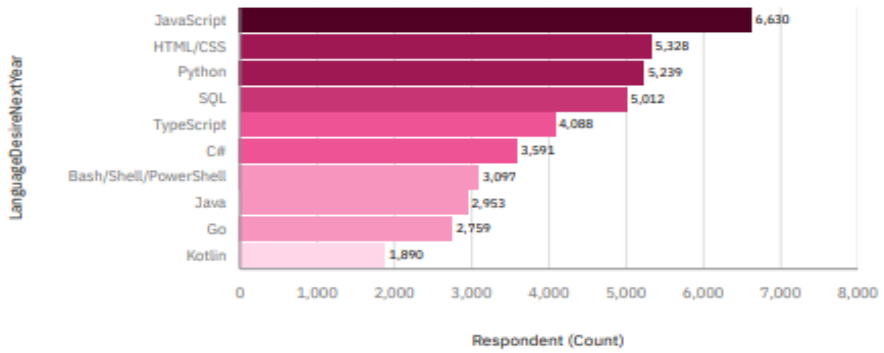
IBM Developer

SKILLS NETWORK

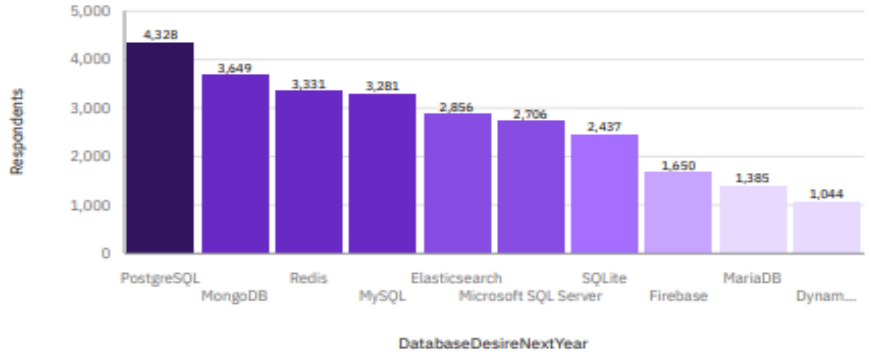
DASHBOARD TAB 2

Future Technology Trend

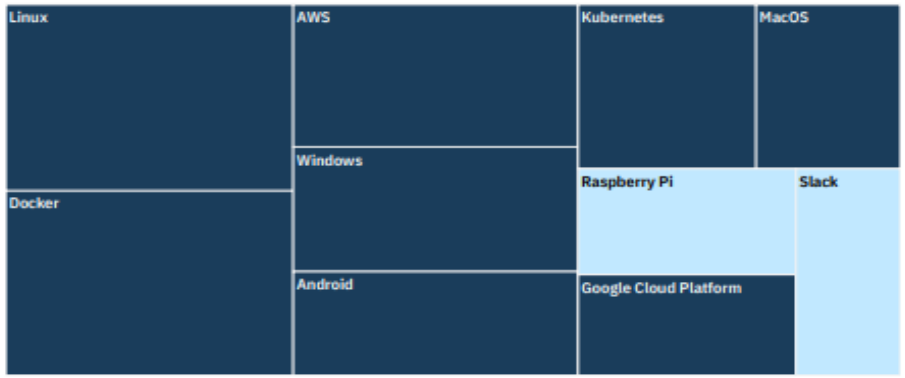
Top 10 Languages Desired Next Year from Survey



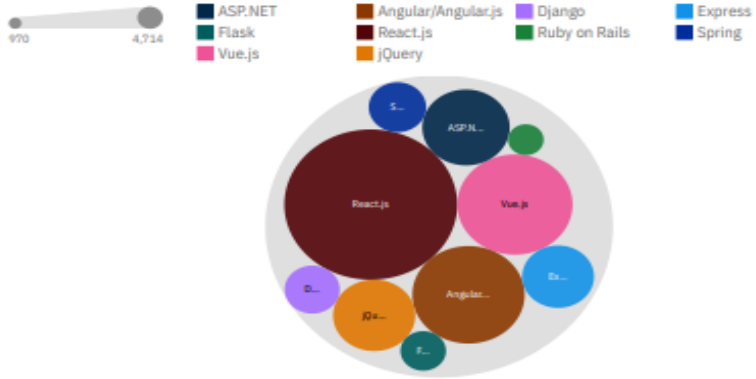
Top 10 Databases Desired Next Year from Survey



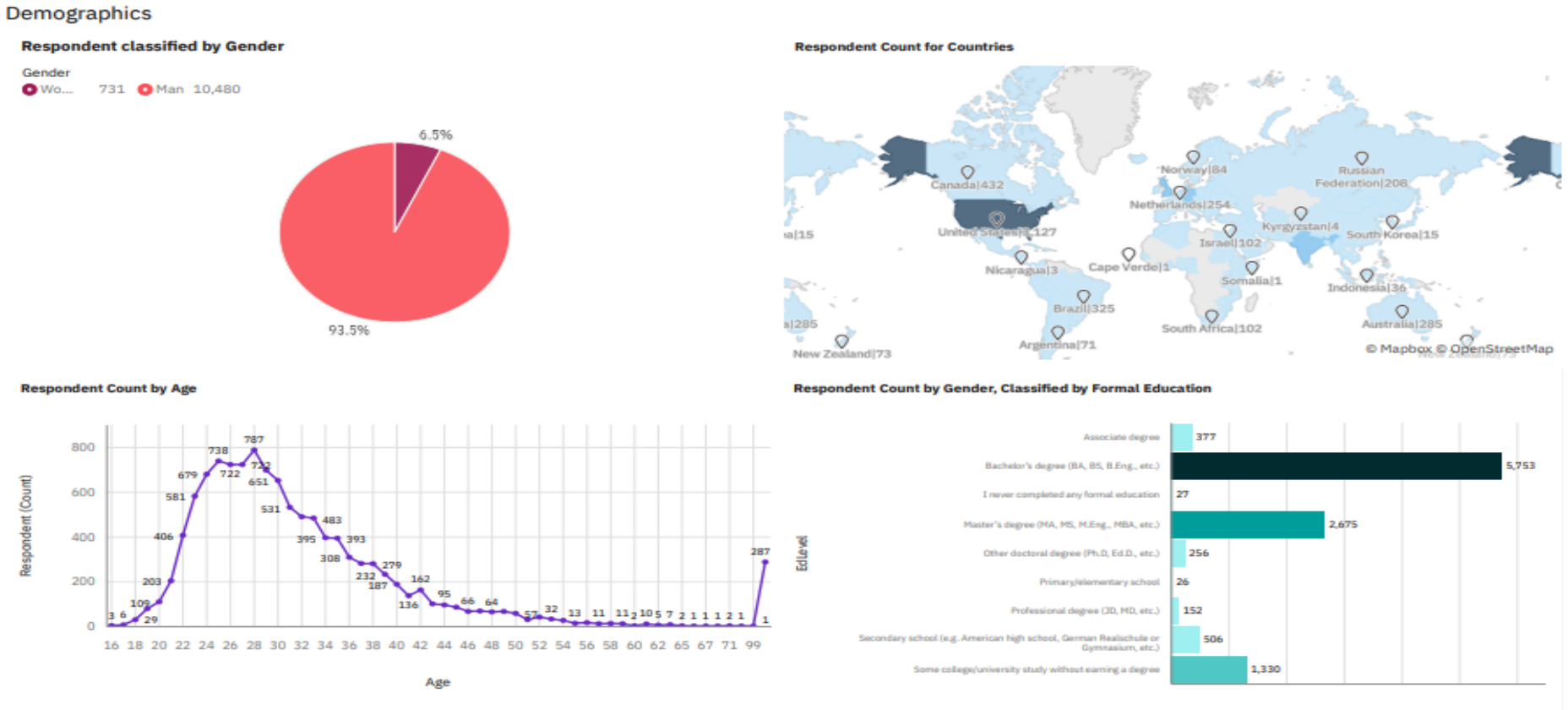
Top 10 Platforms Desired Next Year from Survey



Top 10 Web-Frame Desired Next Year from Survey



DASHBOARD TAB 3



DISCUSSION

The Stack Overflow Developer Survey 2019 gives us a big picture of what developers around the world like and use. It shows that languages like JavaScript, HTML/CSS, and SQL are very popular now, while Python is becoming more important for the future. People are also changing the databases they use, moving from older ones like MySQL to newer ones like PostgreSQL and MongoDB for better performance. Platforms like Windows, Linux, and AWS are very popular, especially for the future. The survey also tells us that most developers are men, many are from the United States, and a lot of them are between 18 and 42 years old. Many developers also have a bachelor's degree. Overall, the survey helps us understand what developers are doing now and what might happen in the future, so companies and educators can prepare for it.

OVERALL FINDINGS & IMPLICATIONS

Findings

- popularity of JavaScript, HTML/CSS, and SQL, indicating their crucial roles in web development and database management.
- There is a notable shift towards modern databases like PostgreSQL, MongoDB, and Redis.
- The high desirability of platforms like Linux, Docker, and AWS suggests a growing interest in cloud computing and containerization.

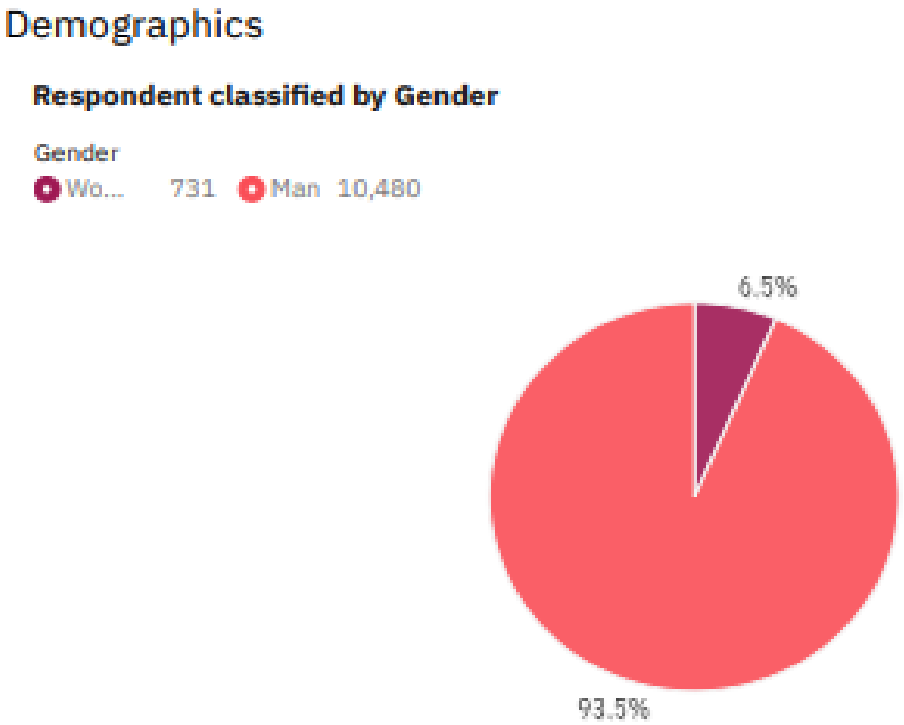
Implications

- Businesses and developers should focus on mastering these languages to stay competitive and meet industry demands.
- Organizations should consider transitioning to these modern databases to better manage complex data requirements and support modern application needs.
- Companies should consider adopting these platforms to improve their infrastructure efficiency and scalability.

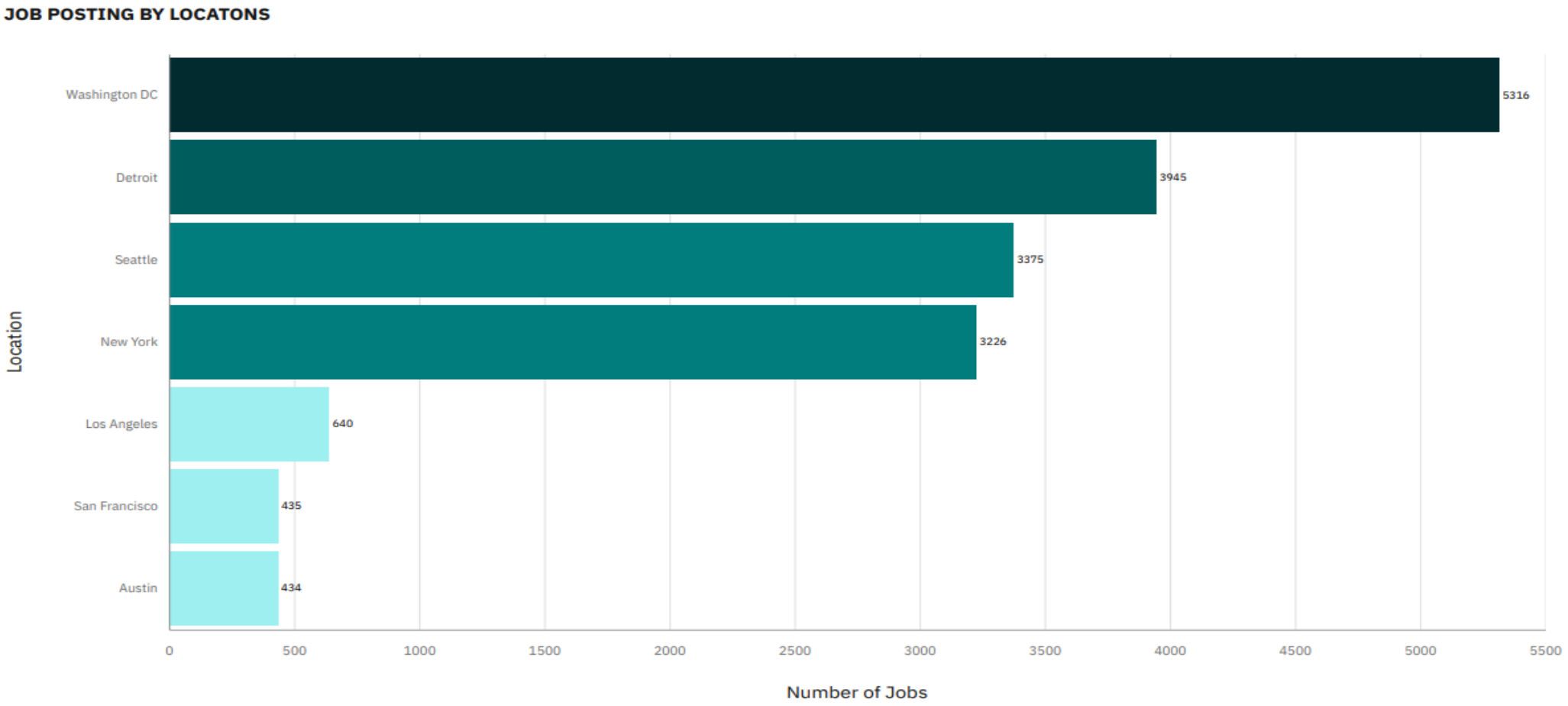
CONCLUSION

- JavaScript, HTML/CSS, and SQL remain the most widely used programming languages, emphasizing the continued importance of web development and database management.
- The shift towards modern databases such as PostgreSQL, MongoDB, and Redis indicates a trend towards more scalable, flexible, and high-performance data management solutions.
- The widespread use and future desirability of platforms like Linux, Docker, and AWS reflect a significant move towards cloud computing and containerization.
- The survey reveals a notable gender imbalance, with over 90% of respondents being men, and a concentration of respondents from the United States and the 18-42 age group. The majority holding bachelor's degrees underscores the importance of formal education in the tech industry.

APPENDIX


Demographics
Respondent classified by Gender
Gender
Wo... 731
Man 10,480
6.5%
93.5%

JOB POSTINGS



POPULAR LANGUAGES