Tech Trends & Demographics: 2024 Insights & Predictions

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OUTLINE

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

EXECUTIVE SUMMARY

The analysis of dashboard creation using IBM Cognos Analytics provides valuable insights into current technology usage, future trends, and demographic patterns among survey respondents. Key findings include the popularity of programming languages, databases, and frameworks among developers, as well as their anticipated preferences for the future. The dashboard reveals significant trends that can inform strategic decisions and resource allocation for organizations in the technology sector.

INTRODUCTION

This report presents an analysis of a dashboard created with IBM Cognos Analytics, based on the requirements of a peer-graded assignment. The assignment aimed to explore technology usage trends and demographic characteristics using a provided dataset. By leveraging IBM Cognos Analytics, we aimed to visualize and analyze the data to gain valuable insights into the preferences and behaviors of developers in the technology industry.

METHODOLOGY

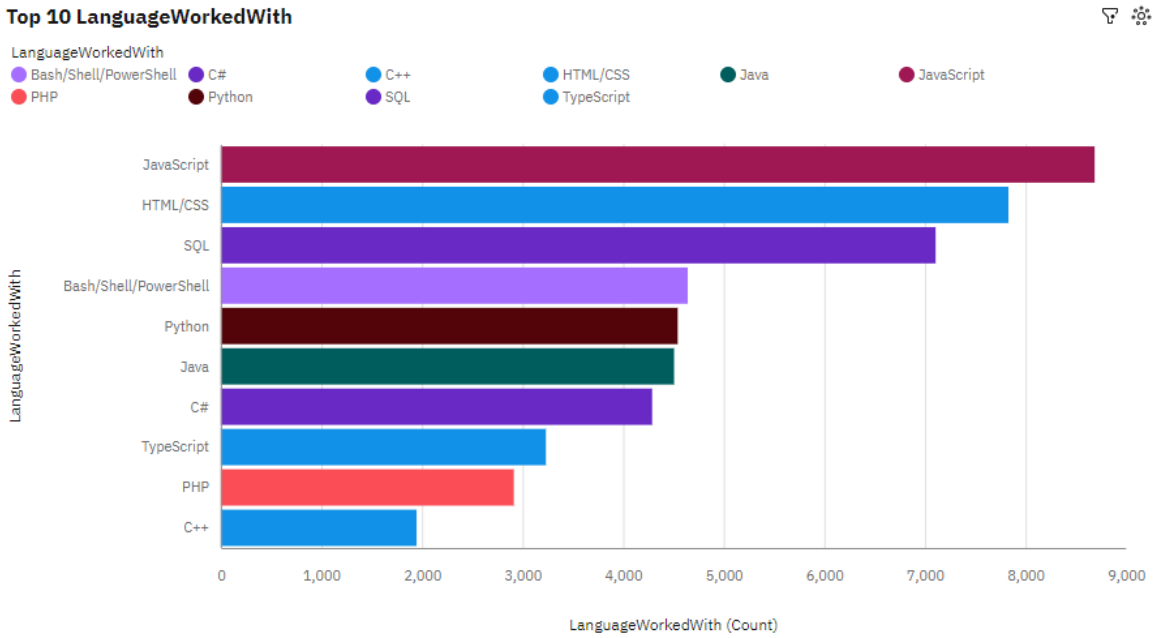
The methodology involved several steps, starting with accessing the dataset provided for the assignment. We then uploaded the dataset to IBM Cognos Analytics and proceeded to create visualizations based on the specified requirements. This involved selecting appropriate chart types, configuring settings such as color and labels, and organizing the visualizations into dashboards. The process required careful attention to detail to ensure accuracy and relevance in representing the dataset.

RESULTS

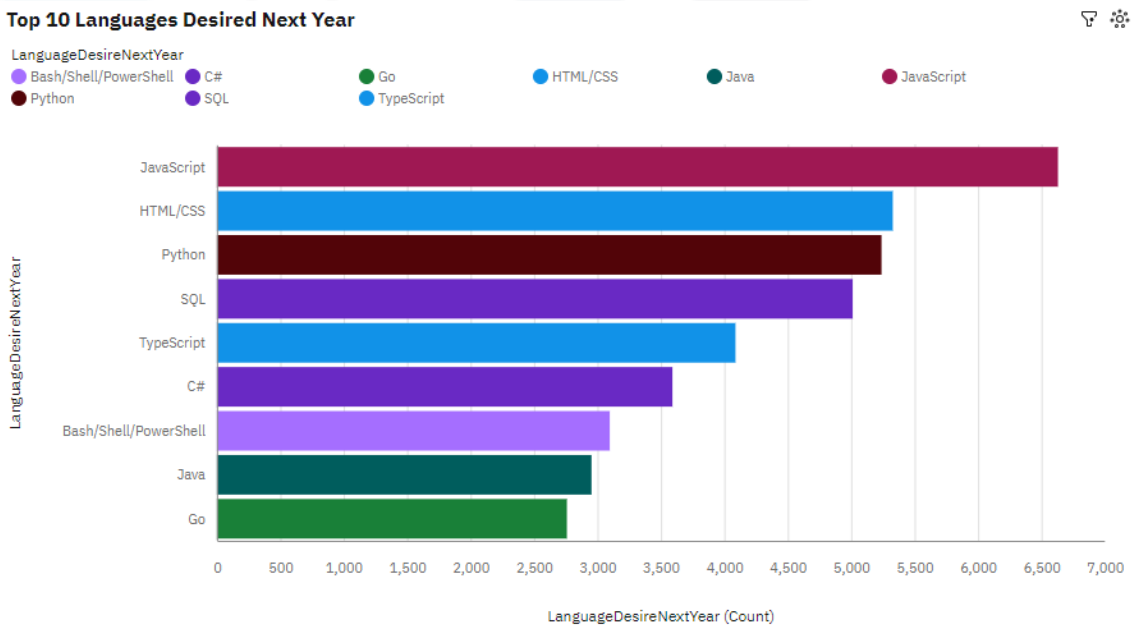
The analysis of the dashboard revealed several key findings. In the Current Technology Usage tab, we observed the most used programming languages, databases, platforms, and web frameworks among survey respondents. The Future Technology Trend tab provided insights into developers' anticipated preferences for the next year. The Demographics tab highlighted demographic patterns such as gender distribution, geographic location, and age demographics among survey respondents.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



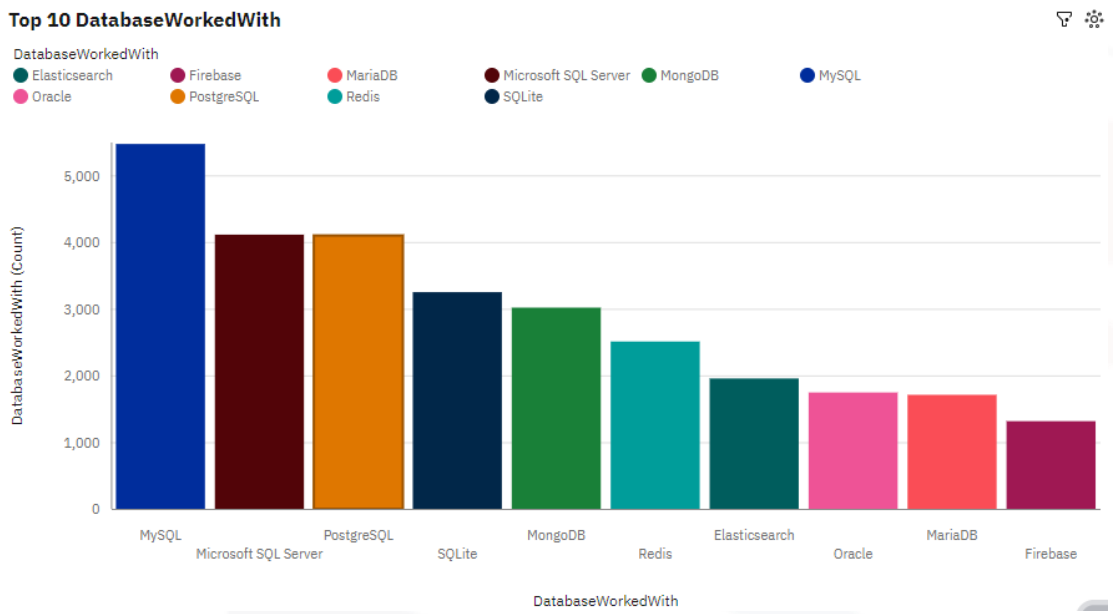
PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

1. **Stable Favorites:** JavaScript, HTML/CSS, and SQL remain popular consistently.
2. **Python's Surge:** Python sees significant growth in desired future usage.
3. **Go Emergence:** Go appears as a desired language, signaling growing interest.

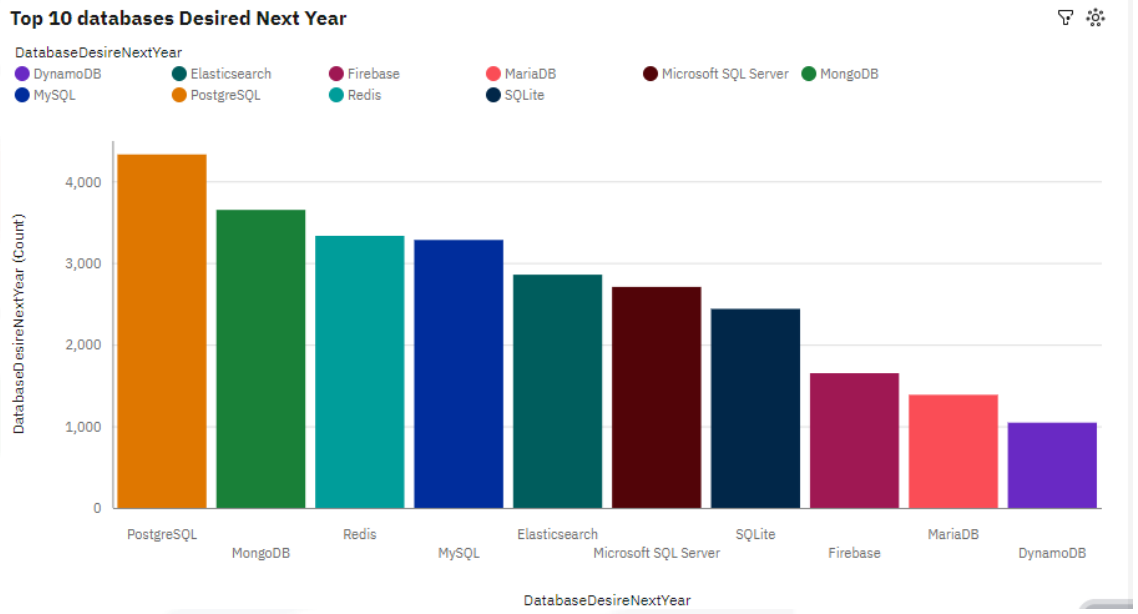
1. **Skill Focus:** Invest in training for top languages to align with project needs.
2. **Explore Go:** Consider adopting Go for projects requiring efficiency.
3. **Talent Strategy:** Recruit and retain talent proficient in these languages for adaptability.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

1. **Current Database Landscape:** MySQL, Microsoft SQL Server, and PostgreSQL dominate the current database usage.
2. **Growing Popularity of NoSQL:** MongoDB and Redis are among the top choices, reflecting a trend towards NoSQL solutions for certain use cases.
3. **Diverse Range of Options:** A mix of relational and non-relational databases like Oracle and Firebase shows a diverse database ecosystem.

Implications

1. **Training Focus:** Prioritize training for MySQL, PostgreSQL, and MongoDB to meet current demand.
2. **Adapt to NoSQL:** Consider incorporating NoSQL solutions like MongoDB and Redis for projects requiring flexible data models.
3. **Evaluation of Options:** Evaluate the suitability of emerging choices like Elasticsearch and DynamoDB for upcoming projects to ensure efficient data management and scalability.

DASHBOARD

https://github.com/aqsaakhan/IBM-Cognos-Dashboard

DASHBOARD TAB 1

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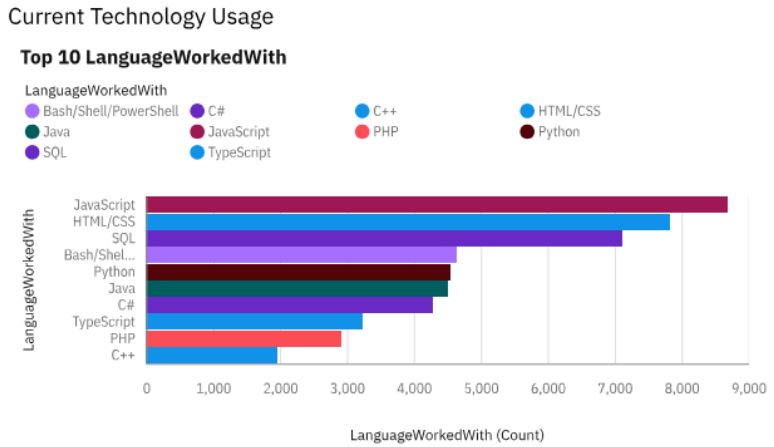
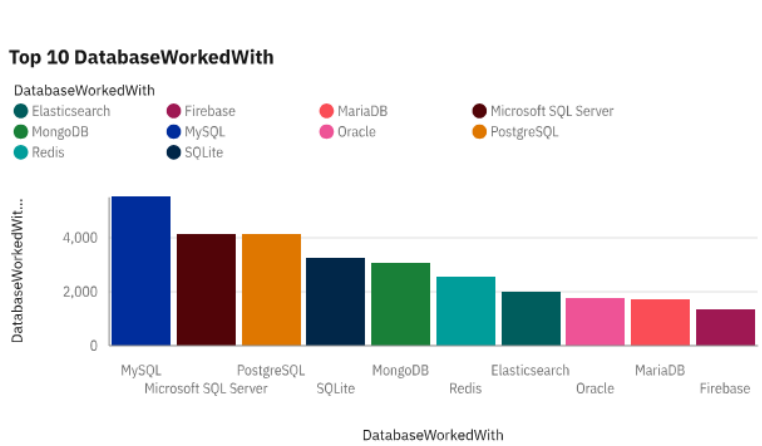
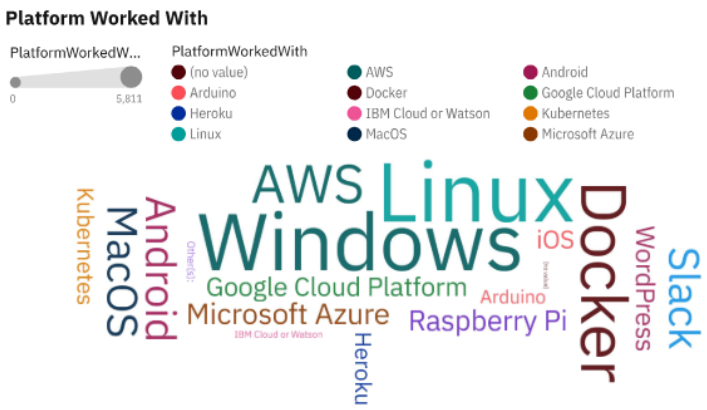
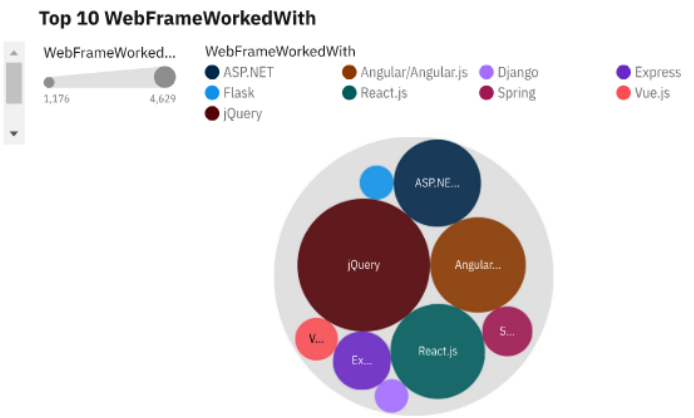
Current Technology Usage



Current Technology Usage







DASHBOARD TAB 2

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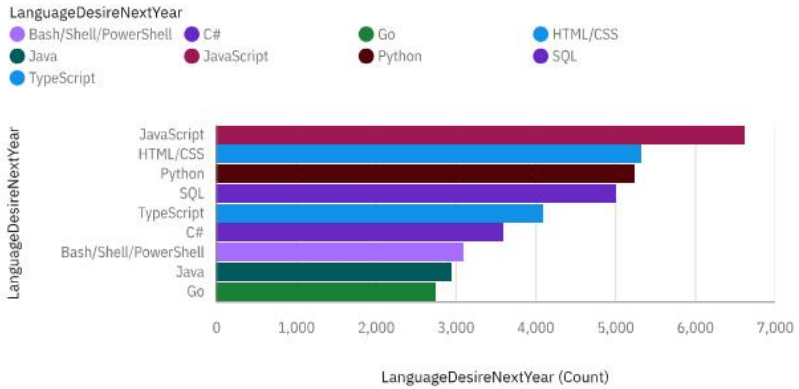
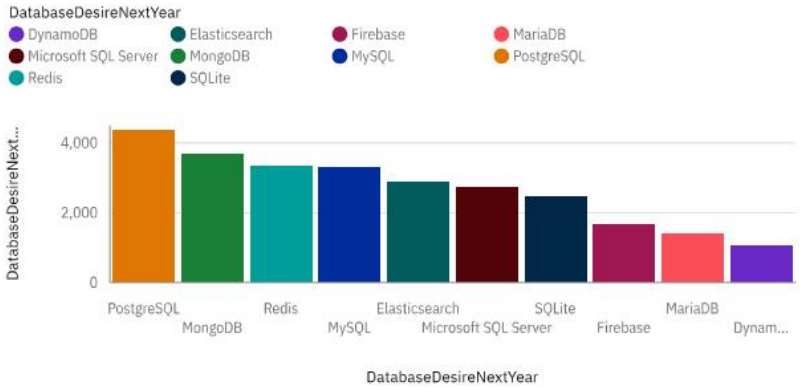
Current Technology Usage

Future Technology Trend

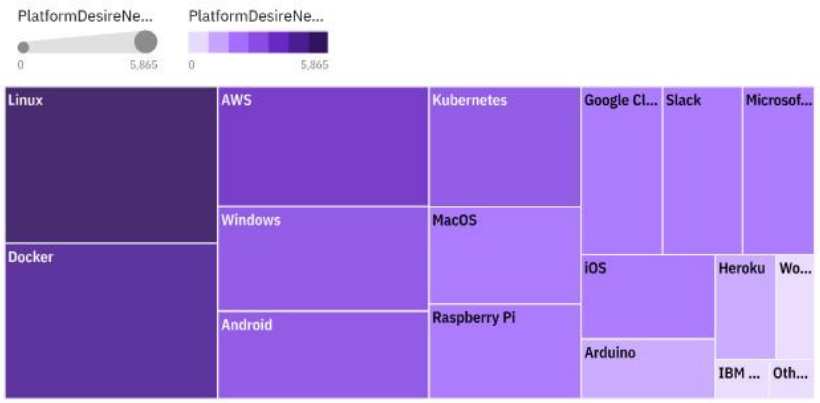
Top 10 Languages Desired Next Year



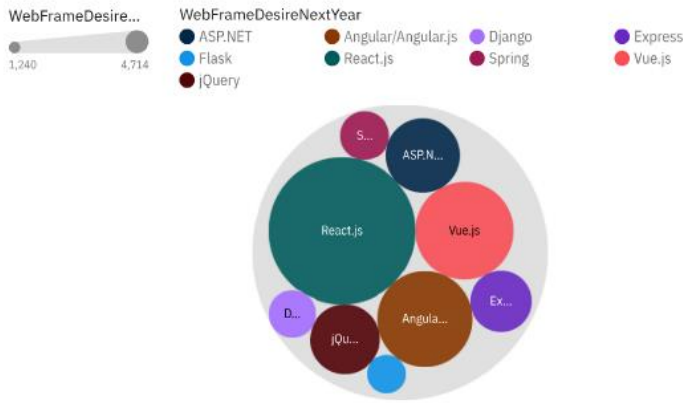
Top 10 databases Desired Next Year



Platform Desired Next Year



Top 10 Webframes Desired Next Year



DASHBOARD TAB 3

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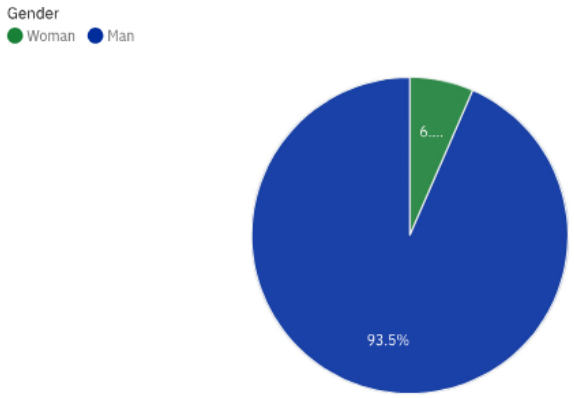
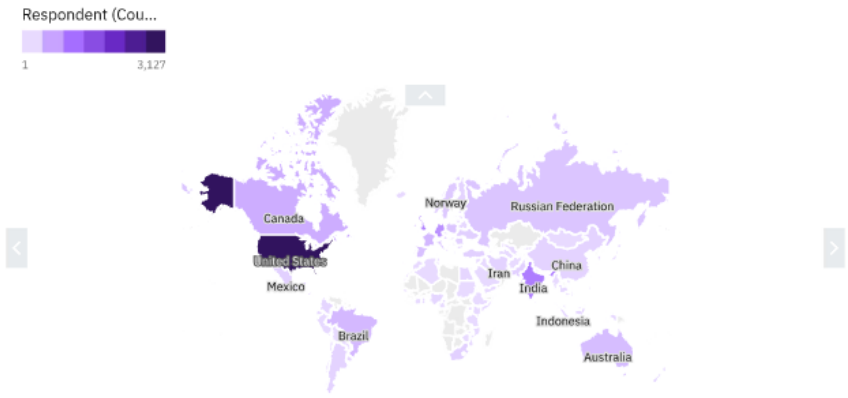
Current Technology Usage

Demographics

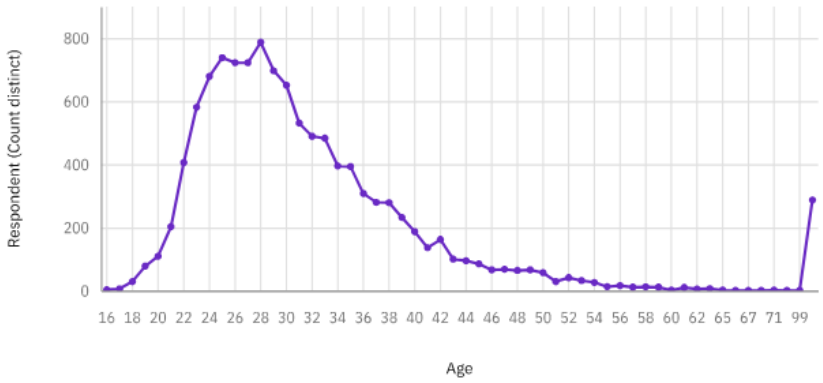
Respondent Classified by Gender



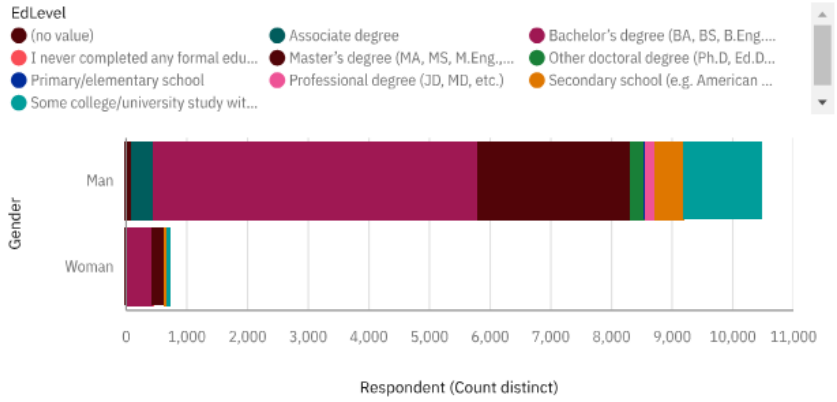
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Formal EdLevel



OVERALL FINDINGS & IMPLICATIONS

Findings

1. **Technological Stability and Innovation:** Certain technologies like JavaScript, SQL, and traditional frameworks like React.js and ASP.NET maintain their dominance in current usage, while newer technologies like Python and modern JavaScript frameworks like React.js and Vue.js show significant growth in desired future usage.
2. **Diverse Landscape:** The tech ecosystem exhibits a diverse range of languages, databases, and web frameworks, indicating the need for flexibility and adaptability in development approaches.
3. **Gender Disparity:** There exists a significant gender gap in the developer community, with men comprising most respondents, highlighting the importance of promoting diversity and inclusivity in the tech industry.

Implications

1. **Continuous Learning and Adaptation:** Prioritize ongoing training and upskilling initiatives to align with the evolving technological landscape, focusing on both established and emerging technologies like Python, React.js, and Vue.js.
2. **Strategic Technology Adoption:** Evaluate the suitability of newer technologies like Go, NoSQL databases, and modern JavaScript frameworks for upcoming projects, ensuring efficient and innovative solutions.
3. **Diversity and Inclusion Initiatives:** Implement measures to promote gender diversity and inclusivity in the workplace, including targeted recruitment strategies, training programs, and initiatives aimed at creating a more welcoming and inclusive environment for all developers.

CONCLUSION

- Dynamic Tech Environment: The analysis reveals a dynamic and rapidly evolving technology landscape, characterized by the steady adoption of new languages, databases, and frameworks alongside the resilience of established technologies.
- Strategic Planning is Key: Organizations need to strategically plan their technology stacks, considering both current trends and future projections to ensure competitiveness and adaptability in the ever-changing market.
- Continuous Learning Culture: Fostering a culture of continuous learning and skill development is essential for developers and organizations alike to stay ahead of the curve and meet evolving project requirements.
- Diversity Drives Innovation: Addressing gender disparities and promoting diversity within the developer community not only fosters a more inclusive workplace but also drives innovation and creativity by bringing together diverse perspectives and experiences.

APPENDIX

- Survey Methodology: Detailing the methods used to collect and analyze the data, including sample size, demographic distribution, and survey instruments employed.
- Data Analysis Tools: Listing the tools and software utilized for data analysis, visualization, and interpretation, such as Python libraries, spreadsheet applications, and statistical software.
- Detailed Survey Results: Providing a breakdown of survey responses, including raw data, charts, and tables for each category analyzed (languages, databases, web frameworks), allowing for a deeper understanding of trends and patterns.
- Additional Insights: Including any additional insights, anecdotes, or observations that may not have been directly addressed in the main report but provide further context or clarification.
- References: Citing any external sources, research papers, or articles referenced during the analysis process for transparency and credibility.