



# STACK OVERFLOW DEVELOPER SURVEY 2019

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# OUTLINE

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

# EXECUTIVE SUMMARY

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- This report delivers an examination of the present technology utilization and upcoming trends among participants, concentrating on programming languages, databases, and platforms.
- The data uncovers the technologies most frequently used and sheds light on trends that point to the tech industry's future trajectory.
- Moreover, demographic insights, such as gender distribution and educational background, are included to offer a more comprehensive understanding of the respondents.

# INTRODUCTION

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- The objective of this report is to assess the present technology usage and the future technological ambitions of respondents.
- The information was gathered from a wide-ranging group of individuals with different levels of experience and expertise in the tech sector.
- Our goal in analyzing this data is to pinpoint trends and provide insights that could steer future advancements and educational programs in the field of technology.

# METHODOLOGY

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- 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

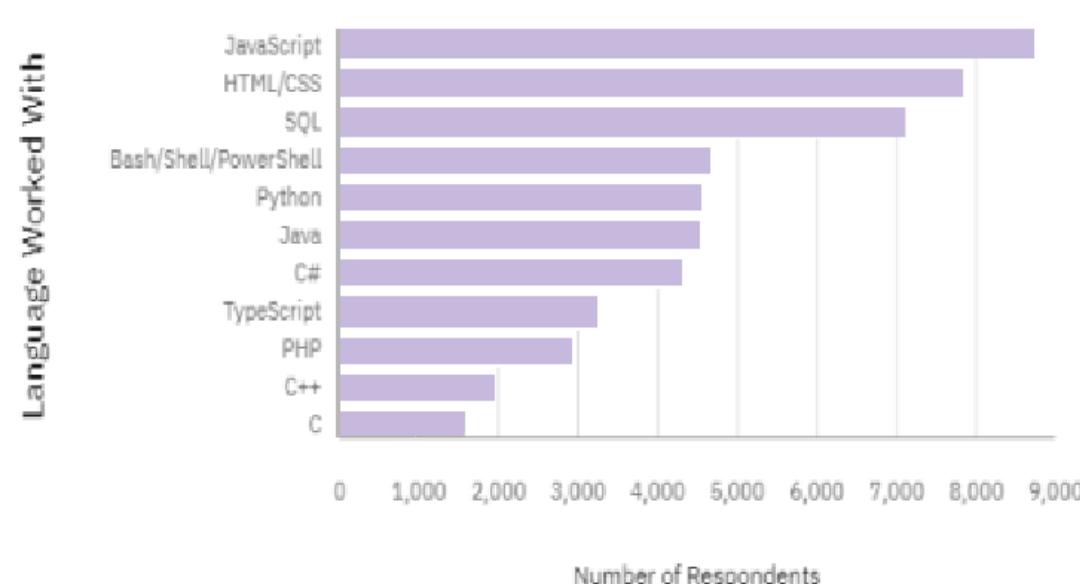
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# PROGRAMMING LANGUAGE TRENDS

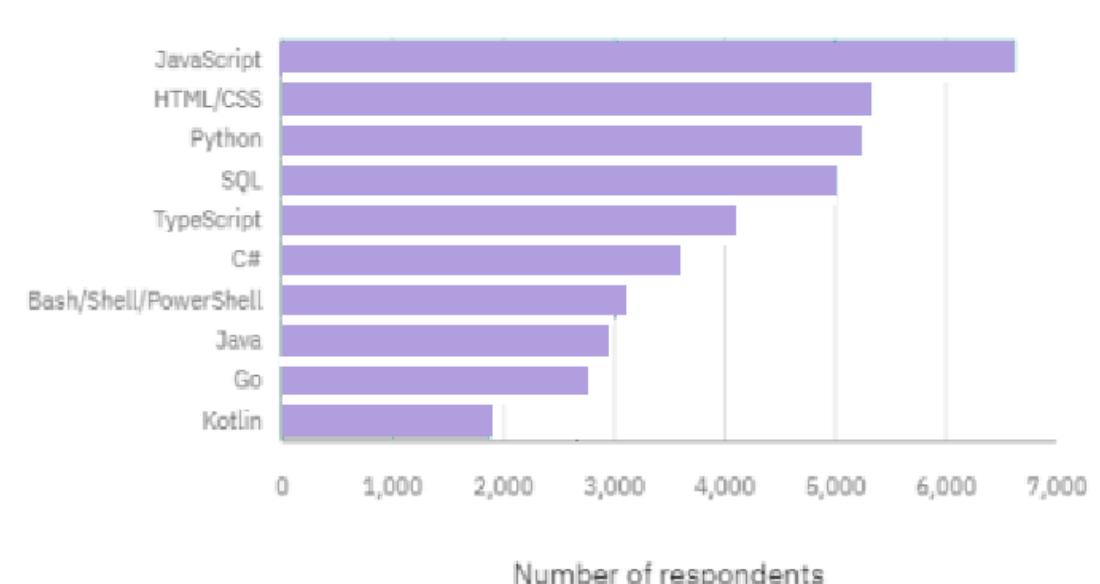
## Current Year

Top 10 Languages Respondents have worked with



## Next Year

Top 10 Desired Language to Learn Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript is still the most popular programming language, underscoring its key position in web development.
- Many respondents are eager to learn Python, highlighting its growing relevance in fields like data science, machine learning, and automation.
- SQL remains a vital language for database management, with steady usage in various technological contexts.

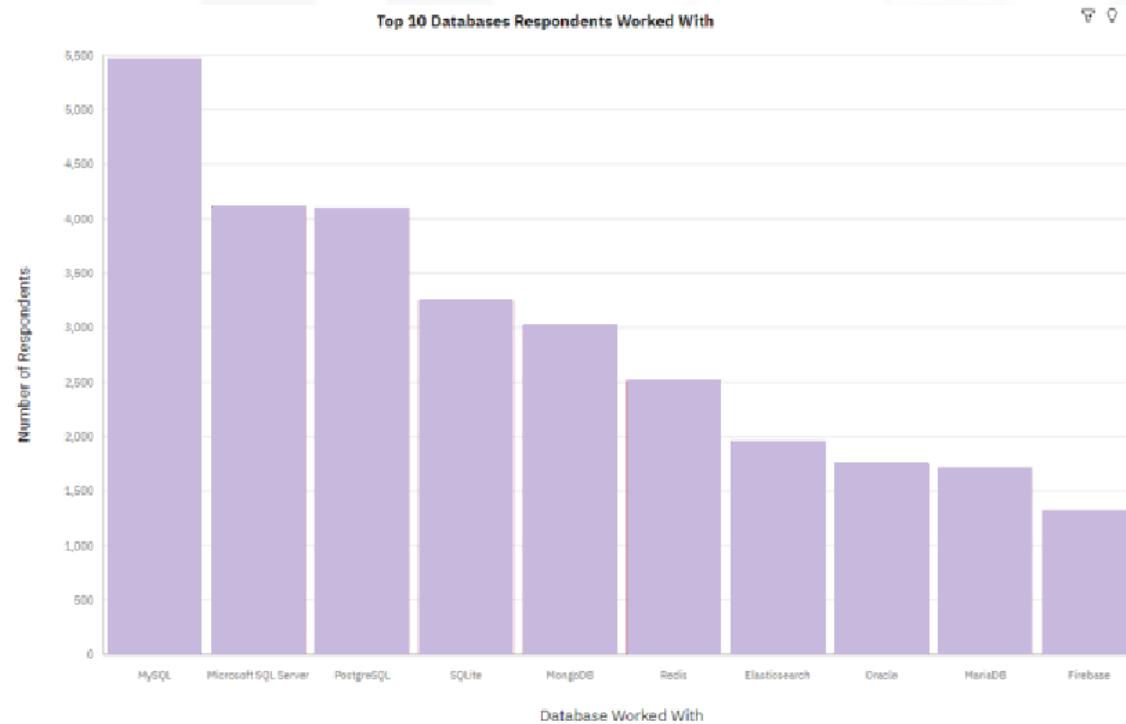
## Implications

- The enduring popularity of JavaScript points to a persistent need for web development expertise, especially in front-end and full-stack positions.
- The growing interest in Python reflects a move towards data-focused roles, highlighting the importance for developers to be proficient in data manipulation and analysis.
- The steady application of SQL emphasizes the ongoing significance of relational databases, indicating that SQL proficiency continues to be a crucial skill for numerous tech roles.

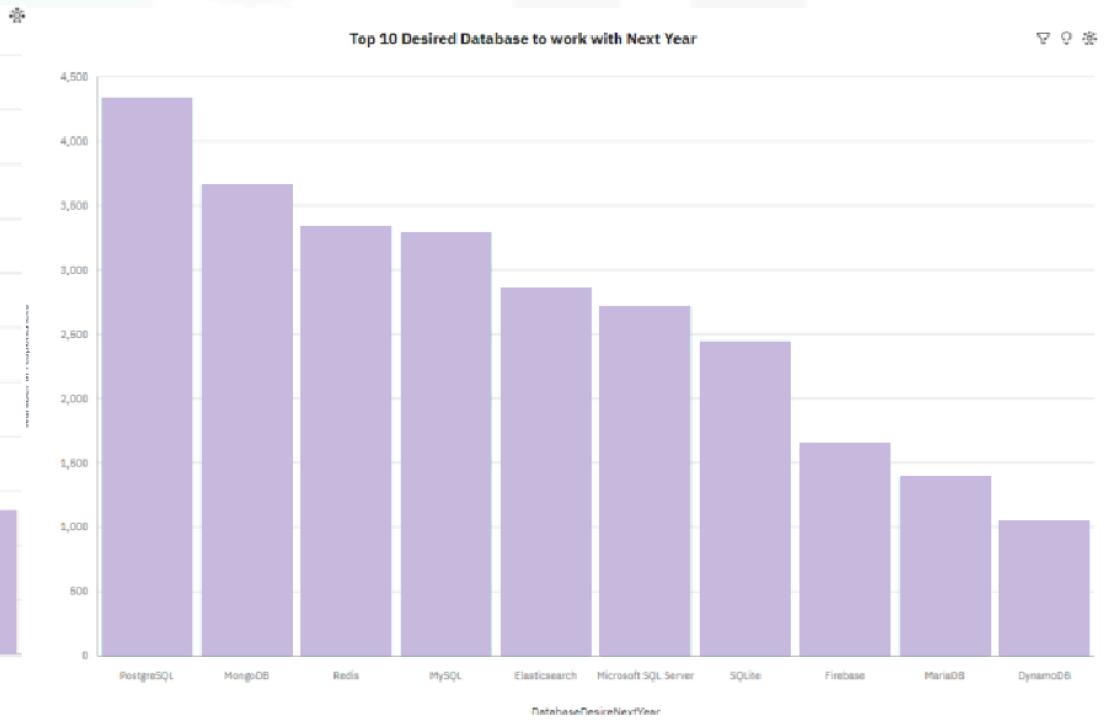


# DATABASE TRENDS

## Current Year



## Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- MySQL and PostgreSQL are the top choices among databases, with MySQL taking a slight lead, reflecting a strong preference for relational database systems.
- MongoDB is gaining popularity for upcoming projects, indicating a rising trend towards using NoSQL databases for unstructured data management.
- Microsoft SQL Server remains a major contender, emphasizing its role in supporting enterprise solutions.

## Implications

- The widespread use of MySQL and PostgreSQL indicates that relational databases will remain a fundamental aspect of backend development, particularly in conventional application settings.
- The rising popularity of MongoDB suggests that developers and organizations are increasingly favoring NoSQL solutions for more adaptable and scalable data storage, especially in cloud and big data contexts.
- The sustained significance of Microsoft SQL Server highlights the ongoing importance of robust enterprise database management systems, especially within organizations that utilize Microsoft infrastructure.



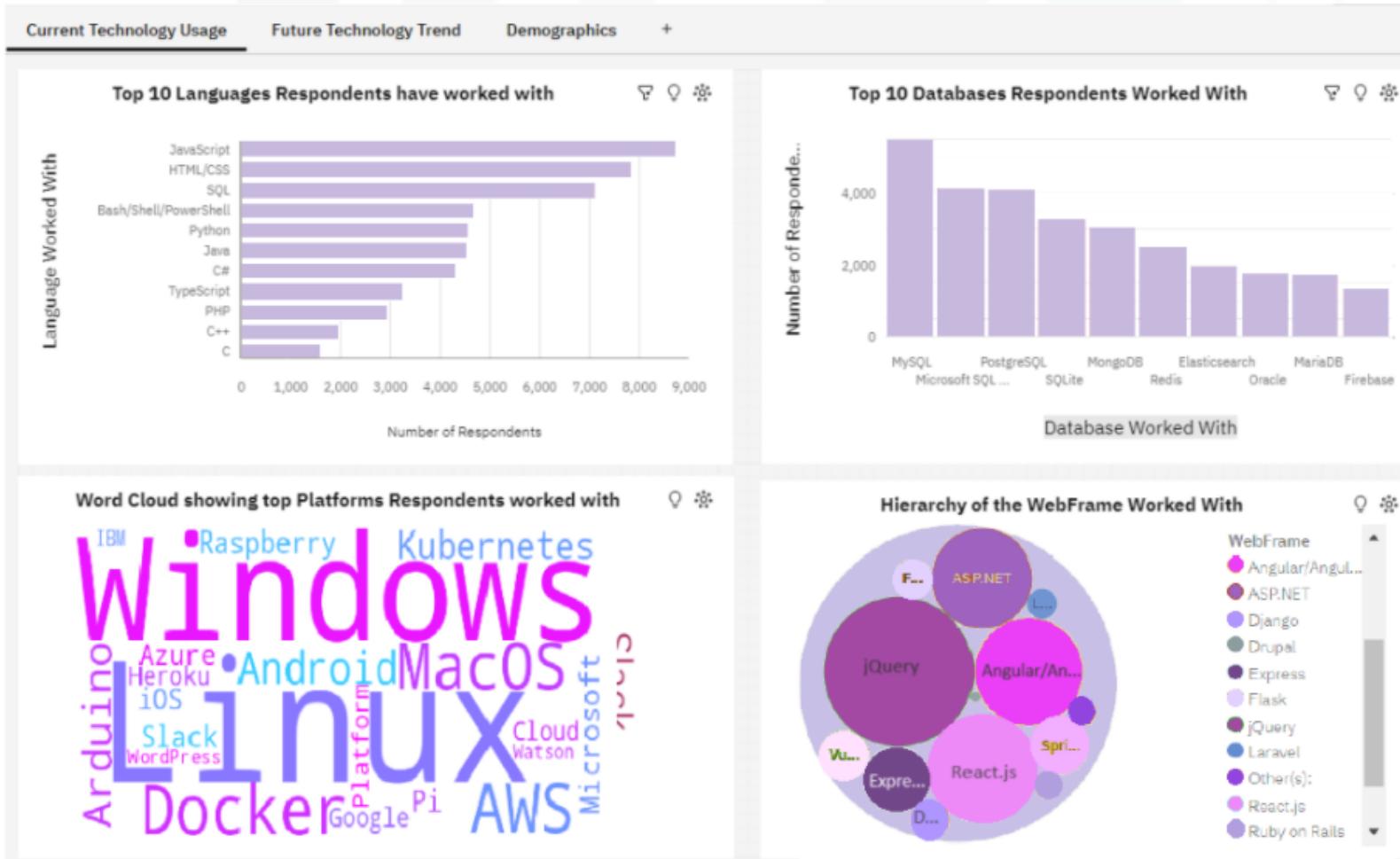
# DASHBOARD

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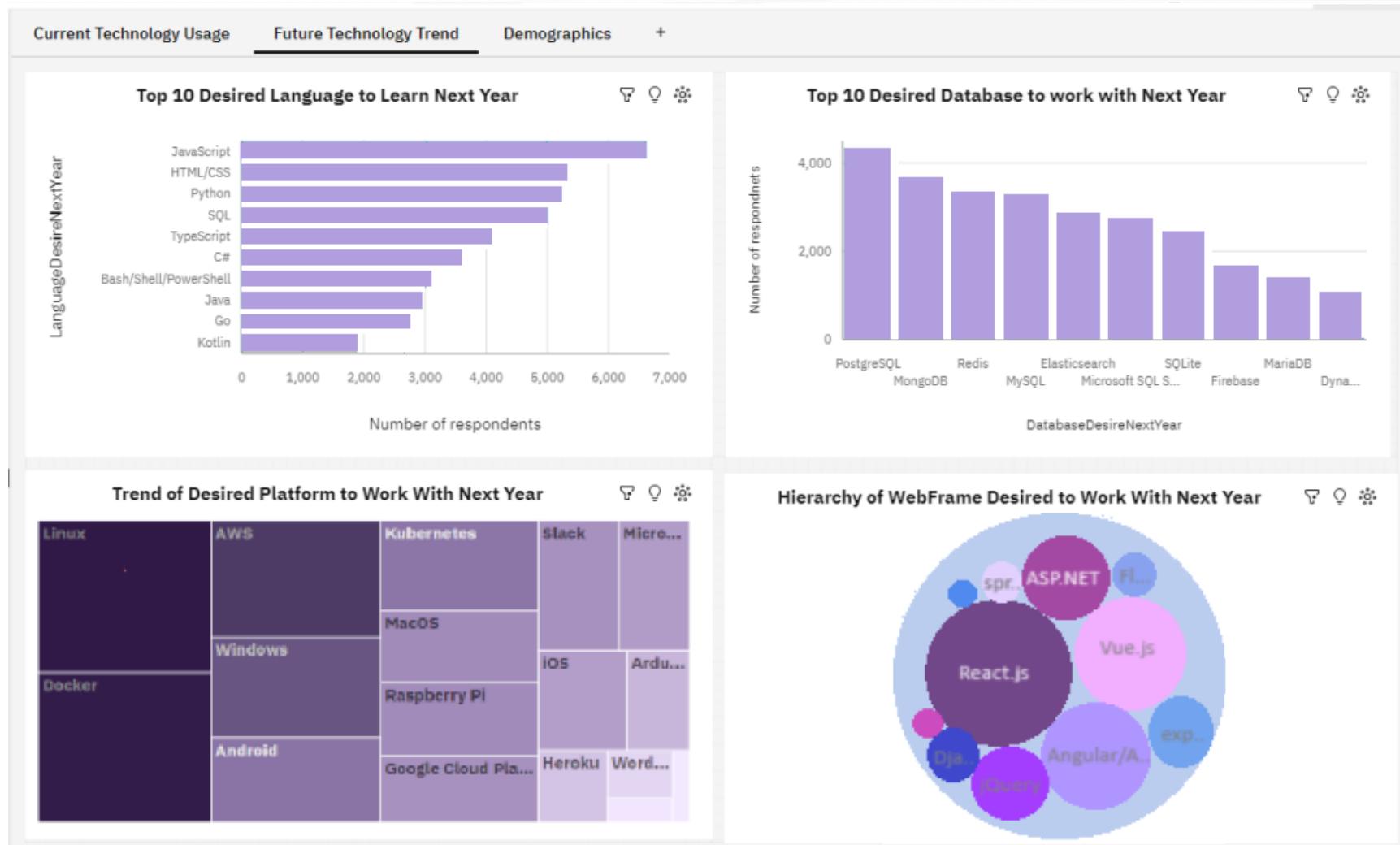


[https://github.com/fatemefyf/Data-visualization-with-IBM\\_Cognos/blob/main/Dashboard-with-Cognos-Dashboard-Embedded-\(CDE\)\\_2.pdf](https://github.com/fatemefyf/Data-visualization-with-IBM_Cognos/blob/main/Dashboard-with-Cognos-Dashboard-Embedded-(CDE)_2.pdf)

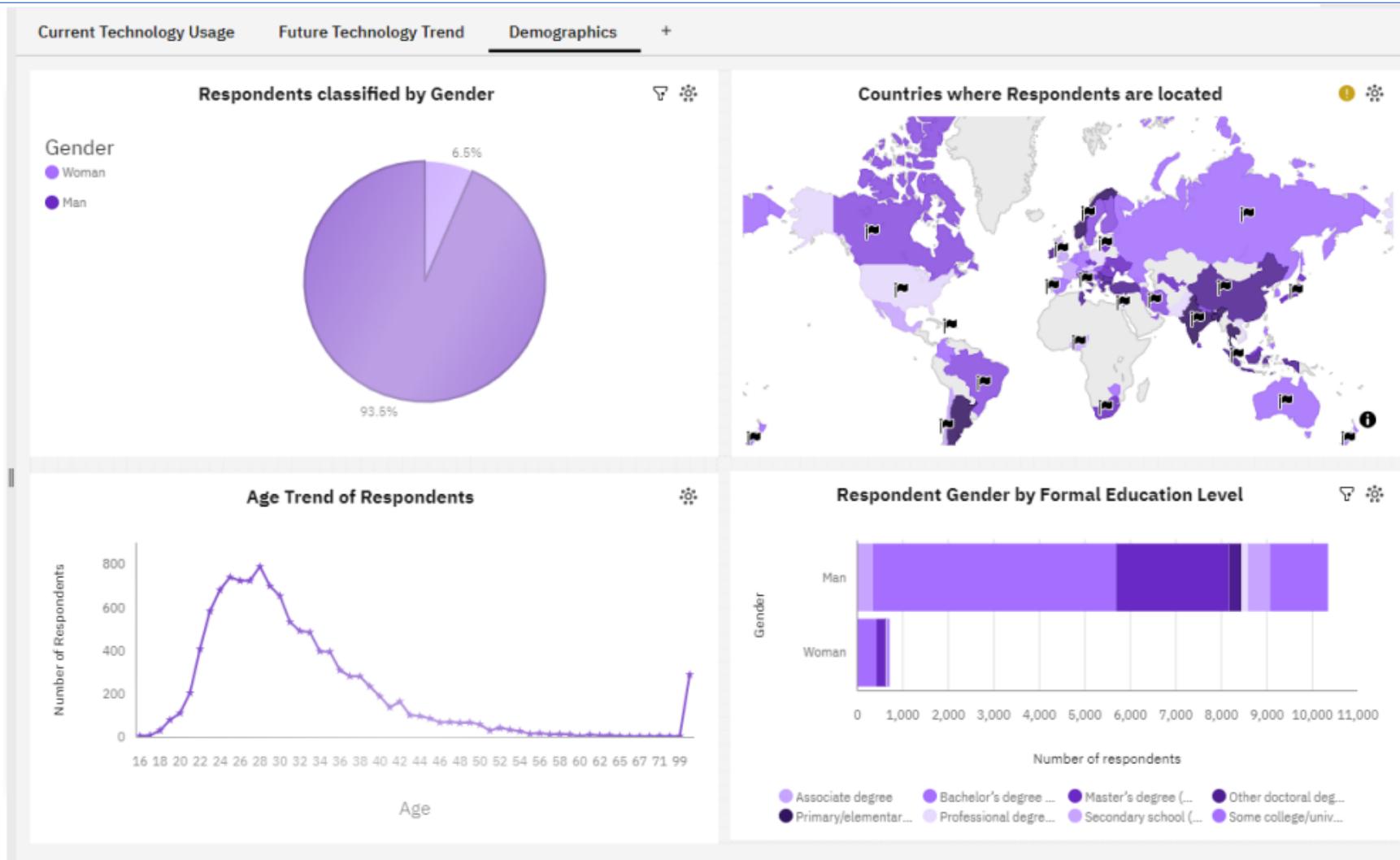
# CURRENT TECHNOLOGY USAGE



# FUTURE TECHNOLOGY TREND



# DEMOGRAPHICS



# DISCUSSION

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- **Current Technology Usage:** The prominence of JavaScript and SQL highlights their ongoing critical role in web development and data management. The frequent use of MySQL and PostgreSQL further emphasizes the reliance on relational databases.

**Future Technology Trends:** The increasing interest in Python and MongoDB signals a shift toward data science and NoSQL databases, aligning with the industry's evolving needs. Additionally, the preference for platforms such as Linux and Docker suggests a trend towards more adaptable, scalable, and cloud-oriented environments.

**Gender and Educational Insights:** The gender distribution indicates a significant male majority in the tech field, potentially influencing which technologies are emphasized. The connection between educational background and technology choices points to the necessity for tailored educational programs to align with industry needs.

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Programming Trends: JavaScript continues to lead in web development, underlining its crucial role in both front-end and full-stack projects. The growing enthusiasm for Python indicates a major shift towards data-centric roles, highlighting the need for expertise in data science, machine learning, and automation. The ongoing relevance of SQL emphasizes its foundational role in relational databases, making it a key skill for backend development.
- Database Trends: MySQL and PostgreSQL remain the preferred choices among professionals, reinforcing the significance of relational databases for managing structured data. Meanwhile, the increasing interest in MongoDB reflects a growing demand for NoSQL databases, driven by the need for more flexible and scalable solutions for unstructured data.

## Implications

- The examination of programming and database trends provides valuable insights into the current landscape and future trajectory of the technology sector.
- This trend aligns with the broader industry shift towards cloud computing and big data applications.
- Overall, while traditional technologies continue to be important, there is an increasing focus on adopting new tools and methodologies that address the complexities of contemporary data environments.
- This transition offers both opportunities and challenges for professionals and organizations, who need to balance expertise in established technologies with the integration of emerging ones to maintain a competitive edge.

# CONCLUSION

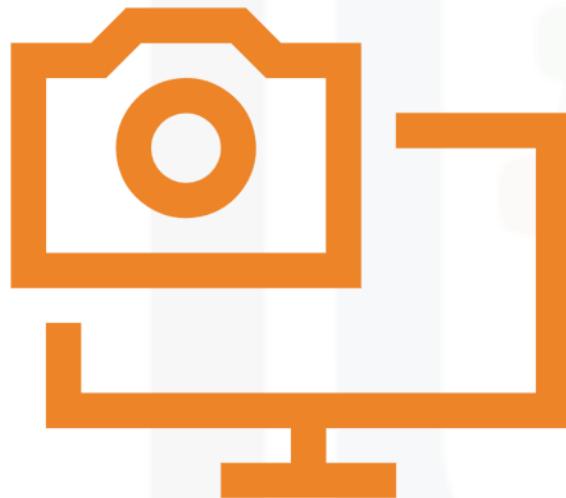
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- The data shows a solid grounding in traditional web development and database technologies, alongside a noticeable shift towards newer, more adaptable technologies like Python, MongoDB, Linux, and Docker.
- These trends indicate that the tech industry is moving towards a data-focused and cloud-oriented model, with increasing importance placed on open-source tools.
- Demographic insights underscore the ongoing need for efforts to diversify the tech workforce and tailor educational programs to address future industry needs.

# APPENDIX

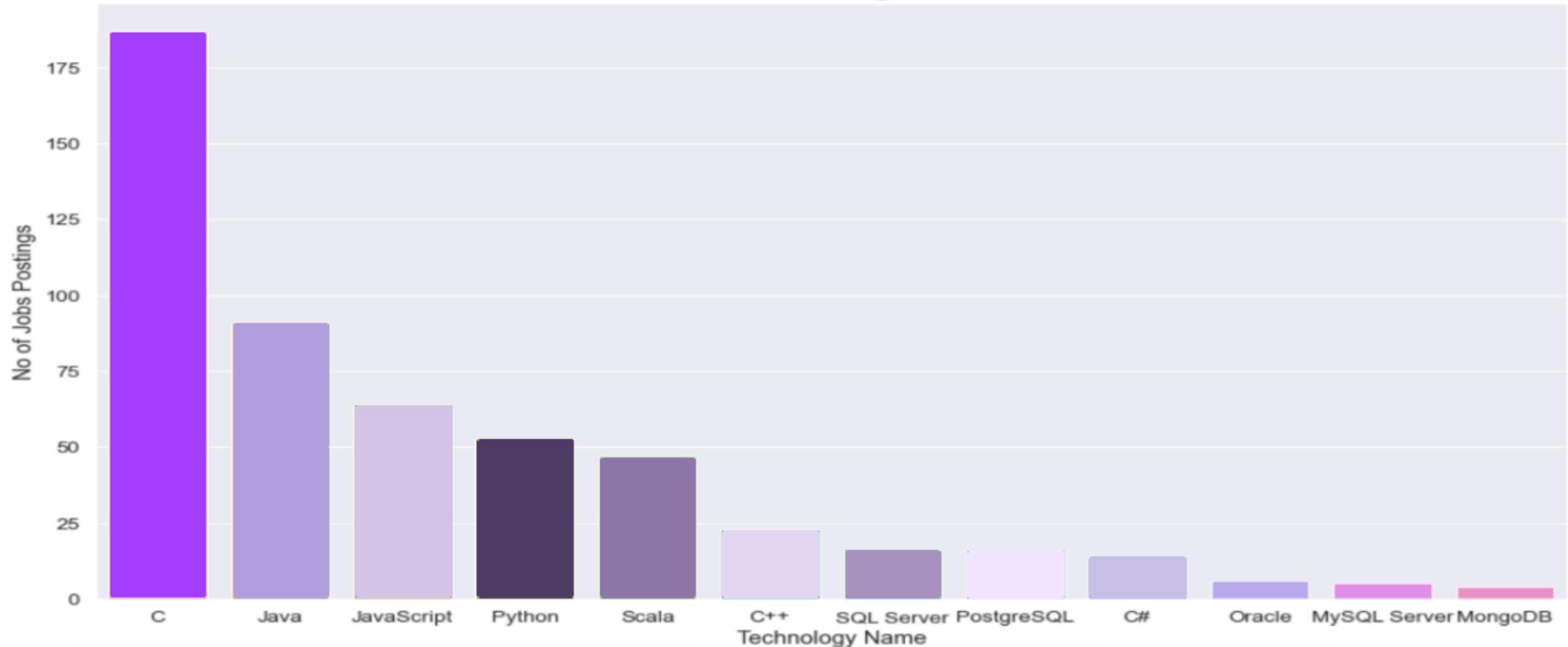
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any relevant additional charts, or tables that you may have created during the analysis phase is included.

# JOB POSTINGS

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# POPULAR LANGUAGES

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