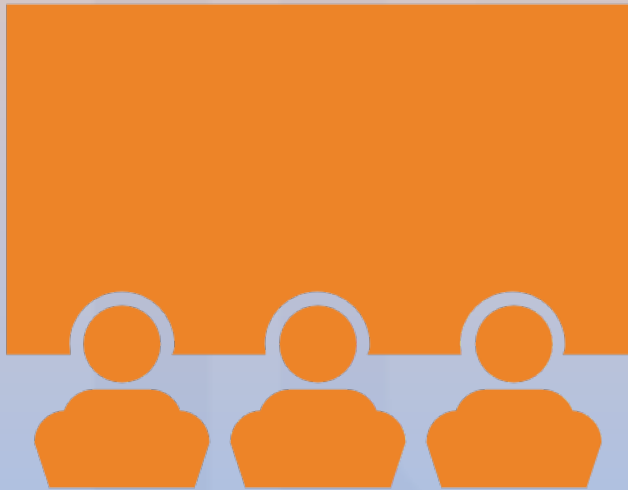


DATA ANALYSIS ON TRENDING SKILLS & TECHNOLOGIES

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August 31, 2024

OUTLINE



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

EXECUTIVE SUMMARY



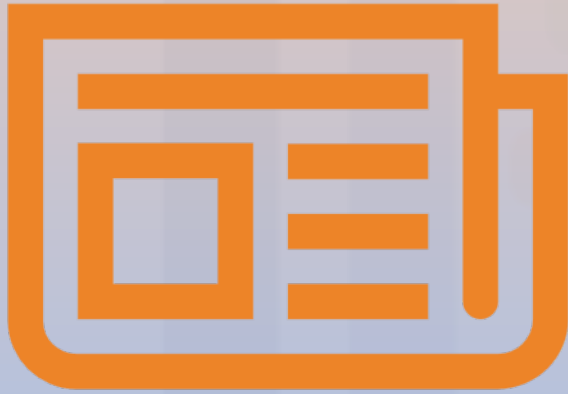
- **Overview of Skill Requirements in IT and Business Consulting** - The IT and business consulting fields are characterized by rapidly evolving skill requirements. To remain competitive, it is crucial to identify both current and future skill needs and trends.
- **Importance of Data-Driven Insights** - Staying competitive in the global IT sector requires keeping up with technological advancements such as the most popular programming language now and in the future or the leading database currently and projected to rise in demand.
- **Analysis of Job Demand and Technology Trend** - The study examines job demand across various technologies and locations, providing a comprehensive view of industry trends.
- **Current and Future Skill Trends** - Identifies the top programming languages, databases, platforms, and web frameworks currently in demand and anticipated future trends.

INTRODUCTION



- This presentation aims to analyze trends in programming languages, databases, platforms, and web frameworks, providing insights to guide informed hiring and budgetary decisions.
- This report utilizes data analytics to highlight current and projected trends in skills related to programming languages, databases, and other technologies.
- The analysis covers in-demand programming languages, database skills, popular IDEs, and emerging technology trends, compiled into a detailed dashboard.
- By understanding these trends, firms can make informed decisions about hiring and budgeting, aligning their strategies with technological advancements and market demands.

METHODOLOGY



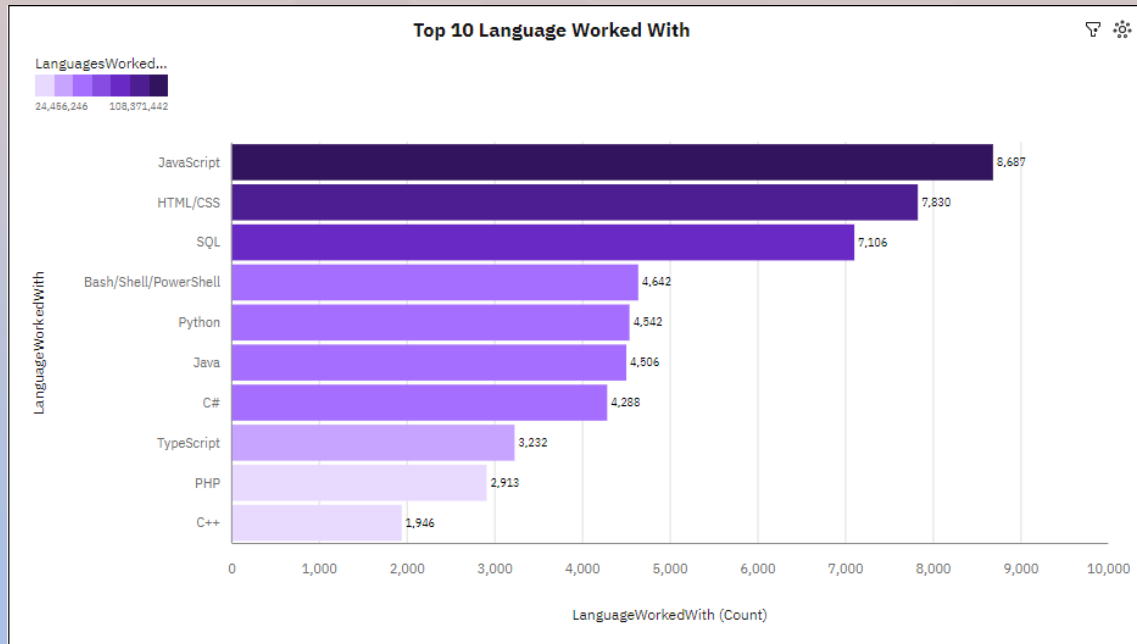
- Data Collection
- Data Wrangling
- Exploring Data Analysis
- Data Visualization
- Dashboard Creation
- Compelling Story

RESULTS

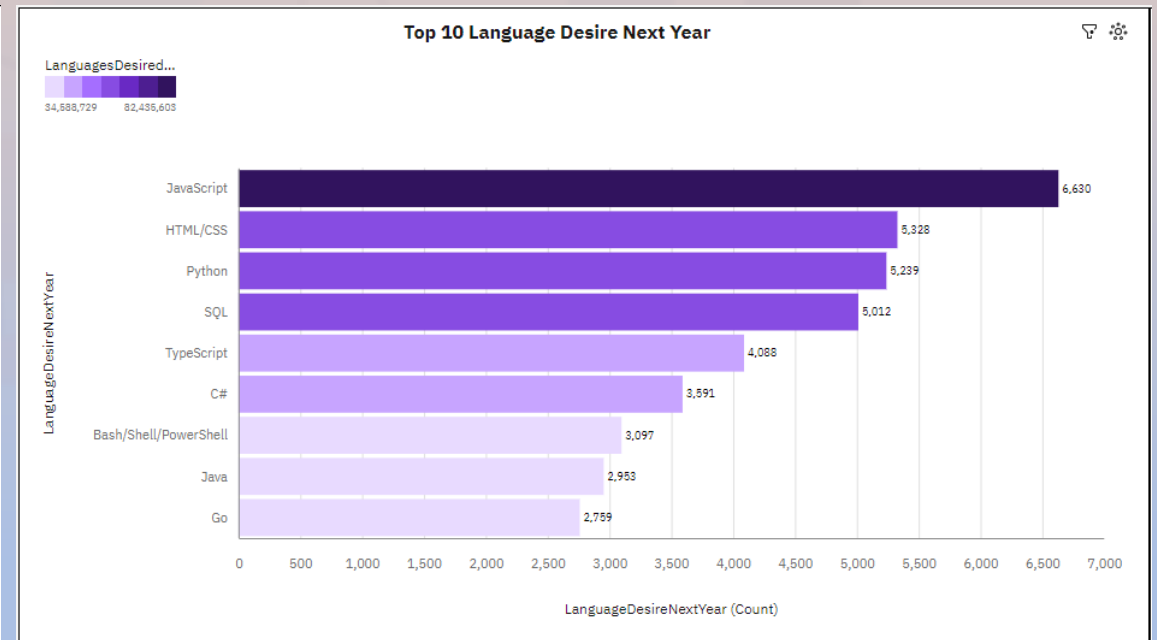
- JavaScript is identified as the most popular programming language now and, in the future, but outsmart by Python as the fastest growing programming language.
- For databases, currently MySQL is the leading database, but PostgreSQL is projected to rise in the future.
- Demographic analysis shows most respondents are male from the America followed by South Asian countries and Europe.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

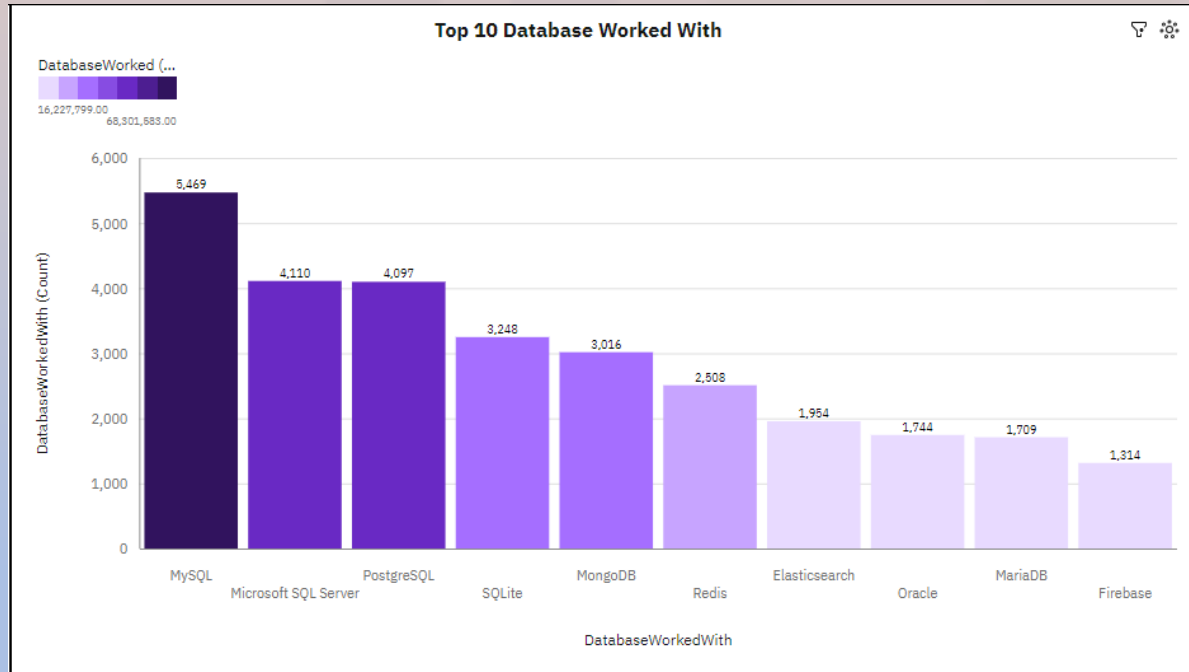
- JavaScript and HTML/CSS are anticipated to maintain their status as the top programming languages for this year and the next.
- Python and TypeScript are anticipated to experience increased popularity in the coming year.
- Conversely, SQL and Bash/Shell/PowerShell are projected to see a decline in interest.

Implications

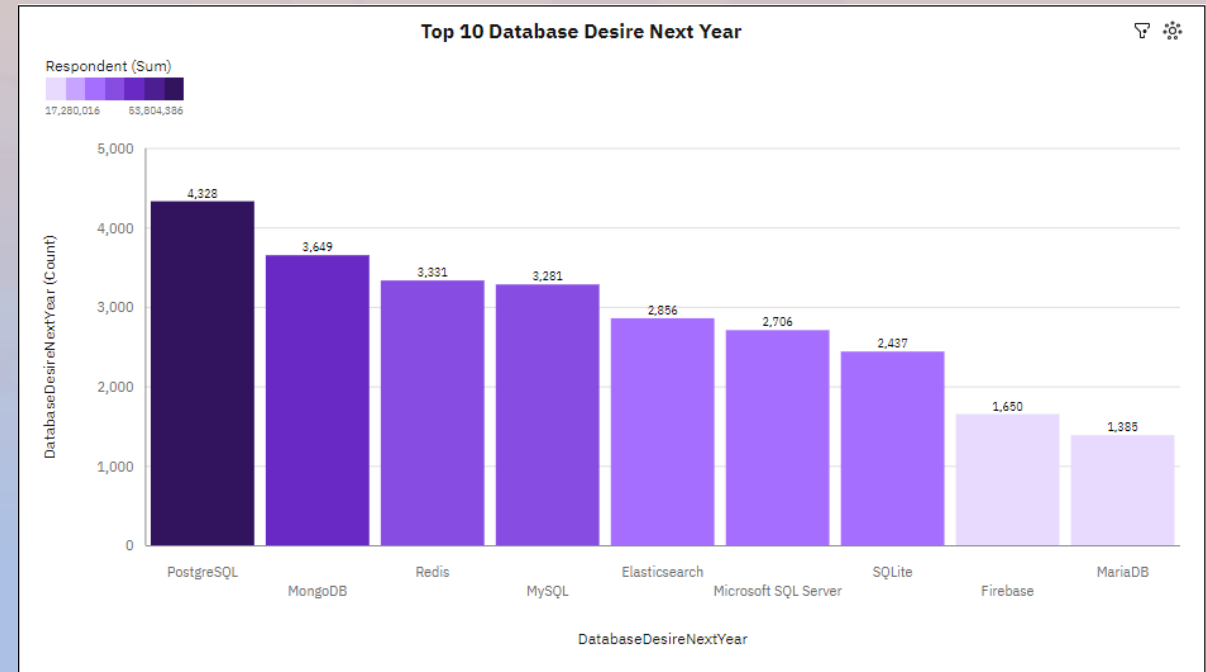
- The dominance of JavaScript and HTML/CSS illustrates their essential role in the contemporary web, reinforcing the importance for developers to acquire proficiency in these languages.
- The extensive use of SQL underscores its essential role in data management and querying, which is vital for applications across both web and non-web environments.
- Python's rising popularity showcases its remarkable versatility and user-friendliness, captivating developers across a diverse range of fields, from data science to software engineering.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **MySQL Dominance:** MySQL is currently the most widely adopted database management system (DBMS) among users, reflecting its strong presence and extensive usage in various applications
- **Close Competitors:** PostgreSQL and Microsoft SQL Server follow closely behind MySQL in popularity, indicating their significant roles and reliability in database management.
- **Leading NoSQL Choice:** MongoDB is recognized as the leading NoSQL database, highlighting its prominence in handling unstructured data and supporting modern application needs.
- **Future Trends:** PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch are anticipated to become more prominent in the future, showcasing evolving trends and shifting preferences in the database landscape.
- **Emerging Technologies:** Redis and Elasticsearch, being relatively new, are set to gain substantial traction due to their innovative features and growing adoption in the IT sector.

Implications

- Organizations might prioritize hiring professionals with strong MySQL skills to maintain a competitive edge in database management
- Businesses should consider diversifying their database solutions by incorporating PostgreSQL and Microsoft SQL Server to leverage their unique features and reliability. When selecting a database solution, evaluating PostgreSQL and Microsoft SQL Server alongside MySQL could lead to better alignment with specific business needs and technical requirements
- Companies dealing with unstructured data should focus on MongoDB for its flexibility and scalability in handling diverse data types. The prominence of MongoDB suggests that development teams should be familiar with NoSQL technologies to meet the demands of modern applications.
- Organizations should prepare for increased adoption of PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch by investing in these technologies and integrating them into their long-term IT strategies. Businesses should stay informed about emerging trends and be ready to adapt their database infrastructure to align with future developments and maintain competitiveness.
- Incorporating Redis and Elasticsearch into existing systems can enhance performance and functionality, reflecting an agile approach to evolving technology landscapes.

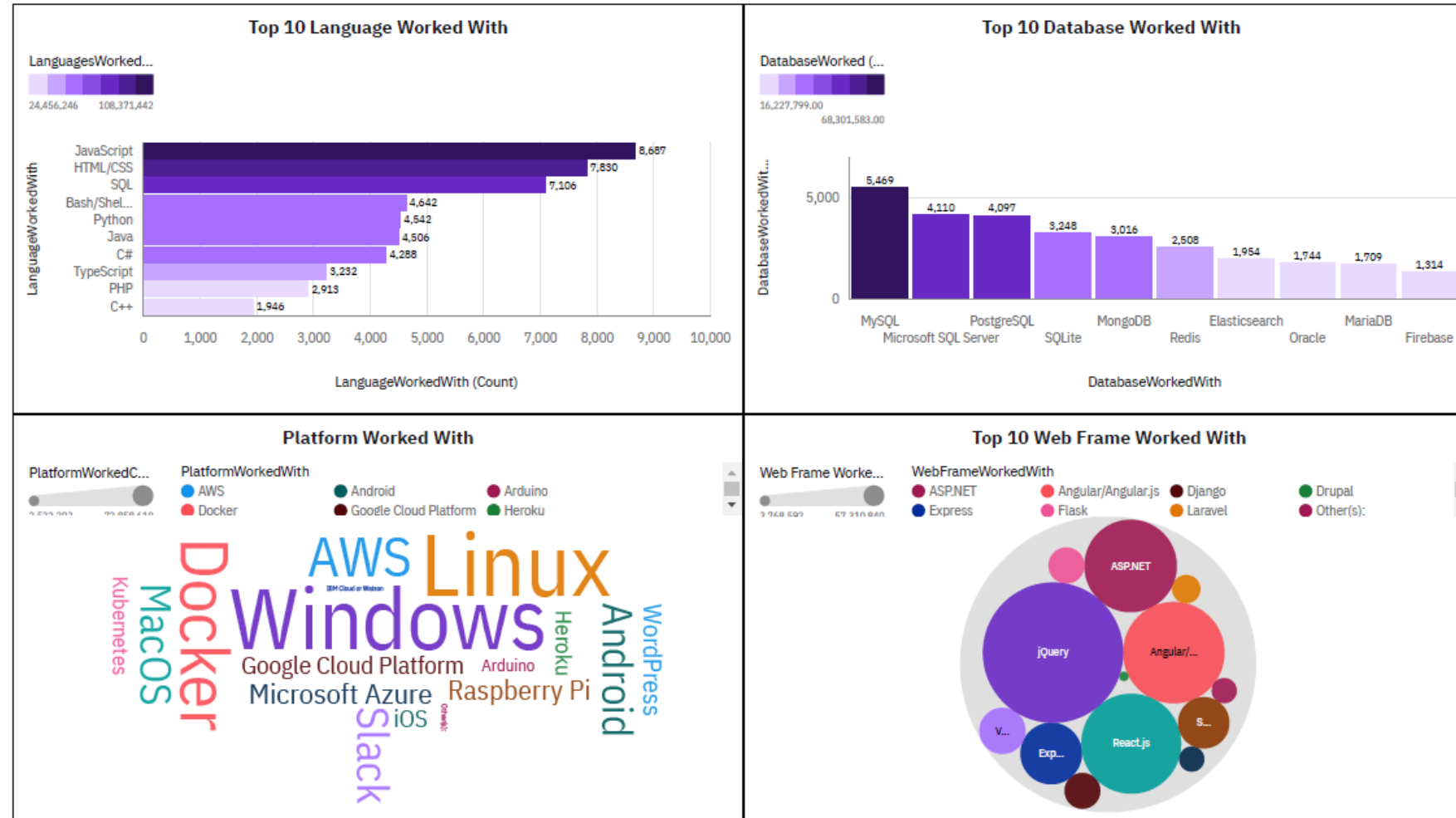
DASHBOARD



<https://github.com/rajbirdhanda4/IBM-DataAnalyst-Capstone-Project/blob/d93e4fbc41ebf578d221a22c4ec3c4c00c1d47e0/Part%20A%20-%20Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf>

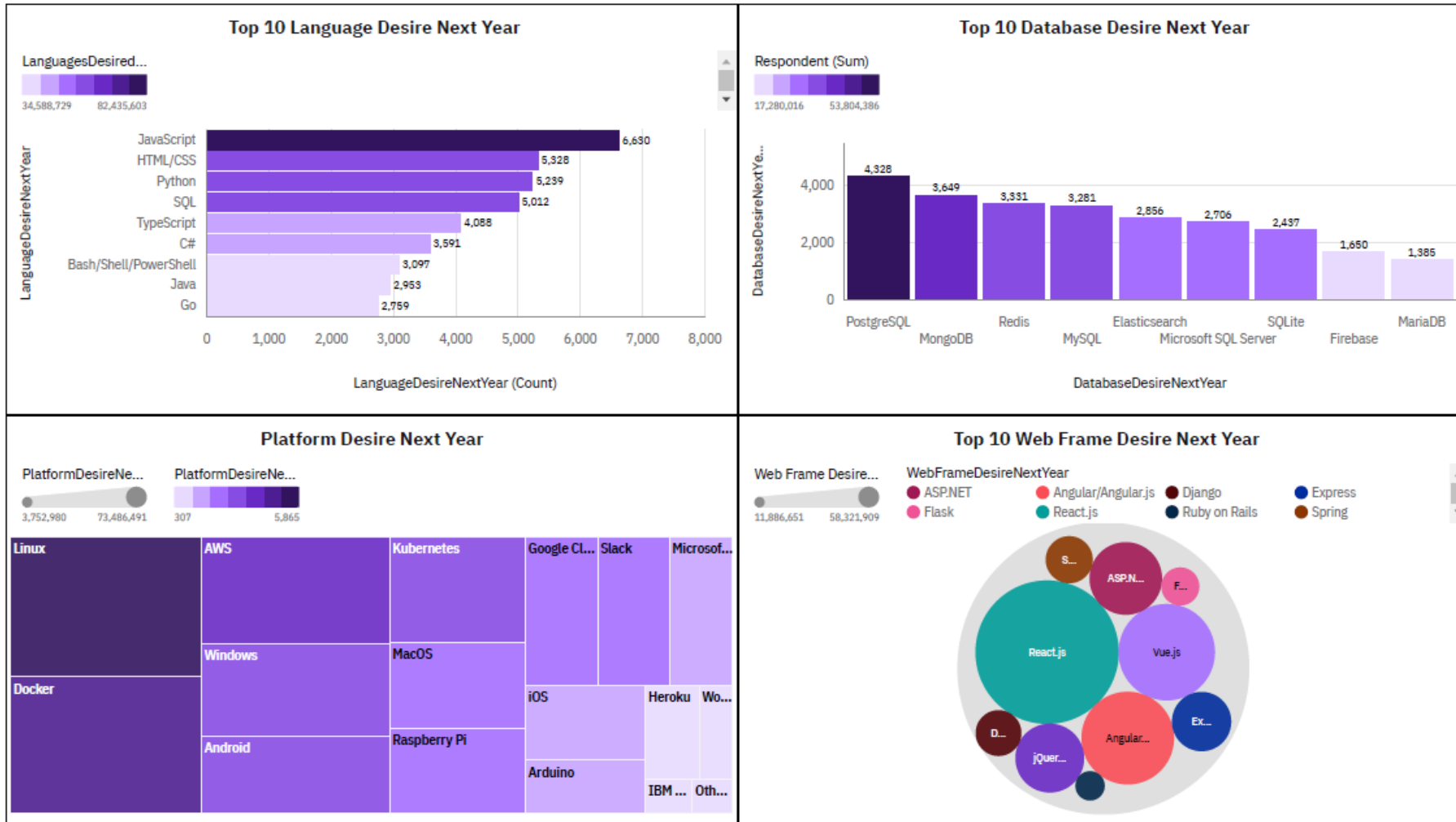
CURRENT TECHNOLOGY USAGE

Current Technology Usage



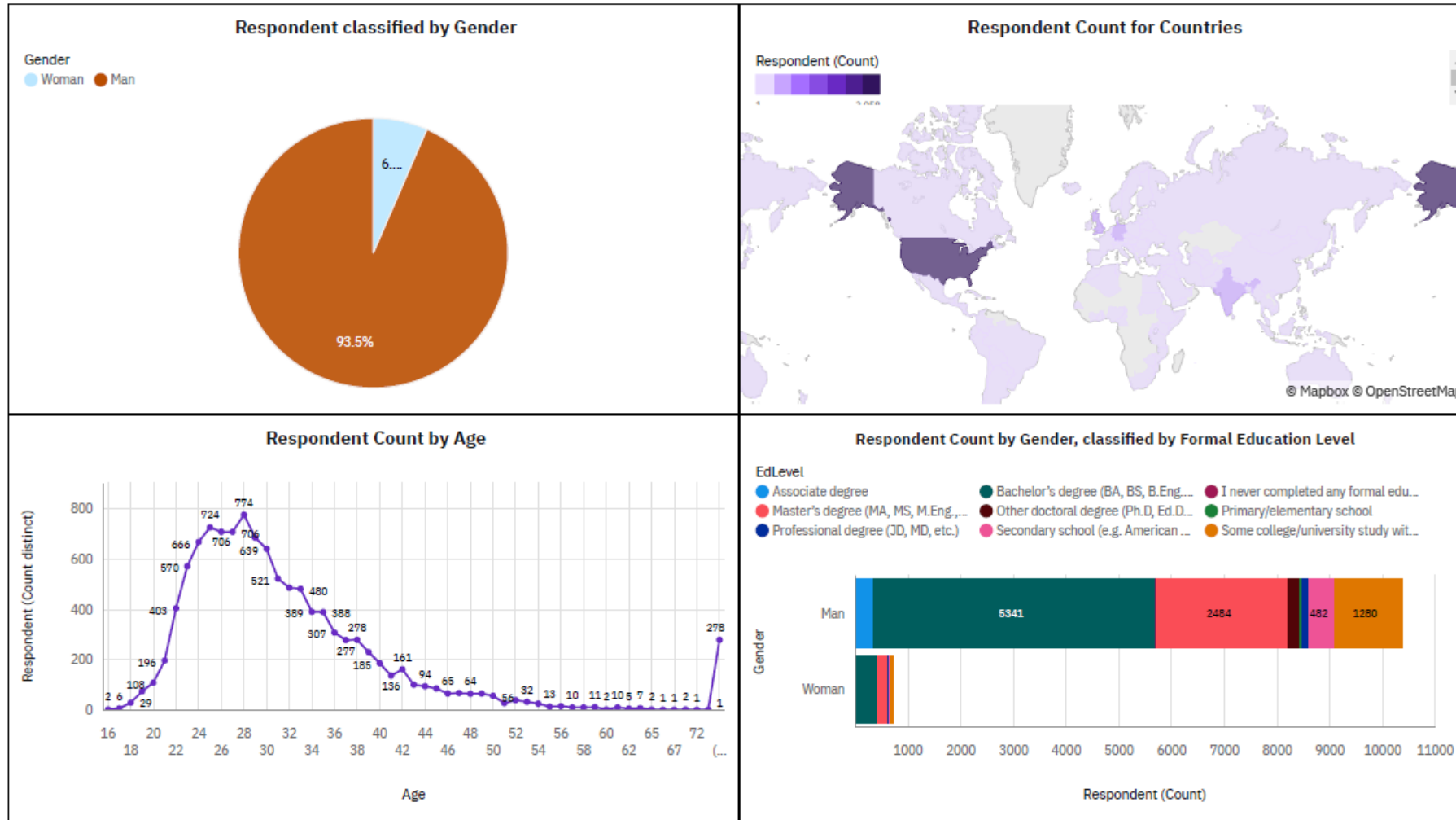
FUTURE TECHNOLOGY TREND

Future Technology Trend



DEMOGRAPHICS

Demographics



DISCUSSION



- **Central Role of Web Development:** JavaScript, HTML/CSS, and MySQL underscore the pivotal role of web development in today's programming landscape.
- **Client-Side Scripting Impact:** Explore how JavaScript and HTML/CSS influence client-side scripting and user experience.
- **Web Development Framework Trends:** Discuss the latest trends and innovations in web development frameworks.
- **Evolving Web Technologies:** Consider how advancements are transforming web technologies and development practices.

OVERALL FINDINGS & IMPLICATIONS

Findings

- **JavaScript and HTML/CSS:** Expected to remain the top two technologies in the coming year.
- **Language Popularity Shift:** Python is set to surpass SQL, with Bash/Shell/PowerShell seeing a decline.
- **Database Leadership:** PostgreSQL is anticipated to overtake MySQL, with reduced use of Microsoft SQL Server and SQLite.
- **Platform Preferences:** Linux remains dominant, with Docker expected to replace Windows.
- **Framework Trends:** React.js is predicted to surpass jQuery in popularity.

Implications

- **JavaScript and HTML/CSS:** Will stay central to web development practices.
- **Python's Rising Role:** Increasing interest is anticipated, influencing future skill requirements.
- **PostgreSQL:** Expected to become the leading database, impacting database management strategies.
- **Docker:** Gaining in preference alongside Linux, signaling a shift in platform choices.
- **React.js:** The decline in jQuery usage suggests a shift towards more modern frameworks.

CONCLUSION

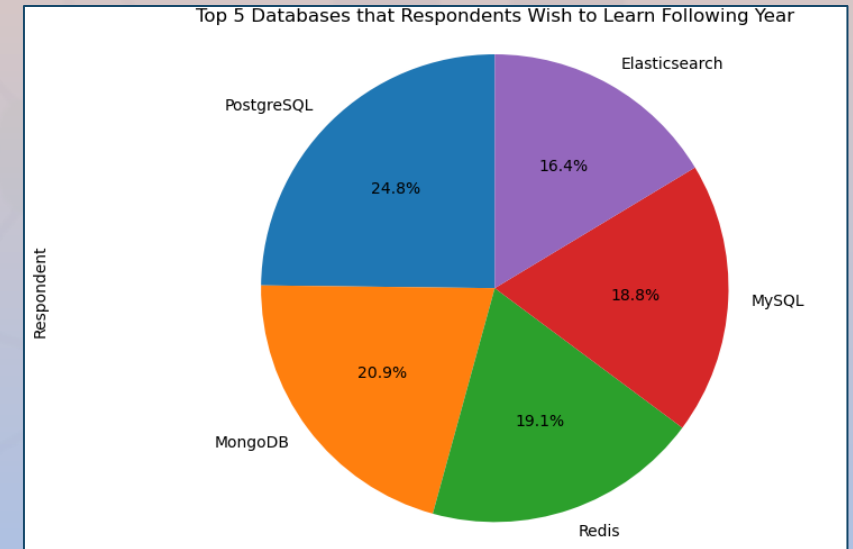
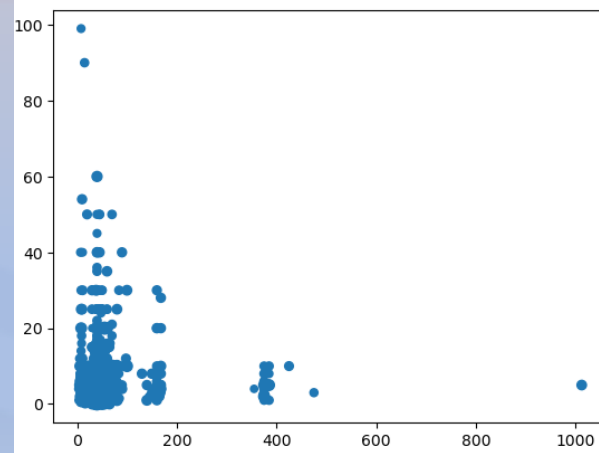
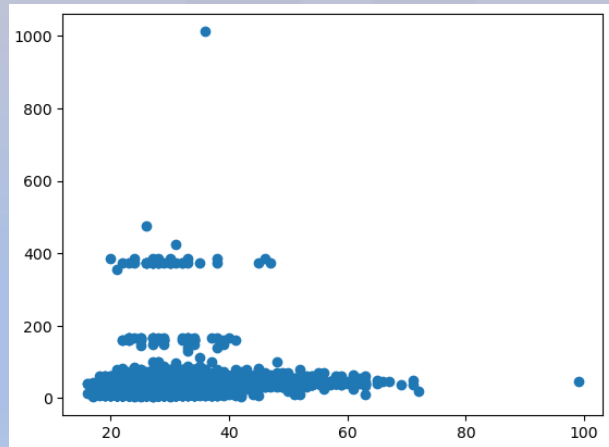
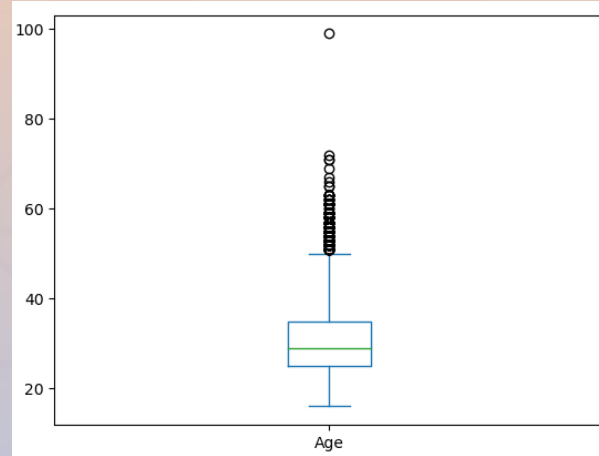
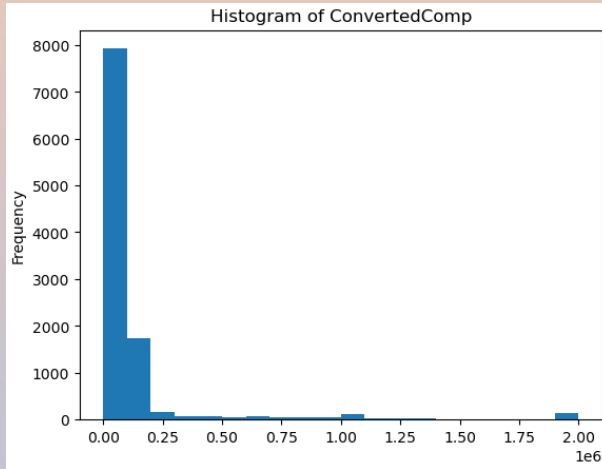
The data highlights several critical trends and shifts in the technology landscape that are essential for strategic planning:

- **Stable Core Technologies:** HTML/CSS is projected to remain a cornerstone of web development, reaffirming its foundational role in creating and maintaining websites. This stability suggests that continuing investment in these skills is beneficial.
- **Evolving Database Preferences:** PostgreSQL is expected to surpass MySQL in popularity, signaling a shift towards advanced database solutions. This trend implies that updating our database strategy and considering PostgreSQL for future projects may offer a competitive advantage.
- **Demographic Insights:** The predominance of men in IT roles compared to women points to an opportunity for targeted recruitment and diversity initiatives. Addressing this imbalance could enhance our team's overall performance and creativity.

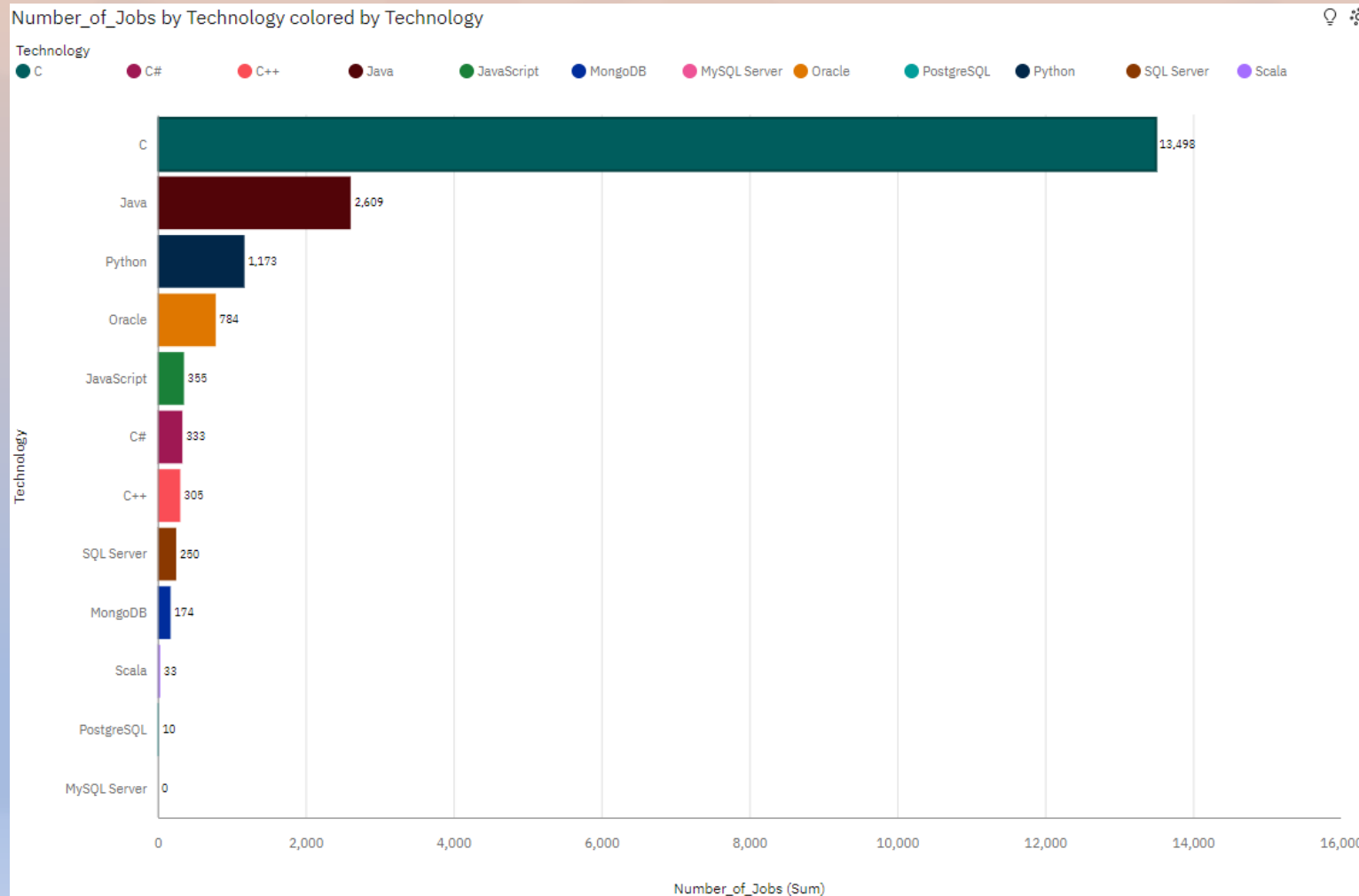
Actionable Recommendations:

- **Invest in Talent Acquisition:** Allocate budget to recruit skilled professionals proficient in PostgreSQL and React.js to meet evolving industry demands.
- **Enhance Training Programs:** Implement training and upskilling programs for current employees to ensure they are equipped with the latest technologies and frameworks.
- **Adjust Staffing and Recruitment:** Reassess staffing needs to align with emerging skills and address gaps, while also focusing on increasing diversity within the IT team.

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

