Analyzing Technology Trends

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IBM Developer

SKILLS NETWORK

OUTLINE

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

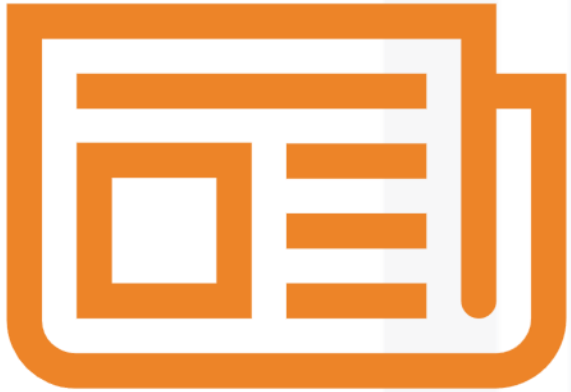
EXECUTIVE SUMMARY

- Objective
- Current technology Trends Analysi
  - Most Languages worked with
  - Most Data Base worked with
- Future Technology Projections
  - Best Languages desired working with next year
  - Best Data Bases desired working with next year
- Platform Preferences
  - Most platforms woking with
  - Best platforms desired working with
- Conclusion

INTRODUCTION

1. **Project Objective**: Create an interactive dashboard to analyze technology trends.
2. **Data Sources**: Visualizes data on top programming languages, databases, and development platforms.
3. **Key Insights**: Highlights current usage, future trends, and preferred developer tools.
4. **Target Audience**: Designed for organizations to guide strategic decisions and technology investments.
5. **Outcome**: A visual tool simplifying complex data for identifying skill gaps and emerging tech trends.

METHODOLOGY

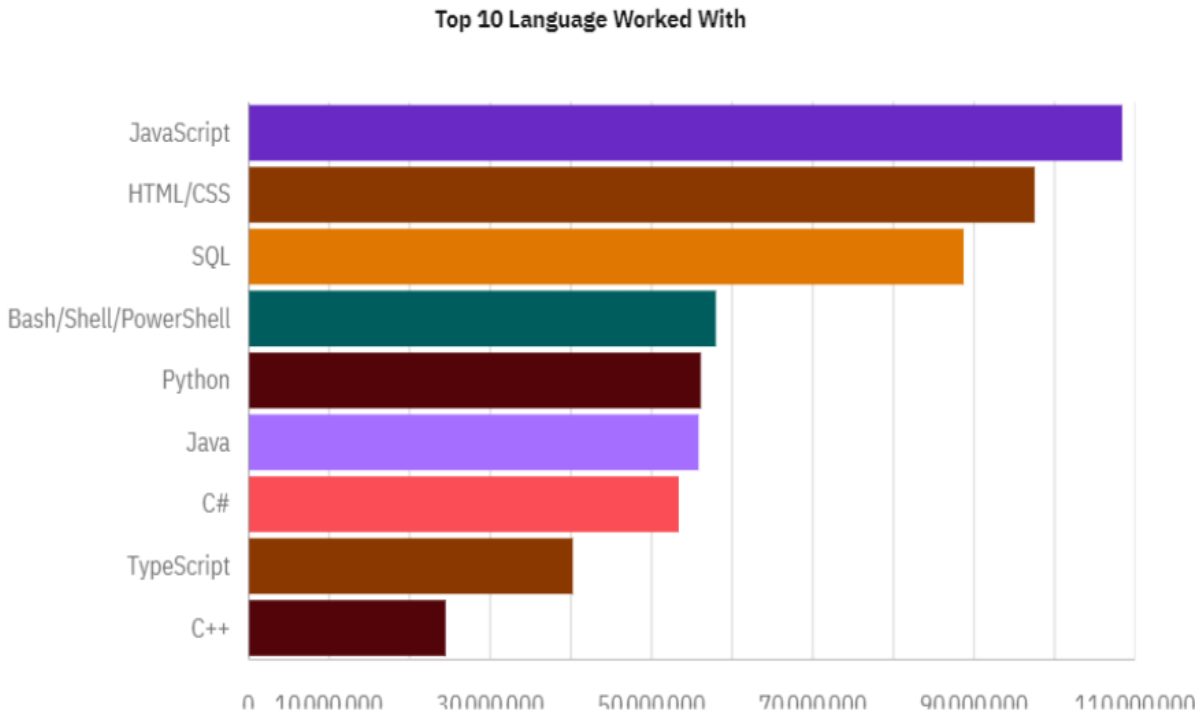


1. **Data Collection**: Relevant data on programming languages, databases, platforms, and demographics was sourced from industry surveys and structured datasets.
2. **Data Cleaning & Preparation**: The raw data was cleaned to remove inconsistencies and formatted for analysis. Missing values were handled, and unnecessary attributes were filtered out.
3. **Dashboard Development**: IBM Cognos Analytics was used to create a dashboard, integrating multiple visualizations to represent the top technologies, platforms, and future projections.
4. **Visualization Techniques**: Bar charts, trend lines, and pie charts were used to showcase current vs. future trends and platform preferences, making complex data easily interpretable.
5. **Review & Validation**: The dashboard was reviewed and validated to ensure accuracy and relevance, enabling stakeholders to derive actionable insights.

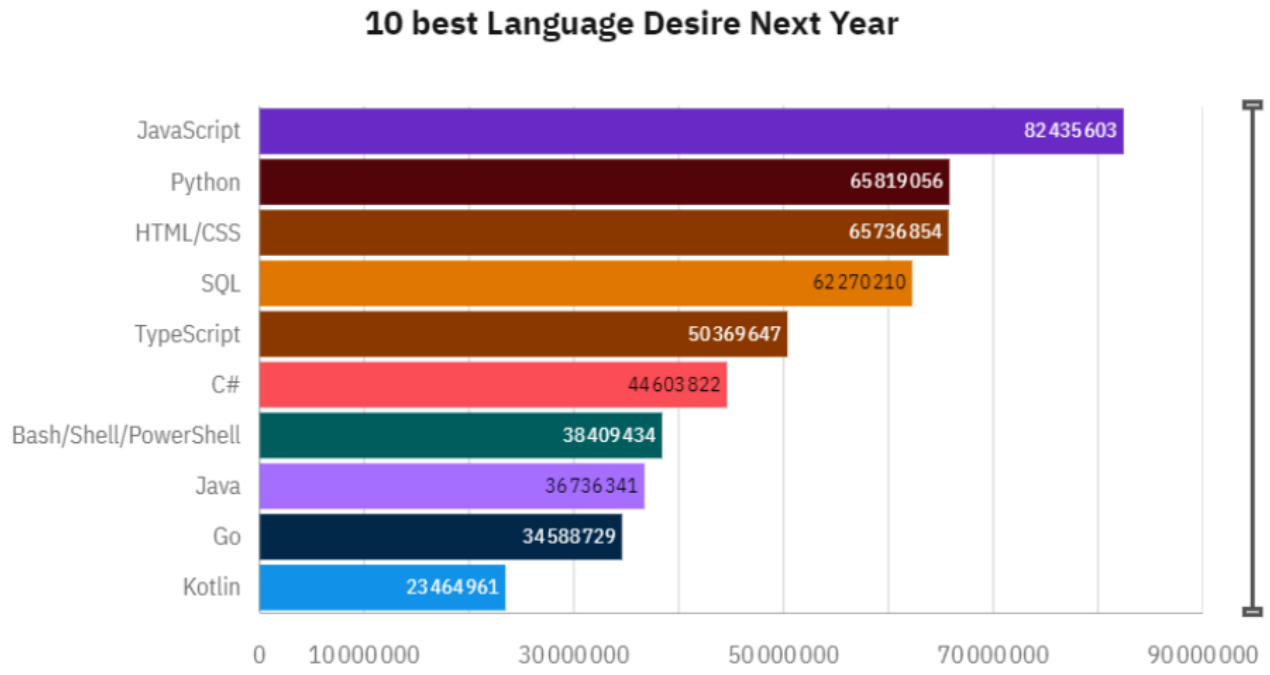
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Finding**: **JavaScript** remains the most widely used language, both currently and in future projections.
- **Python** shows a significant increase in demand, surpassing other languages.
- **TypeScript** is gaining traction as a preferred language for large-scale applications.
- **Go and Kotlin** are emerging as popular choices for future development.

Implications

Organizations should continue to invest in JavaScript training and frameworks to maintain competitiveness in web and front-end development.

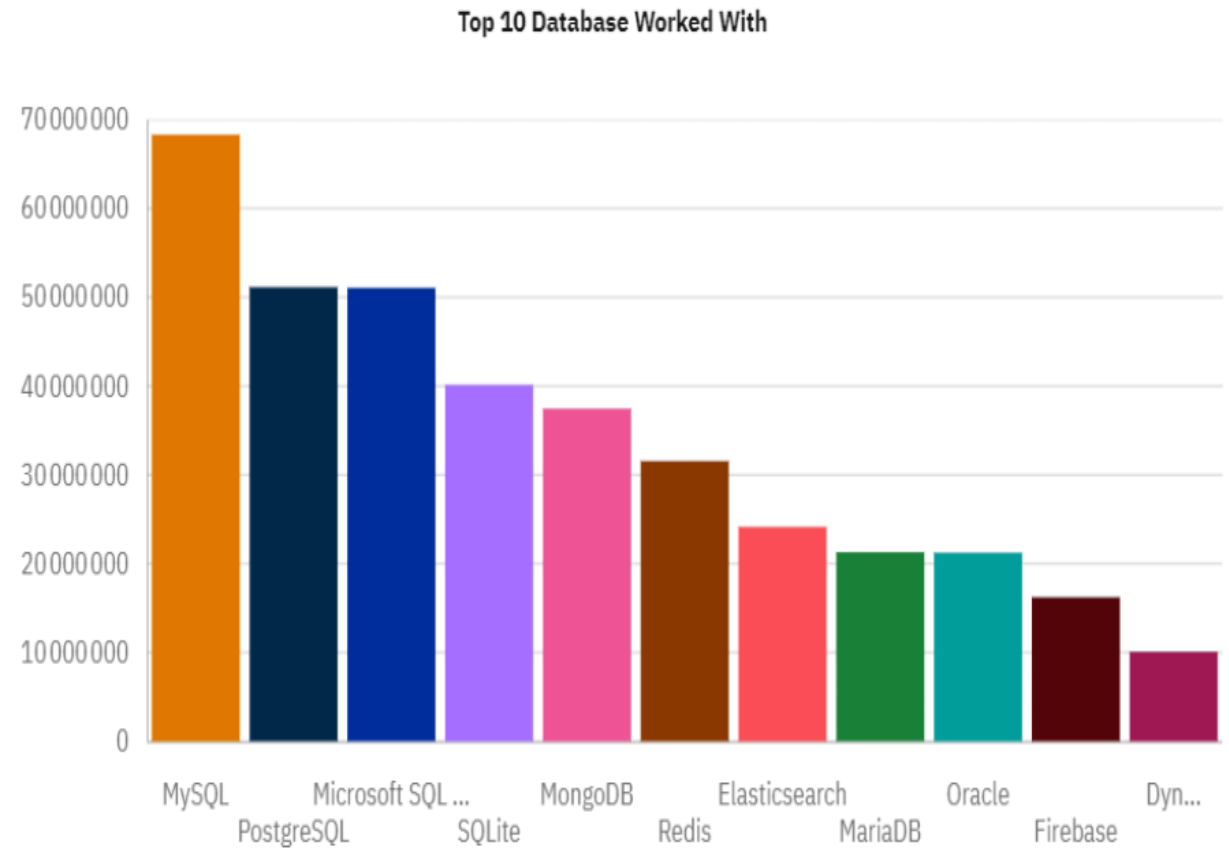
Python's growth highlights its versatility across data science, machine learning, and backend development, suggesting a need for expertise in these areas.

Companies building scalable and maintainable systems should adopt TypeScript to enhance code quality and developer productivity.

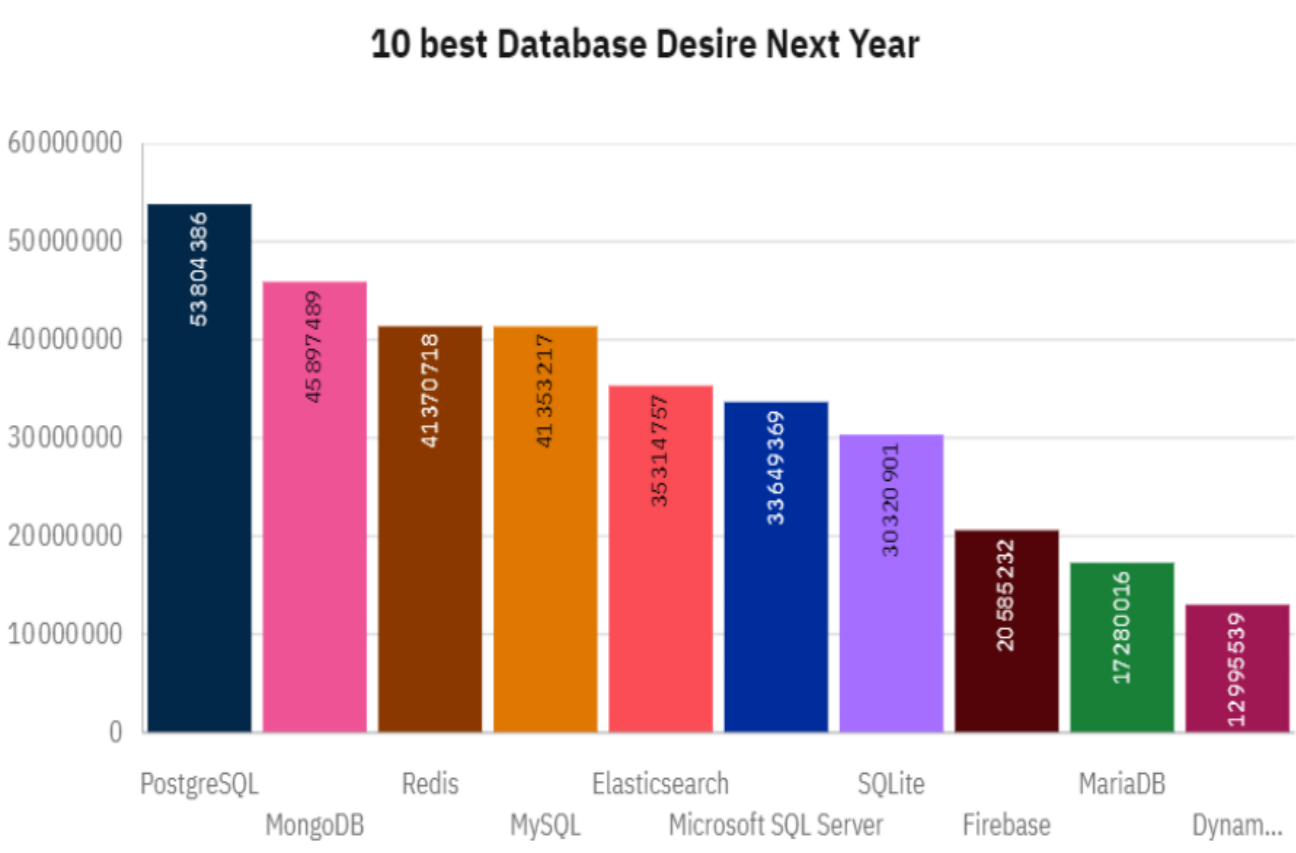
Organizations should consider adopting Go for high-performance applications and Kotlin for Android and cross-platform mobile development.

DATABASE TRENDS

Current Year



Next Year



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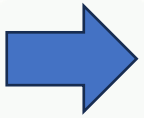
DATABASE TRENDS - FINDINGS & IMPLICATIONS

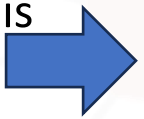
Findings

- **MySQL** and **PostgreSQL** are the top databases currently used, with PostgreSQL projected to surpass MySQL in future demand.
- **MongoDB** is experiencing a rise in popularity and is projected to become one of the top databases in the coming years.
- **Redis** is gaining traction as a go-to in-memory database solution.
- Traditional relational databases like **Oracle** and **Microsoft SQL Server** show declining interest.

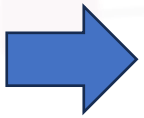
Implications



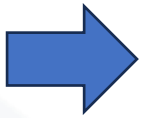
Organizations should consider transitioning to PostgreSQL for its advanced features and better support for complex queries, positioning it as a preferred choice for modern application development.



Companies working with unstructured data or needing scalable, NoSQL solutions should invest in MongoDB expertise to meet evolving data needs.



Redis should be adopted for high-performance caching and real-time analytics applications to enhance system responsiveness and speed.



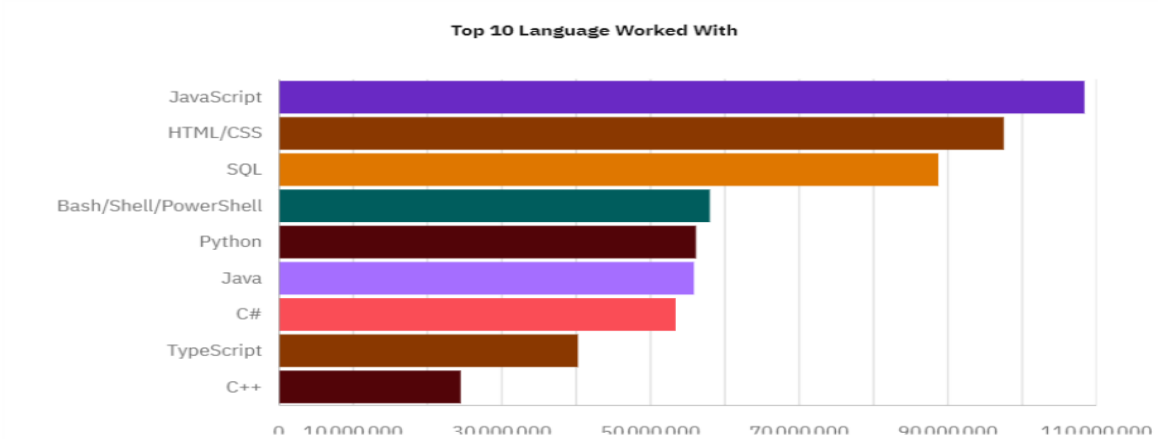
Enterprises reliant on these legacy systems should explore hybrid or cloud-native alternatives to stay aligned with industry trends and reduce maintenance overhead.

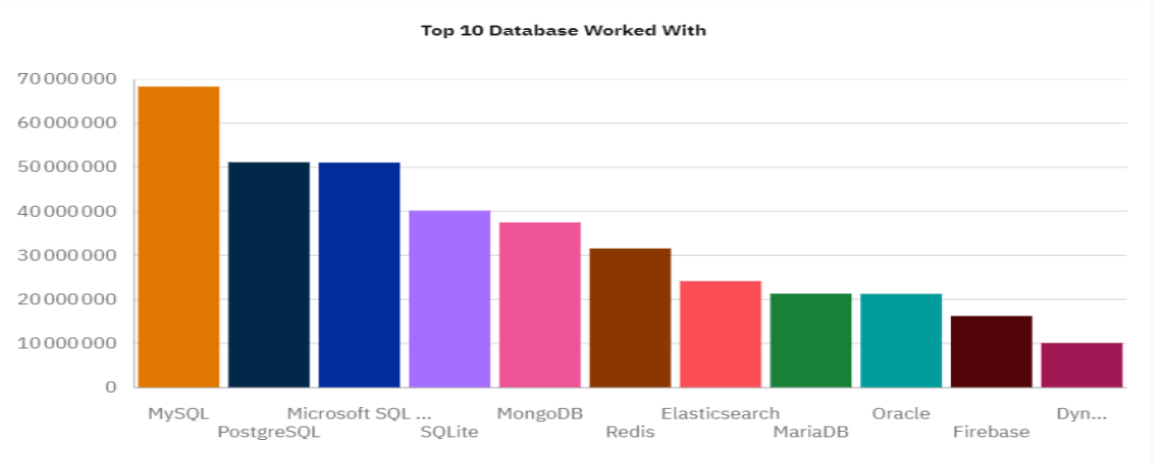
DASHBOARD

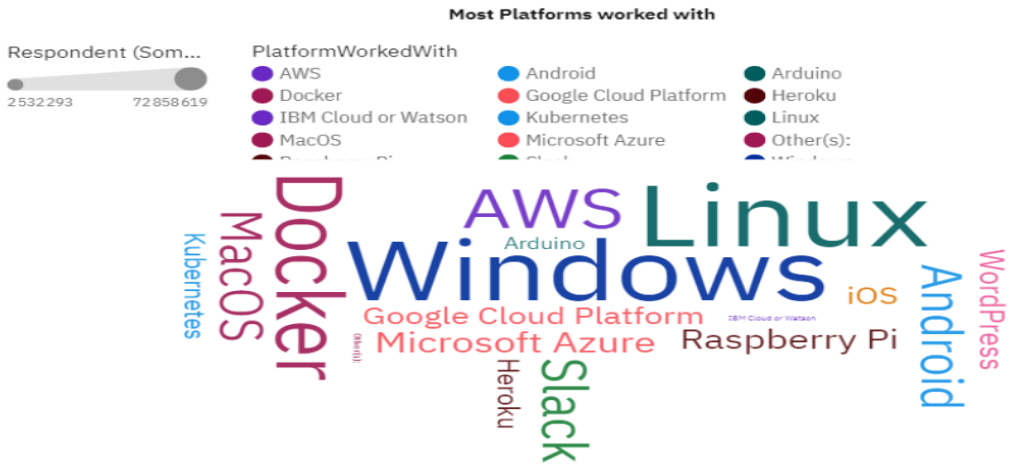
https://github.com/Hakbouj/-Building-A-Dashboard-With-IBM-Cognos-Analytics.git

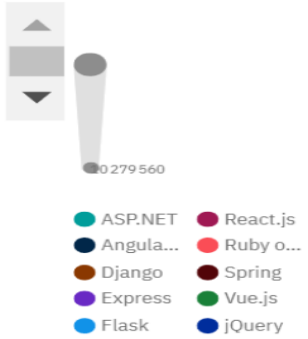
DASHBOARD TAB 1

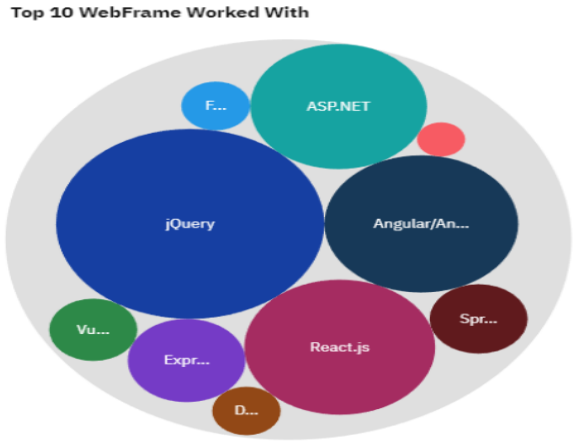
Current Technology Usage.











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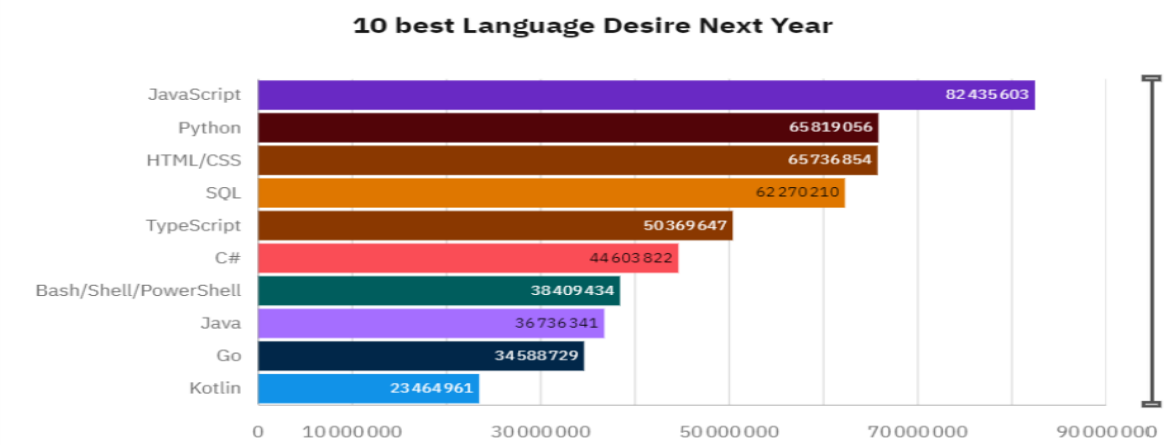
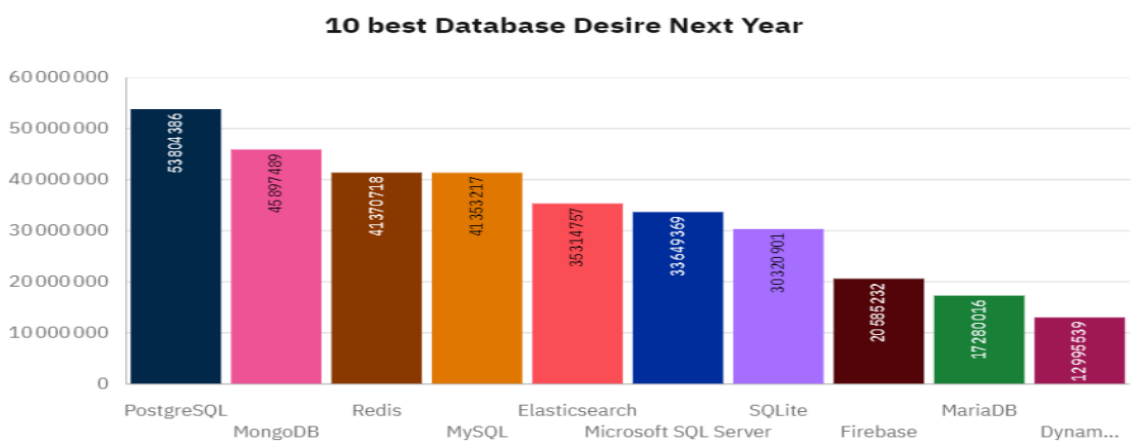
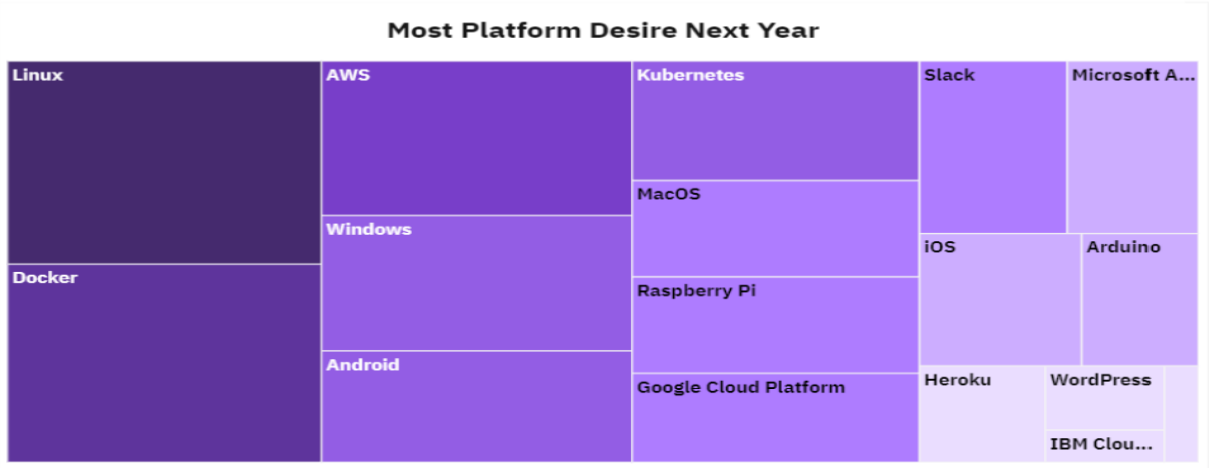
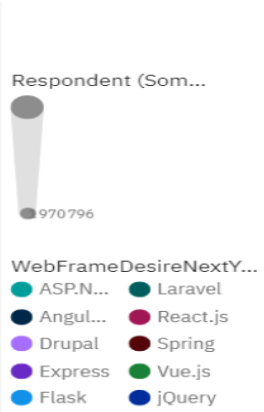
DASHBOARD TAB 2

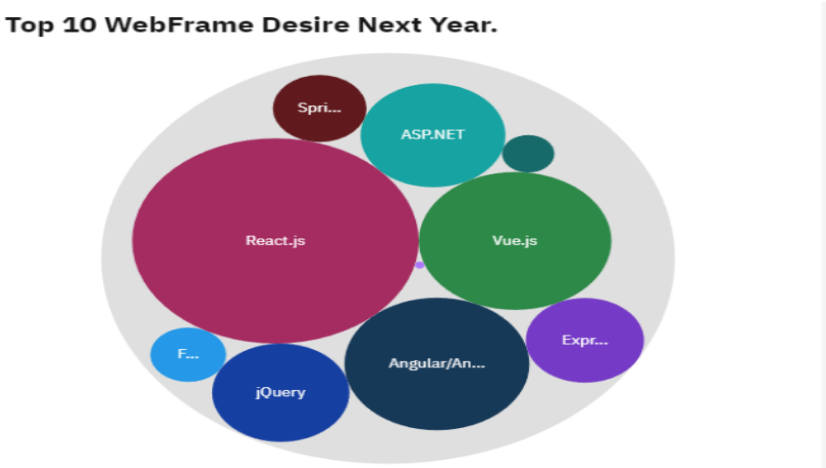
Future Technology Trend.











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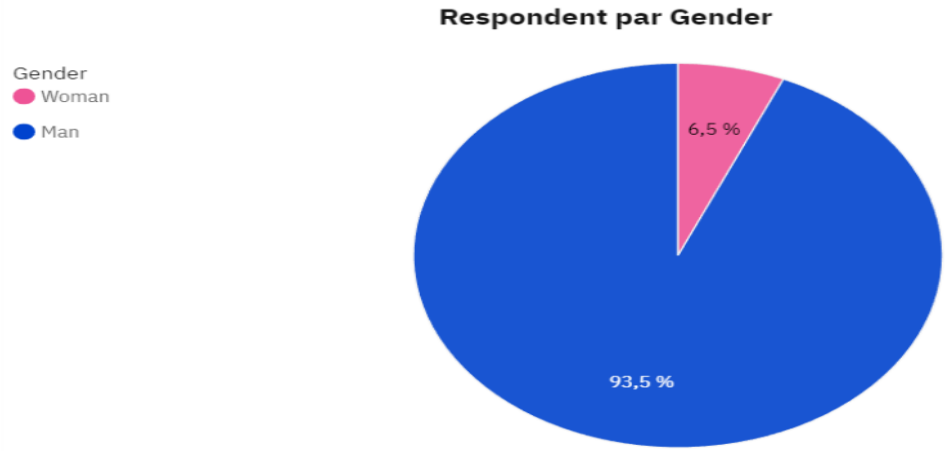
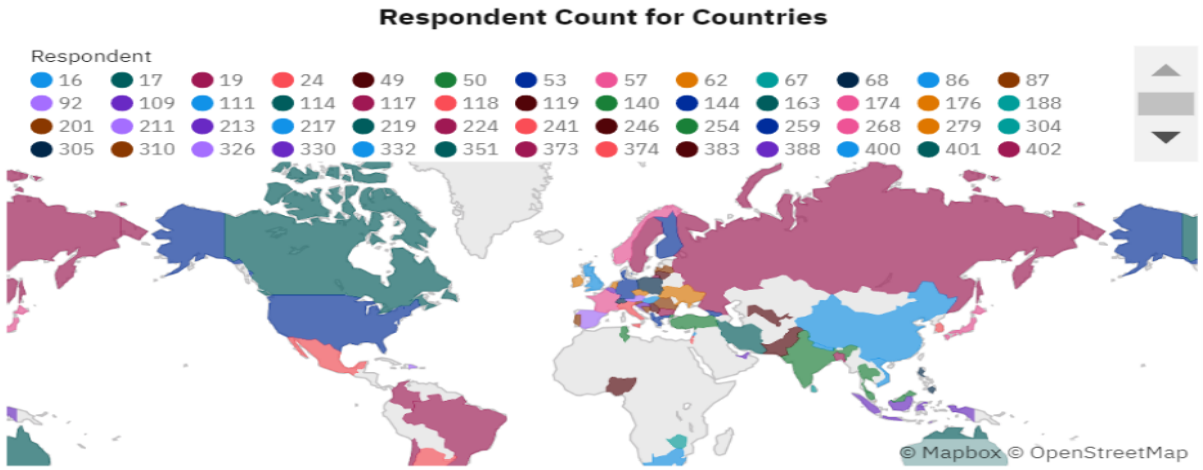
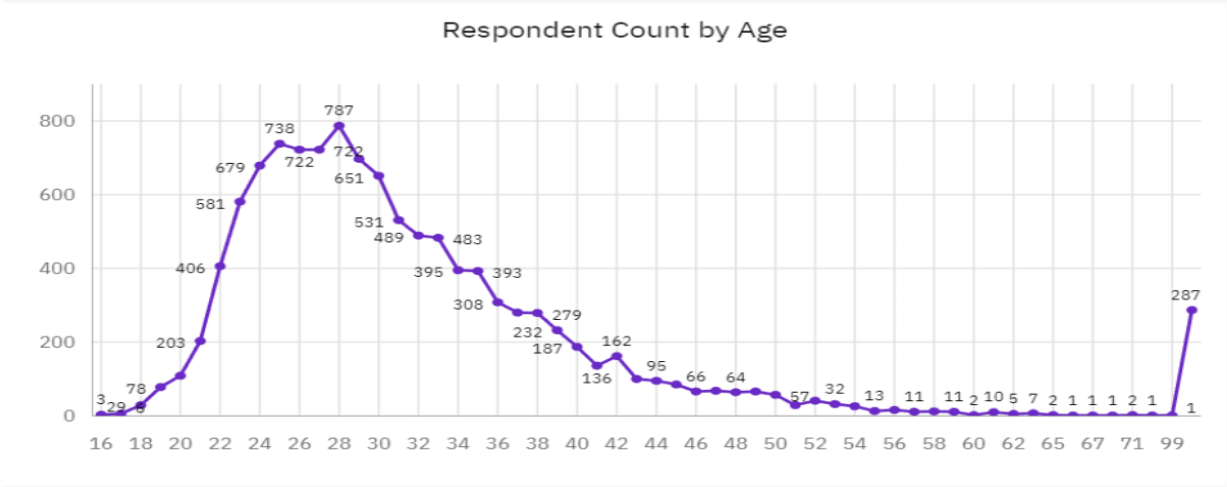
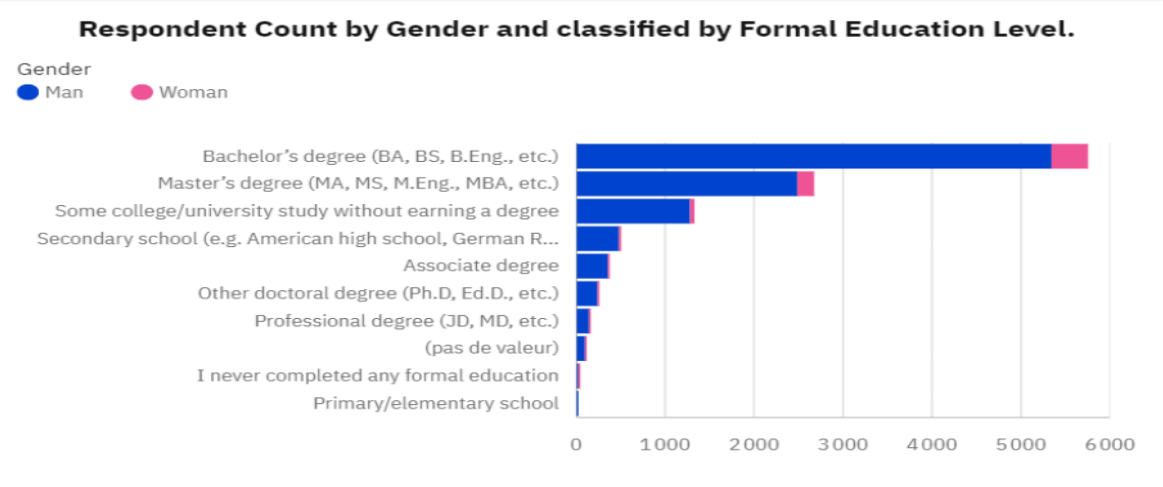
DASHBOARD TAB 3

Demographics.









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DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- The demand for **JavaScript** and **Python** is increasing, highlighting their crucial roles in web development and data science.
- **PostgreSQL** and NoSQL databases like **MongoDB** and **Redis** are becoming essential for modern data management.
- Traditional databases like **Oracle** and **Microsoft SQL Server** are declining in usage as organizations favor agile, cloud-native alternatives.

Implications

Organizations should prioritize training and hiring for these languages to leverage their capabilities and remain competitive.

Companies should transition to PostgreSQL and invest in NoSQL solutions to enhance data handling, performance, and scalability.

Enterprises should reassess their database strategies and adopt more flexible, cost-effective solutions to meet current and future needs.

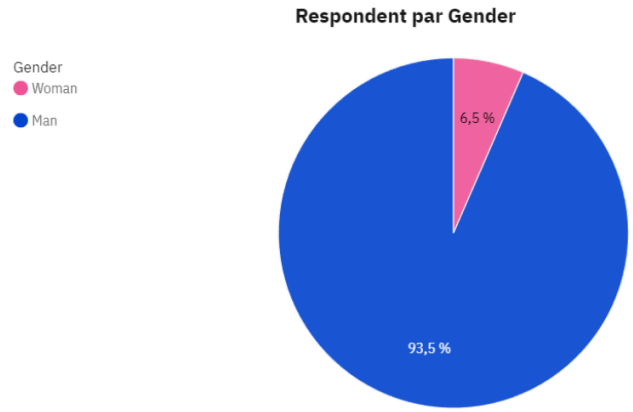
CONCLUSION

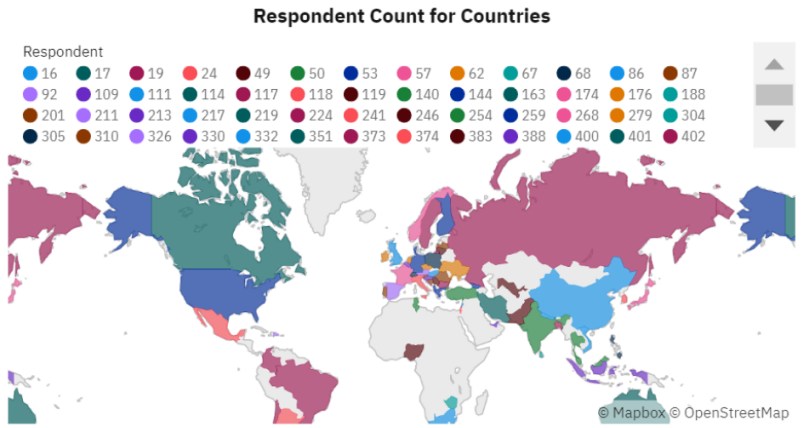
The analysis of technology trends using the IBM Cognos Analytics dashboard highlights the dominance of JavaScript and Python in web development and data science. The growing preference for PostgreSQL and NoSQL databases like MongoDB and Redis emphasizes the need for scalable data management solutions.

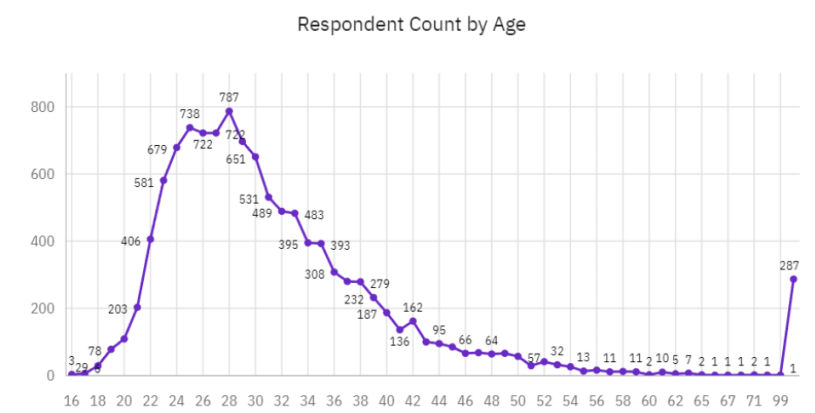
Organizations must adapt by investing in modern technologies and training to remain competitive. Transitioning from traditional databases to agile, cloud-native alternatives will enable businesses to respond effectively to market changes. This dashboard serves as a crucial tool for stakeholders to make informed decisions and align their technology investments for the future.

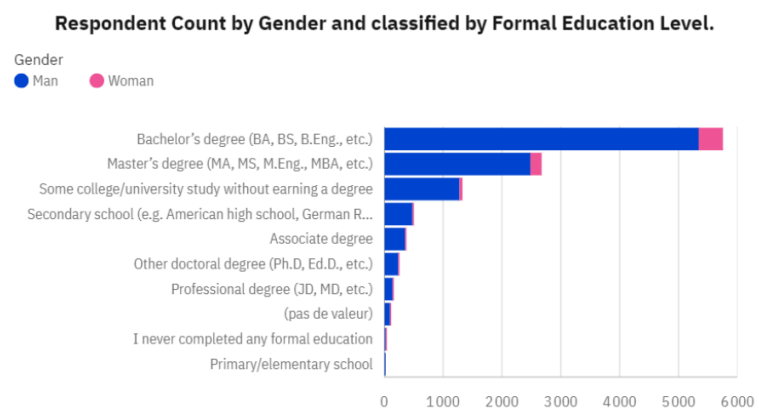
APPENDIX

Demographics.

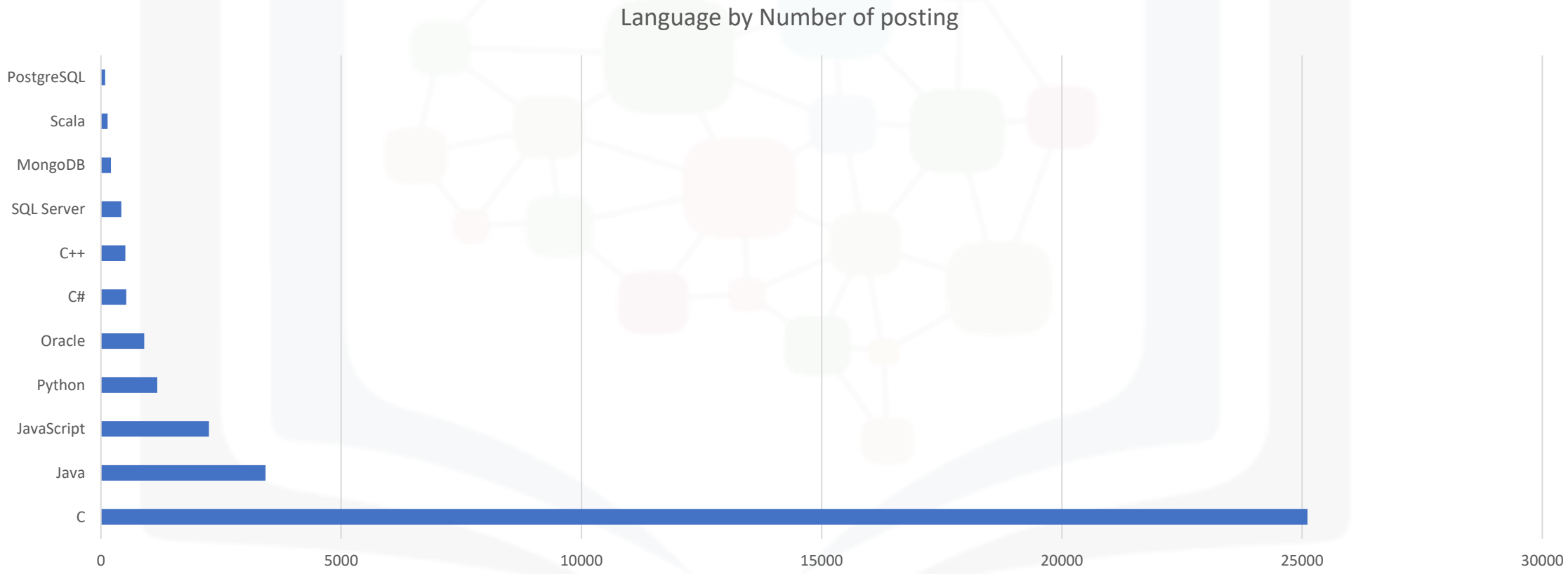








JOB POSTINGS



POPULAR LANGUAGES