How to remain competitive in a changing Tech Environment ? Analysis of Developer Preferences and Identification of future skill requirements

Olivier Bajoux

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IBM Developer

SKILLS NETWORK

OUTLINE

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- Discussion
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EXECUTIVE SUMMARY

- Share results of the Stack Overflow Developer Survey 2019 and give a trend in developer preferences allowing organizations to get a competitive advantage.
- Population target : developers across multiple technologies, platforms and demographics.
- Key findings :
  - JavaScript as the most-used programming language and continue to dominate as the most desired one.
  - PostgreSQL as a leading database for future projects due to its scalability, open-source flexibility, and advanced functionality.
  - Emerging platforms like Kubernetes and Docker showing increased desirability.
- The analysis reveals trends in developer preferences that can guide hiring and technology adoption strategies.
- Results are presented through interactive dashboards for easy exploration and insights.

INTRODUCTION

- This analysis is based on survey data to understand trends in programming languages, databases, platforms and developer demographics.
- The goal is to identify current usage and future preferences to inform decision-making in technology strategy.
- Data was collected via a global survey of developers and analyzed using Cognos Analytics.
  - Key metrics include usage, desirability and demographic insights
  - Results are visualized in dashboards and charts for actionable insights

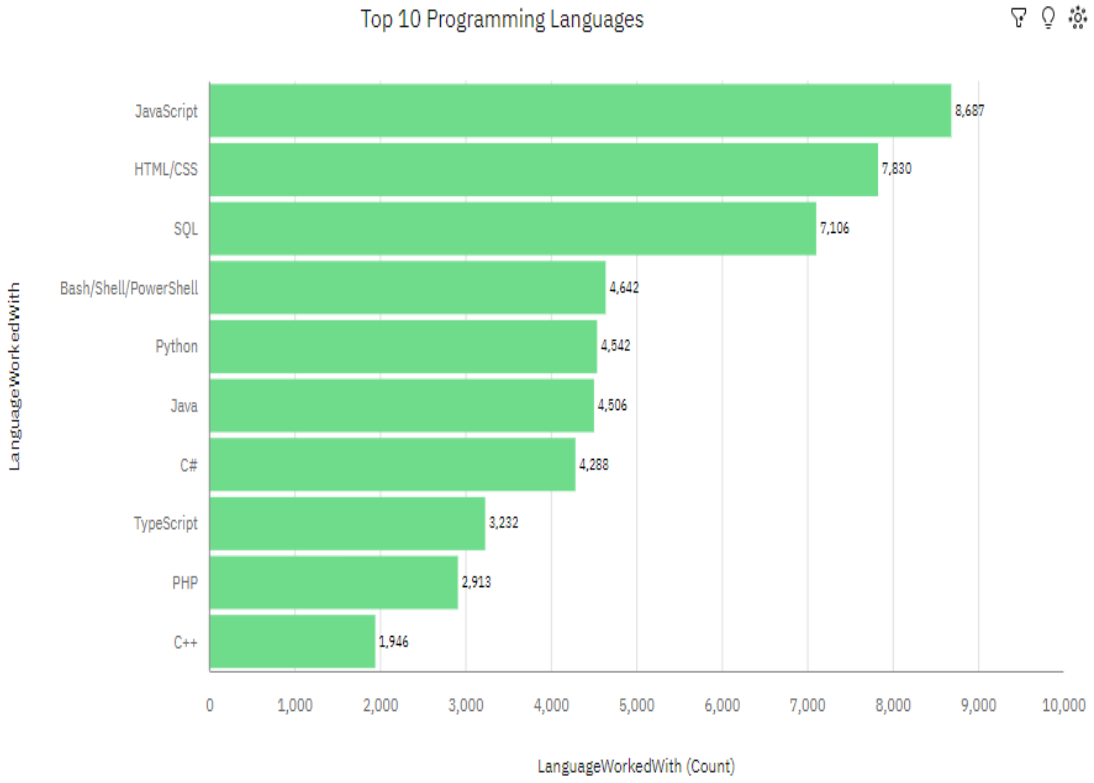
METHODOLOGY

- Data collection involved a survey distributed to developers worldwide.
- The dataset includes metrics like language usage, database preferences and platform desirability.
- Dashboards were created using IBM Cognos Analytics for interactive visualization.
- Steps included data cleaning, trend analysis and visualization design.
  - Visualization tools included bar charts, geographic maps and comparison graphs
  - Focus areas were categorized by current trends, future aspirations and respondent demographics

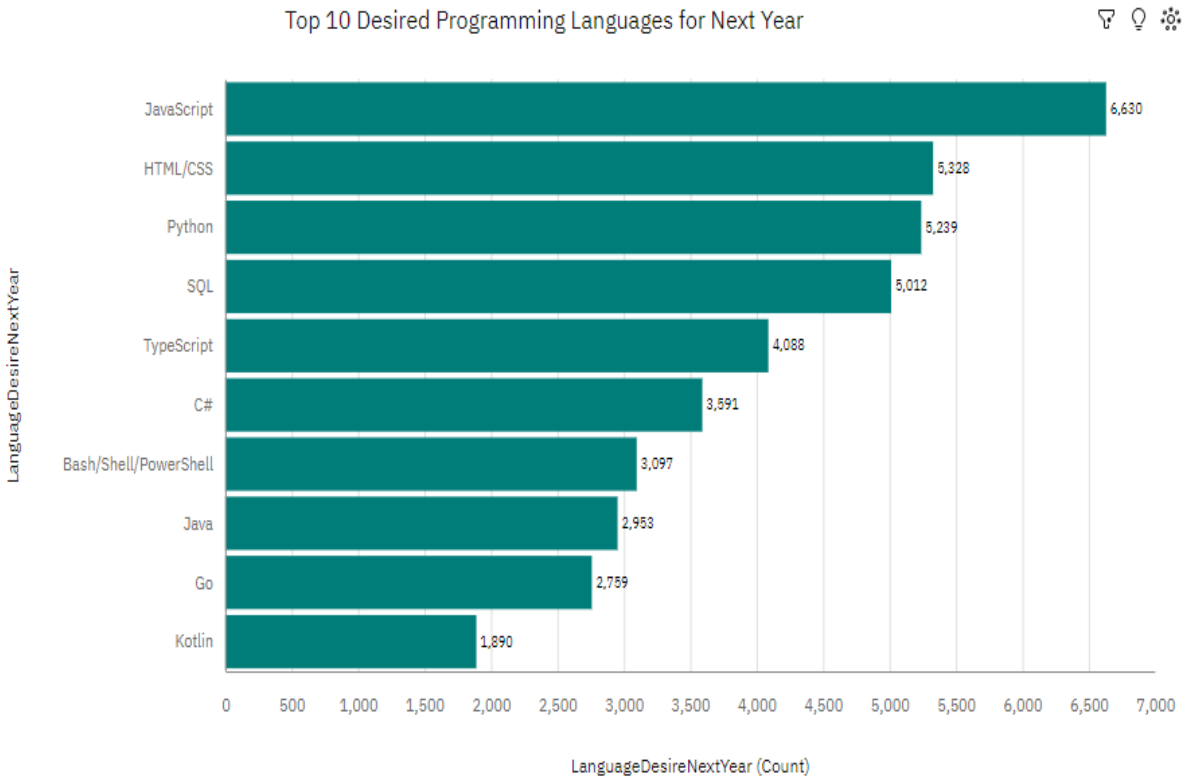
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

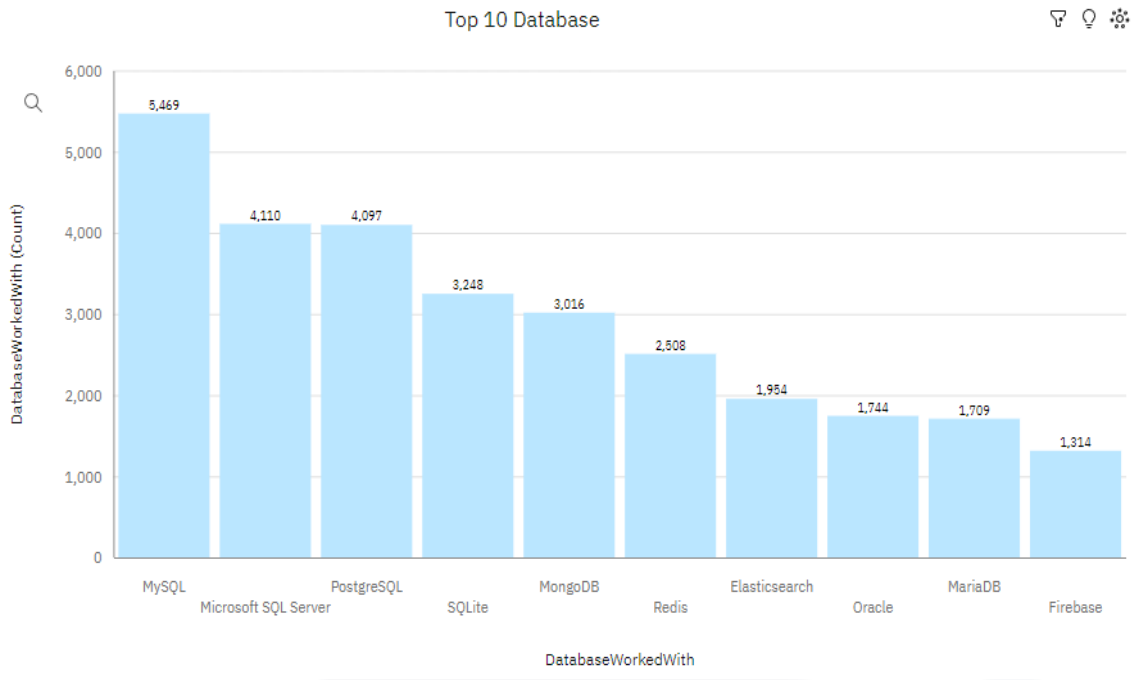
- JavaScript continues to dominate as the most used programming language due to its role in front-end and full-stack development.
- Python shows a sharp rise in desirability, reflecting its growing importance in AI, machine learning and data science.
- HTML/CSS and SQL are essential due to their foundational role in web and database applications.

Implications

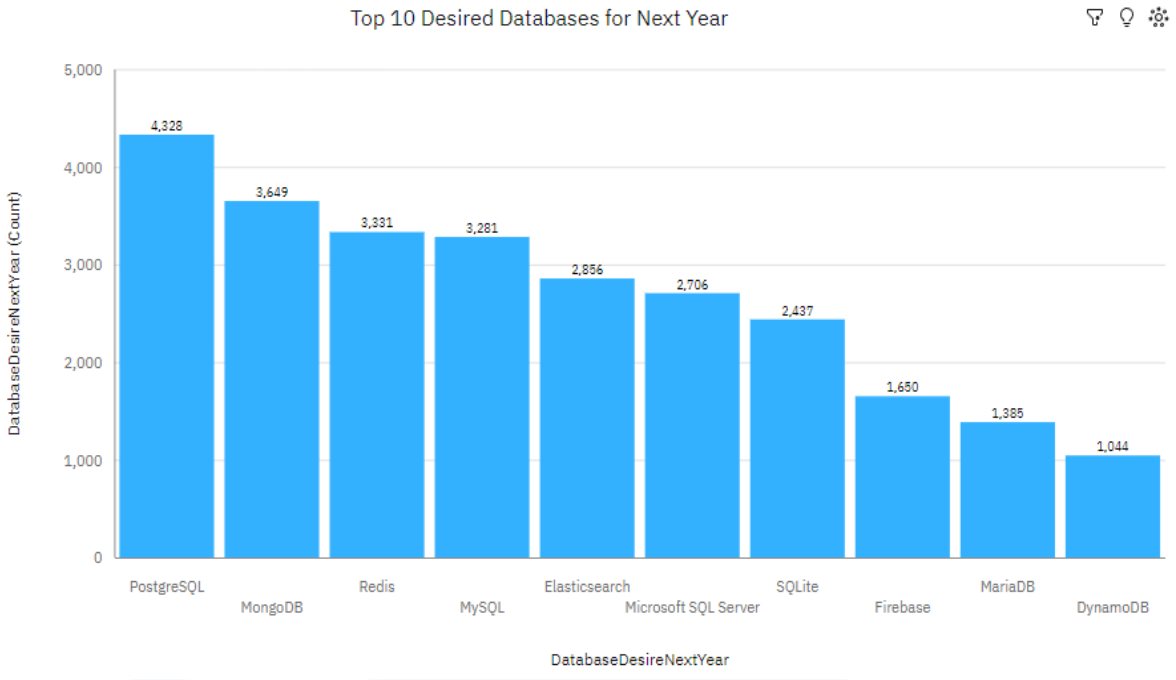
- Organizations should prioritize hiring developers with strong JavaScript and Python skills to meet current and future demands.
- Training programs for developers should include Python for AI and JavaScript for web development.
- Emphasizing foundational languages like HTML/CSS and SQL ensures a versatile skillset among development teams.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL and Microsoft SQL Server are the most widely used databases, valued for their reliability and compatibility with various applications.
- PostgreSQL emerges as the most desired database for future projects due to its scalability, open-source flexibility, and advanced functionality.
- The trend indicates a preference for both established relational databases and modern, feature-rich solutions.

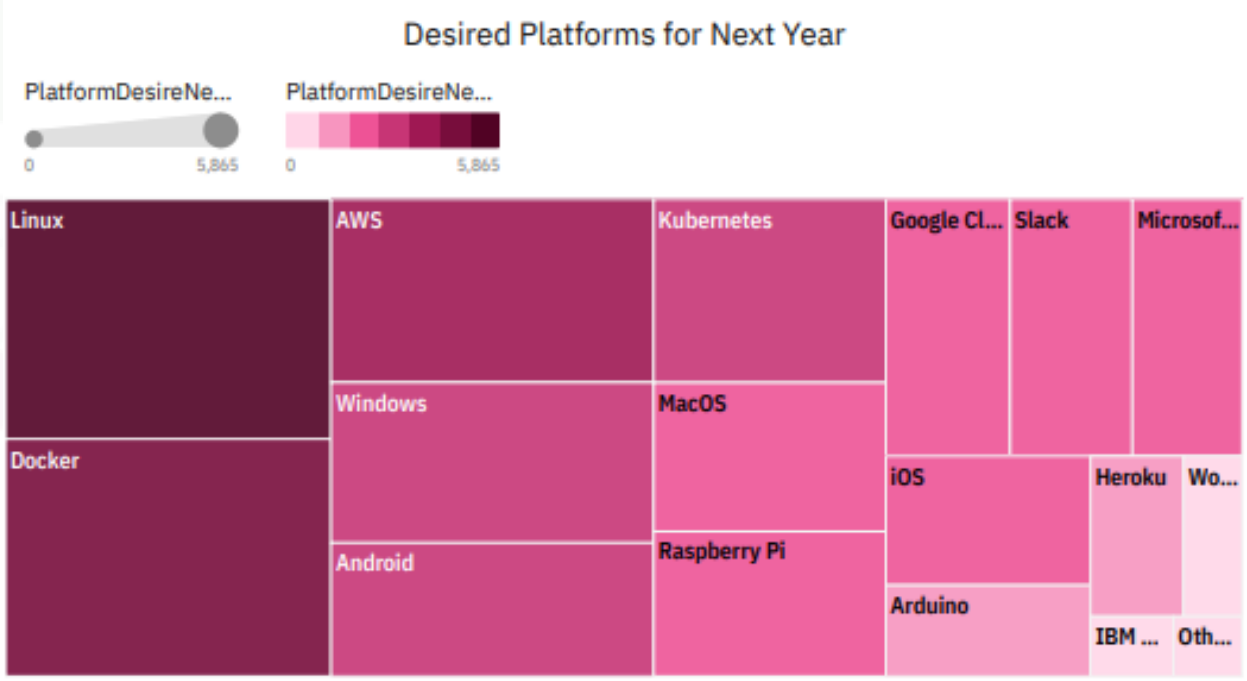
Implications

- Organizations should continue leveraging widely used databases like MySQL and SQL Server for their established ecosystems.
- Training and adoption of PostgreSQL can provide long-term benefits for scalability and innovation in data management.
- Companies should assess their database needs and consider transitioning to or integrating PostgreSQL where advanced features are required.

PLATFORM TRENDS

Current Year

Next Year



PLATFORM TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript remains the most used and desired programming language, pivotal for web and full-stack development.
- PostgreSQL is emerging as a preferred database due to its scalability and advanced features.
- Platforms like Kubernetes are gaining attraction reflecting a shift toward containerized workflows.

Implications

- Prioritize hiring developers with expertise in JavaScript and PostgreSQL to address current trends.
- Invest in training programs for container orchestration tools like Kubernetes to improve operational efficiency.
- Consider adopting PostgreSQL in projects requiring robust and scalable database solutions.

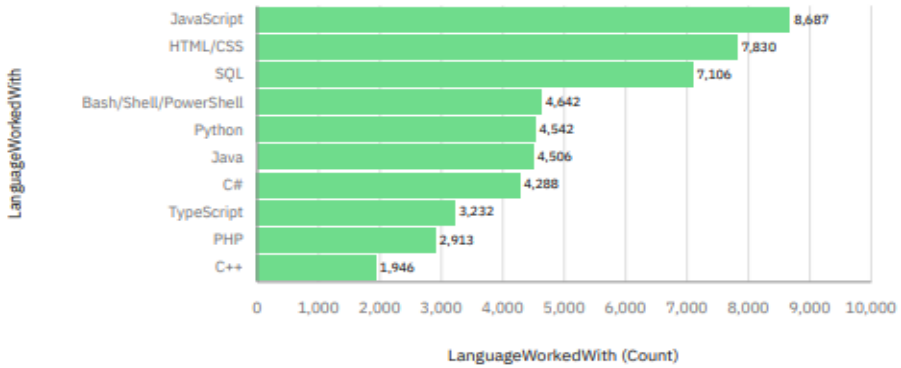
DASHBOARDS

State of the Tech Industry: Developer Preferences and Future Trends

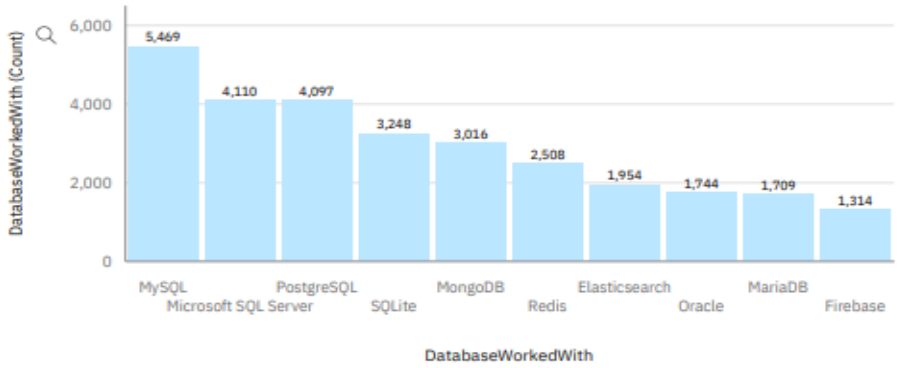
DASHBOARD TAB 1

Current Technology Usage

Top 10 Programming Languages

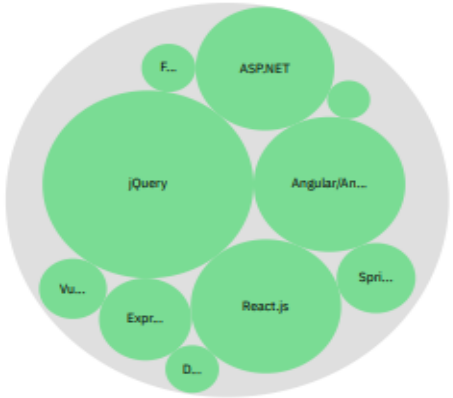


Top 10 Database



Platforms Used

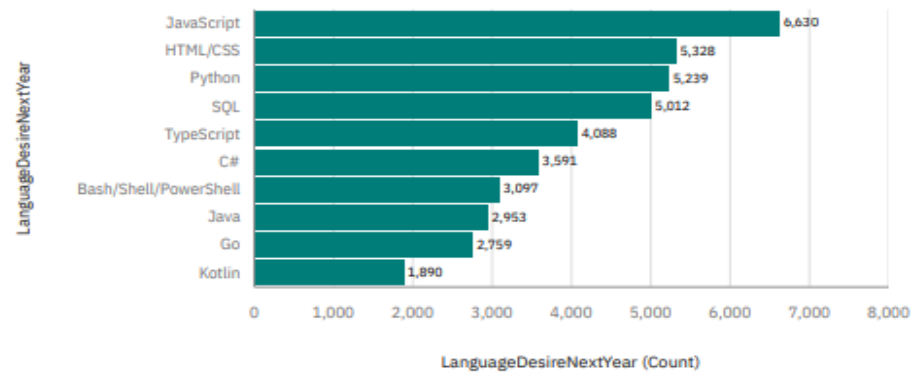
Top 10 Web Frameworks



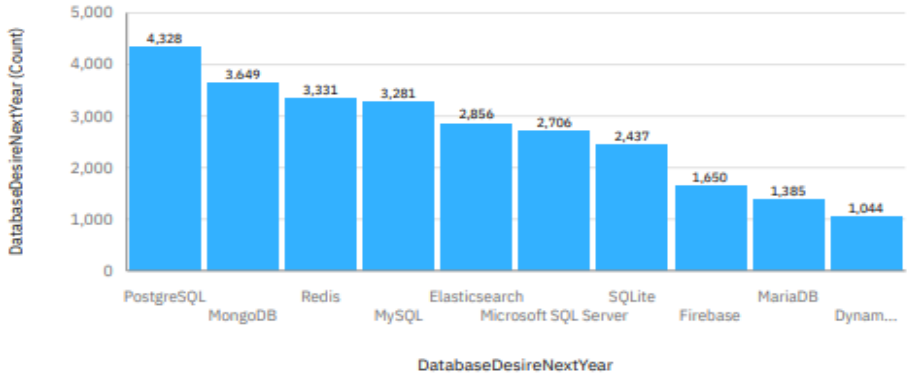
DASHBOARD TAB 2

Future Technology Trend

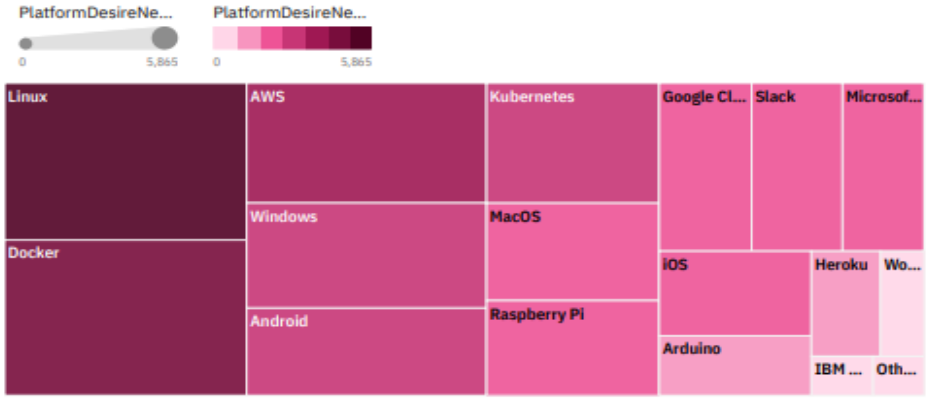
Top 10 Desired Programming Languages for Next Year



Top 10 Desired Databases for Next Year



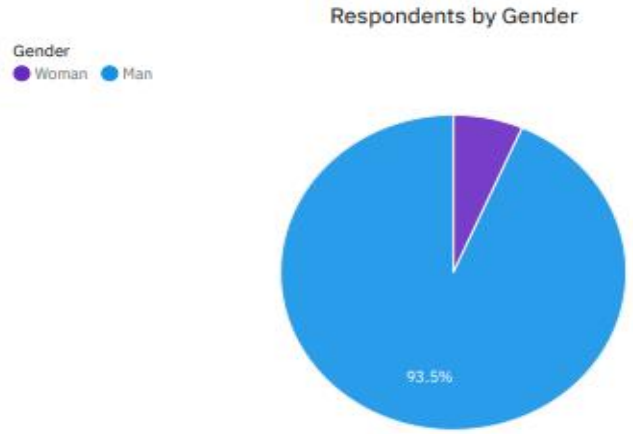
Desired Platforms for Next Year

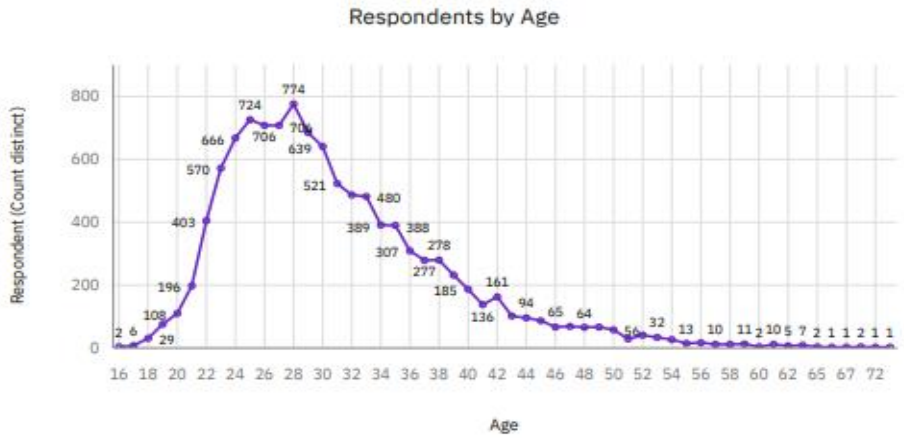


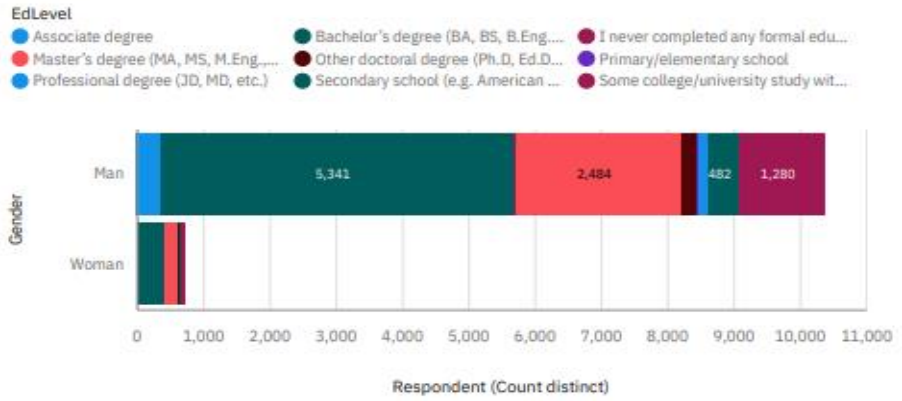
Top 10 Desired Web Frameworks for Next Year

DASHBOARD TAB 3

Demographics







DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript's dominance underscores its critical role in full-stack development.
- PostgreSQL's desirability suggests a preference for open-source, high-performance databases.
- The growing interest in platforms like Kubernetes reflects the need for container orchestration in modern workflows.

Implications

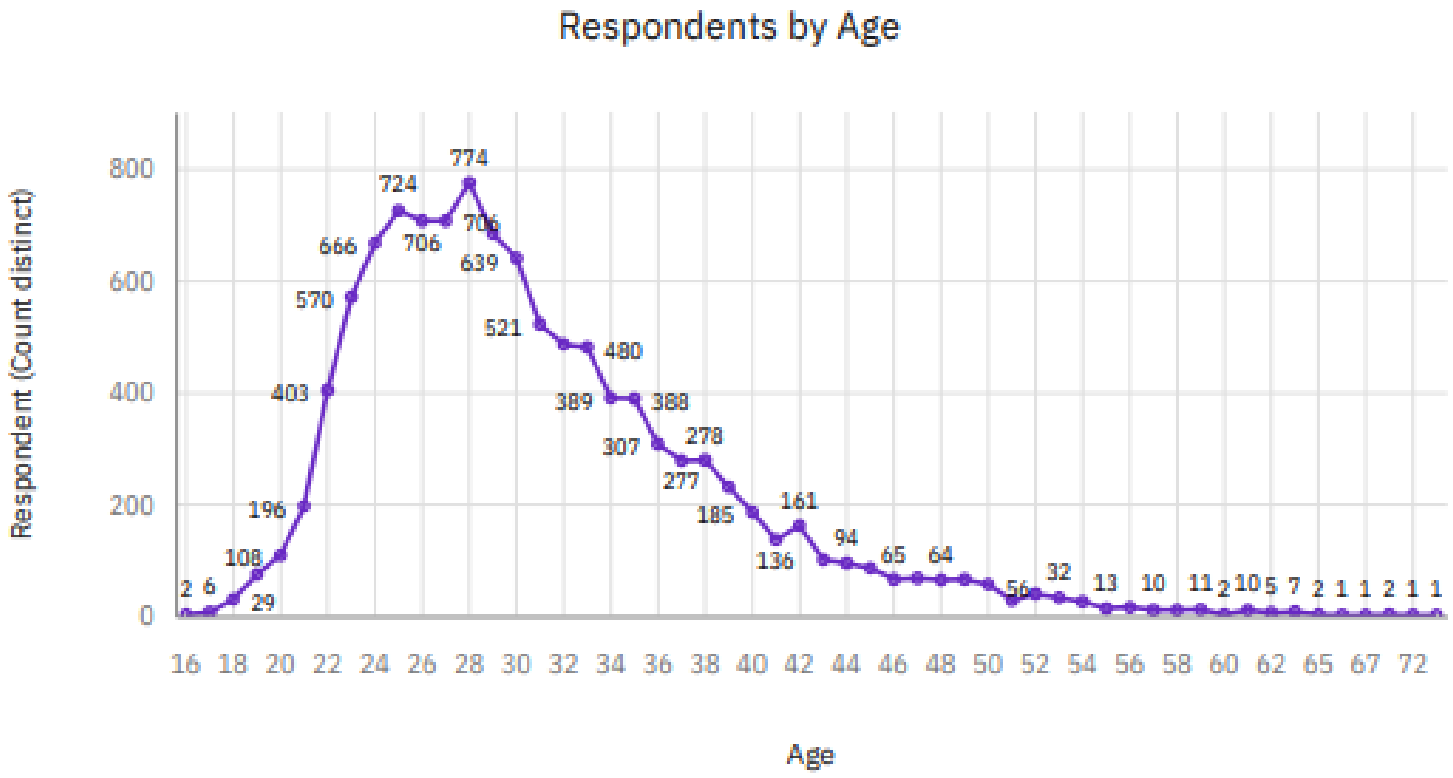
- Employers should prioritize these skills in hiring.
- Investment in training for desired technologies like Docker and Python is essential.
- Adoption of these trends can drive innovation and efficiency.

CONCLUSION

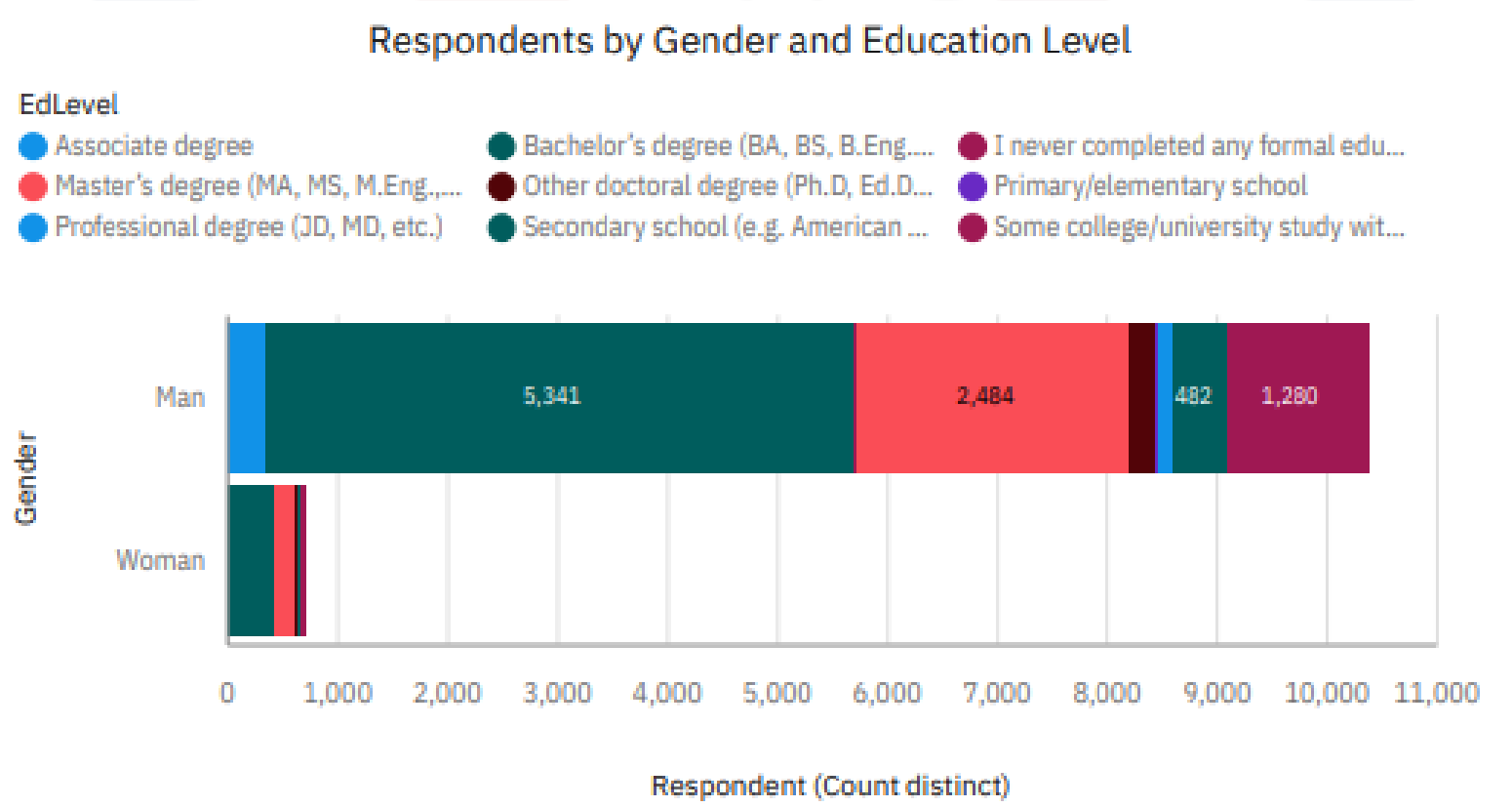
- The analysis provides actionable insights into developer preferences and technology trends.
- Organizations should align their strategies with emerging technologies to stay competitive.
- Future analysis could explore deeper correlations, such as the relationship between age and technology preferences.
- The interactive dashboards offer a flexible way to explore data further.

APPENDIX

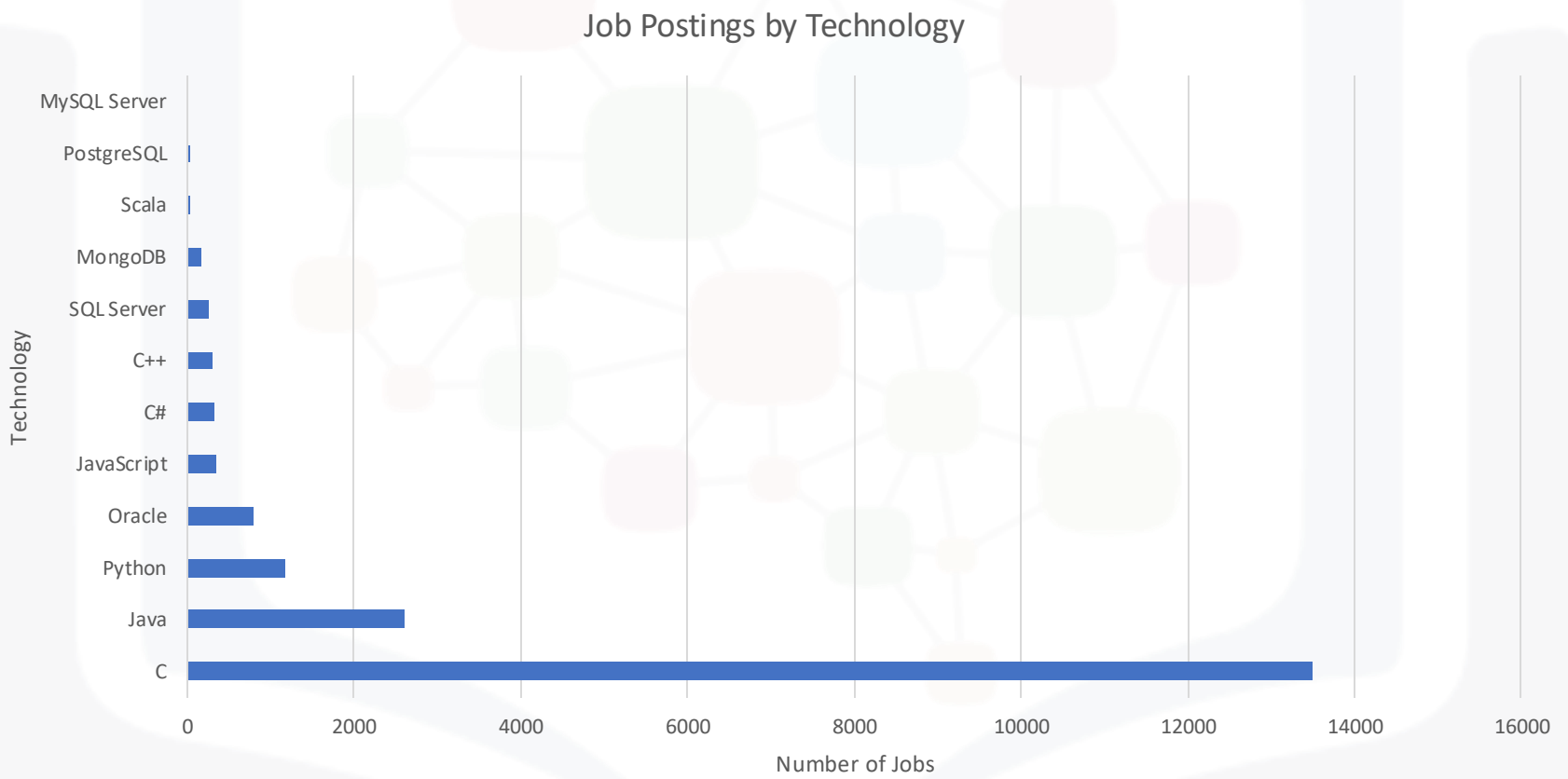
APPENDIX 1 – Respondents by Age



APPENDIX 2 – Respondents by Gender and Education Level



JOB POSTINGS



POPULAR LANGUAGES