TECHNOLOGY TRENDS

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OUTLINE

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- Methodology

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  - Dashboard

- Discussion
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EXECUTIVE SUMMARY

This report covers three key areas:

- Exploring the Current Landscape of Technology Usage: Trends and Insights

- Key Technology Trends to Watch in the Coming Year

- Understanding the Demographics of the Tech Industry

INTRODUCTION

- **About**
  - Analyzing the trends in software development
- **Purpose**
  - Identify skill requirements for future
  - What are the top programming languages in demand?
  - What are the top database skills in demand?
  - What are the popular IDEs
- **Audience**:
  - Human Resource and IT Head

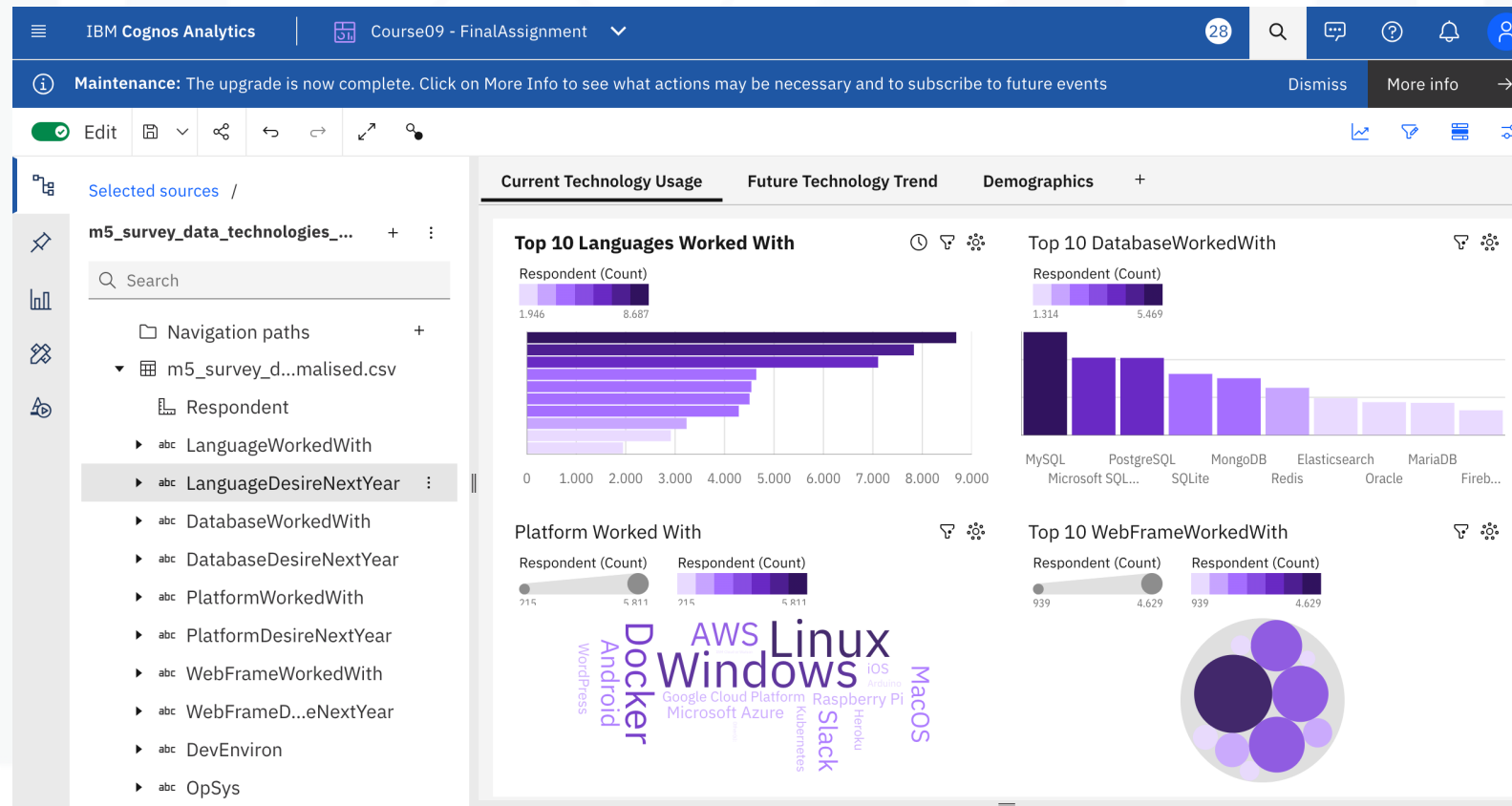IBM **Developer**

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METHODOLOGY

- Data Collection Sources
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Postings
  - Programming Languages Annual Salary

- Data Exploration

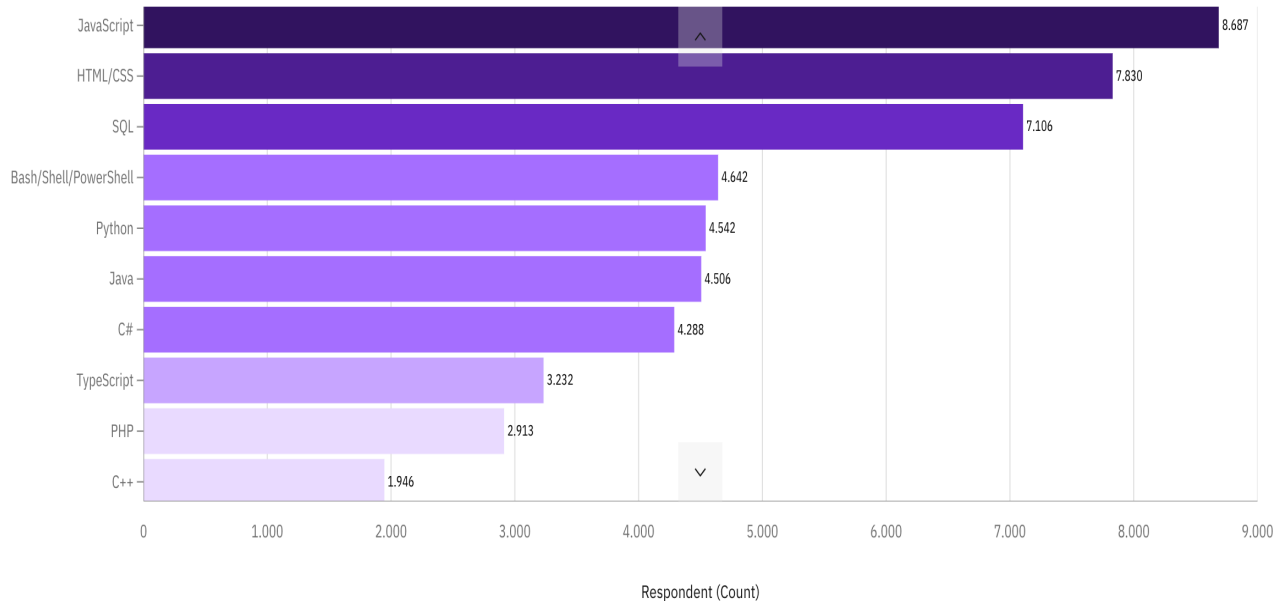- Data Cleaning

- Data Visualization

- Presentation

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RESULTS

Dashboard and Slide Visualizing Data with Findings & Implications"

PROGRAMMING LANGUAGE TRENDS

Current Year

Language	Count
JavaScript	8.687
HTML/CSS	7.830
SQL	7.106
Bash/Shell/PowerShell	4.642
Python	4.542
Java	4.506
C#	4.288
TypeScript	3.232
PHP	2.913
C++	1.946

Respondent (Count)

Next Year

Language	Count
JavaScript	6.630
HTML/CSS	5.328
Python	5.239
SQL	5.012
TypeScript	4.088
C#	3.591
Bash/Shell/PowerShell	3.097
Java	2.953
Go	2.759
Kotlin	1.890

Respondent (Count)

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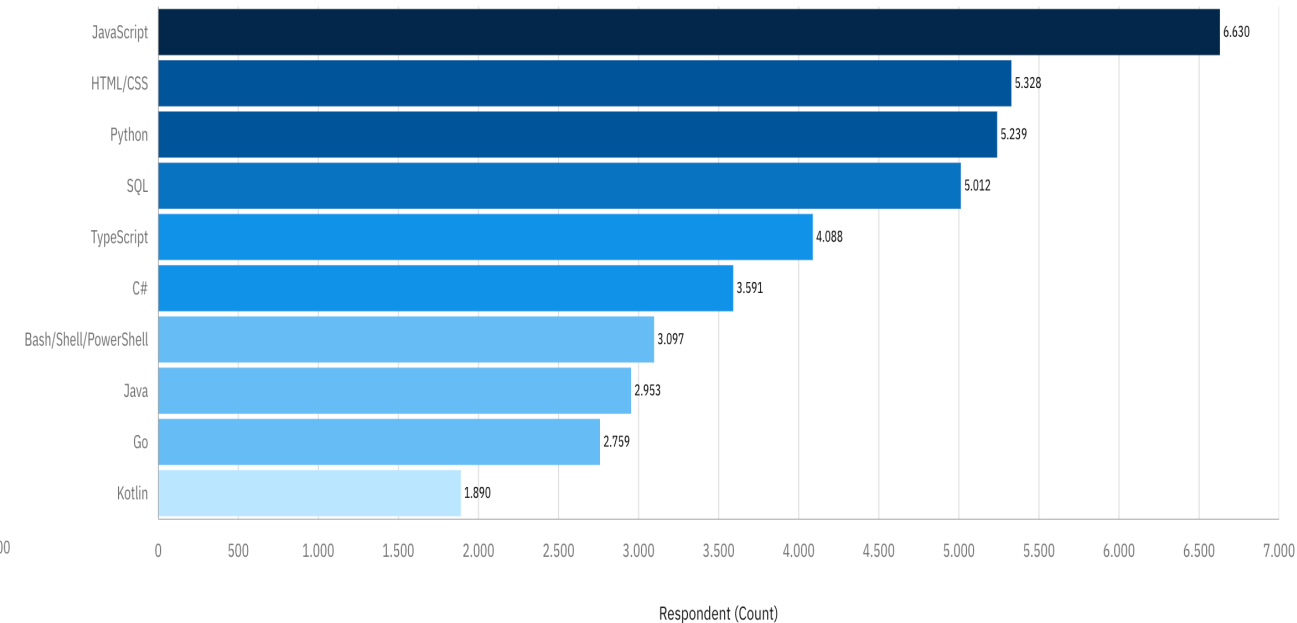
# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **JavaScript Dominance**: JavaScript is the most popular language both in the current year and projected for the next year, indicating its sustained popularity.

- **Python's Rising Popularity**: Python is positioned to gain traction next year, moving higher up in the rankings compared to the current year, potentially overtaking other languages like SQL and Bash/Shell.

- **Emergence of TypeScript**: TypeScript is showing growth, ranking higher for the next year, reflecting its increasing adoption in the developer community.
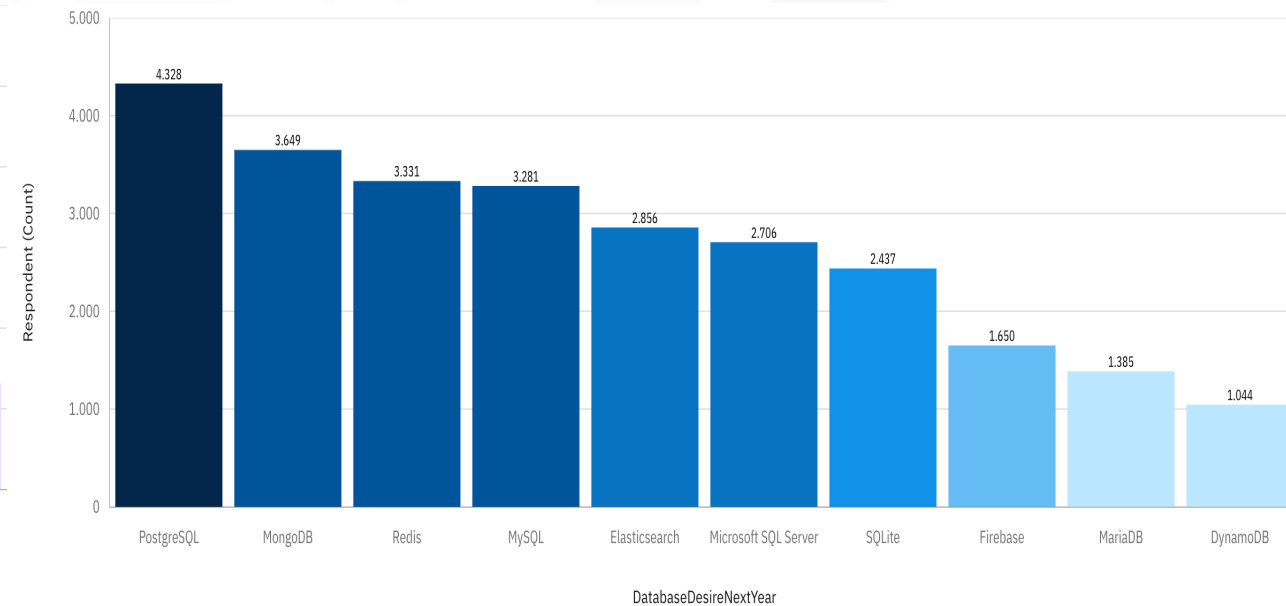
Implications

- **Focus on JavaScript Skills**: Organizations should continue investing in JavaScript for web and application development, ensuring employees are well-versed in the language.

- **Adapting to Python's Growth**: With Python's popularity rising, companies should prioritize Python training, especially in fields like data science, machine learning, and web development.

- **Increased Demand for TypeScript Developers**: Businesses adopting TypeScript should consider upskilling their workforce to leverage its enhanced features for large-scale projects.

DATABASE TRENDS

Current Year
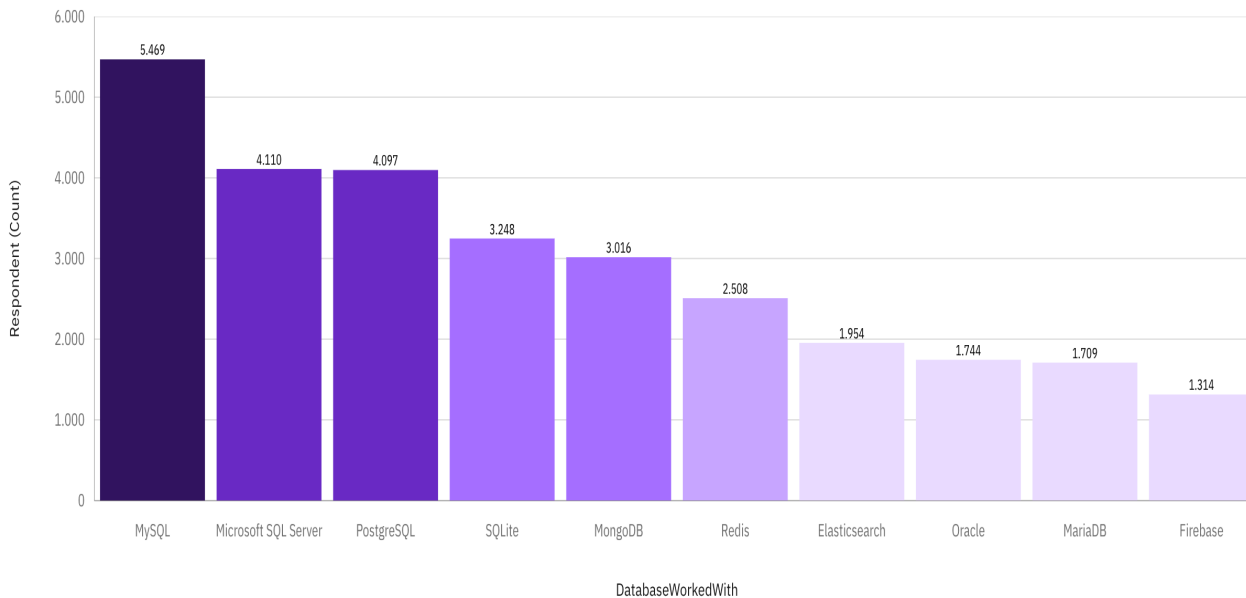
Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Current Dominance of MySQL:** MySQL has the highest respondent count for the current year, reflecting its widespread usage in the industry.

- **Rising Popularity of PostgreSQL:** While PostgreSQL ranks below MySQL in the current year, it is projected to become the most desired database in the next year, indicating an increasing preference for its advanced features.

- **Redis and MongoDB Growth:** Both Redis and MongoDB show a consistent presence in the top databases for the next year, highlighting their adoption for specific use cases like caching and NoSQL applications.

Implications

- **Organizations Should Optimize MySQL**: Given MySQL's current dominance, companies should ensure robust performance tuning, security, and scalability for MySQL-based systems to meet growing demands.

- **Prepare for PostgreSQL Transition**: Businesses should start training their teams in PostgreSQL to harness its advanced functionalities, such as JSON/JSONB handling and scalability, as it gains more traction.

- **Adopt Hybrid Database Strategies**: Companies should consider integrating databases like Redis (for caching) and MongoDB (for unstructured data) into their architectures to address diverse data storage needs efficiently.
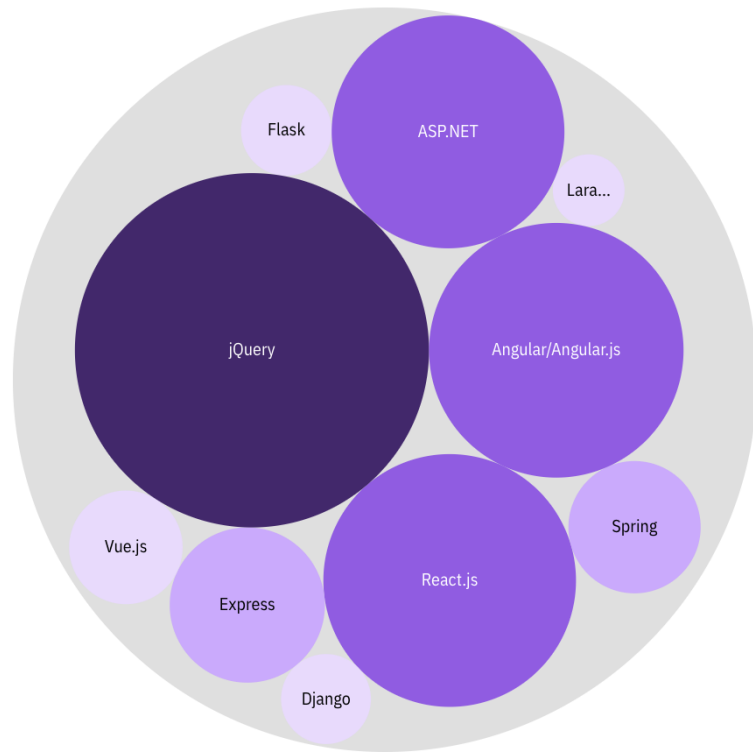
PLATFORM TRENDS

Current Year

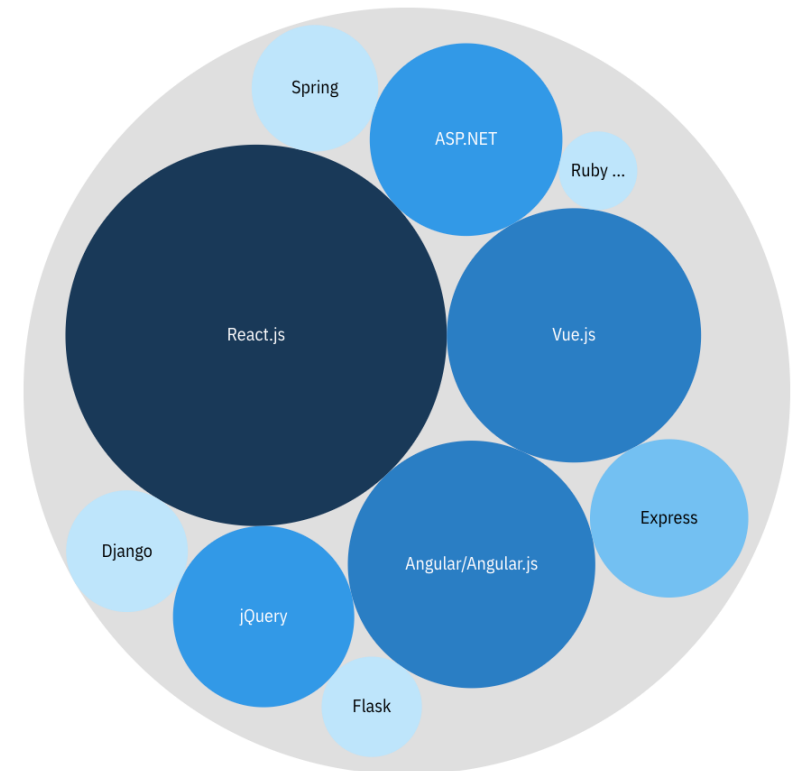## Next Year

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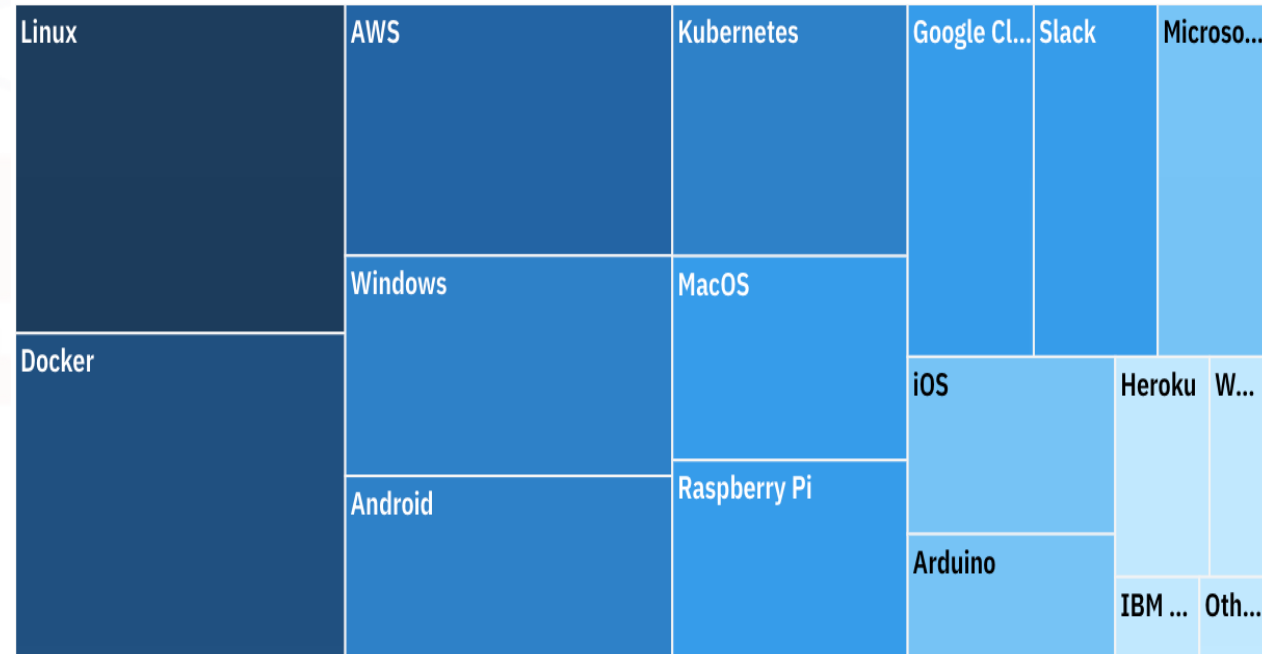
WEB FRAMEWORK TRENDS

Current Year
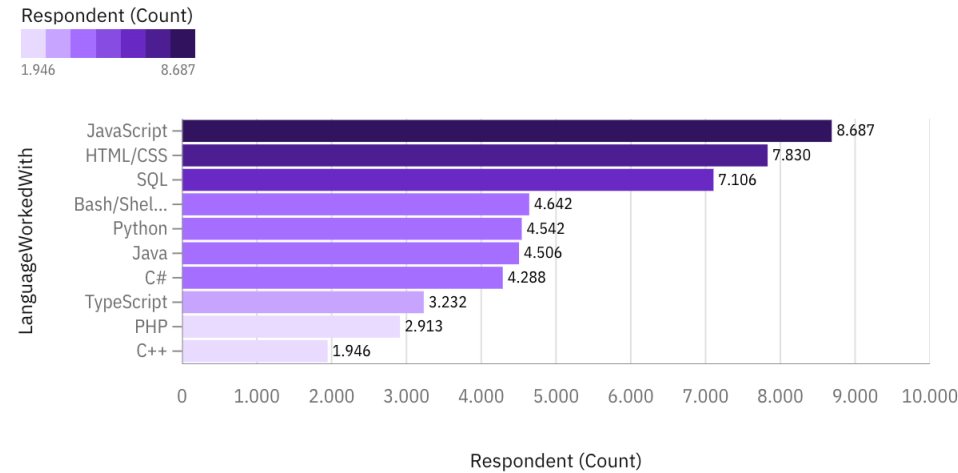

Next Year

DASHBOARD

Link to my GITHUB pdf

https://github.com/yennhipear/DA-capstone-proj-coursera/blob/main/Dashboard-FinalAssignment.pdf
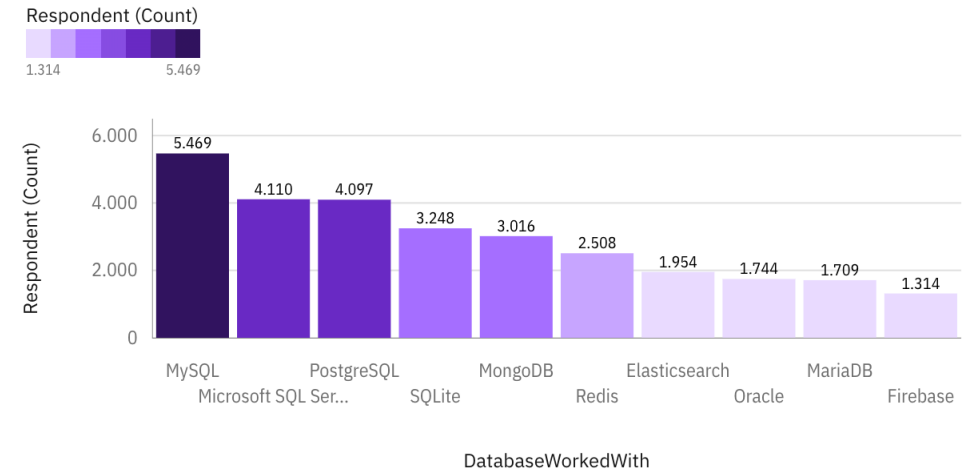
Link to my dashboard IBM Cognos
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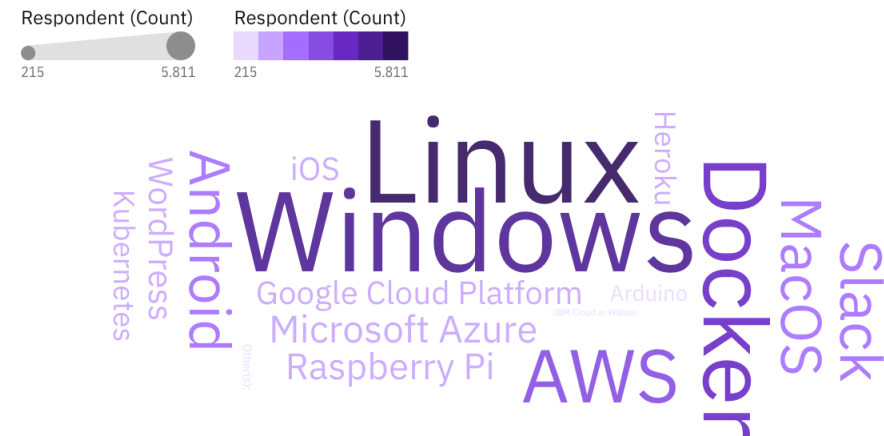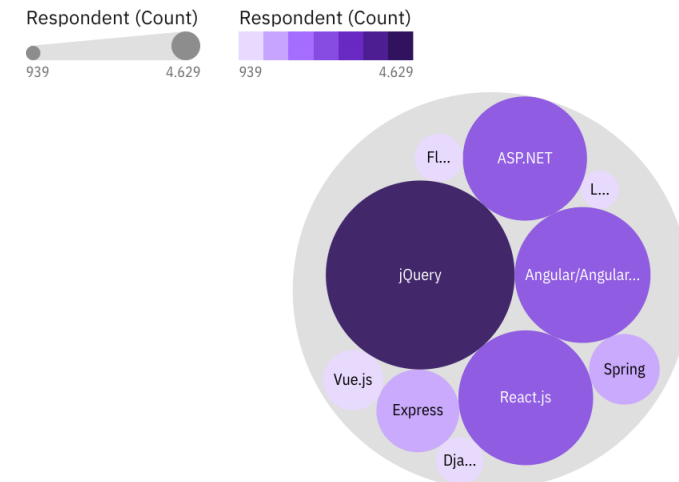
DASHBOARD TAB 1

DASHBOARD TAB 2

Top 10 LanguageDesireNextYear

Respondent (Count)
1.890 — 6.630

LanguageDesireNextYear	Respondent (Count)
JavaScript	6.630
HTML/CSS	5.328
Python	5.239
SQL	5.012
TypeScript	4.088
C#	3.591
Bash/Shell/PowerShell	3.097
Java	2.953
Go	2.759
Kotlin	1.890

0   1.000   2.000   3.000   4.000   5.000   6.000   7.000   8.000

Respondent (Count)

Top 10 DatabaseDesireNextYear

Respondent (Count)
1.044 — 4.328

DatabaseDesireNextYear	Respondent (Count)
PostgreSQL	4.328
MongoDB	3.649
Redis	3.331
MySQL	3.281
Elasticsearch	2.856
Microsoft SQL Ser...	2.706
SQLite	2.437
Firebase	1.650
MariaDB	1.385
Dyna...	1.044
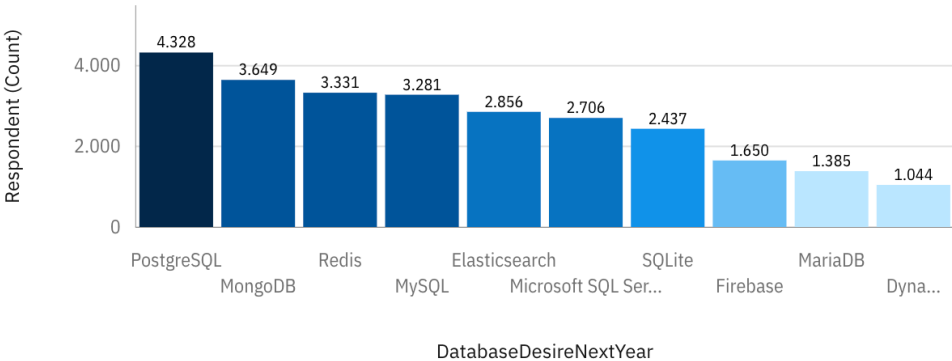
PlatformDesireNextYear

Respondent (Count)
307 — 5.865

Respondent (Count)
307 — 5.865

Linux, Docker, AWS, Windows, Android, Kubernetes, MacOS, Raspberry Pi, Google Cl..., Slack, iOS, Arduino, Heroku, Microso..., W..., IBM ..., Oth...
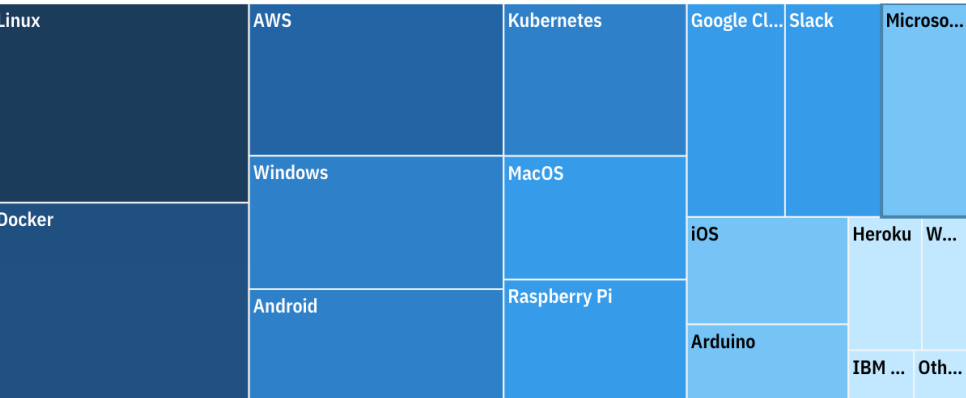
Top 10 WebFrameDesireNextYear
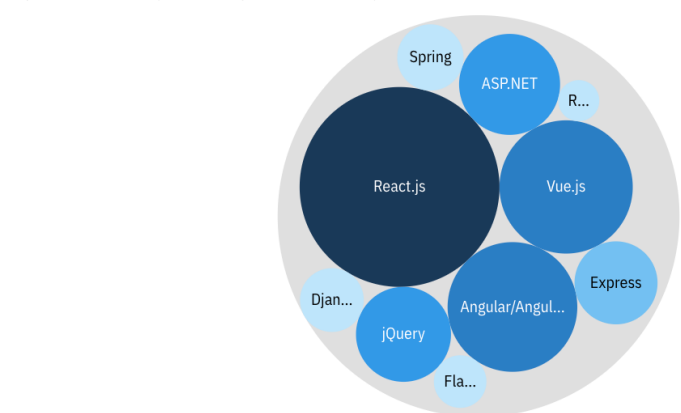
Respondent (Count)
970 — 4.714

Respondent (Count)
970 — 4.714

React.js, Spring, ASP.NET, R..., Vue.js, Express, Angular/Angul..., jQuery, Djan..., Fla...

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DASHBOARD TAB 3
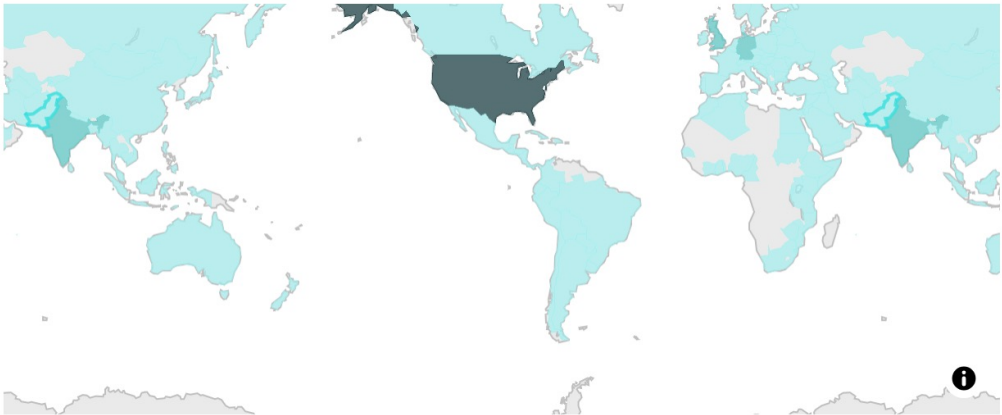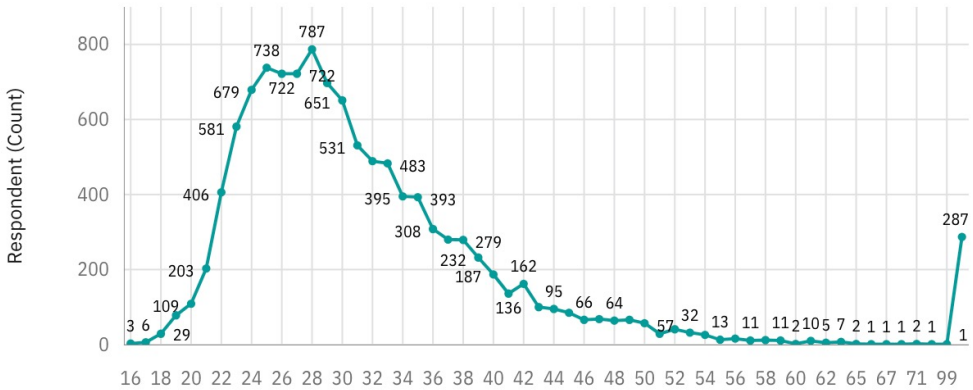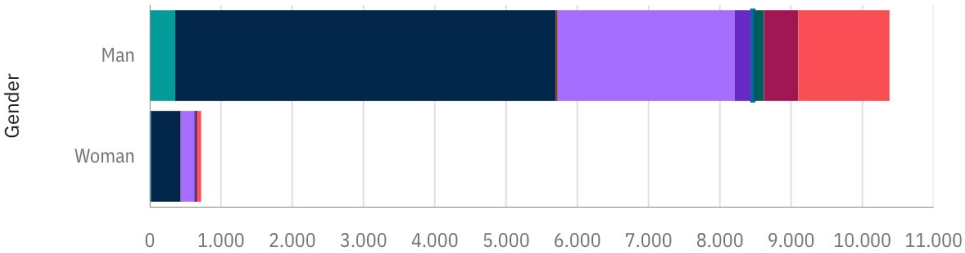
DISCUSSION

- Current and Future Technology Trends

- Upskilling and Reskilling the Workforce

- Increasing Female Representation in the Technology Sector

- Addressing Technology Gaps in Developing Nations

- Eradicating Age and Education Bias in Employment Practices

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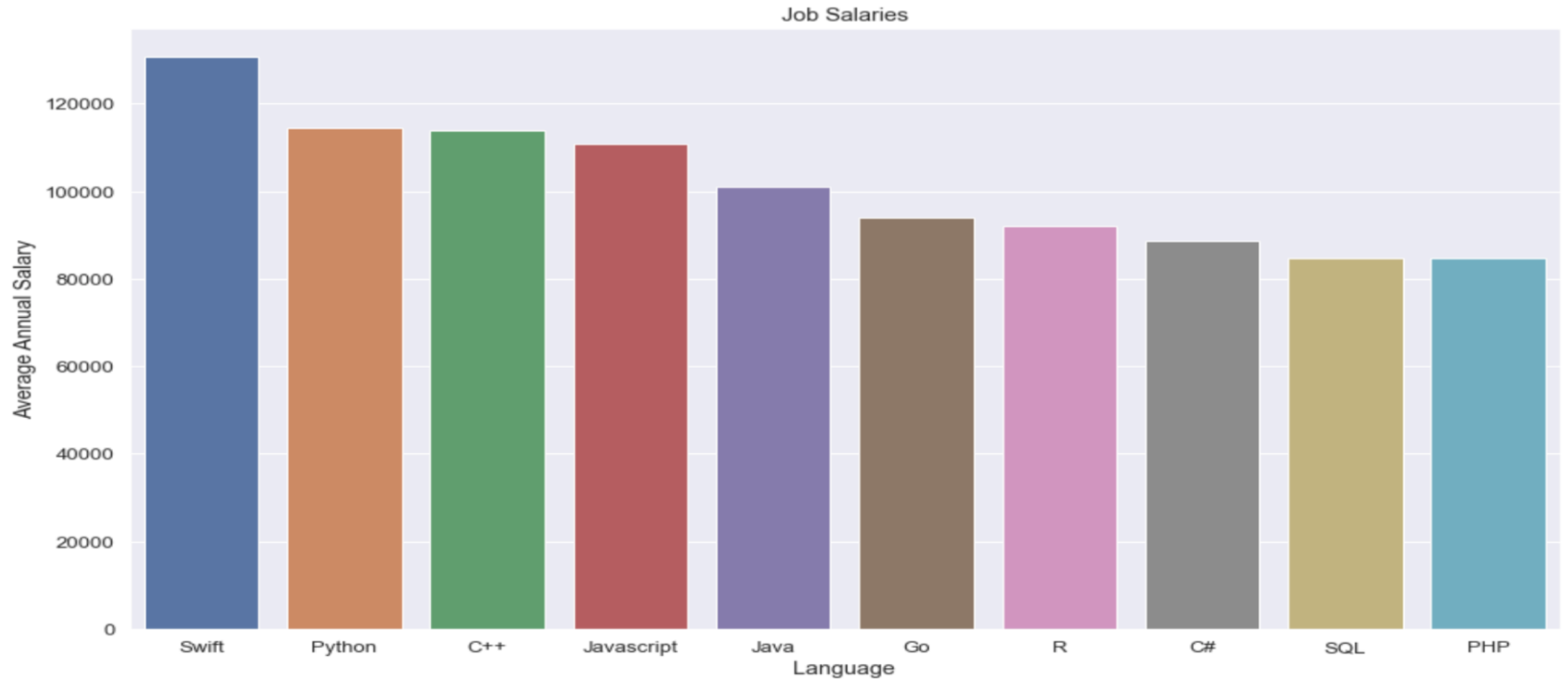SKILLS NETWORK

OVERALL FINDINGS AND IMPLICATIONS

Findings

- Rapidly evolving technology year after year
- Dominance in a few countries, such as the USA and India
- Gender disparity in technology-related careers
- Increasing adoption of platforms like Docker and AWS
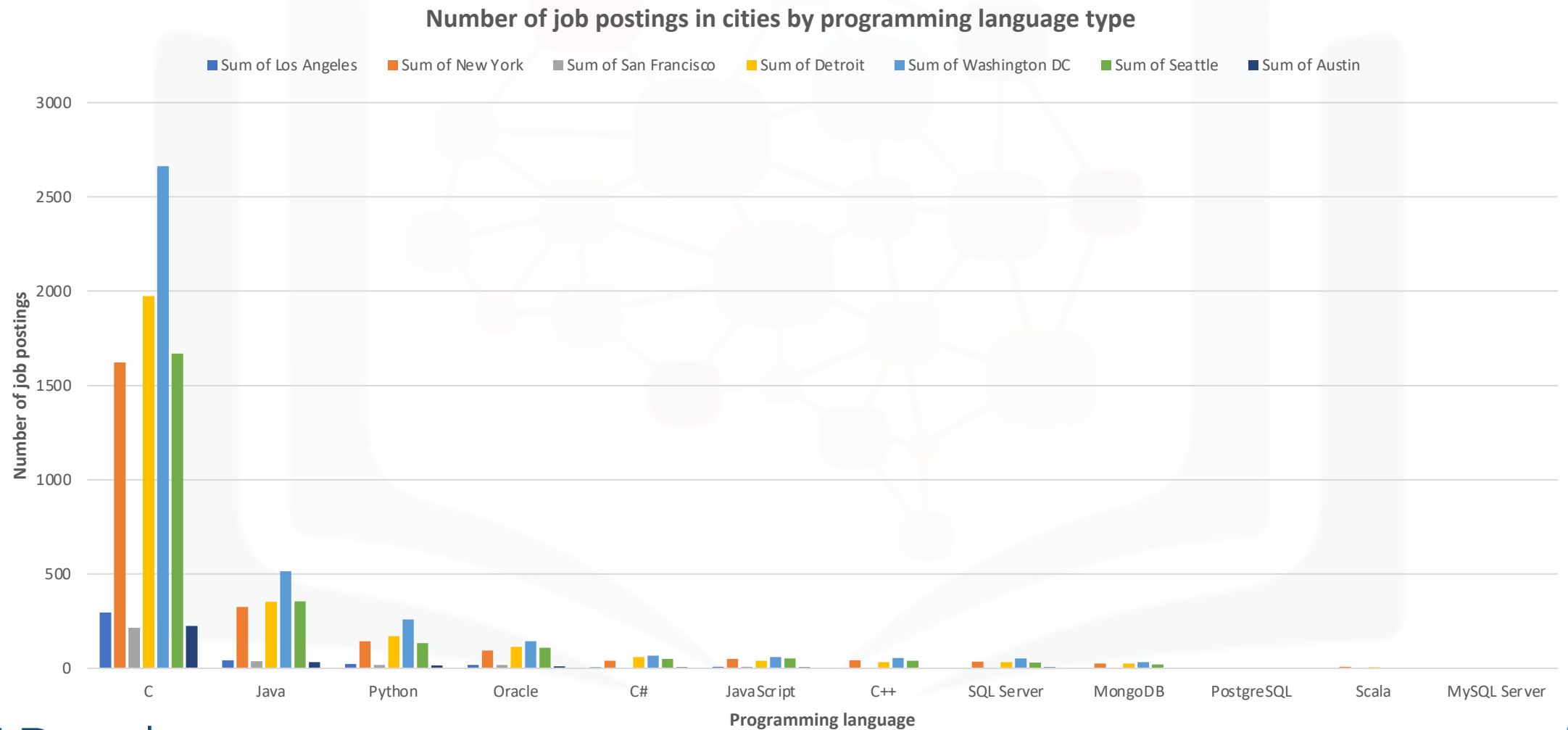
Implications

- Businesses must remain adaptable to keep up with rapid technological advancements.
- Efforts should focus on expanding technology access to underdeveloped nations.
- Influence on employment and hiring trends.
- Transition toward quicker application deployment and increased reliance on cloud services in the future.

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POPULAR LANGUAGE

Job Salaries

JOB POSTINGS

Number of job postings in cities by programming language type

THANK YOU FOR WATCHING!