Analysis on Future Program Skills

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2024-10-04

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EXECUTIVE SUMMARY

- This report provides a comprehensive analysis of current and future technology and programming language trends, highlighting key areas where businesses must focus to remain competitive. The findings are based on insights from technology usage, database preferences, and programming language trends.
- IBM Cognos was used to generate the graphs and dashboards, based on the data that have been analyzed in the different methodologies presented.

INTRODUCTION

In the rapidly evolving landscape of technology, understanding current and future trends is crucial for organizations looking to maintain a competitive edge. This analysis explores key trends in technology usage, database preferences, and programming languages, providing insights into where the industry is headed and how businesses should prepare.

- Programming Language Trends
- Database Preferences
- Current Technology Usage vs. Future Technology Trends

METHODOLOGY

The following methods were applied for this study

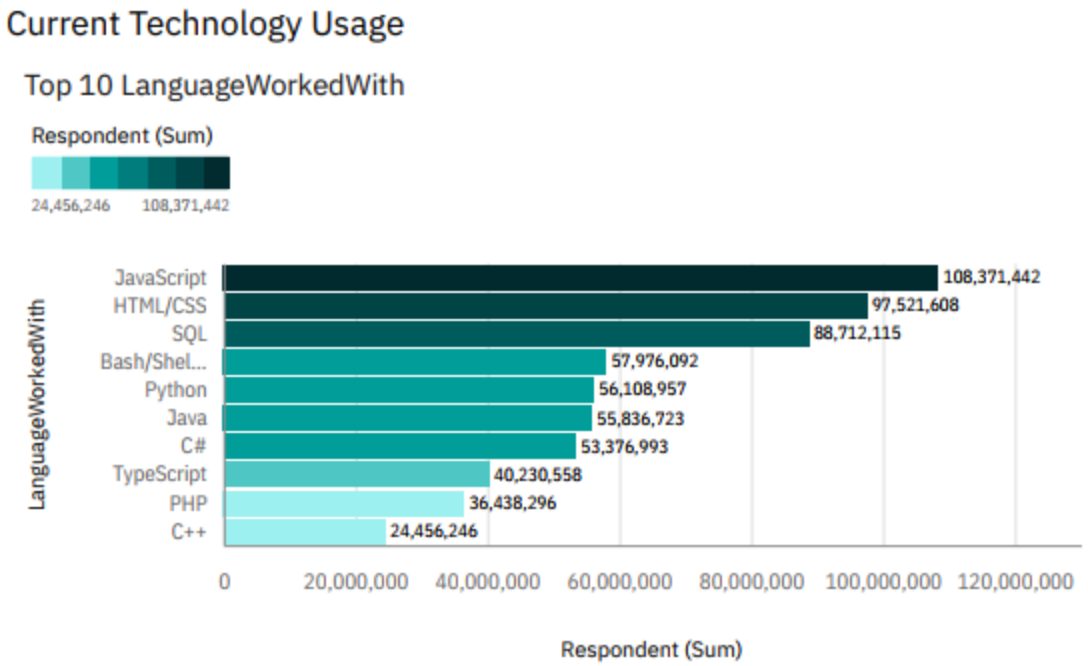
- Collecting Data Using API
- Data Wrangling
- Exploratory Data Analtics
- Data Visualizations
  - Building Charts
  - Building Dashboards

RESULTS

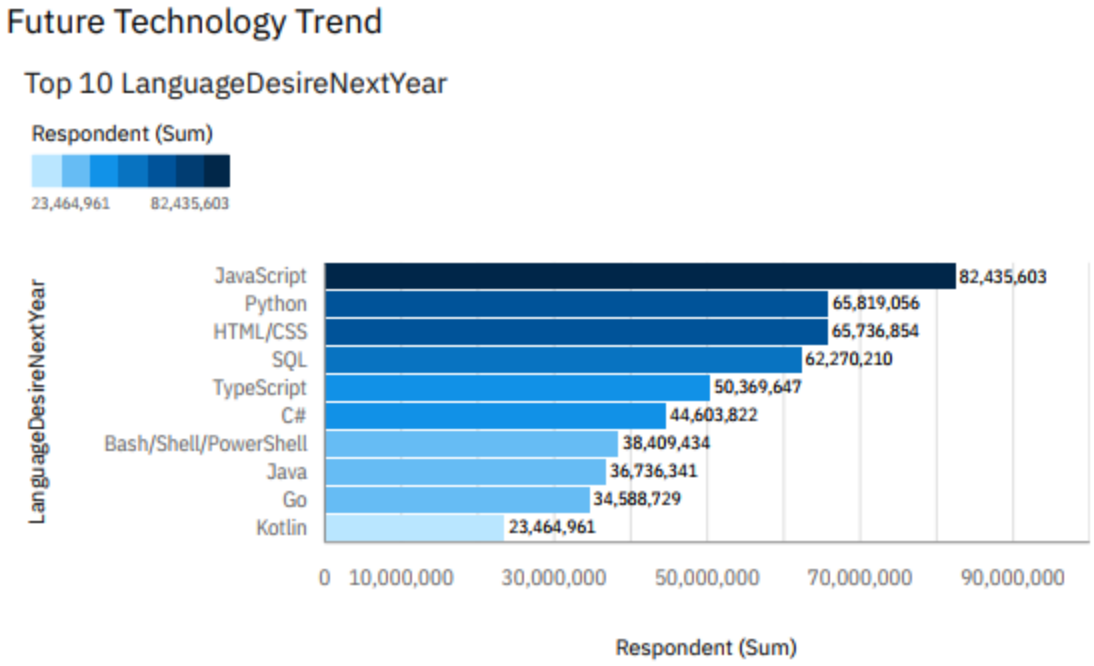
- The results obtained from the data analysis are shown below.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

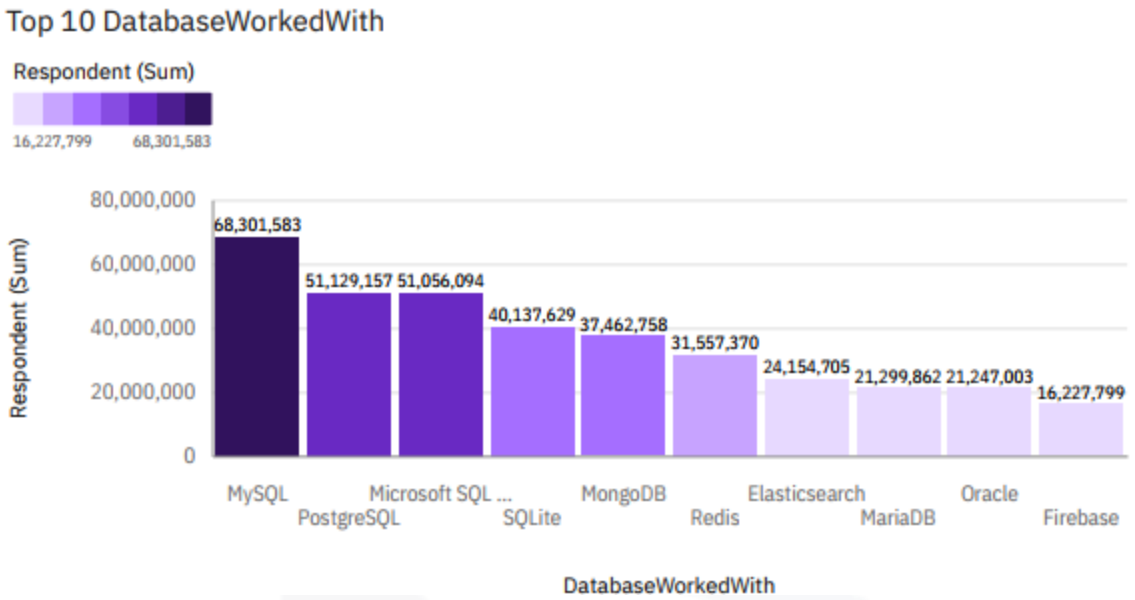
- JavaScript ranks as the most used programming language in both current usage (over 108 million respondents) and future desired languages (82 million). Its place at the top shows no signs of decline.
- Python is currently the fifth most-used language but jumps to second place in the list of most desired languages for the next year, with over 65 million respondents expressing interest.
- SQL consistently appears in both current usage (third most-used language) and future trends (fourth most-desired language), reflecting its ongoing importance in database management and querying.

Implications

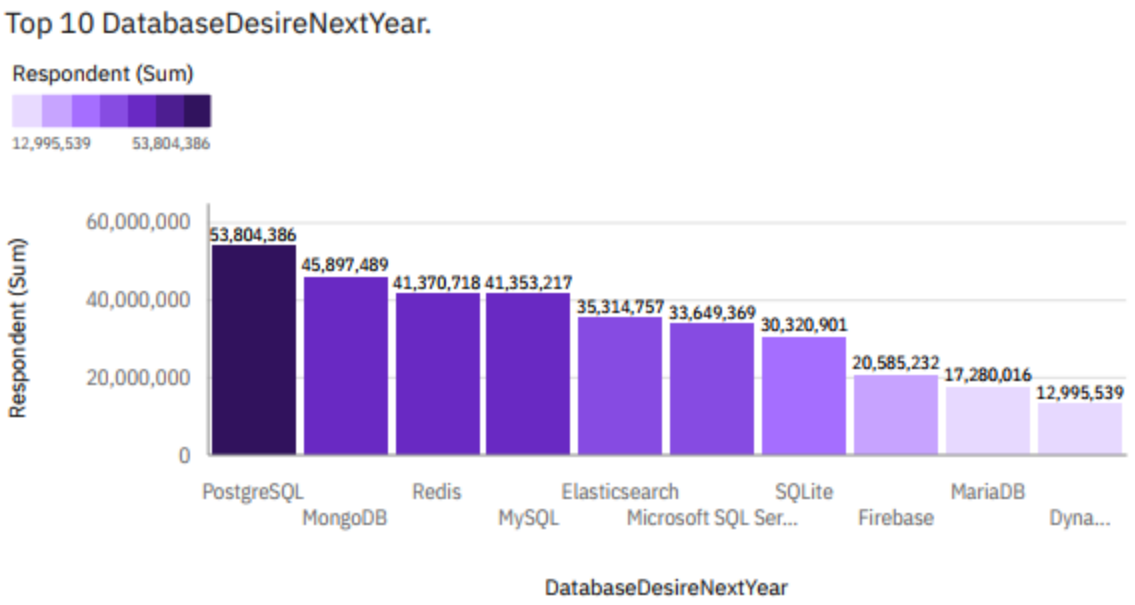
- JavaScript remains the backbone of web development and will continue to dominate front-end and back-end development ecosystems (Node.js).
- Python's surge is driven by its versatility and growing adoption in areas such as data science, machine learning, AI, and automation.
- SQL's continued relevance emphasizes the need for businesses to maintain strong database management systems.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL ranks second in the current database usage but takes the top spot for the most desired database for the future, with over 53 million respondents showing interest.
- While MySQL leads the current usage chart with the highest number of respondents, it ranks fourth on the list of databases desired for the next year, indicating a potential decline in preference.
- Redis, a database that was lower on the list of current usage, climbs to the third spot in the desired database list, showing significant future interest.

Implications

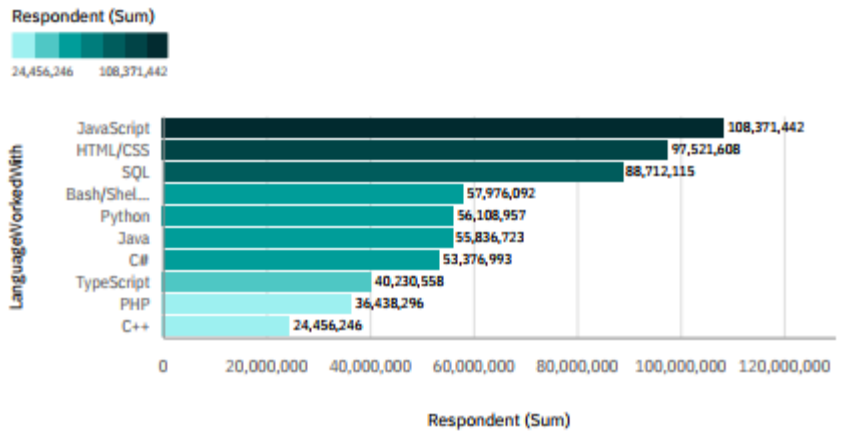
- This trend suggests a growing interest in PostgreSQL due to its open-source nature, flexibility, and performance capabilities.
- This shift may suggest that users are transitioning to more scalable or modern databases like PostgreSQL or MongoDB.
- Redis is known for its speed and efficiency in handling caching and in-memory data structures. Its rising popularity implies that more companies may adopt Redis for performance-critical applications, making it essential to incorporate Redis into new architecture strategies.

DASHBOARD

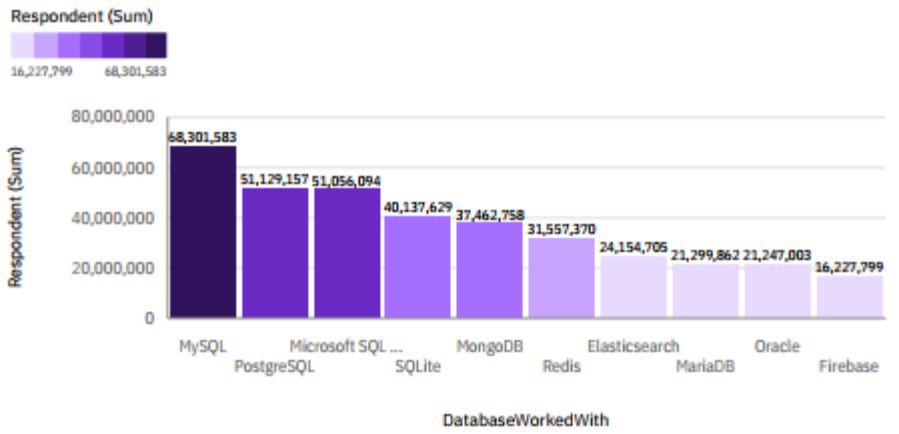
https://github.com/lazarox10/IBM-Data-Analyst-Capstone-Project/blob/44391af9f91631660f759b3b96132586060e3b90/5.%20Building%20a%20Dashboard/b.%20Building%20A%20Dashboard%20With%20IBM%20Cognos%20Analytics.pdf

DASHBOARD TAB 1

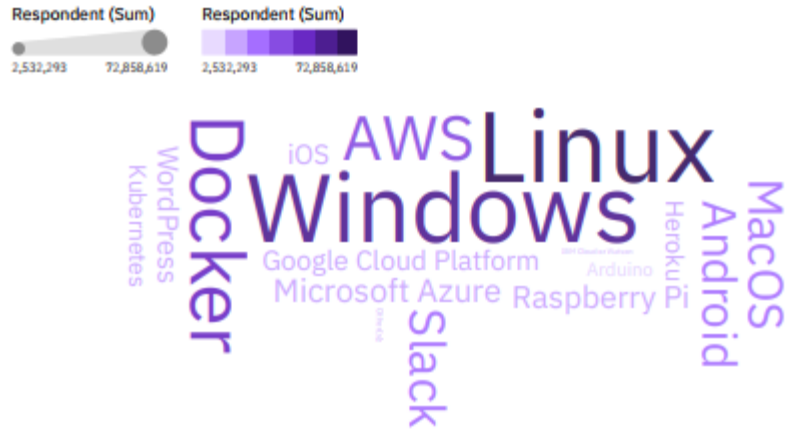
Top 10 LanguageWorkedWith



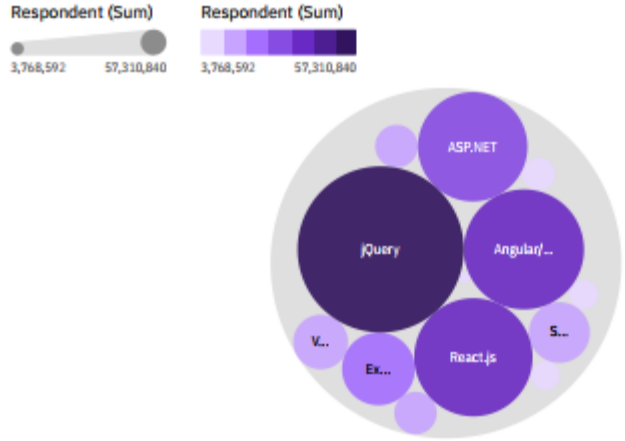
Top 10 DatabaseWorkedWith



PlatformWorkedWith.



Top 10 WebFrameWorkedWith.



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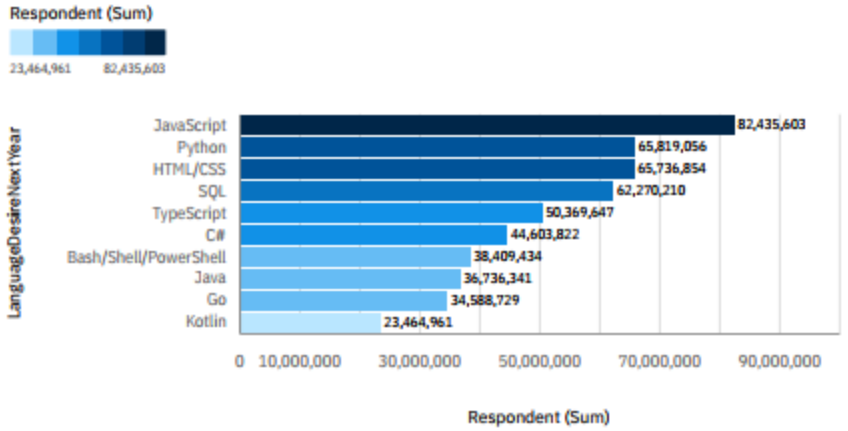
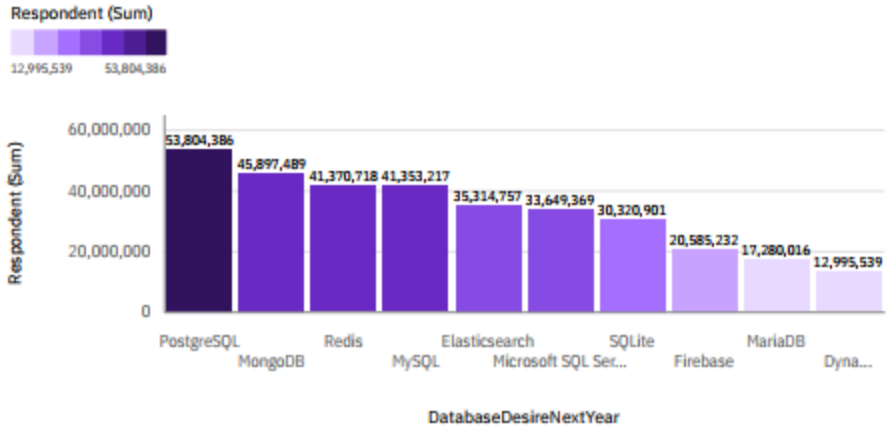
DASHBOARD TAB 2

Future Technology Trend

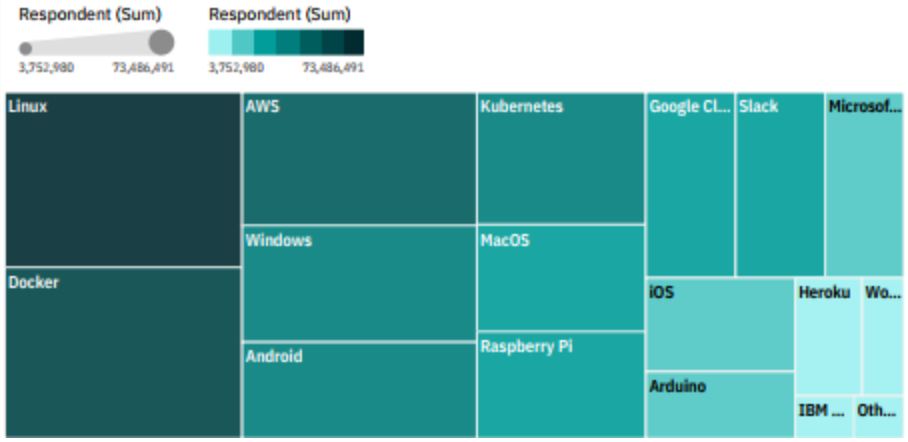
Top 10 LanguageDesireNextYear



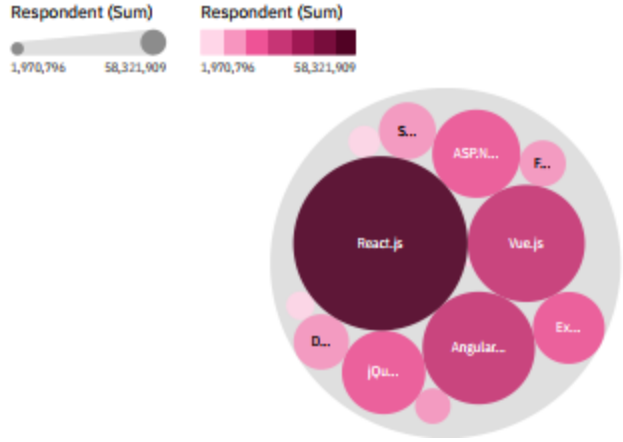
Top 10 DatabaseDesireNextYear.



PlatformDesireNextYear



Top 10 WebFrameDesireNextYear



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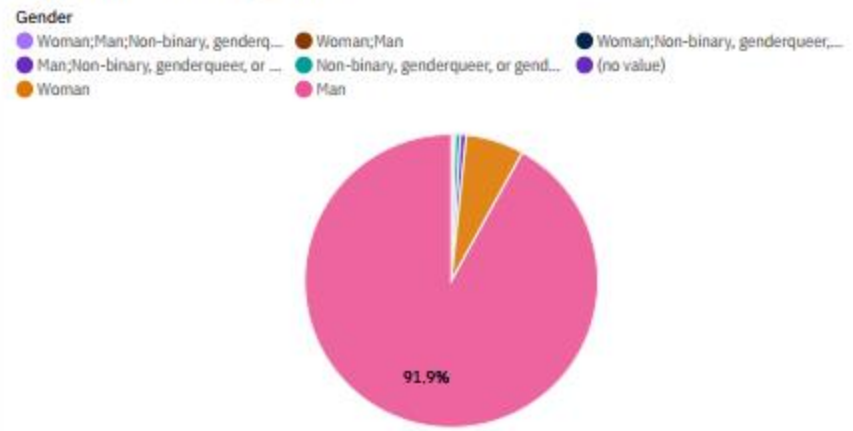
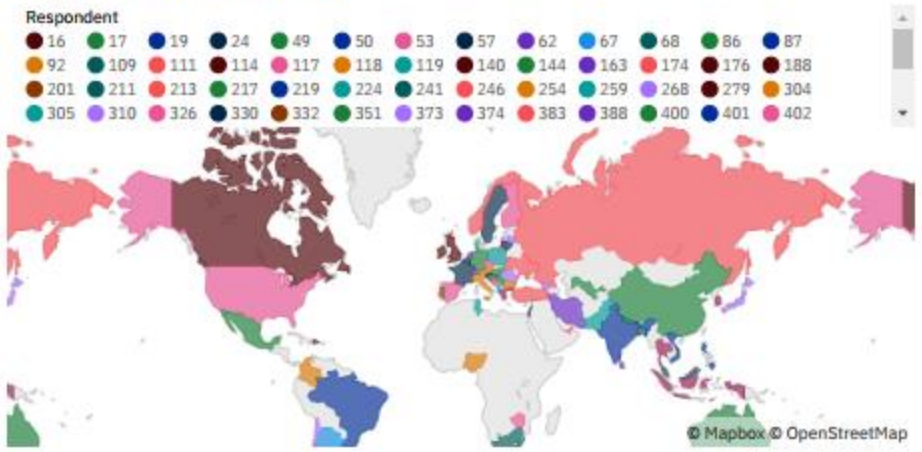
DASHBOARD TAB 3

Demographics

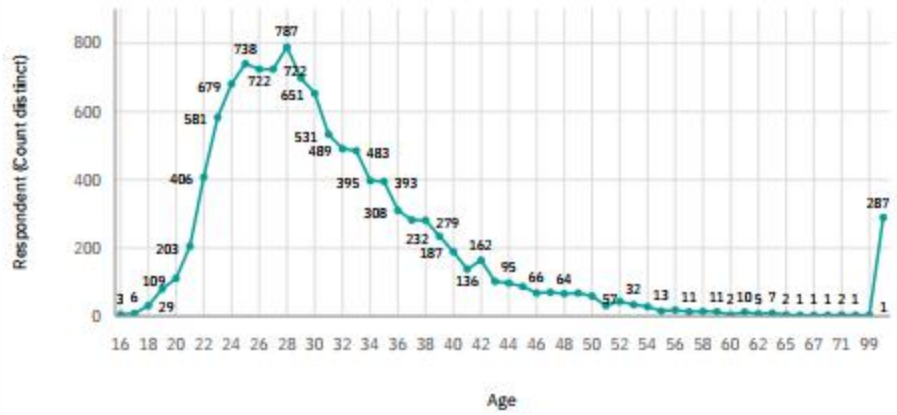
Respondent classified by Gender



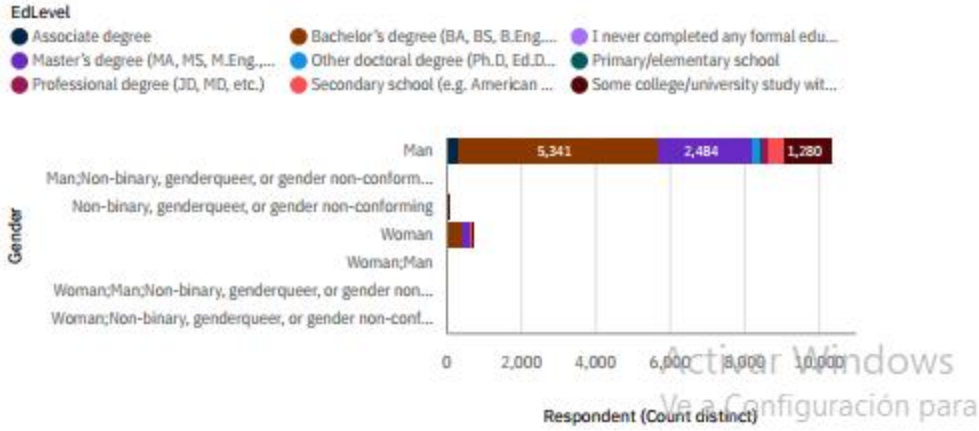
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level.



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DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Cloud platforms (AWS, Google Cloud) and container technologies (Docker, Kubernetes) dominate both current and future trends.
- PostgreSQL and Linux are increasingly favored for future use.
- JavaScript leads current and future use, with Python rapidly growing in demand.

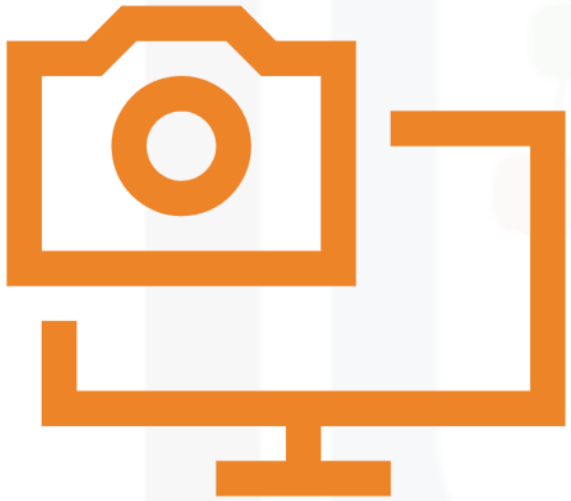
Implications

- Companies must adopt cloud-native, containerized solutions to remain scalable and competitive. Delaying adoption may lead to higher costs and slower operations.
- Organizations should invest in open-source technologies to reduce costs and improve flexibility, ensuring long-term adaptability in their tech stack.
- Companies should focus on these languages to remain competitive in web development (JavaScript) and data-driven fields (Python), especially in AI and automation.

CONCLUSION

- JavaScript continues to dominate web development, while Python's increasing demand reflects its growing role in AI, machine learning, and automation. Mastering these languages is critical for businesses to remain competitive in both fields.
- The rising preference for PostgreSQL and Linux highlights the growing importance of open-source solutions. Businesses should integrate these technologies to reduce costs and foster innovation in their IT infrastructure.
- Go, Kotlin, Redis, and MongoDB are gaining momentum, especially in cloud computing, mobile app development, and real-time data processing. Businesses should invest in these technologies to capitalize on new opportunities and drive innovation in their respective domains.
- Organizations need to adopt cloud platforms and containerization technologies like AWS, Google Cloud, Docker, and Kubernetes to remain scalable, agile, and competitive in a rapidly evolving market.

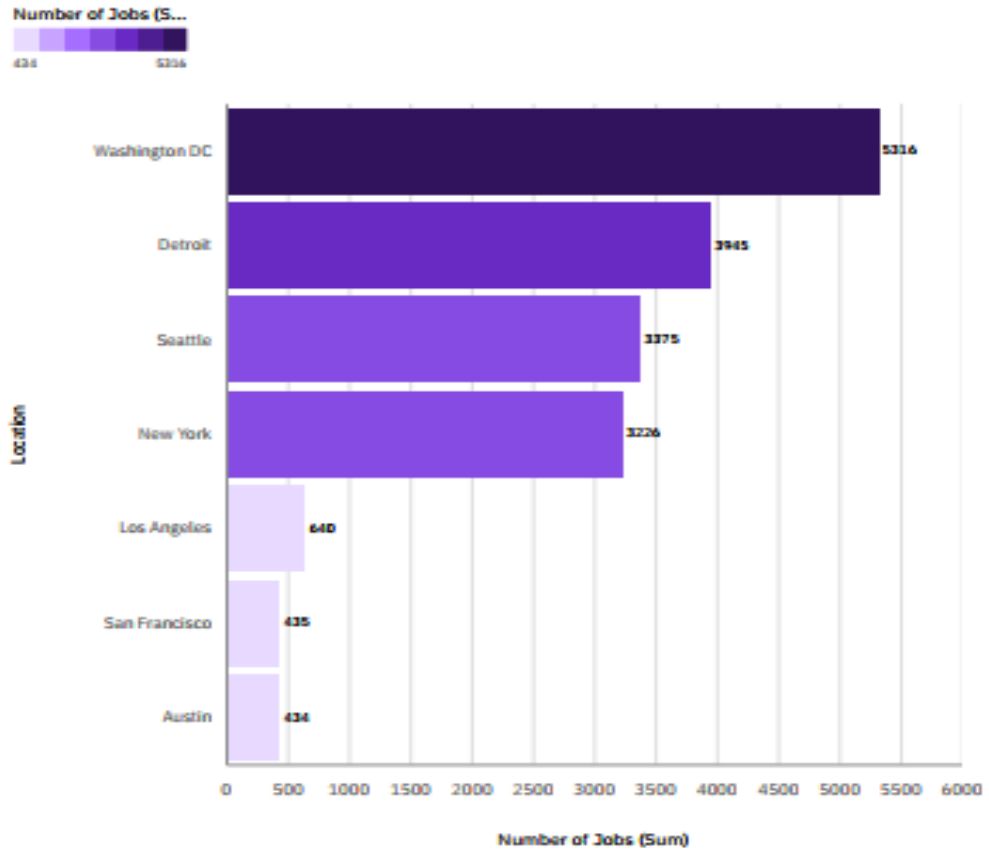
APPENDIX



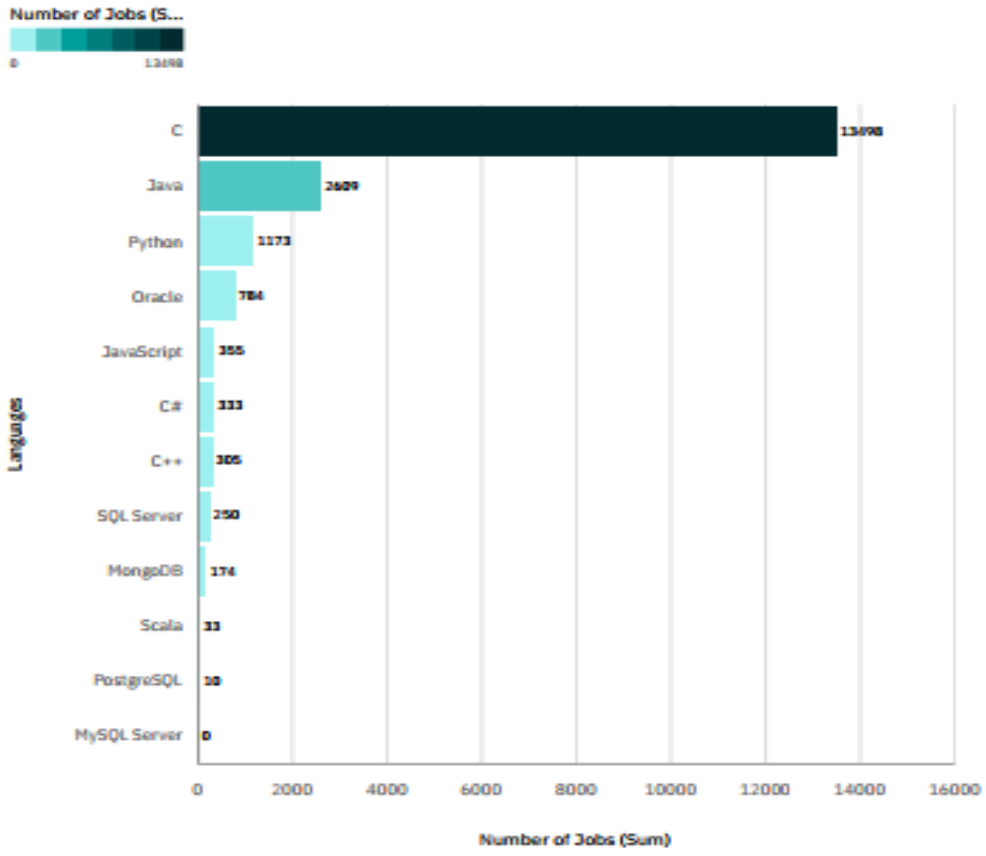
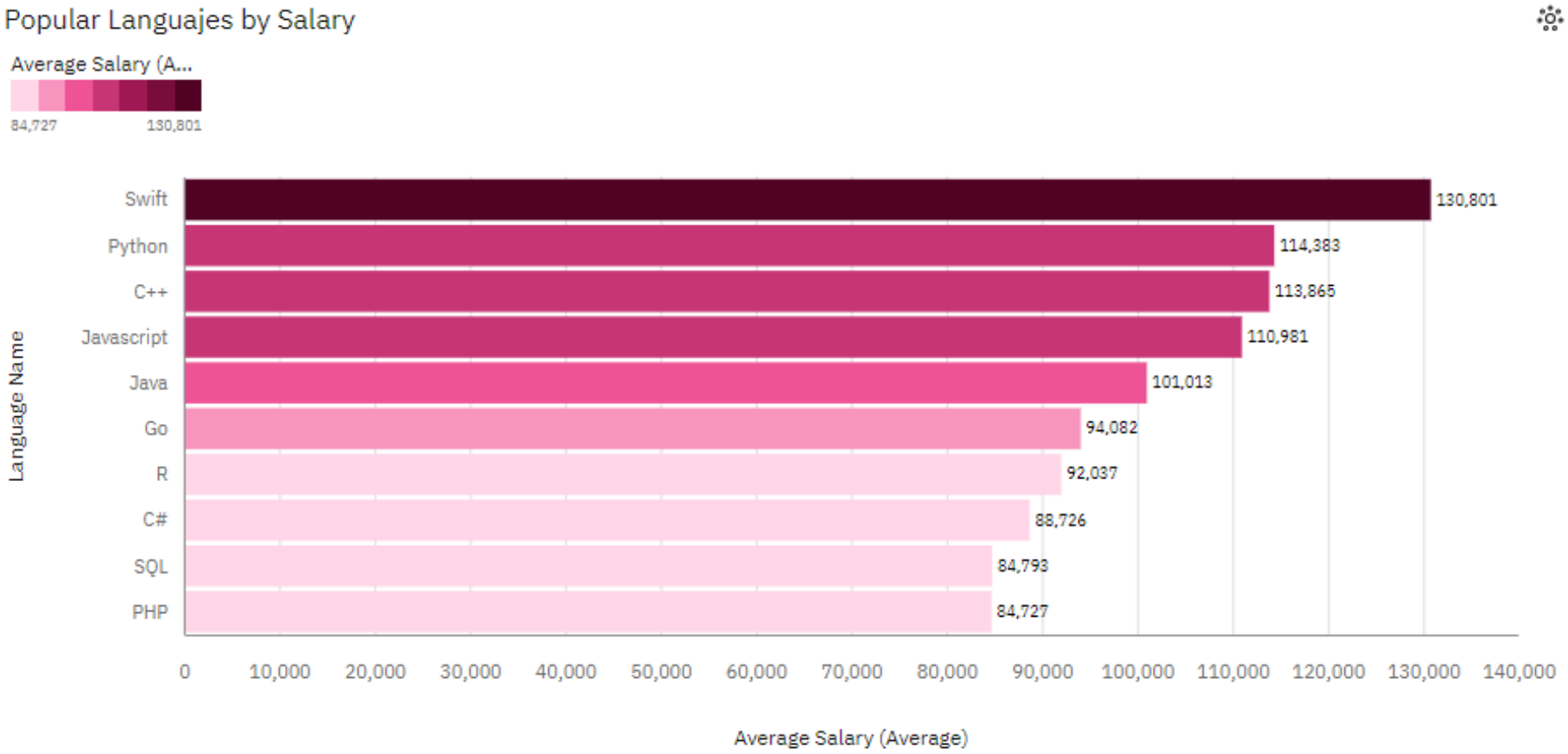
JOB POSTINGS

Jobs Postings

Number of Jobs Posting by Location



Number of Jobs Posting by Languages



POPULAR LANGUAGES