



Analyzing Technology Trends

Anastasiia Kanafeva

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EXECUTIVE SUMMARY



- The primary objectives of the analysis included identifying the most sought-after programming languages, evaluating the demand for database skills, and assessing the popularity of integrated development environments (IDEs).
- To address the research questions, three dashboards were developed utilizing data from the Stack Overflow Developer Survey 2019: Current Technology Trends, Future Technology Trends, and Demographic Insights.
- Findings reveal that JavaScript, HTML/CSS, and SQL were the most popular programming languages in 2019. The most desired languages to learn were JavaScript, HTML/CSS, and Python. However, languages like Kotlin and Go are emerging as top choices, suggesting a shift in technology preferences among developers.
- In terms of databases, MySQL, PostgreSQL, and Microsoft SQL Server were the most commonly used in 2019. PostgreSQL, MongoDB, and Redis emerged as the most sought-after databases, indicating a preference for open-source solutions with flexibility and community support.

INTRODUCTION



In today's rapidly evolving tech landscape, staying competitive demands anticipating future skill needs. Embracing emerging technologies enhances operational efficiency and agility. However, this pace requires proactive upskilling to prevent skill obsolescence. That's why this research is focusing on **identifying future skill requirements in order to keep a global IT and business consulting services firm in pace with changing technologies and remain competitive.**

The primary objectives guiding this analysis encompassed:

- Identifying the most sought-after programming languages.
- Evaluating the demand for database skills.
- Assessing the popularity of integrated development environments (IDEs).

METHODOLOGY



For this analysis, a multi-faceted approach was employed, drawing from diverse sources including **job postings**, **training portals**, and **surveys**.

Job postings provided insight into current trends in the job market, while data from training portals allowed for an understanding of learning preferences and demands.

Additionally, surveys were conducted to gather insights and opinions from industry professionals, enriching the analysis with qualitative data.

This combination of quantitative and qualitative data sources facilitated a comprehensive examination of the evolving landscape of skills and technologies in the industry.

RESULTS

To address the research questions, three dashboards were created utilizing data from the Stack Overflow Developer Survey 2019:

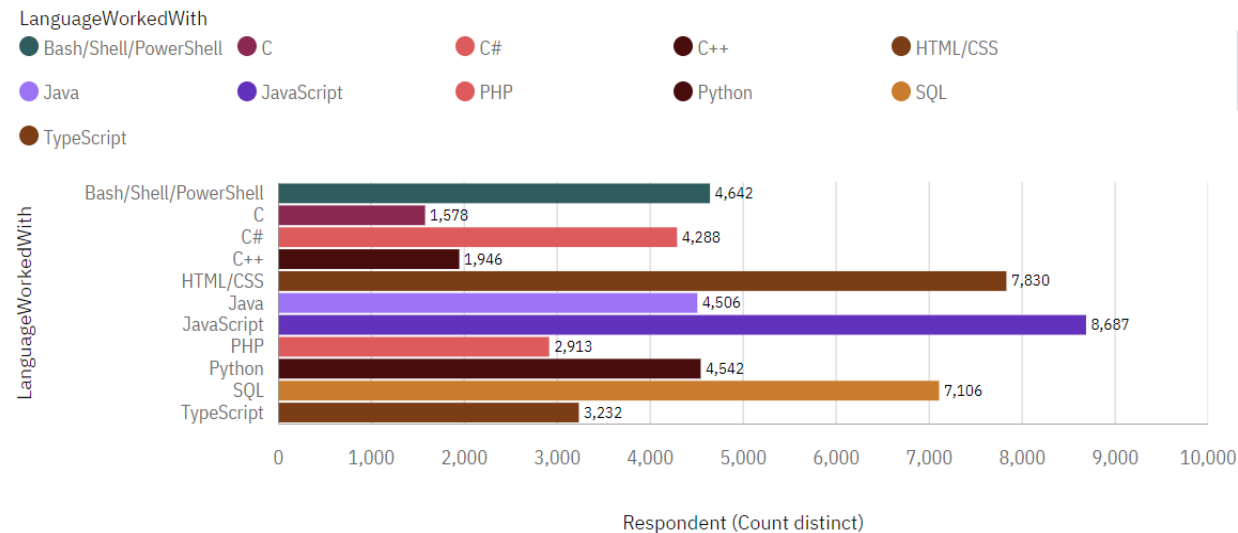
- 1. Current Technology Trends**
- 2. Future Technology Trends**
- 3. Demographic Insights**



PROGRAMMING LANGUAGE TRENDS

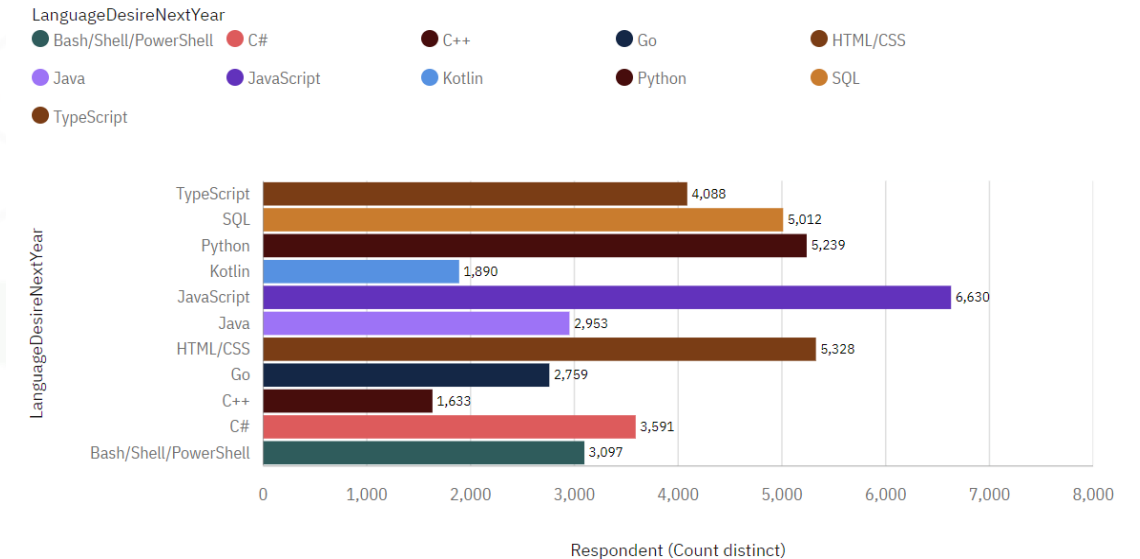
Current Year

Top 10 LanguageWorkedWith



Next Year

Top 10 LanguageDesireNextYear



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- The most popular programming languages in 2019 were JavaScript, HTML/CSS, and SQL.
- The most desired programming languages to learn in 2019 were JavaScript, HTML/CSS, and Python.
- Despite C and PHP being among the Top 10 LanguageWorkedWith, it did not make it to the Top 10 LanguageDesireNextYear. These places took Kotlin and Go.

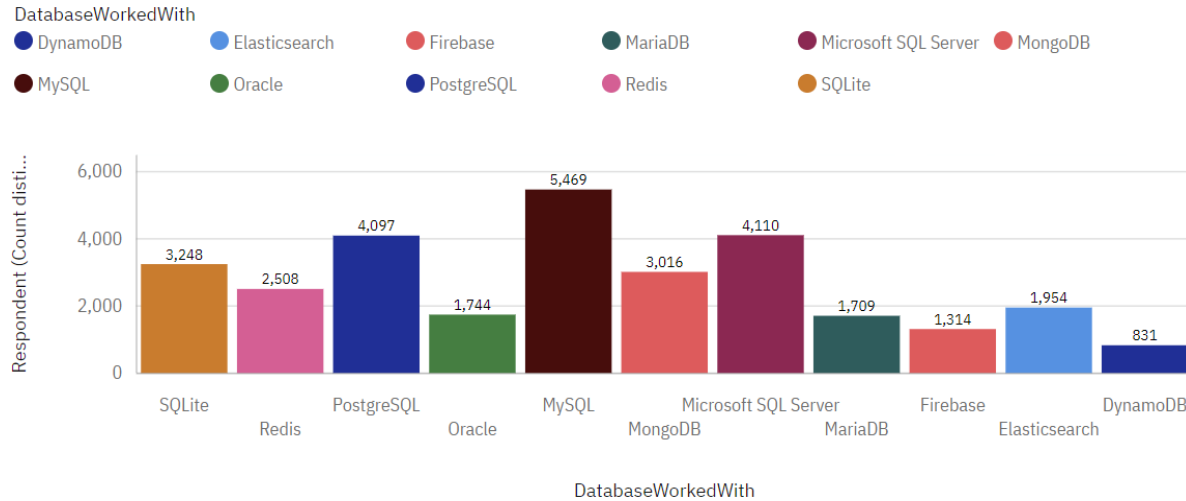
Implications:

- The trend in rising interest in Kotlin and Go could be attributed to their modern features, performance advantages, and suitability for specific use cases, such as Android app development for Kotlin and systems programming for Go.
- The consistency of JavaScript and HTML/CSS in both the most popular and desired programming languages indicates their enduring relevance and importance in the industry. However, the emergence of Python as a desired language suggests a growing interest in its versatility and applicability across various domains such as data science, machine learning, and web development.
- The decreasing popularity of languages like C and PHP highlights a shift in technology preferences among developers.

DATABASE TRENDS

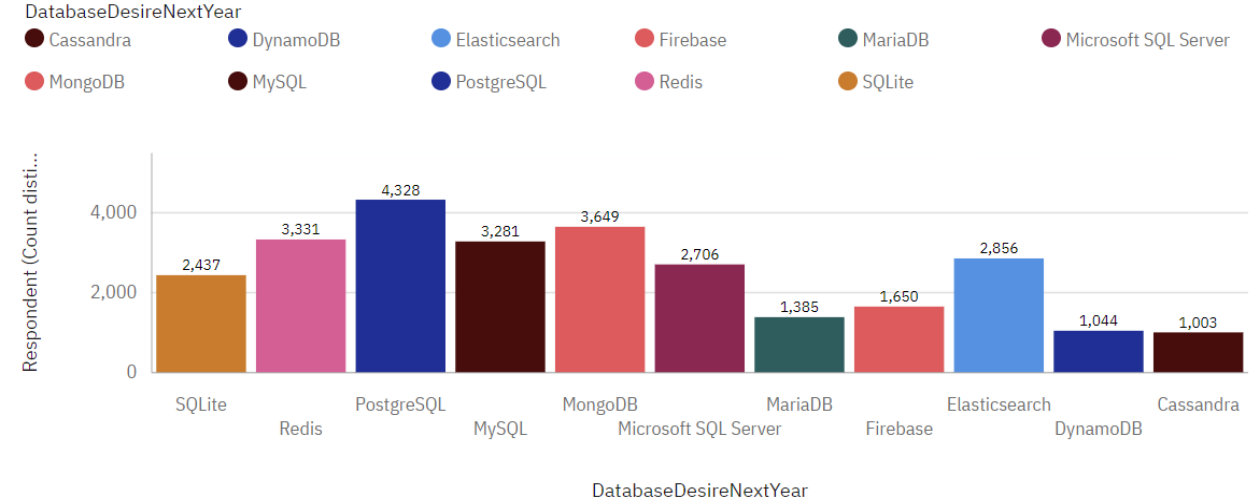
Current Year

Top 10 DatabaseWorkedWith



Next Year

Top 10 DatabaseDesireNextYear



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- In 2019, the most commonly used databases were MySQL, PostgreSQL, and Microsoft SQL Server.
- The most sought-after databases in 2019 were PostgreSQL, MongoDB, and Redis.
- Despite Oracle database being among the Top 10 DatabaseWorkedWith, it did not make it to the Top 10 DatabaseDesireNextYear.

Implications:

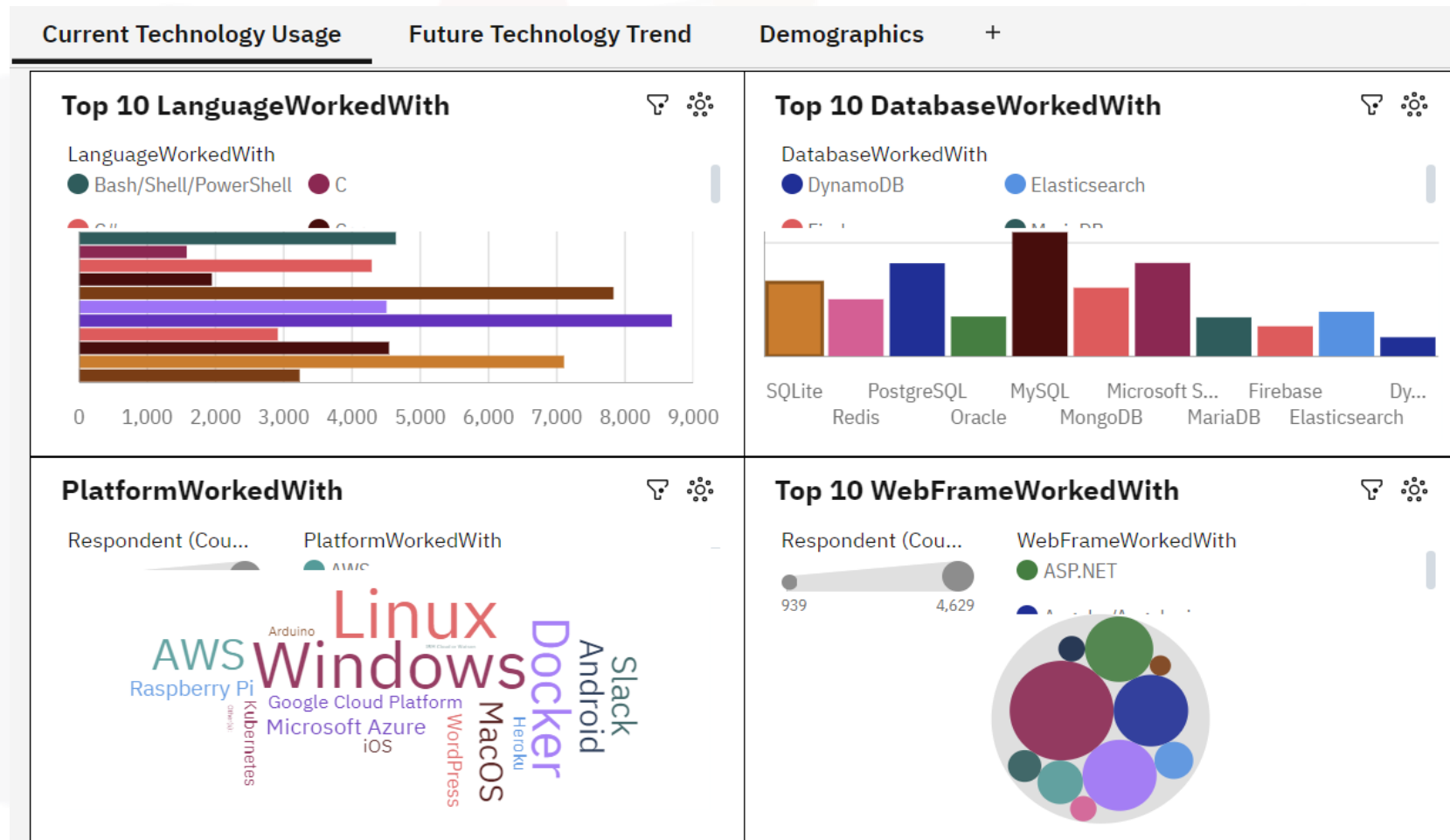
- PostgreSQL and MongoDB, both open-source databases, feature prominently among the most desired databases. This trend suggests a growing preference for open-source solutions, possibly due to their flexibility, cost-effectiveness, and community support.
- The absence of Oracle database in the Top 10 DatabaseDesireNextYear despite its presence in the Top 10 DatabaseWorkedWith may signal increasing competition from other database management systems.
- The prominence of databases like MongoDB and Redis among the most desired reflects the evolving landscape of data management. Their popularity may indicate a growing demand for specialized databases optimized for specific use cases, such as document-oriented or in-memory data storage.

DASHBOARD LINK

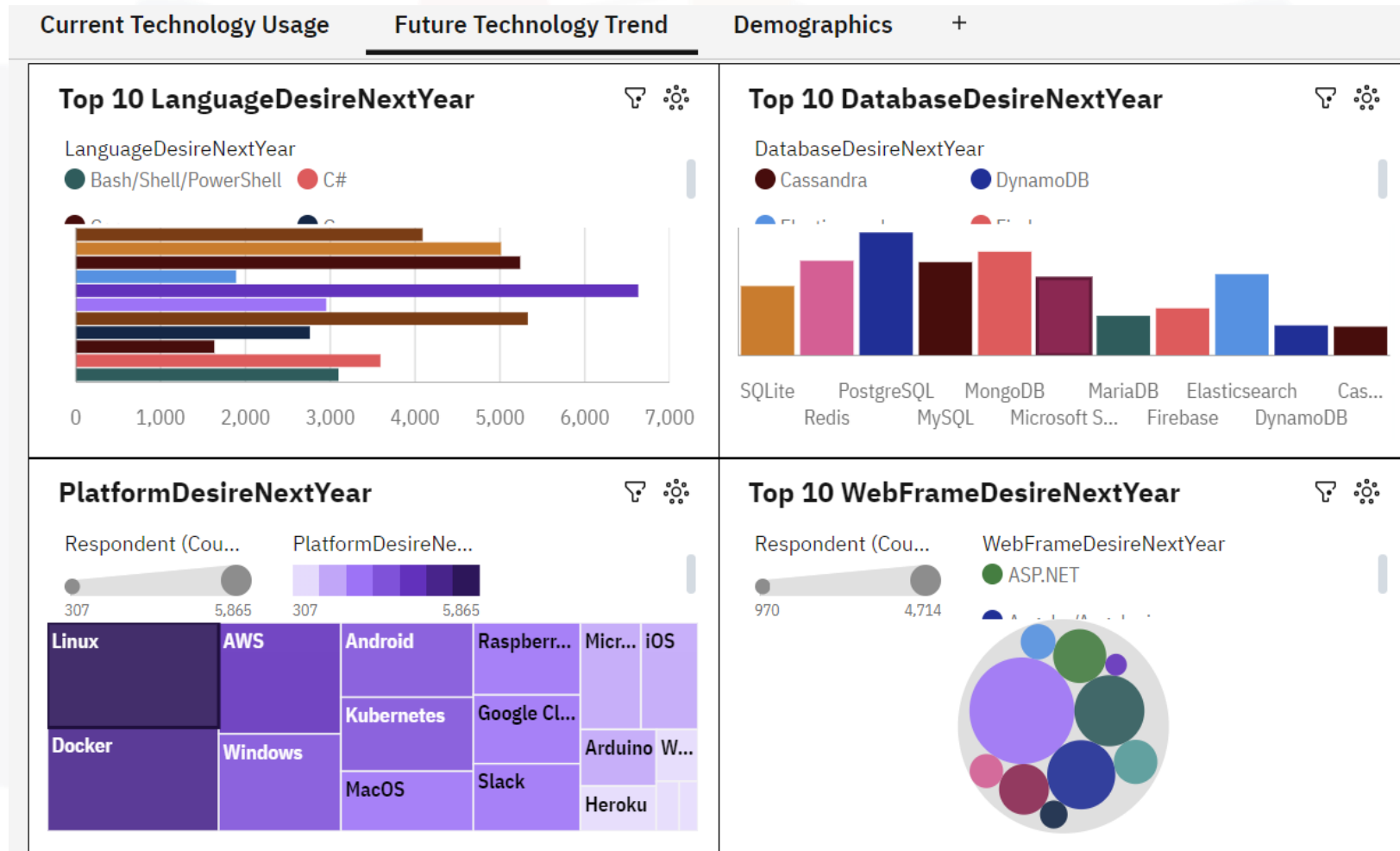


<https://github.com/kanafeva13/CapstoneProject/blob/main/Peer-Graded%20Assignment%20Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics1.pdf>

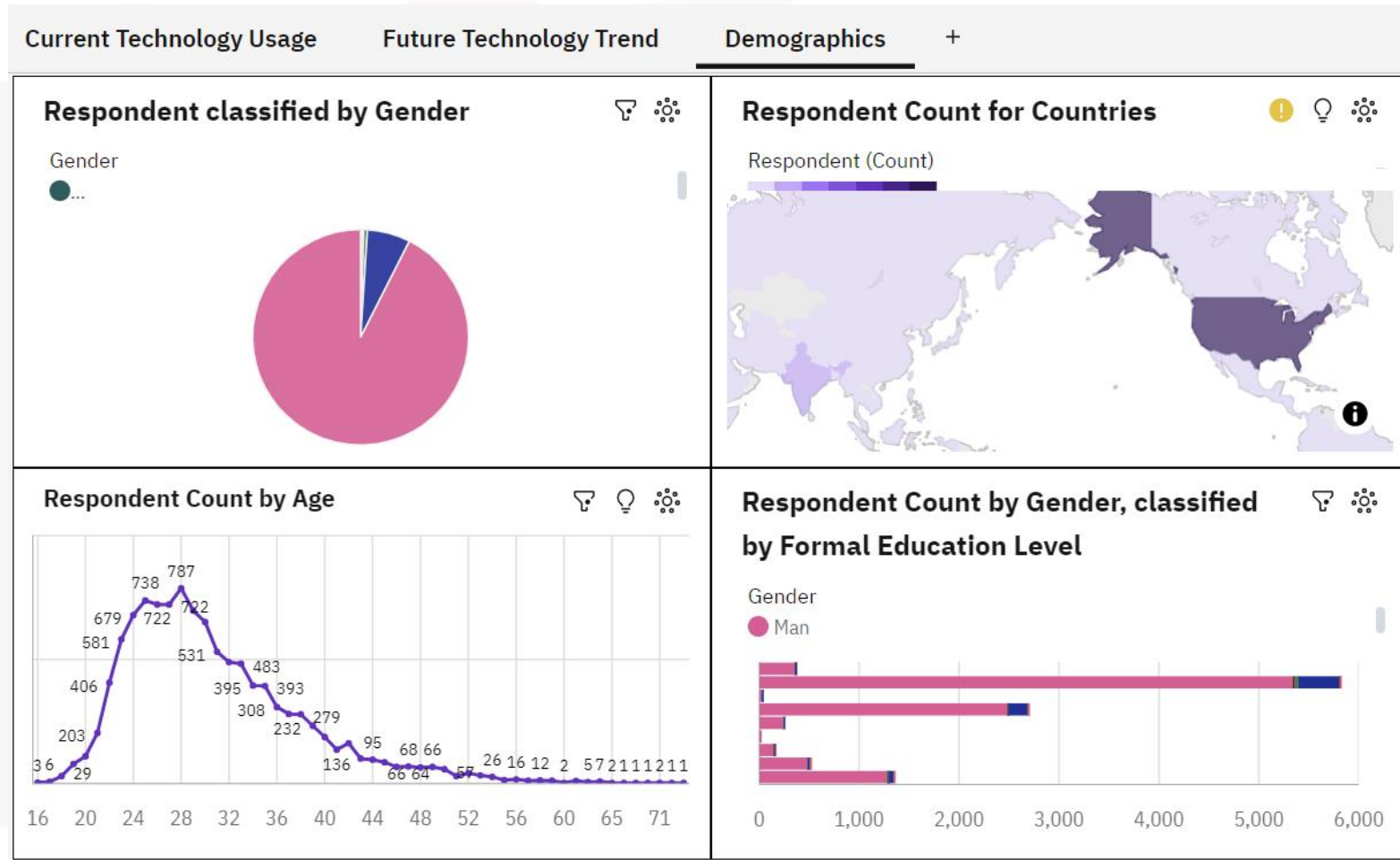
DASHBOARD Current Technology Usage



DASHBOARD Future Technology Trend



DASHBOARD Demographics



DISCUSSION

The findings regarding **programming language trends** reveal compelling insights into the evolving preferences of developers and the shifting dynamics within the technology landscape.

- The dominance of JavaScript, HTML/CSS, and SQL as the most popular programming languages;
- The emergence of Python as a desired language reflects a growing interest in its versatility and applicability in areas such as data science, machine learning, and web development.

In the realm of **database trends**, the findings highlight the growing prominence of open-source solutions such as PostgreSQL and MongoDB. Their increasing popularity underscores a preference for flexible, cost-effective, and community-supported database management systems.

OVERALL FINDINGS & IMPLICATIONS

Findings:

- JavaScript, HTML/CSS, and SQL emerged as the most popular languages in 2019, highlighting their enduring relevance and widespread adoption within the industry. Meanwhile, the emergence of Python as a desired language underscores its versatility and applicability across various domains.
- The declining popularity of languages such as C and PHP signals a shift in technology preferences among developers.
- MySQL, PostgreSQL, and Microsoft SQL Server emerged as the most commonly used databases, reflecting their established presence in the industry. However, PostgreSQL, MongoDB, and Redis emerged as the most sought-after databases.

Implications:

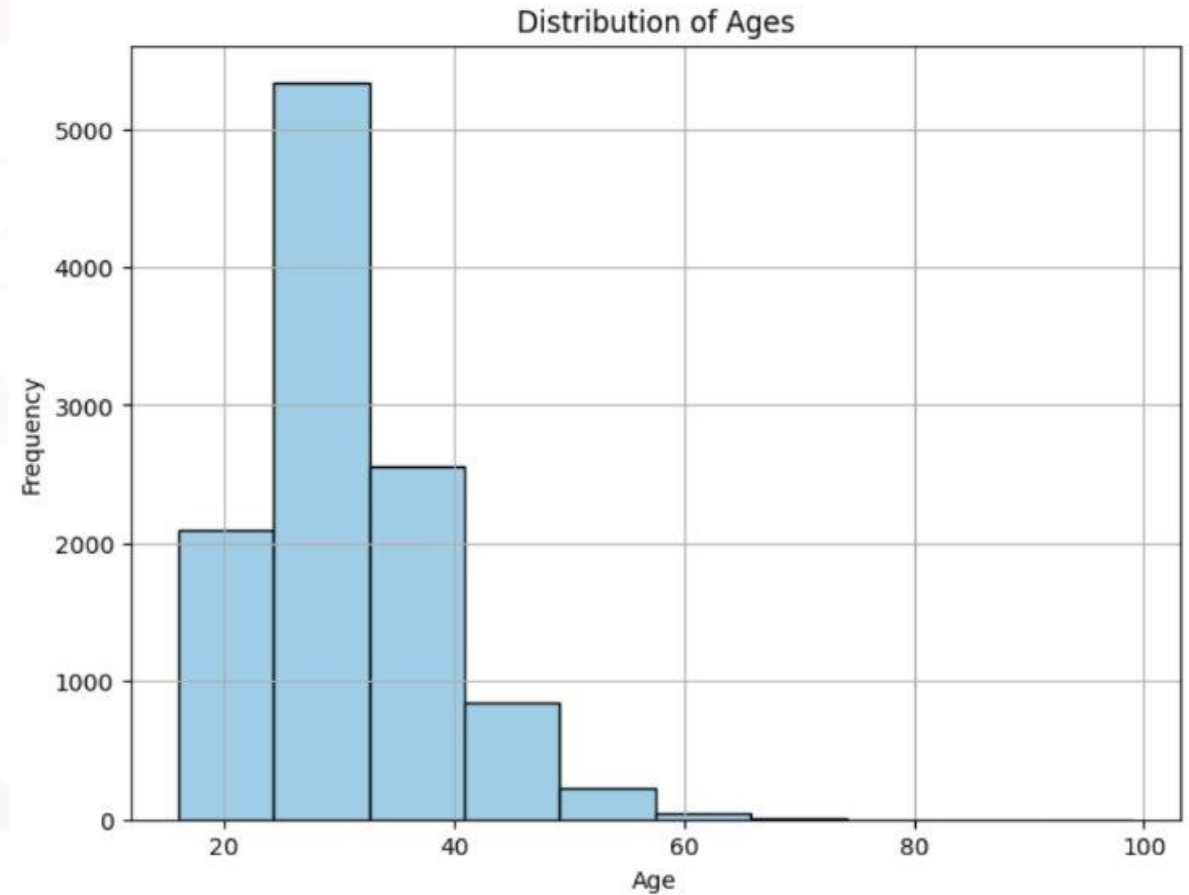
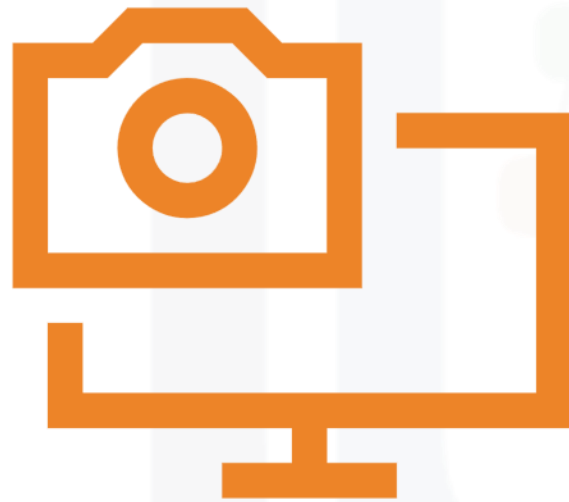
- A growing interest in advanced data science and web development capabilities.
- A growing preference for open-source solutions characterized by flexibility, cost-effectiveness, and community support.
- The absence of Oracle database from the top desired databases further underscores the need for database management systems to adapt to evolving user needs and preferences, potentially signaling increased competition within the market.

CONCLUSION



- The findings from analysis highlight the embracing emerging technologies, such as JavaScript, HTML/CSS, and Python, enhances operational efficiency and agility, while also addressing the growing demand for advanced capabilities in data science, machine learning, and web development.
- The observed trends in programming language and database preferences underscore the need for organizations to remain agile and adaptable in response to shifting technology landscapes. The inclusion of languages like Kotlin and Go in the top desired programming languages signals a rising interest in modern features and performance advantages, prompting organizations to consider transitioning to newer technologies to maintain competitiveness and attract top talent.
- The prominence of open-source databases like PostgreSQL and MongoDB reflects a growing preference for flexible, cost-effective solutions with strong community support.

APPENDIX



Annual Average Salary vs. Programming Language

