STACK OVERFLOW DEVELOPER SURVEY ANALYSIS

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OUTLINE

- Executive Summary

- Introduction

- Methodology

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  - Trends
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- Discussion
  - Overall Findings & Implications

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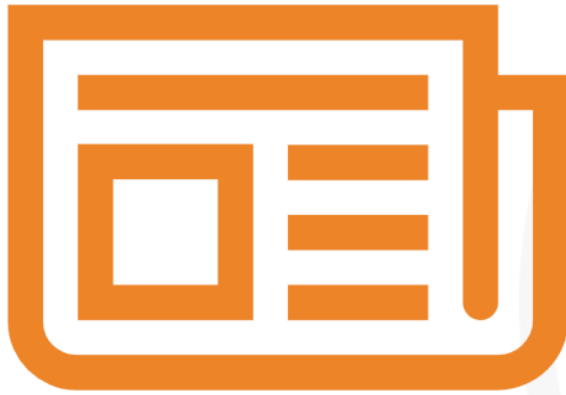Skills Network

EXECUTIVE SUMMARY

- Data Contextualization and Analysis goal.

- Methodology description.
    - Data Gathering
    - Data Analysis
    - Data Visualizations

- Results presentation supported with graphs and trends.

- Discussion of overall findings and implications regarding the results previously exposed.

- Final Conclusions of the carried out research.

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INTRODUCTION

- Stack Overflow's Annual Developer Survey is the largest and most comprehensive survey of people who code around the world.

- Results don't represent everyone in the developer community evenly.

- Nearly 90,000 developers.

- Trends to predict where the developers are going.

- Characterization of developers around the globe.

METHODOLOGY

- Collect survey data & explore its content
  - Web Scraping
  - APIs
  - Request library
- Data Wrangling
- Exploratory Data Analysis
  - Analyzing data distribution
  - Handling outliers
  - Correlations
- Data Visualization
  - Highlighting distribution of data, relationships, the composition and comparison of data.
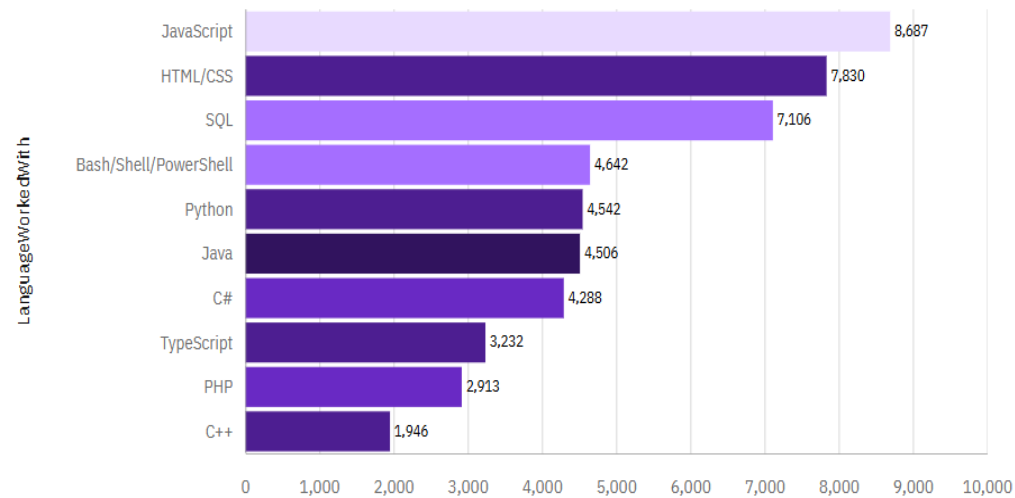- Dashboards

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RESULTS

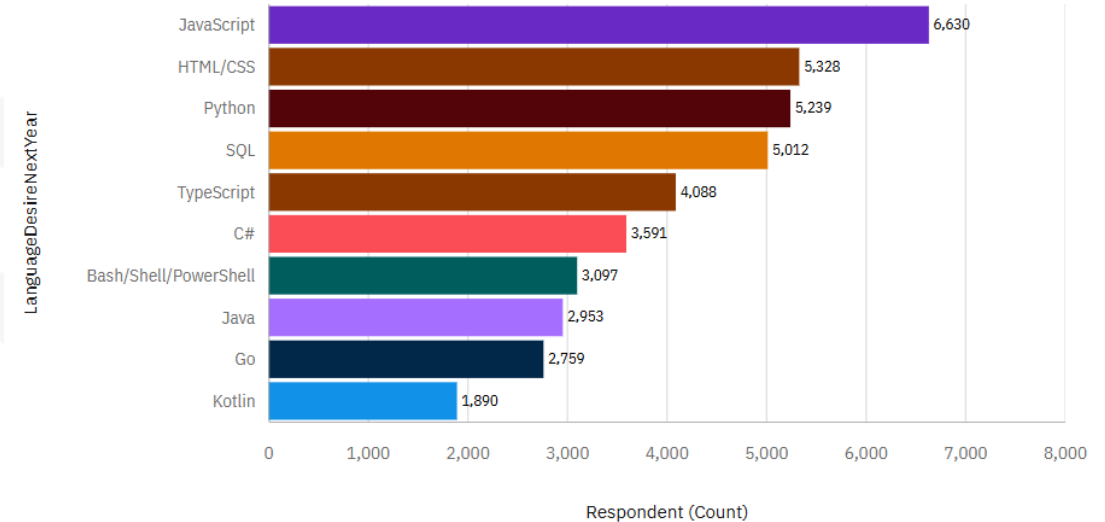# PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Programming Languages Respondents Have Worked With

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

Top 10 Desired Languages to Learn

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

- **JavaScript** and **HTML/CSS** emerge as the most used programming languages among all respondents.

- **SQL** also maintains a significant presence.

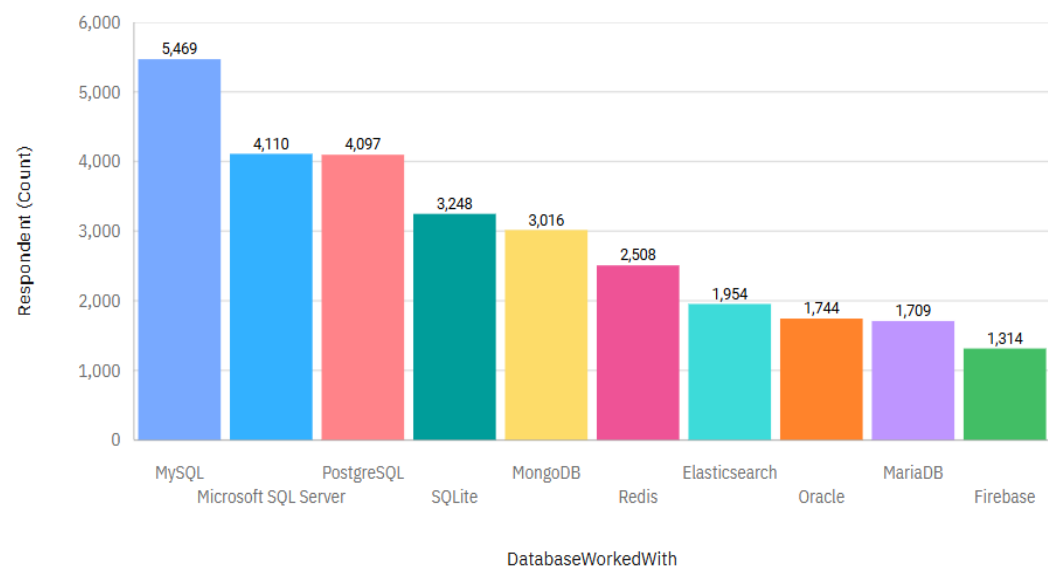- **Python** just edged out **Java** in overall ranking.

IMPLICATIONS

- The dominance of **JavaScript** and **HTML/CSS** underscores their indispensability in modern web development, highlighting the importance of mastering them of developers.

- The high usage of **SQL** emphasizes the critical role of data management and querying in modern software applications, across both web and non-web environments.

- The rise of **Python** might also reflect its versatility and ease of use, attracting developers across various domains from data science to software development.

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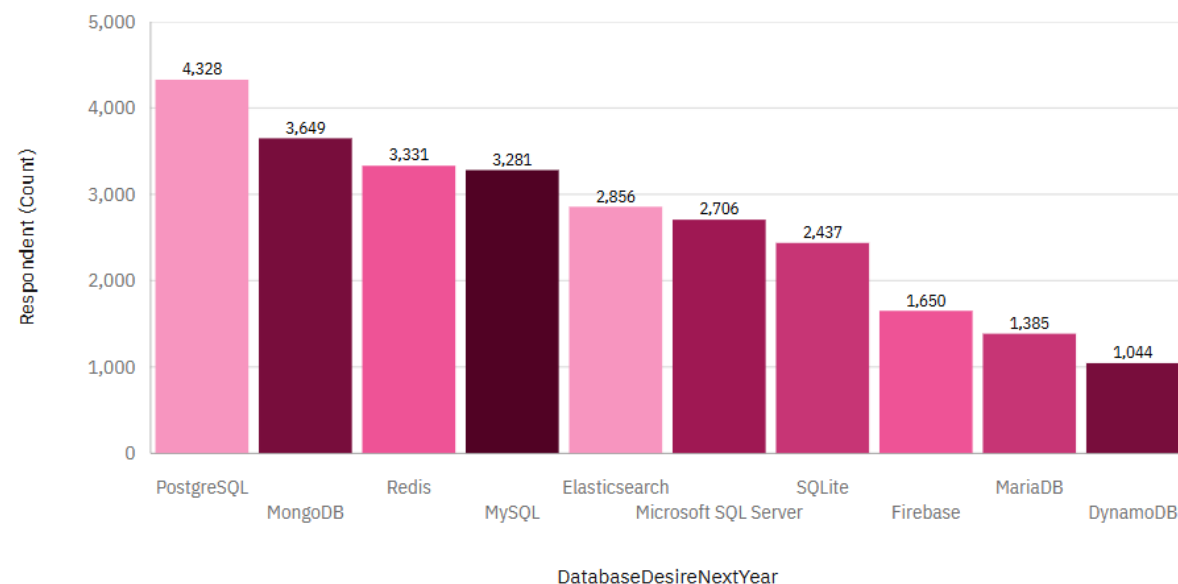
DATABASE TRENDS

Current Year

Next Year

Top 10 Databases Respondents Have Worked With

DATABASE TRENDS

FINDINGS

- **MySQL** leads as the most used DBMS among all respondents.
- **PostgreSQL** and **Microsoft SQL Server** follow closely behind **MySQL**.
- **MongoDB** ranks as the top **NoSQL** database.

IMPLICATIONS

- The popularity of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** underscores the importance of relational databases in various applications.
- The high usage of **MongoDB** reflects the growing trend towards **NoSQL** databases, driven by the need for flexible data models and scalability, particularly in modern web and modern applications.
- The diverse range of database systems utilized by developers indicates the importance of selecting the right tool for the job, considering factors such as data structure, scalability, and performance requirements.
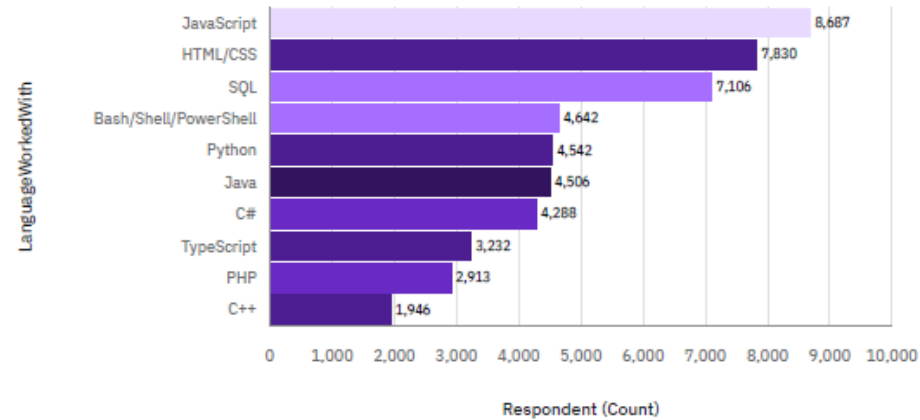
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DASHBOARD

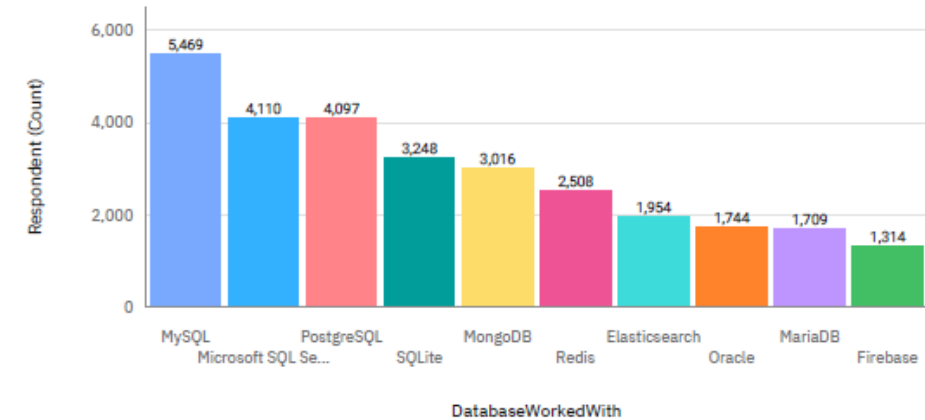https://github.com/YashNair88/IBM-Data-Analyst-Capstone-Project/blob/main/Dashboard/Cognos%20Dashboard.pdf
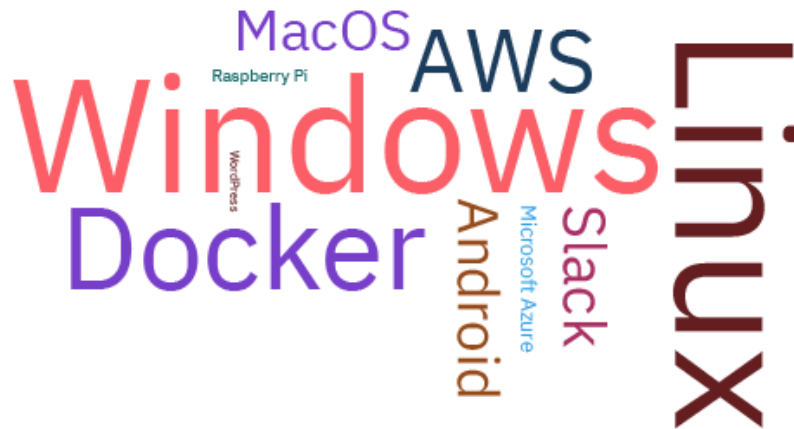
CURRENT TECHNOLOGY USAGE

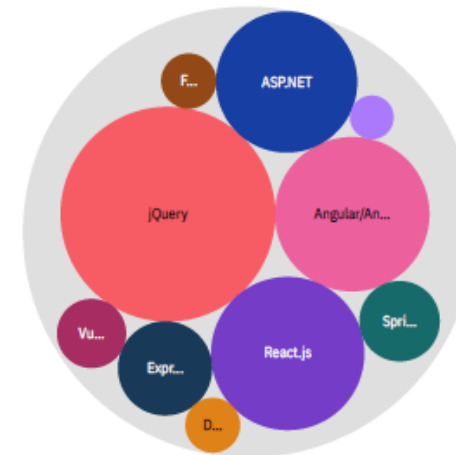Top 10 Programming Languages Respondents Have Worked With

Top 10 Databases Respondents Have Worked With

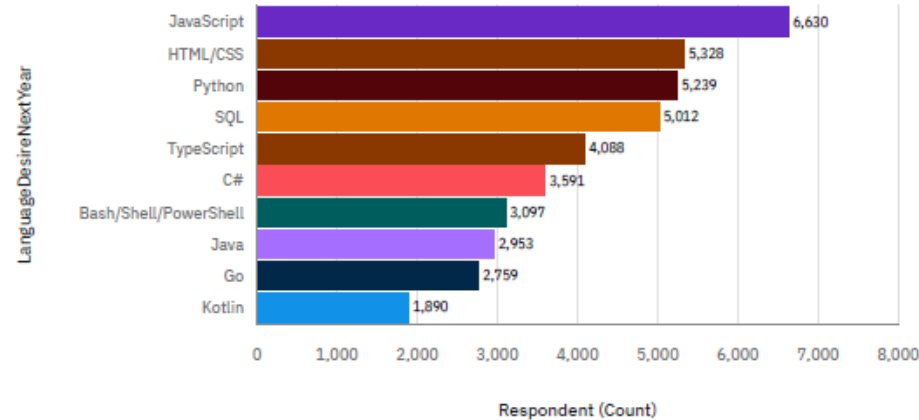Top 10 Platforms Respondents Have Worked With
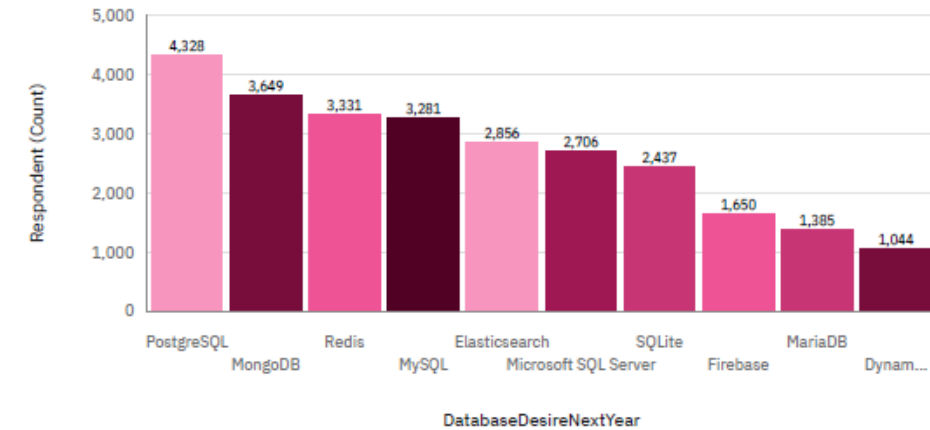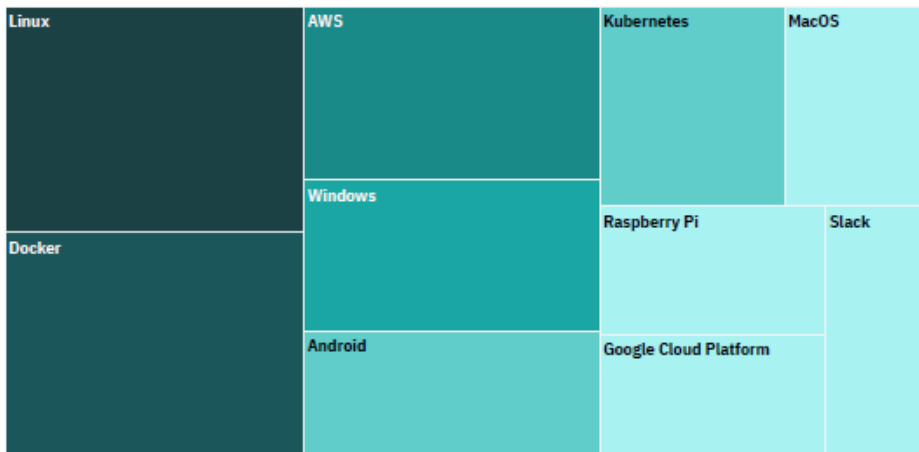
Top 10 Web Frameworks Used

FUTURE TECHNOLOGY TRENDS
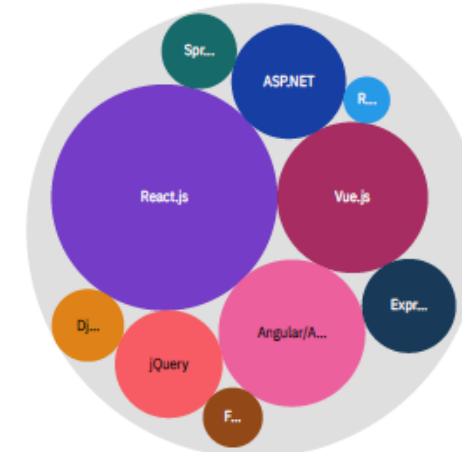
Top 10 Desired Languages to Learn

Top 10 Databases Respondents Want to Work With

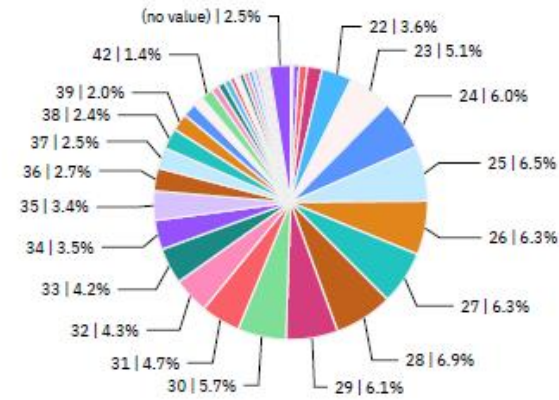### Top 10 Platforms Respondents Want to Work With

Top 10 Web Frameworks Respondents Want to Work With
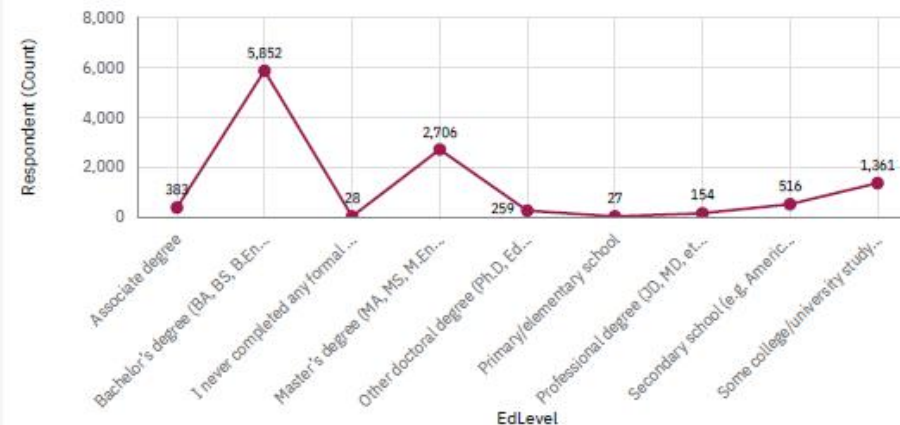

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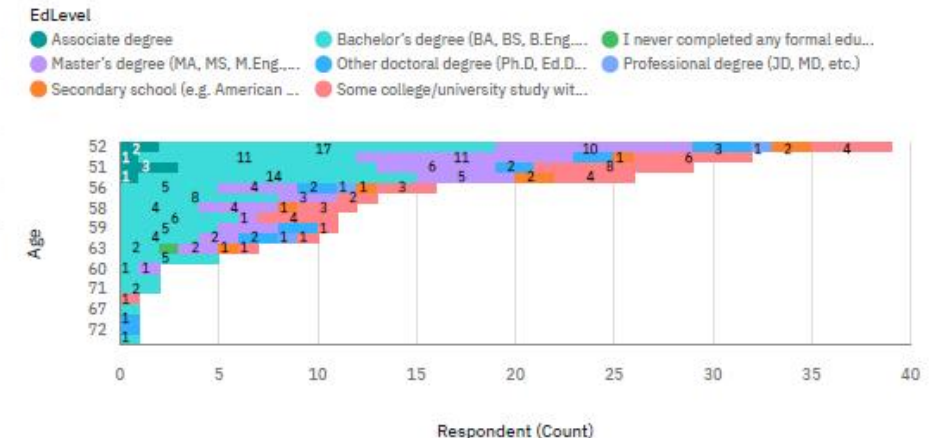
DEMOGRAPHICS

Respondent Distribution by Age

Respondent Count by Country

Respondent Distribution by Formal Education Level

Respondent Count by Age Classified by Education Level

DISCUSSION

- The dominance of **JavaScript** and **HTML/CSS** and the adoption of **MySQL** as the leading database management system.

- Highlights the central role of **web development** in the programming landscape

- Opens up discussions on the significance of **client-side scripting** and **styling**, trends in web development frameworks, and the evolving nature of **web technologies**.

OVERALL FINDINGS & IMPLICATIONS

FINDINGS

- **Technology Trends:** The dominance of **JavaScript** and **HTML/CSS** underscores the importance of staying updated with technology trends in web development.

- **Data Management:** The prevalence of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** highlights the critical role of effective data management in software development.

- **Diversity of Tools:** The diverse range of programming languages and database systems utilized by developers underscores the importance of understanding the strengths and weaknesses of different tools.

IMPLICATIONS

- **Web Dominance:** The widespread usage of JavaScript and HTML/CSS indicates the dominance of web development in the programming ecosystem, reflecting the growing importance of online platforms and digital experiences.

- **Database Diversity:** The variety of database management systems used highlights the importance of flexibility and adaptability in data storage solutions. Organizations must consider factors such as data structure, scalability, and performance when selecting a database system.

- **Industry Standardization:** The popularity of certain technologies like JavaScript and MySQL suggests a degree of industry standardization, where certain tools become widely adopted due to their proven reliability and effectiveness. This can simplify collaboration and interoperability within the developer community.

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CONCLUSION

- The findings underscore the dynamic nature of the programming landscape and the critical role of technology in driving innovation across industries.

- As developers navigate this ever-changing terrain,
  - A keen understanding of diverse programming languages
  - Database systems becomes essential to meet the demands of modern applications
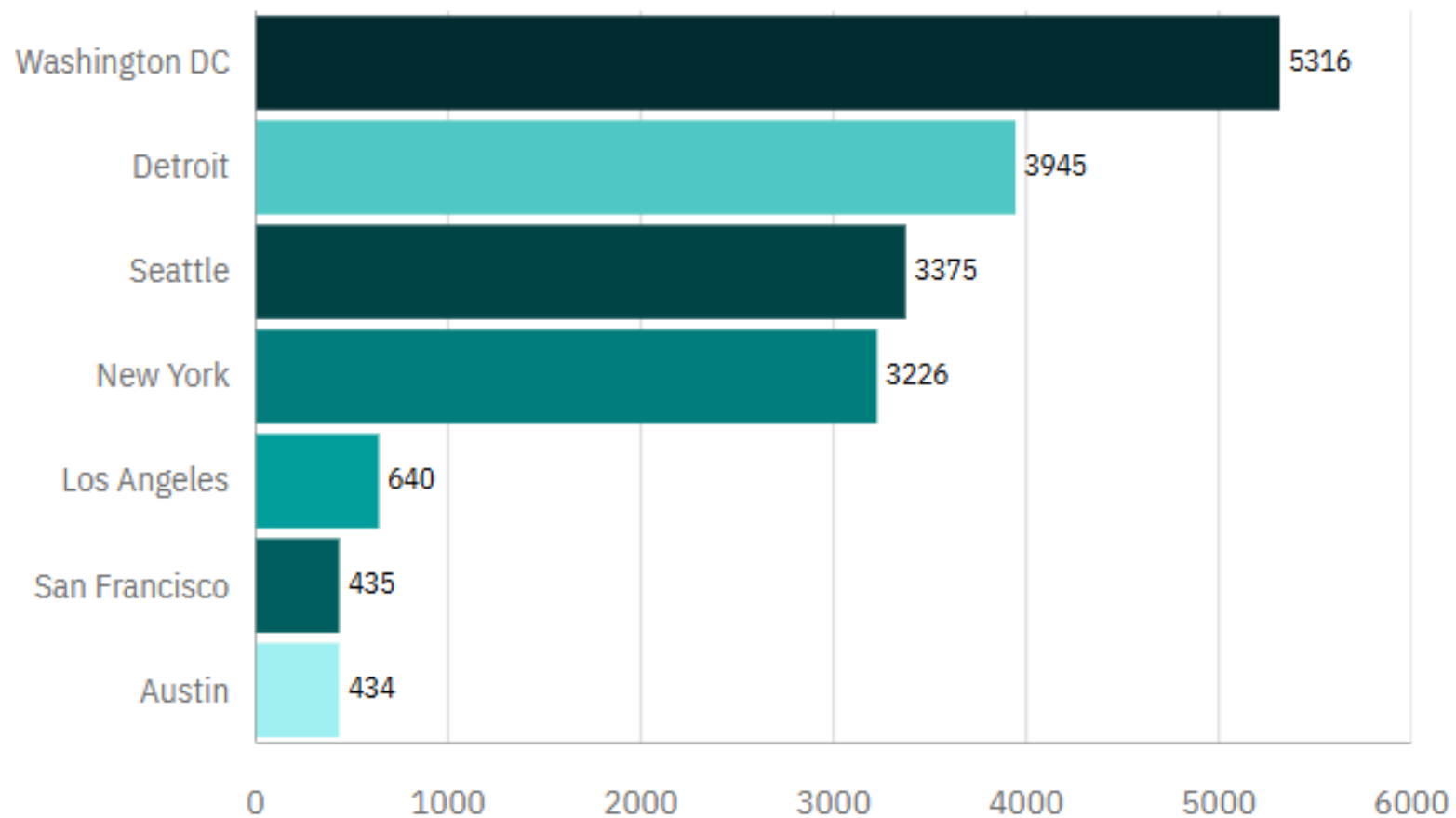 - Ensure optimal outcomes in software development projects.

APPENDIX

- A – Job Postings Chart
- B – Popular Languages Chart

JOB POSTINGS

POPULAR LANGUAGES