



Unveiling Developer Trends: Insights from the 2019 Stack Overflow Survey

ONI Gabriel

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EXECUTIVE SUMMARY



- In the rapidly evolving global IT sector, staying abreast of technological advancements is crucial for maintaining competitiveness. This report leverages data analytics to highlight current and future trends in the demand for skills related to programming languages, databases, and other technologies. Additionally, it examines the demographics of technology sector professionals.
- The data was collected, cleaned, subjected to exploratory analysis, and visualized on dashboards
- Analysis show that JavaScript is currently the most popular programming language and is anticipated to remain so in the future
- MySQL has the highest database usage at the moment

INTRODUCTION



This analysis report delves into the 2019 Stack Overflow Developer Survey dataset to uncover key insights and trends within the IT industry. By leveraging data analytics, this report aims to highlight current and projected trends in skills related to programming languages, databases, and other technologies. Furthermore, it examines the demographics of technology professionals to provide a comprehensive understanding of the developer landscape.

Utilizing data sourced from Stack Overflow, the data was meticulously collected, cleaned, and subjected to exploratory analysis. The findings are presented through visualizations on dashboards, offering a clear and informative view of the trends shaping the IT sector.

METHODOLOGY



Data Collection

- Sources: Stack Overflow 2019 Developer Survey

Data Acquisition: Web scraping

Data Cleaning

- Remove any duplicate entries.
- Handle missing values by either imputing or removing them.
- Standardize the data formats (e.g., date formats, text case).

Exploratory Data Analysis (EDA)

Descriptive Statistics:

- Compute basic statistics (mean, median, mode, etc.).
- Identify patterns and trends in the data.

Visualizations:

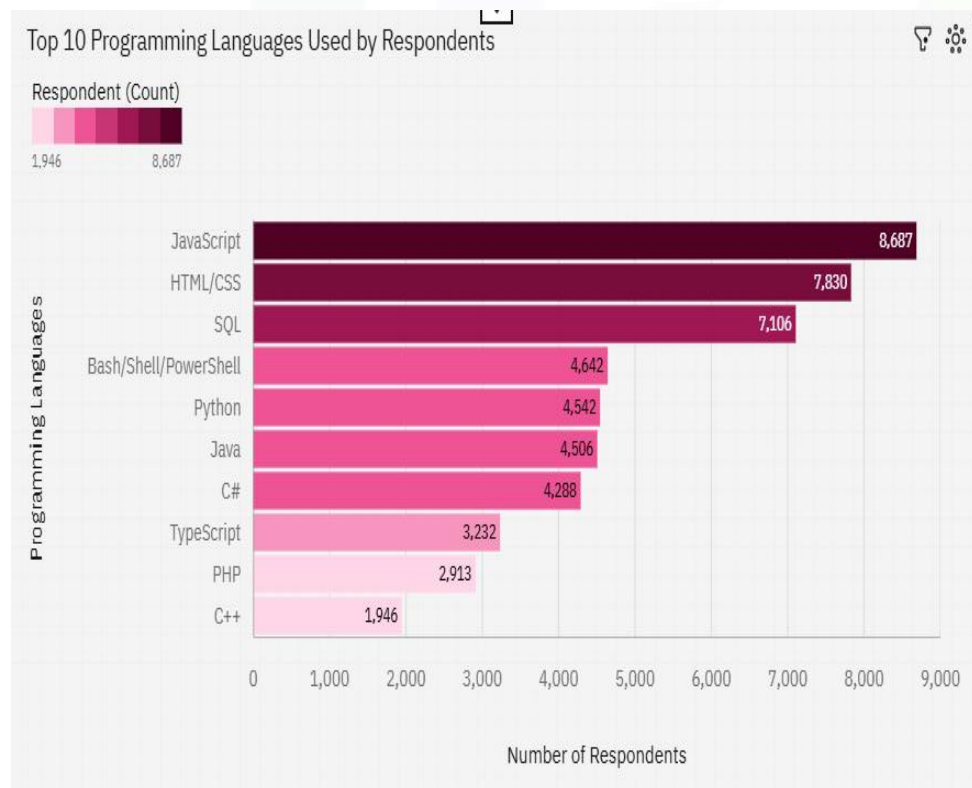
- Create charts, graphs, and dashboards to illustrate key insights.
- Use tools like Python (Matplotlib, Seaborn) or Tableau for visualizations.

RESULTS

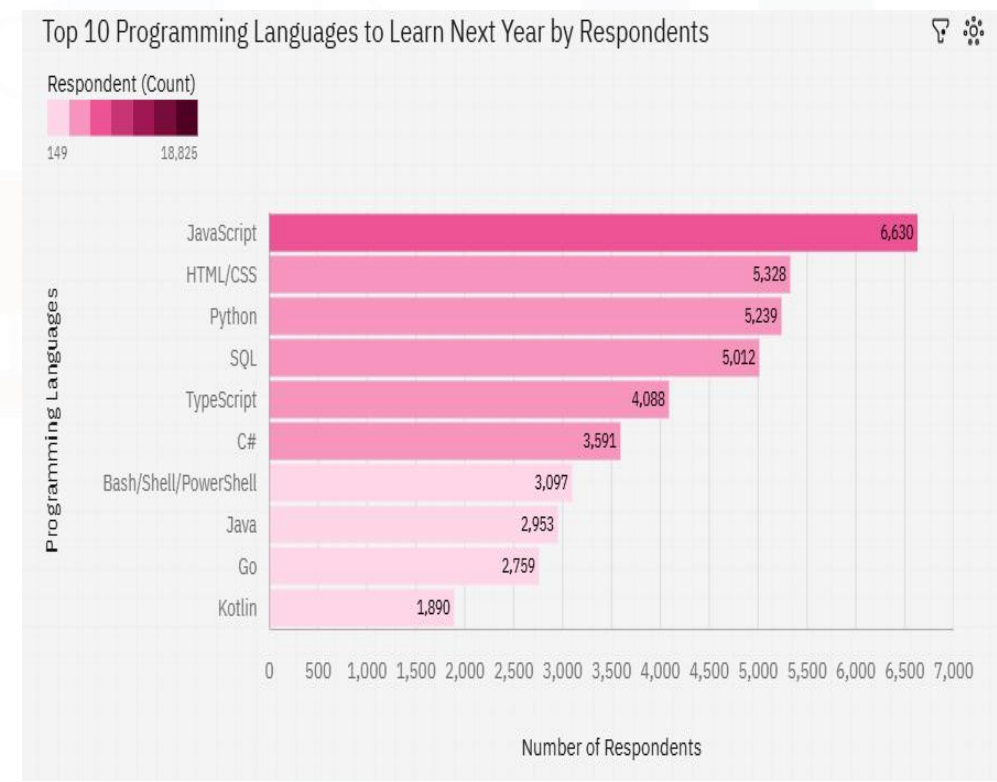


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

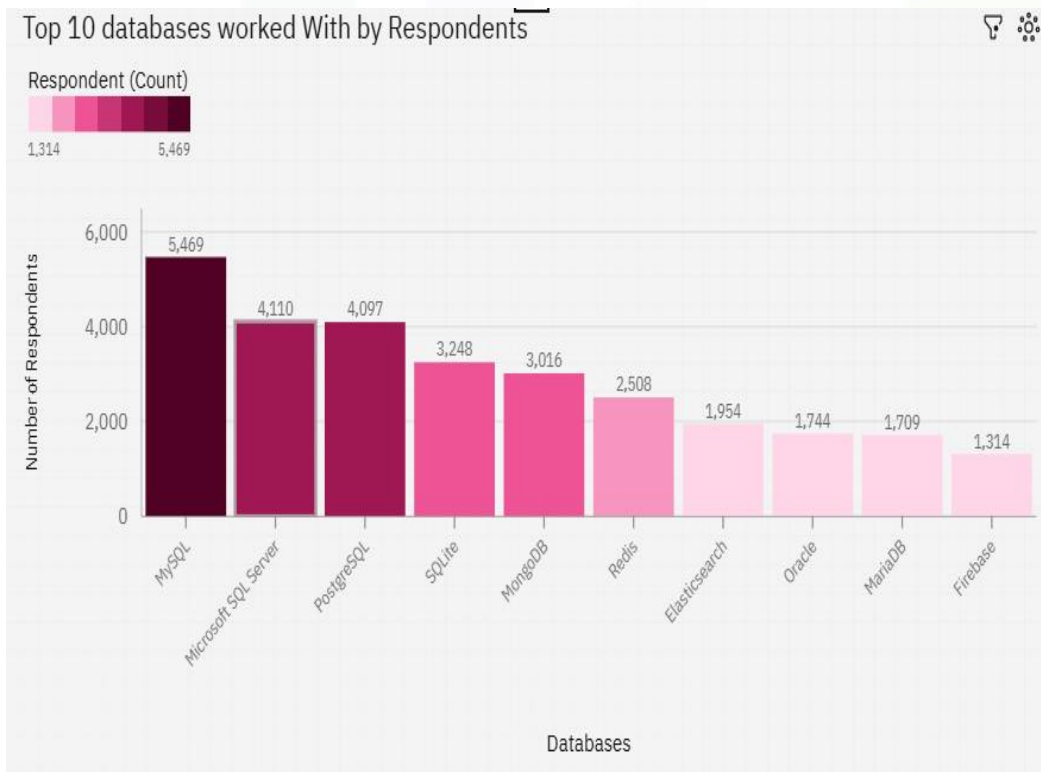
- Most respondents use JavaScript, followed by HTML/CSS and then SQL
- Most respondents see JavaScript as the top language to learn in the future

Implications

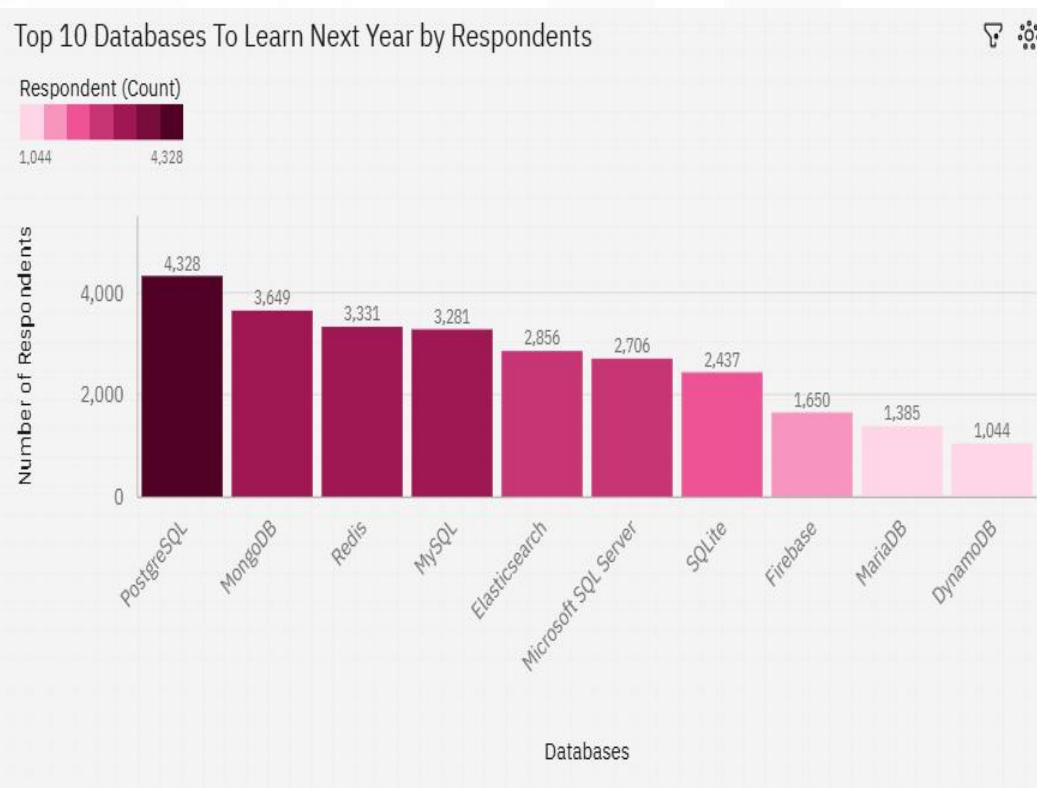
- **Industry Demand and Skill Relevance:** The fact that most respondents use JavaScript, followed by HTML/CSS and then SQL, implies that these technologies are highly relevant and in demand in the industry
- **Future Learning Trends:** Since most respondents see JavaScript as the top language to learn in the future, it implies that JavaScript will continue to be a dominant language in the tech industry

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Most respondents use SQL based databases with 5,469 using MySQL, 4,110 using MS SQL Server and 4097 using PostgreSQL
- NoSQL distributed NoSQL databases are also used but less
- Most respondents see PostgreSQL and MongoDB as the databases to learn in future.

Implications

- The majority of respondents using SQL-based databases (e.g., MySQL, MS SQL Server, PostgreSQL) suggests that these databases are well-established and widely adopted in the industry
- The lower usage of NoSQL databases indicates that while they are recognized and utilized, they haven't achieved the same level of penetration as SQL databases
- The preference for learning PostgreSQL and MongoDB suggests a shift towards more flexible and scalable database solutions

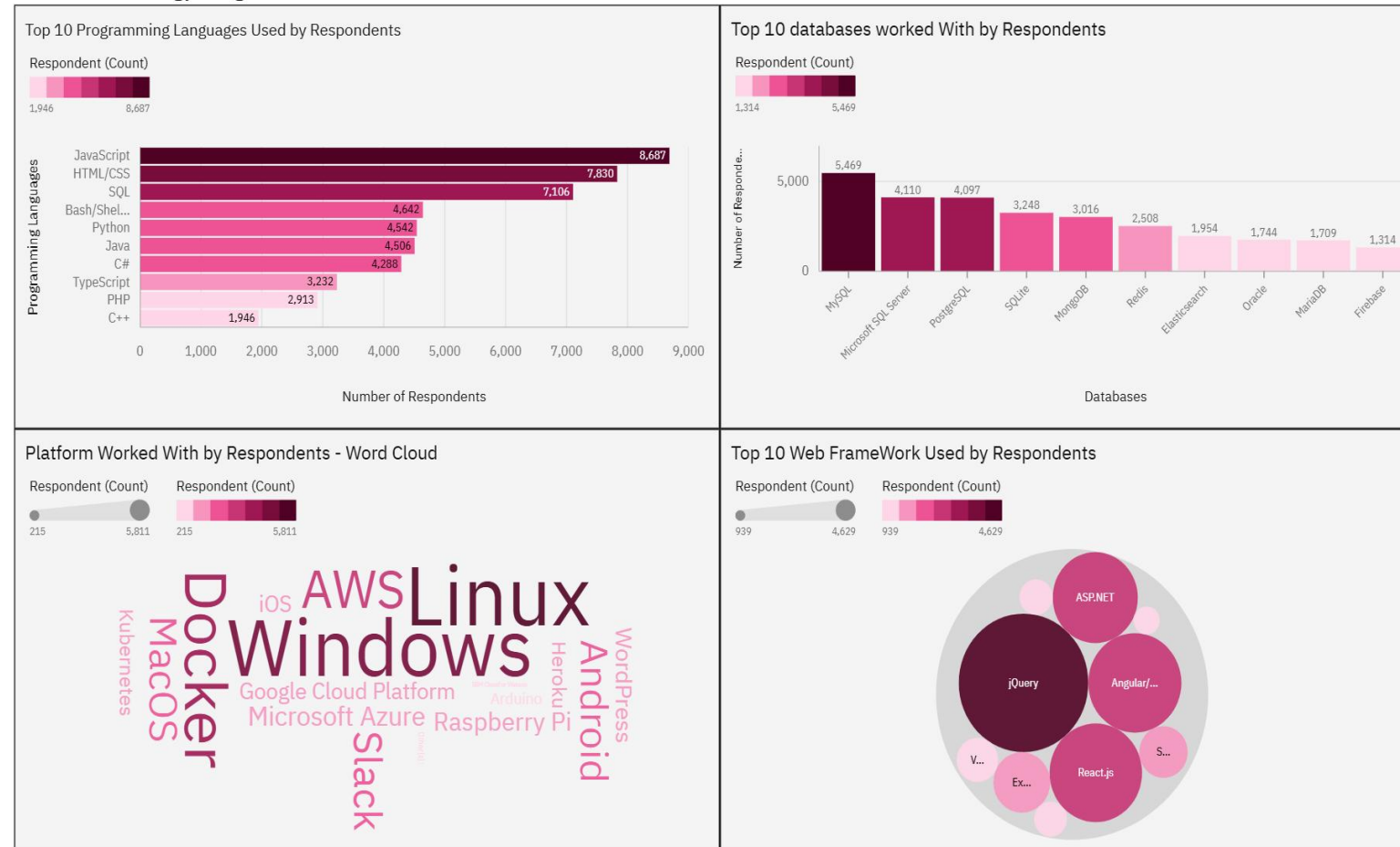
DASHBOARD



[Data-Visualization-with-IBM-Cognos/Final Project.pdf at main · osareniho-oni/Data-Visualization-with-IBM-Cognos · GitHub](#)

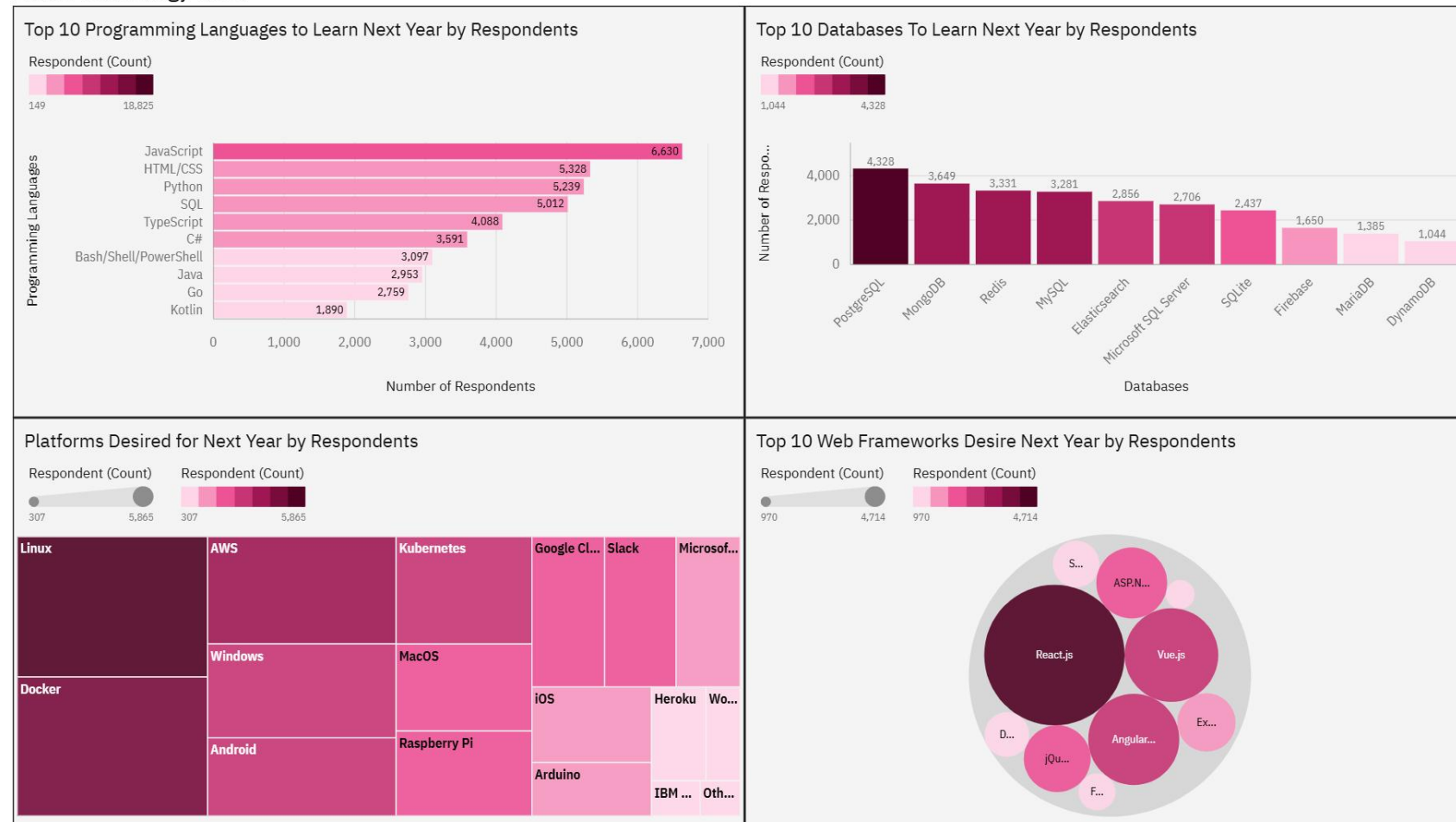
DASHBOARD TAB 1

Current Technology Usage



DASHBOARD TAB 2

Future Technology Trend

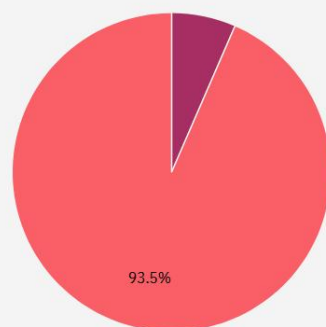


DASHBOARD TAB 3

Demographics

Respondents Classified by Gender

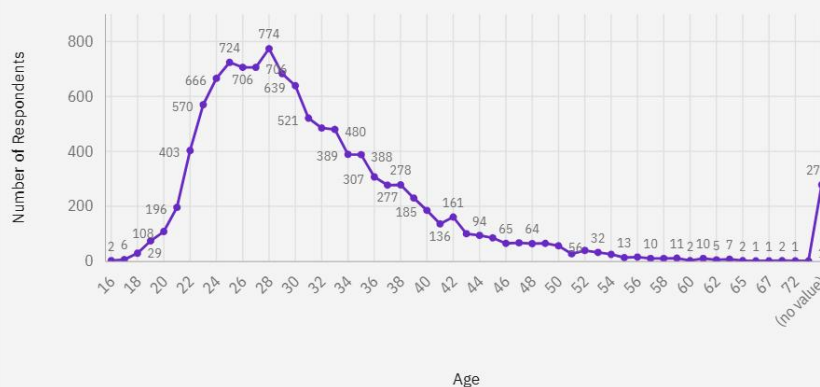
Gender
● Woman ● Man



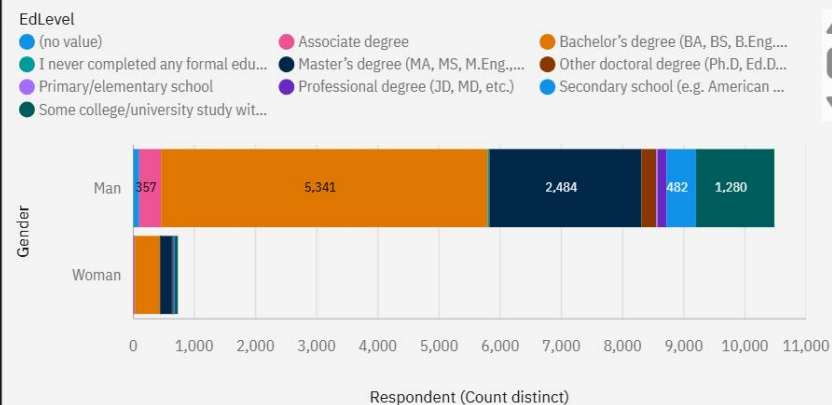
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION



- Why is JavaScript the dominant language among developers?
- How does the preference for JavaScript influence other areas of web development?
- What factors contribute to the popularity of SQL-based databases like MySQL, MS SQL Server, and PostgreSQL?
- Why are PostgreSQL and MongoDB gaining popularity as the databases to learn in the future?
- What advantages do NoSQL databases like MongoDB offer compared to traditional SQL databases?
- What are the challenges and opportunities associated with adopting new technologies like PostgreSQL and MongoDB?
- What additional research is needed to understand the long-term impact of emerging technologies on the IT industry?

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript remains the most widely used and sought after programming language
- SQL databases remain the most widely used and sought after databases by developers
- JQuery was the most used framework by respondents while React.js was the most desired for personal development
- AWS, Windows, Linux and Docker are the most used platforms

Implications

- High demand for JavaScript skills highlights its importance for career advancement
- Emphasizing SQL skills in training programs remains essential
- The use of JQuery and choice of React for future development re-emphasizes the dominance of JavaScript as a programming language

CONCLUSION

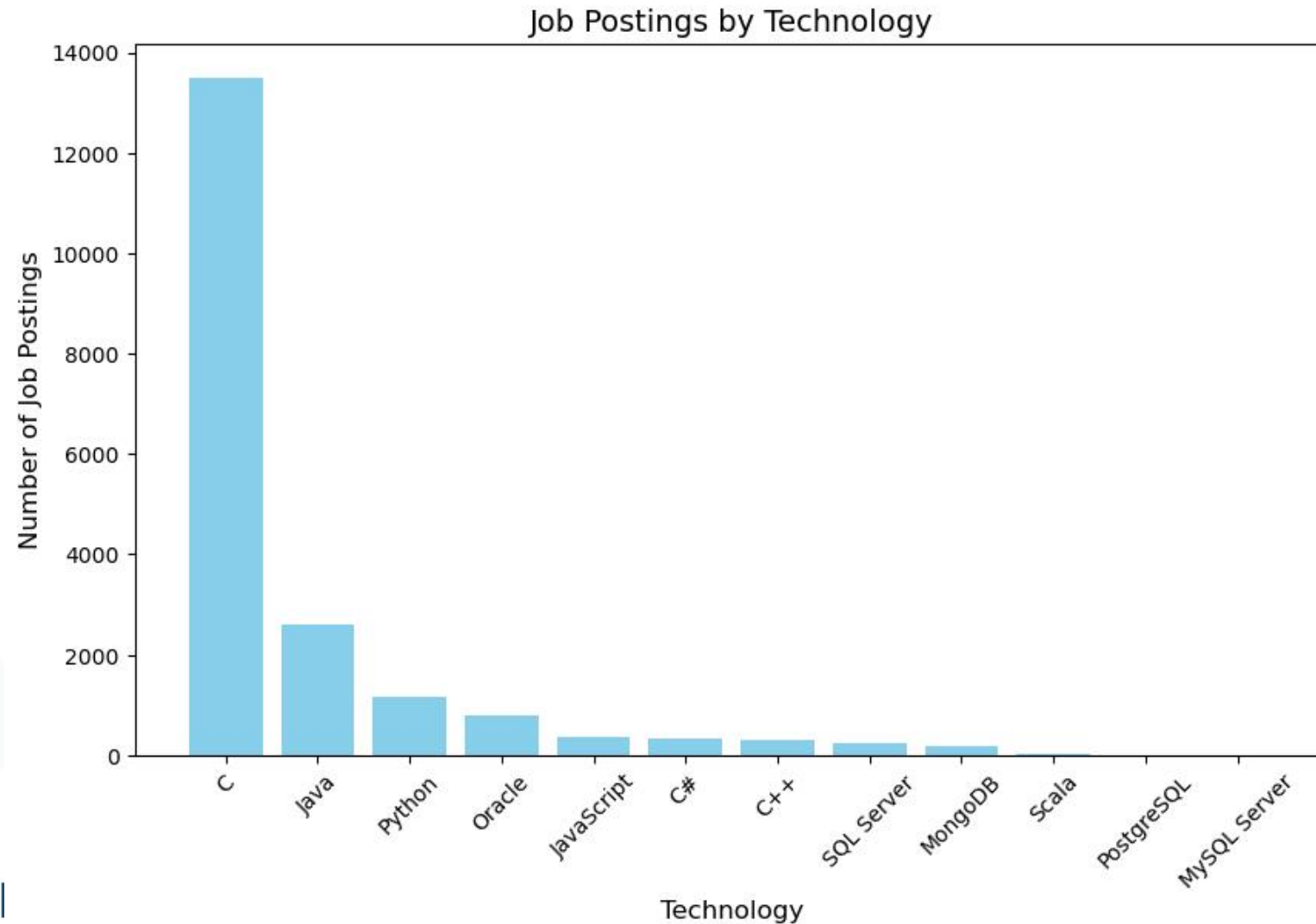


The analysis reveals:

- JavaScript remains the most used and desired language, essential for web development.
- SQL databases are widely trusted and used, highlighting their importance.
- PostgreSQL and MongoDB are emerging as crucial technologies for future learning.
- Frameworks: JQuery is still relevant for legacy systems, while React.js is the future focus.
- Platforms: AWS, Windows, Linux, and Docker are essential for versatile development.

Developers should focus on these technologies to stay competitive, and educational programs should include them to prepare students for industry demands.

JOB POSTINGS



POPULAR LANGUAGES

