



# Navigating the Future of Technology: Insights into Developer Preferences and Emerging Trends

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October 6, 2024

# OUTLINE



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

# EXECUTIVE SUMMARY



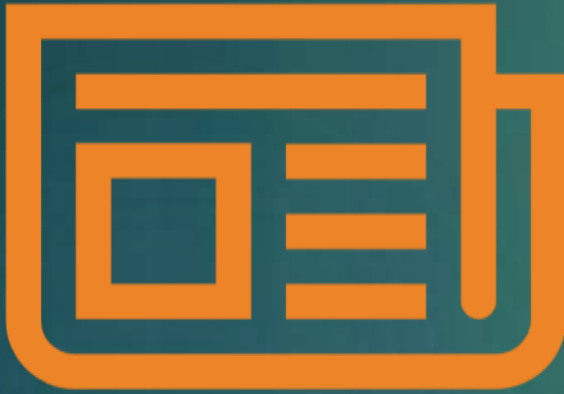
- ▶ **Programming Language Trends:** JavaScript, HTML/CSS, and Python are the leading languages, with JavaScript dominating current use and future demand.
- ▶ **Database Preferences:** MySQL and PostgreSQL are the most utilized databases, indicating reliability and popularity.
- ▶ **Platform Utilization:** Windows and Linux are prevalent, with increasing interest in cloud services like AWS and Google Cloud.
- ▶ **Web Framework Popularity:** React.js and Angular are the top web frameworks, with strong interest for continued use next year.
- ▶ **Future Skills Development:** Developers should enhance skills in JavaScript, cloud technologies, and modern web frameworks to meet industry demands.

# INTRODUCTION



- **Report Overview:** Analyzes programming language and database trends to inform industry standards.
- **Target Audience:** Designed for software developers, data analysts, and business leaders.
- **Reader Benefits:** Provides insights for informed decision-making regarding skill development and technology adoption.

# METHODOLOGY



- ▶ **Data Collection:** Utilized survey data from a diverse respondent pool to gather insights on technology usage, preferences, and demographics.
- ▶ **Data Visualization:** Employed IBM Cognos Analytics to create interactive dashboards for visual representation of data trends and patterns.
- ▶ **Statistical Analysis:** Analyzed distinct counts and sums across various categories, such as programming languages, databases, and platforms, to identify key findings.
- ▶ **Comparative Analysis:** Compared current technology usage with desired future technologies to assess shifts in developer preferences and industry trends.



# RESULTS

The results indicate a clear preference for JavaScript as the leading programming language, which reinforces its critical role in web development and suggests that educational programs should prioritize its teaching. The strong showing of MySQL and PostgreSQL highlights the importance of reliable database management systems, indicating that organizations should invest in training for these technologies to ensure effective data handling.

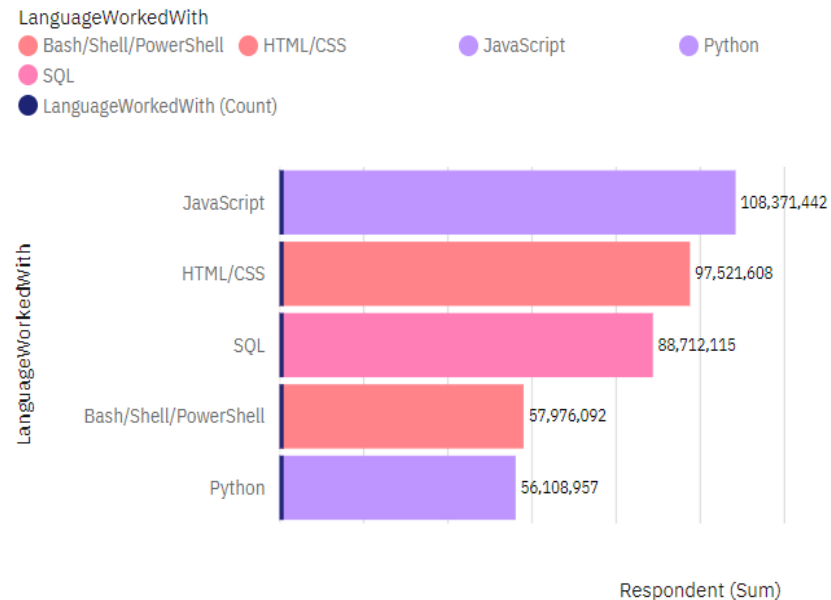
Furthermore, the growing interest in cloud platforms like AWS and Google Cloud reflects a significant industry shift towards scalable solutions, prompting businesses to adapt their infrastructure strategies accordingly. The popularity of frameworks such as React.js and Angular suggests that developers must stay abreast of modern tools to remain competitive, emphasizing the need for continuous learning and skill development in an evolving tech landscape.

Overall, these findings underscore the necessity for both developers and organizations to align their skills and technologies with current trends to thrive in a rapidly changing environment.

# PROGRAMMING LANGUAGE TRENDS

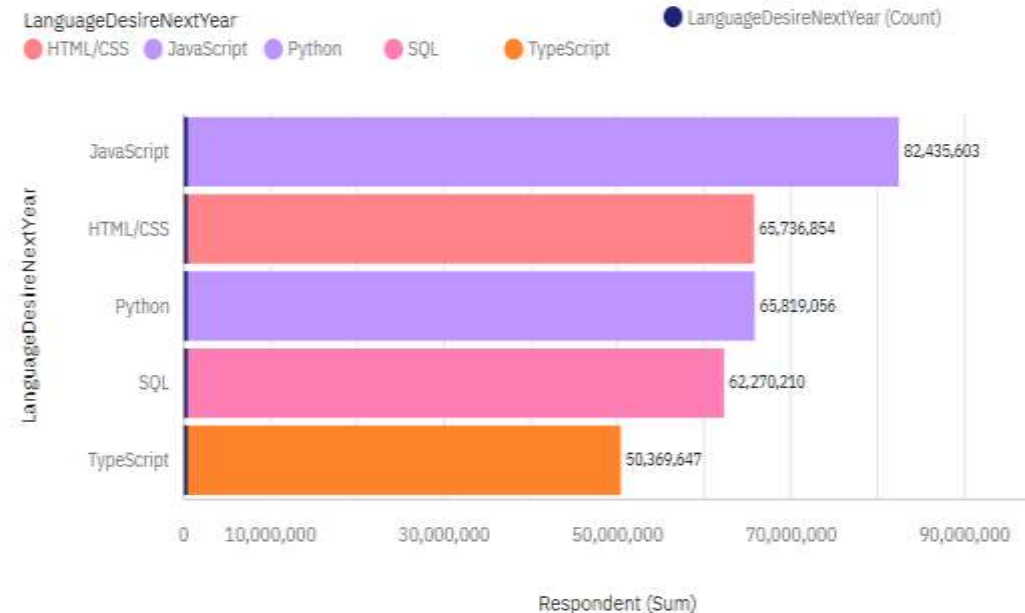
## Current Year

Top 5 Language Worked With



## Next Year

Top 5 Language Desired Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- ▶ **JavaScript Dominance:** JavaScript remains the most used and desired language.
- ▶ **Python Growth:** Python is highly desired for next year, increasing its future relevance.
- ▶ **Declining Popularity of Typescript:** Typescript has lower respondent usage compared to modern languages like Python and JavaScript.

## Implications

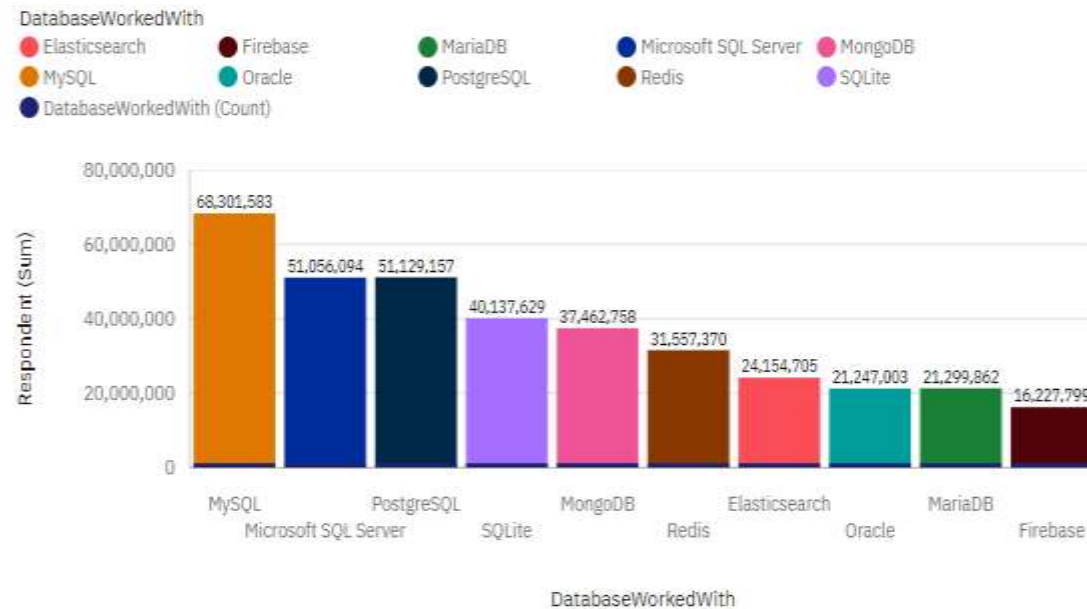
- ▶ **JavaScript's Continued Leadership:** Essential for web development roles.
- ▶ **Increased Demand for Python:** Valuable for data science, AI, and automation positions.
- ▶ **Shift from Older Languages:** Skills in Typescript may become less critical, pushing developers to learn newer technologies.



# DATABASE TRENDS

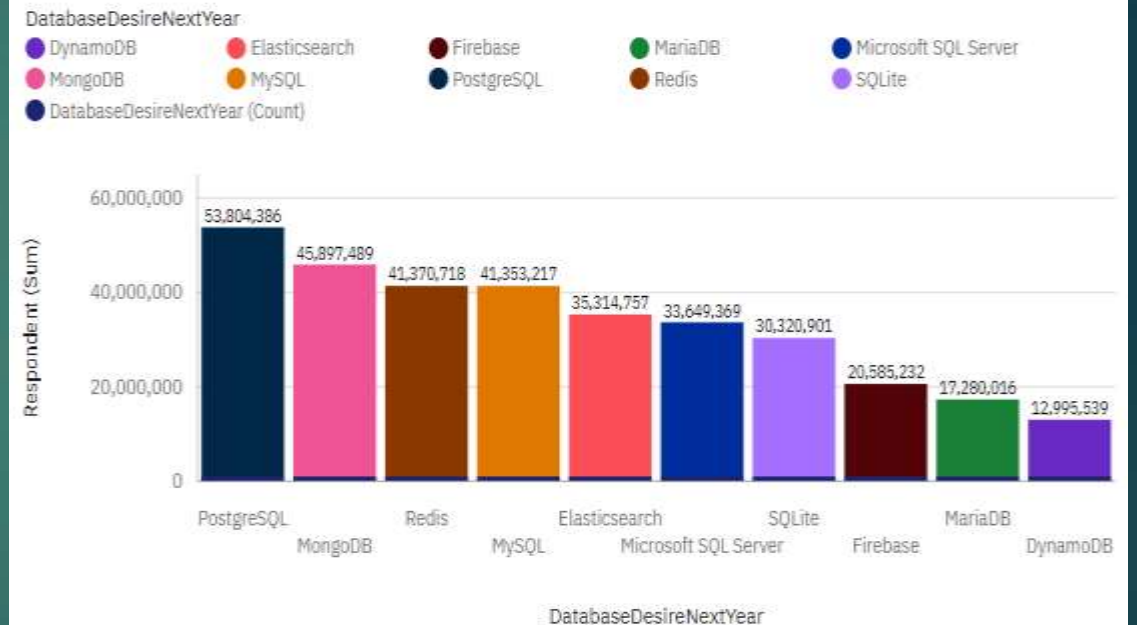
## Current Year

Top 10 Database Worked With



## Next Year

Top 10 Database Desired Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- ▶ **MySQL Popularity:** MySQL remains the most widely used database.
- ▶ **Emergence of DynamoDB:** DynamoDB is gaining attention as a desired database for the next year.
- ▶ **Consistent Interest in PostgreSQL:** PostgreSQL shows strong interest in both current and future usage.

## Implications

- ▶ **Continued Demand for MySQL Skills:** MySQL knowledge is essential for many development roles.
- ▶ **Growing Need for NoSQL Databases:** Increased demand for databases like DynamoDB reflects the shift to scalable, cloud-based solutions.
- ▶ **Stability in PostgreSQL Usage:** Professionals should consider enhancing skills in PostgreSQL for versatility and enterprise solutions.

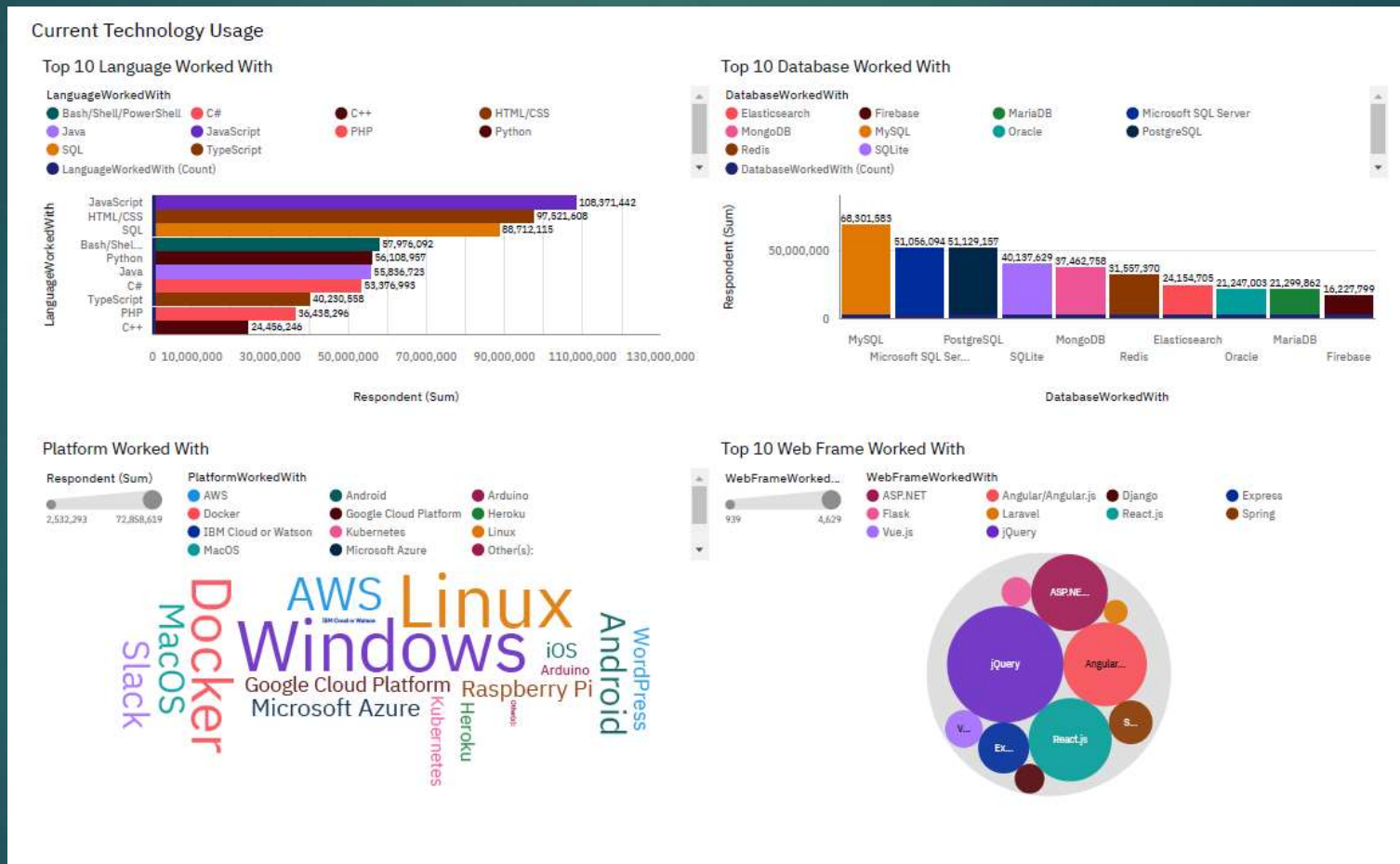
# DASHBOARD



## [Capstone Final Project](https://github.com/dysoboe/IBM-Cognos-Analytics/blob/main/Capstone%20Final%20Project.pdf)

<https://github.com/dysoboe/IBM-Cognos-Analytics/blob/main/Capstone%20Final%20Project.pdf>

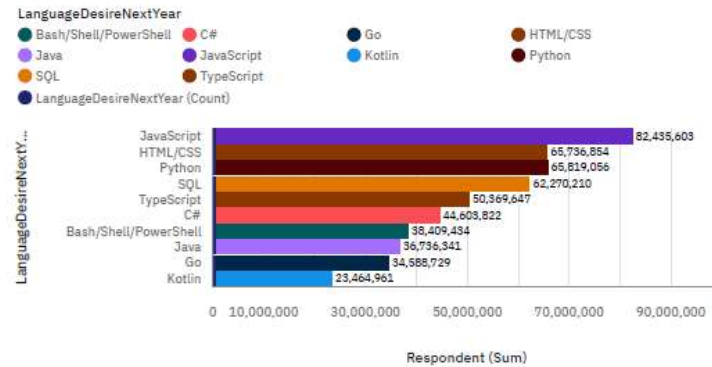
# CURRENT TECHNOLOGY USAGE



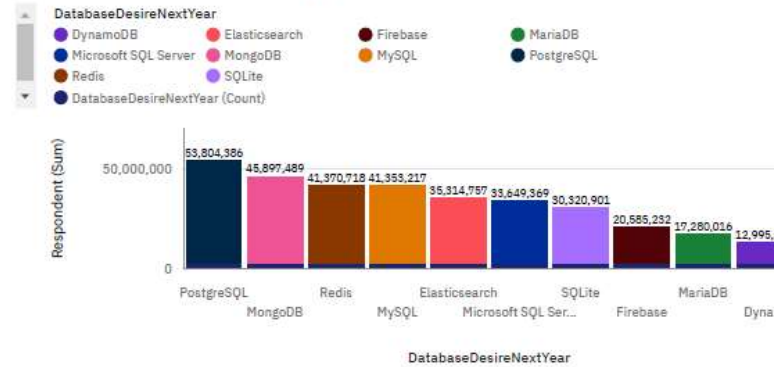
# FUTURE TECHNOLOGY TREND

## Future Technology Trend

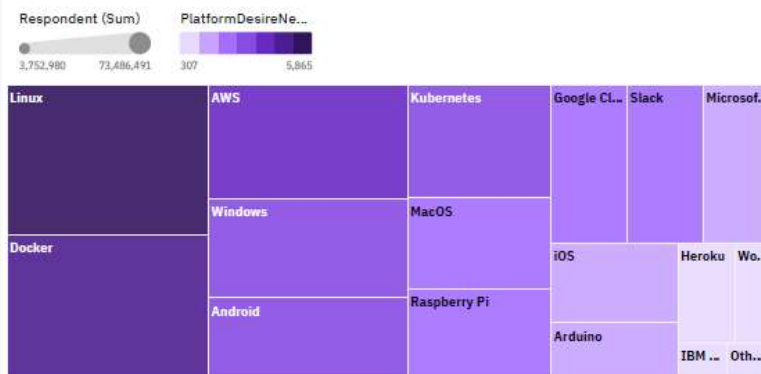
### Top 10 Language Desired Next Year



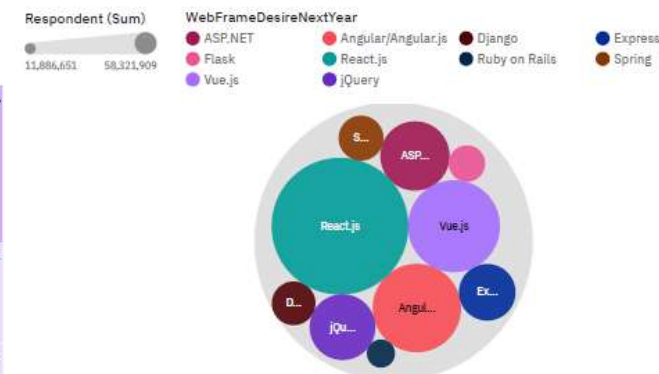
### Top 10 Database Desired Next Year



### Platform Desire Next Year

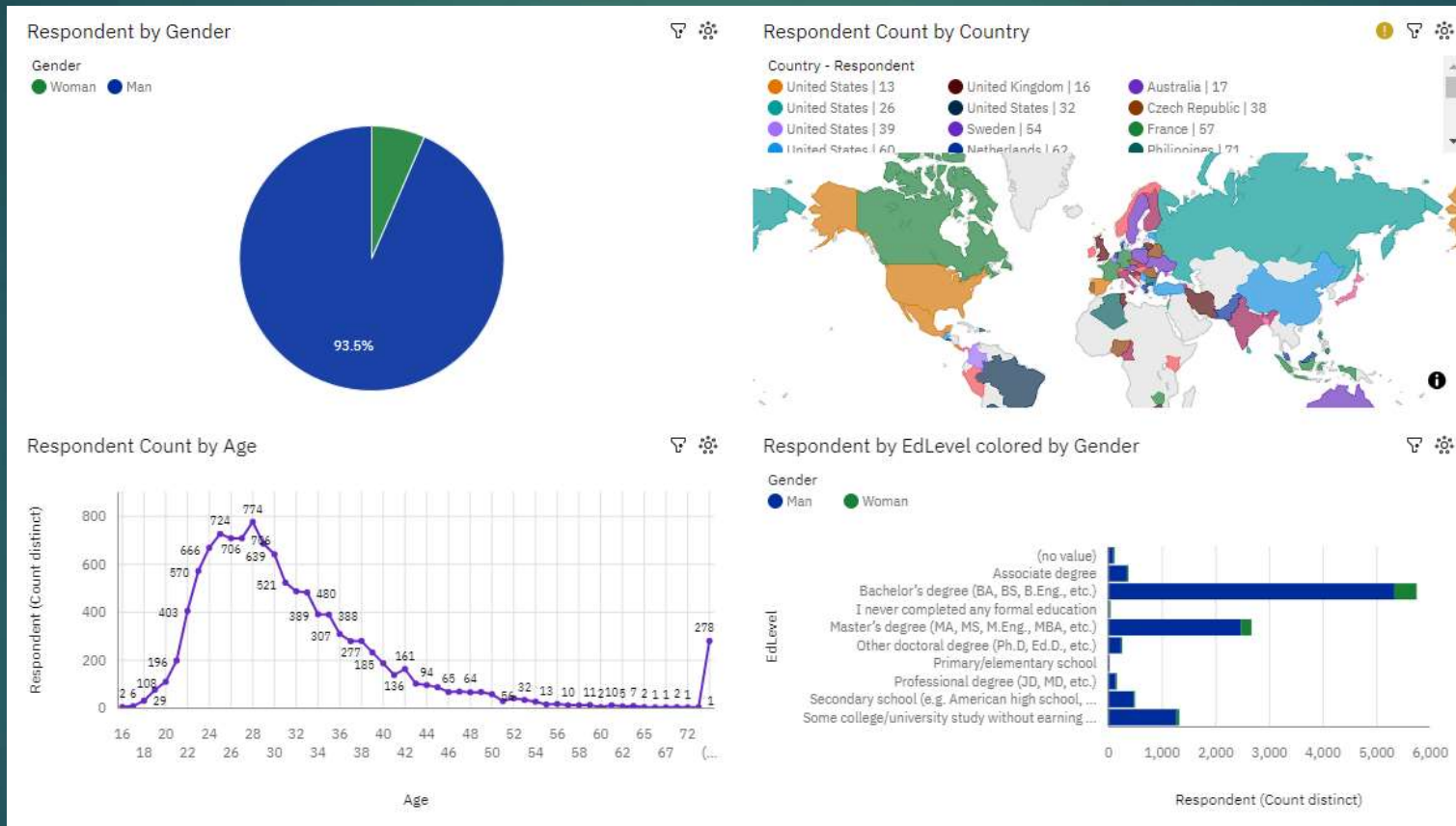


### Top 10 Web Frame Desired Next Year





# DEMOGRAPHICS



# DISCUSSION



- ▶ The analysis reveals a significant gap in understanding the evolving landscape of programming languages and frameworks, particularly the dominance of JavaScript and the rising interest in cloud technologies. By highlighting the overwhelming preference for established databases like MySQL and PostgreSQL, our findings address the critical need for reliable data management solutions in an increasingly complex digital environment.
- ▶ Moreover, the strong inclination towards modern frameworks such as React.js and Angular not only fills the knowledge gap regarding developer preferences but also emphasizes the urgency for continuous skill development. This narrative illustrates how our results provide essential insights that empower organizations and developers to make informed decisions, ultimately bridging the gap between current practices and future technological demands.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- ▶ **Dominance of JavaScript:** JavaScript remains the most widely used programming language and is also the most desired for the upcoming year, indicating its critical role in development.
- ▶ **Database Preferences:** MySQL and PostgreSQL are the leading databases currently in use and are also highly desired for the next year, reflecting their reliability and popularity among developers.
- ▶ **Platform Trends:** Windows and Linux are the most utilized platforms, with a growing interest in cloud services like AWS and Google Cloud, suggesting a shift towards more scalable and flexible solutions.

## Implications

- ▶ **Skill Development:** Developers should focus on enhancing their JavaScript and database management skills to remain competitive in the job market.
- ▶ **Adoption of Cloud Technologies:** Organizations may need to invest in cloud infrastructure and training to leverage the growing trend towards cloud-based platforms and services.
- ▶ **Framework Familiarity:** Familiarity with popular web frameworks like React.js and Angular will be essential for developers to meet the demands of modern web development projects.

# CONCLUSION



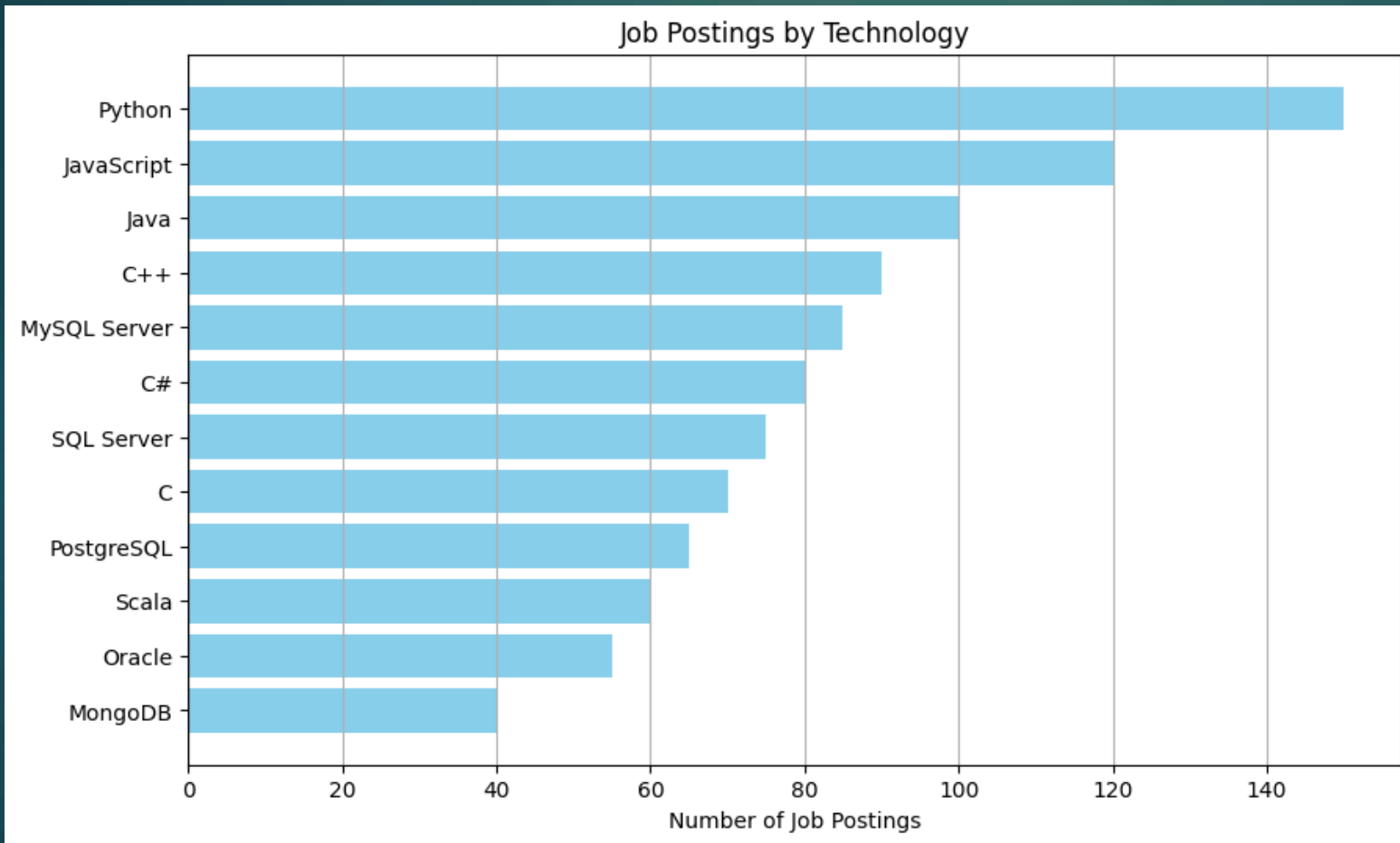
- ▶ **JavaScript's Central Role:** JavaScript's continued dominance in both current usage and future interest underscores its essential position in web development and programming education.
- ▶ **Reliability of Traditional Databases:** The sustained preference for established databases like MySQL and PostgreSQL indicates that developers value stability and performance in their data management solutions.
- ▶ **Shift Towards Cloud Solutions:** The increasing desire for cloud platforms suggests a significant industry shift towards scalable, flexible, and cost-effective infrastructure, necessitating adaptation by organizations and developers alike.
- ▶ **Importance of Modern Frameworks:** The popularity of frameworks such as React.js and Angular highlights the need for developers to stay updated with modern tools and technologies to effectively meet evolving project requirements.

# APPENDIX



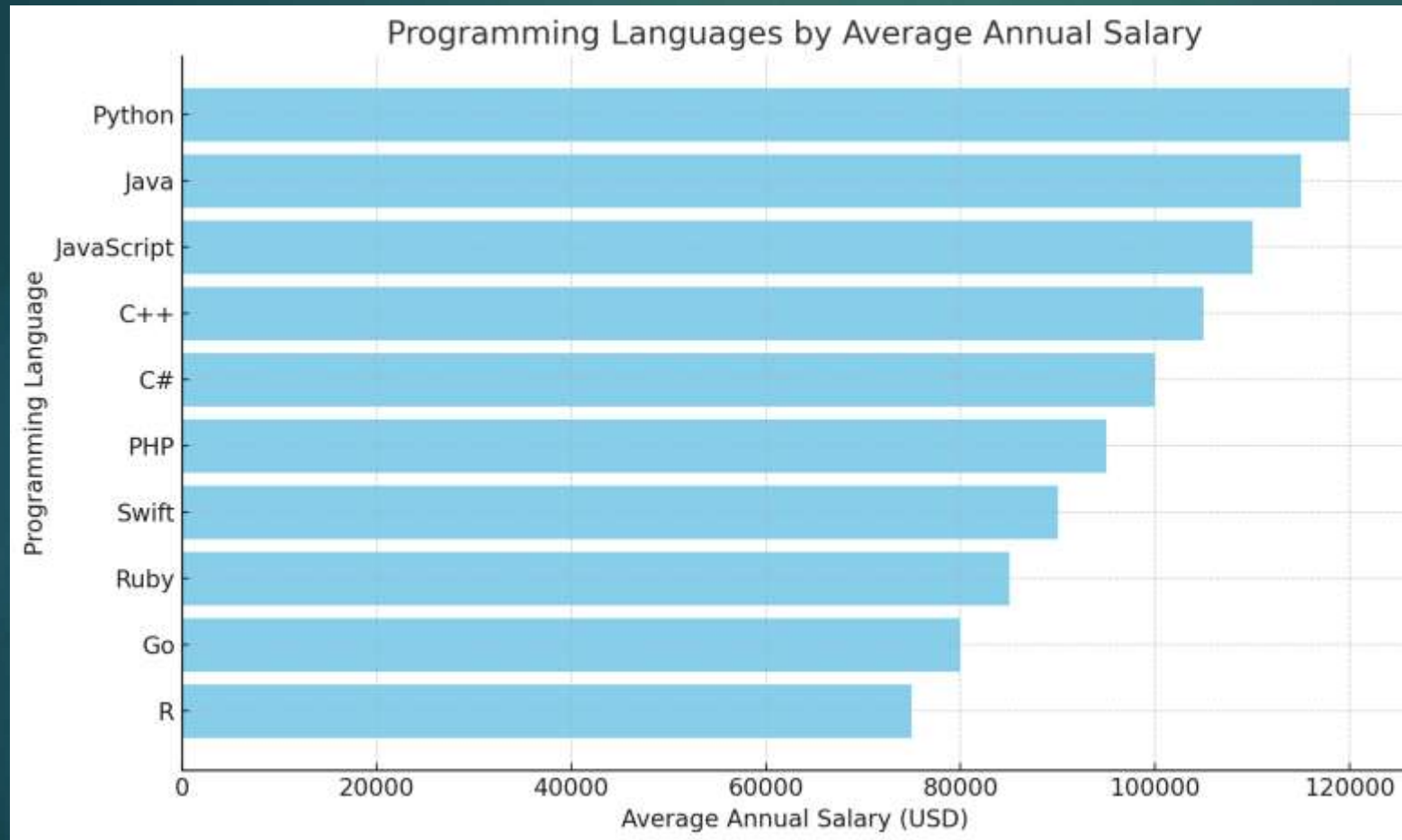


# JOB POSTINGS



Job postings by technology arranged in descending order.

# POPULAR LANGUAGES



- ▶ Programming languages ordered by their average annual salary in descending order