Shifting Technology Trends

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OUTLINE

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

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EXECUTIVE SUMMARY

- **Objective:** Analyze the most in-demand programming skills and databases to identify emerging trends and future skill requirements in the IT industry.

- **Key Findings:** Modern languages like Python and TypeScript are gaining popularity, while PostgreSQL, MongoDB, and Redis are emerging as preferred database solutions.

- **Implications:** Organizations need to invest in upskilling their workforce in these emerging technologies and adapt their tech stack to stay competitive.

- **Conclusion:** Embracing these trends and focusing on continuous learning and strategic technology investments will be crucial for maintaining industry leadership and driving future success.

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INTRODUCTION

- **Objective:** Help the organization stay competitive by identifying emerging skill requirements through data analysis

- **Data Collection:** The initial phase of this project involved gathering data on the most in-demand programming skills from various sources, including job postings, training portals, and industry surveys

- **Data Analysis:** Applied data wrangling and statistical techniques to prepare the data for analysis, focusing on identifying trends in programming languages, database skills, and popular Integrated Development Environments (IDEs)

- **Insights and Reporting:** Synthesizing the insights into a comprehensive report, visualized using IBM Cognos Analytics, and preparing a presentation to effectively communicate these findings

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METHODOLOGY

- **Data Collection:** Gathered data from multiple sources, including job postings, training portals, and industry surveys, to identify the top programming skills and databases currently in demand

- **Data Wrangling:** Cleaned and organized the collected data, converting it into usable formats, and ensured consistency and accuracy for analysis

- **Statistical Analysis:** Applied statistical techniques to analyze the prepared data, focusing on identifying trends in programming languages, database usage, and popular IDEs

- **Visualization and Reporting:** Used IBM Cognos Analytics to create visual dashboards that highlight key insights and trends, which were then synthesized into a coherent report and presentation

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RESULTS

Current Technology Usage
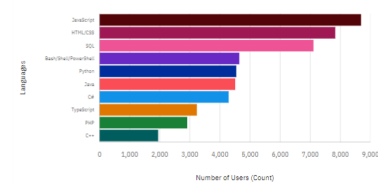
Top 10 Languages Respondents Worked With

Top 10 Databases Respondents Worked With
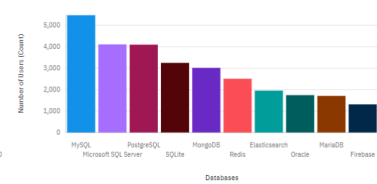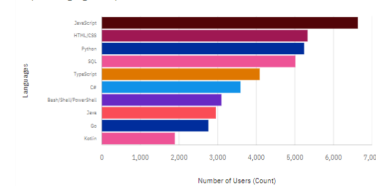
Platforms Respondents Worked With
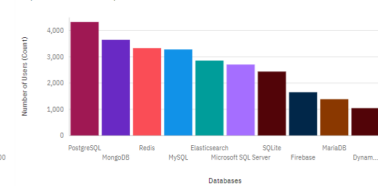
Top 10 Web Frames Respondents Worked With
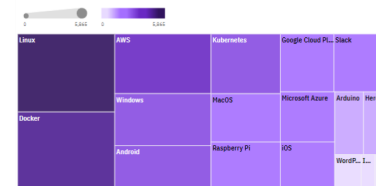
Future Technology Trend

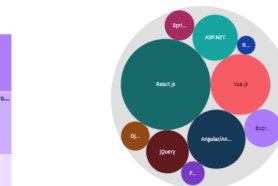Top 10 Languages Respondents Desire Next Year

Top 10 Databases Respondents Desire Next Year
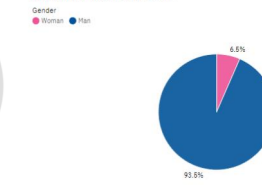
Platforms Respondents Desire Next Year

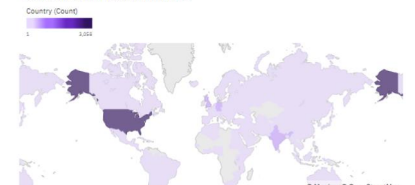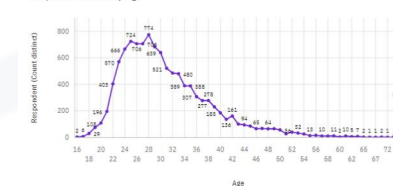Top 10 Web Frames Respondents Desire Next Year

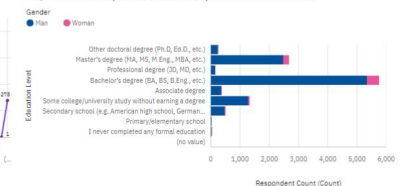Demographics

Respondents Classified by Gender

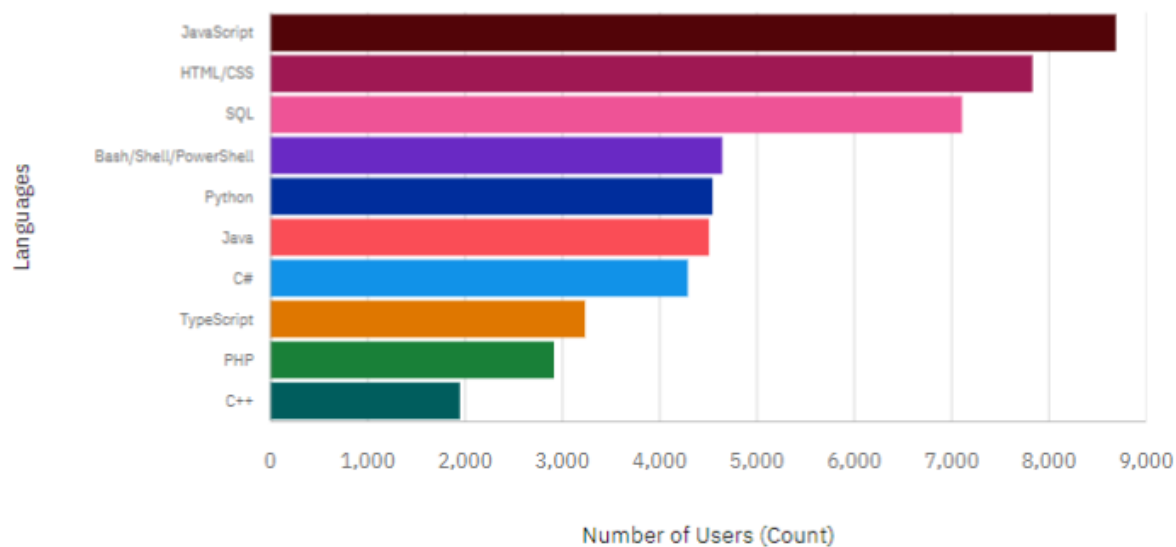Respondent Count Based on Countries

Respondent Count by Age

Respondent Count by Gender, Classified by Formal Education Level
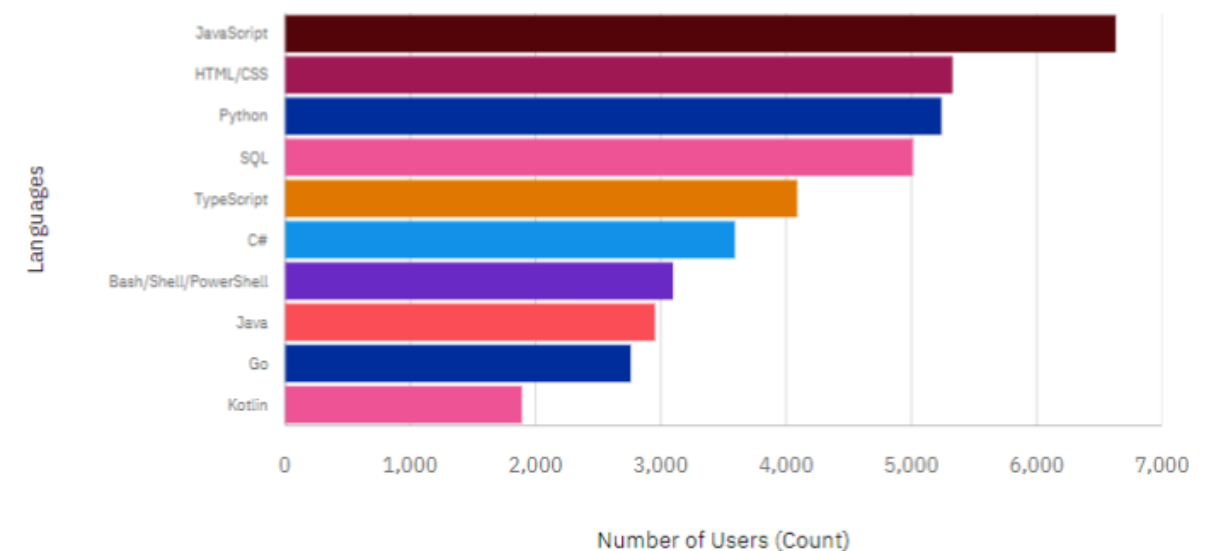
PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages Respondents Worked With

Next Year

Top 10 Languages Respondents Desire Next Year

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS remain the most popular

- JavaScript, HTML/CSS, TypeScript, and Python have the most gain in popularity

- Python, TypeScript, Go, and Kotlin has gained more popularity

Implications

- Suggesting a strong demand for full-stack development skills

- Indicates a shift towards languages that offer versatility, modern syntax, and efficiency

- Continuous learning and adaptability are crucial for IT professionals
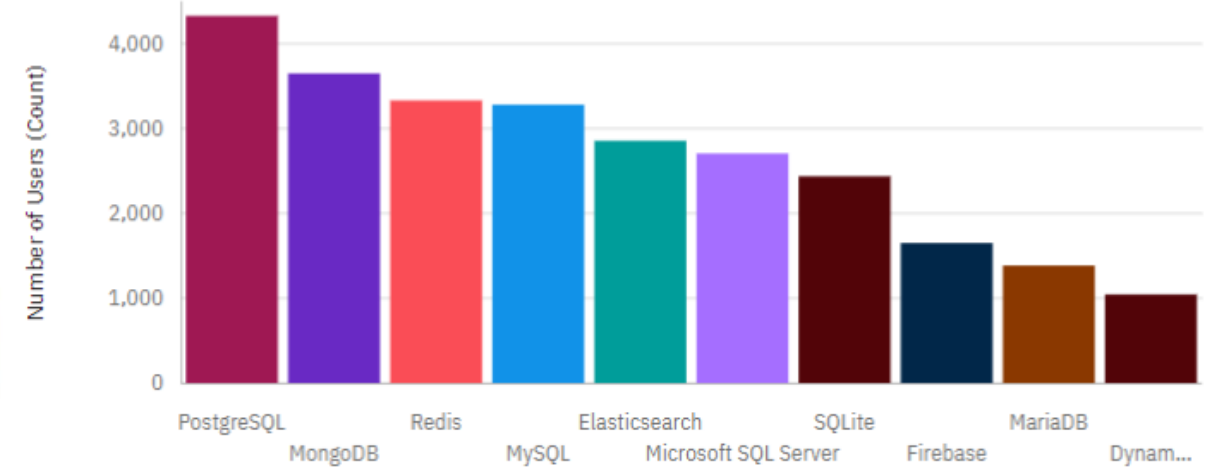
DATABASE TRENDS

Current Year

Top 10 Databases Respondents Worked With
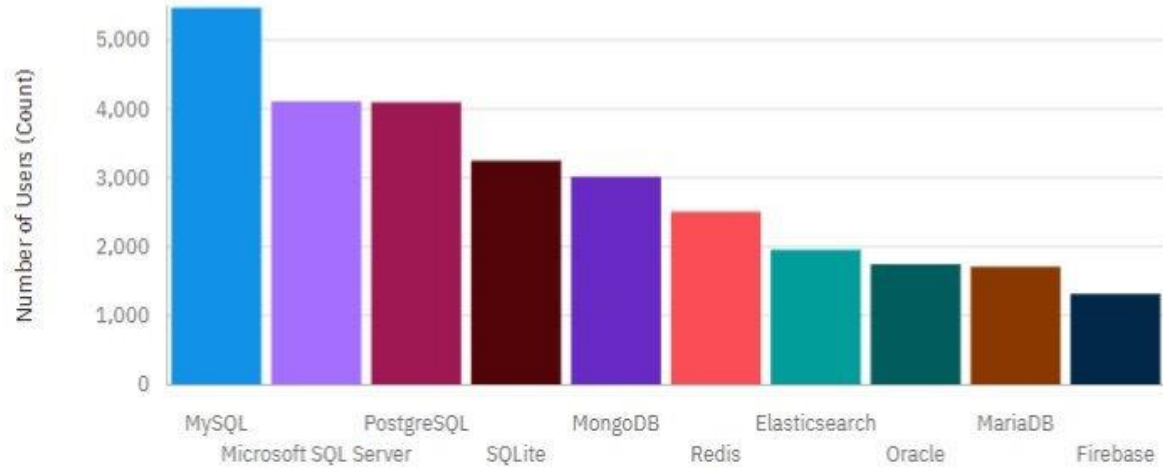
Next Year

Top 10 Databases Respondents Desire Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Rising popularity in PostgreSQL, NoSQL databases, Firebase, and DynamoDB

- Declining interest for MySQL, Microsoft SQL Server, SQLite, and Oracle

- MySQL's Consistent Usage but Declining Interest

Implications

- People are moving towards databases that offer better scalability, flexibility, and performance

- Organizations that have heavily relied on these older technologies might need to consider transitioning to more modern databases to stay competitive, which could lead to increased investment in database migration and upskilling of their technical teams

- As data becomes more complex and unstructured, databases should be able to handle these new challenges more effectively
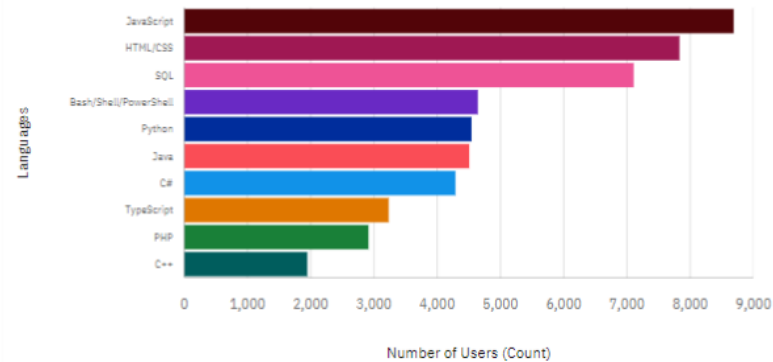
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DASHBOARD

[GitHub link of the IBM Cognos Studio dashboard](#)

DASHBOARD TAB 1
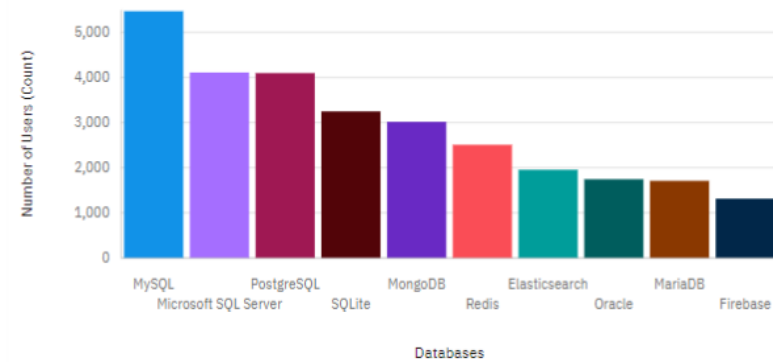

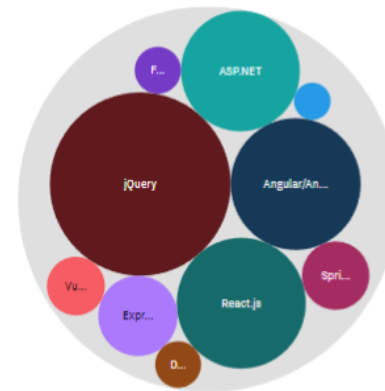Current Technology Usage

Top 10 Languages Respondents Worked With

Top 10 Databases Respondents Worked With

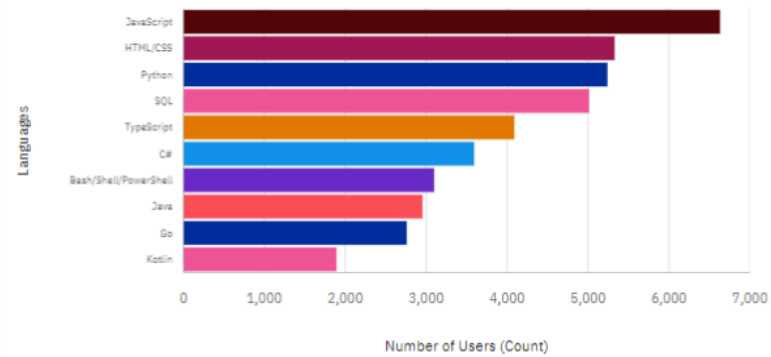Platforms Respondents Worked With

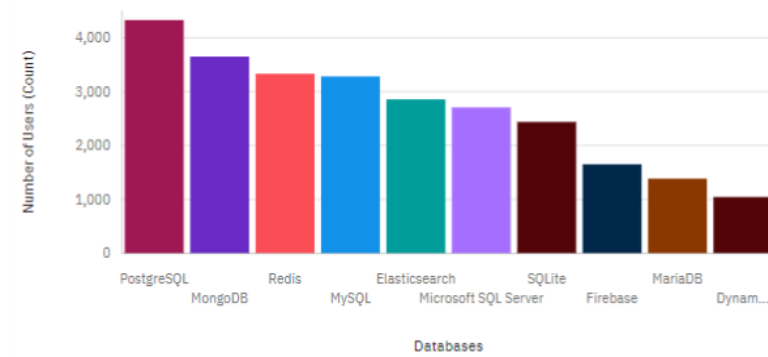Top 10 Web Frames Respondents Worked With
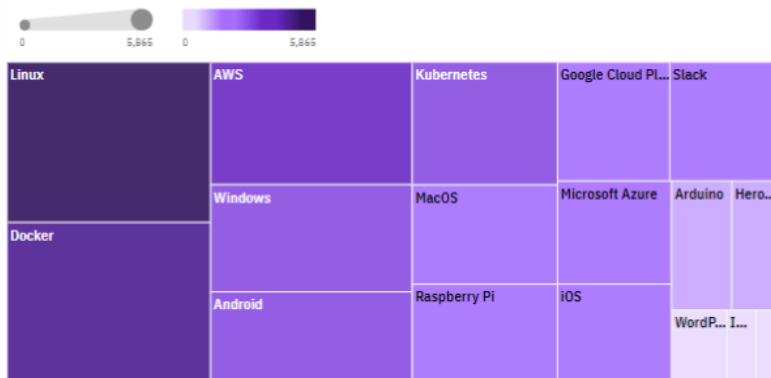
DASHBOARD TAB 2

Future Technology Trend

Top 10 Languages Respondents Desire Next Year

Top 10 Databases Respondents Desire Next Year

Platforms Respondents Desire Next Year

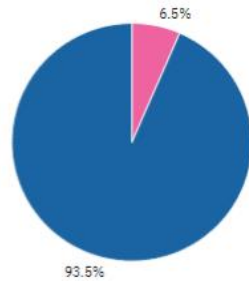Top 10 Web Frames Respondents Desire Next Year
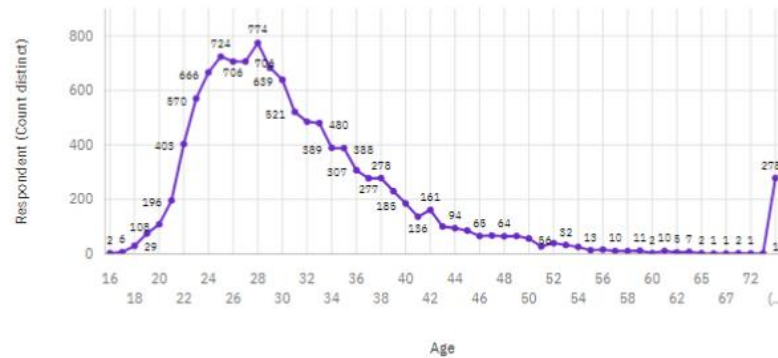
DASHBOARD TAB 3

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DISCUSSION

- **Shifting Landscape in Technology Preferences:** The data indicates a clear shift towards modern, versatile technologies. This trend suggests that organizations are increasingly prioritizing flexibility, scalability, and performance in their tech stacks, which may be driven by the growing demand for more complex, data-intensive applications.

- **Implications for Workforce Development:** Opportunity for both organizations and educational institutions to focus on training and development programs that equip employees with these in-demand skills, ensuring they remain competitive in the job market.

- **Potential Decline of Legacy Technologies:** Older technologies may face reduced adoption in the coming years. Organizations relying on these legacy systems may need to evaluate the potential benefits of transitioning to newer database solutions to stay aligned with industry trends.

- **Strategic Recommendations:** To stay ahead of these emerging trends, it is recommended that organizations invest in upskilling their teams in the latest programming languages and databases, particularly focusing on the growing areas of cloud-based solutions. Additionally, staying attuned to the evolving preferences in IDEs and development tools will be crucial for maintaining developer productivity and satisfaction.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Rising Popularity of Modern Languages and Frameworks
- Transition to Scalable Database Solutions
- Increased Focus on Developer Tools and IDEs

Implications

- Need for Continuous Learning
- Strategic Investments in Technology
- Workforce Development Focus
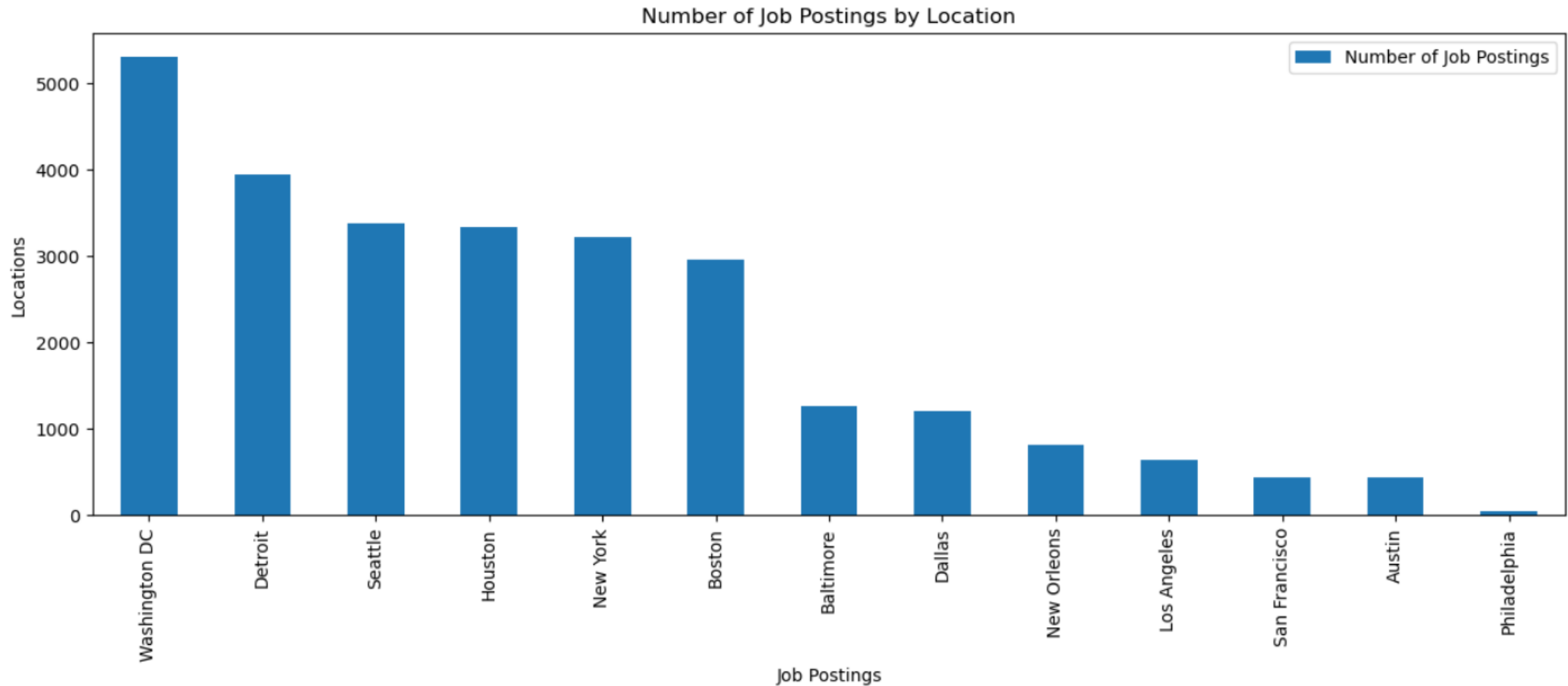
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CONCLUSION

- Technological Evolution
- Strategic Adaptation
- Continuous Learning
- Future Focus

APPENDIX

- Relevant additional charts or tables

JOB POSTINGS

Number of Job Postings by Location

POPULAR LANGUAGES

Average Annual Salary by Language Used