An Analysis of Stack Overflow Surveys

Tom Barber

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OUTLINE

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EXECUTIVE SUMMARY

- Languages used in the current year and those desired to learn in the next year seem to be correlated

- Databases used in the workforce and those desired to learn overlap often

- Limited variety of platforms. Software is dominated by AWS, Microsoft Azure, Google Cloud

- Prioritization should be focused on top languages, databases, and web platforms to maintain workplace efficiency
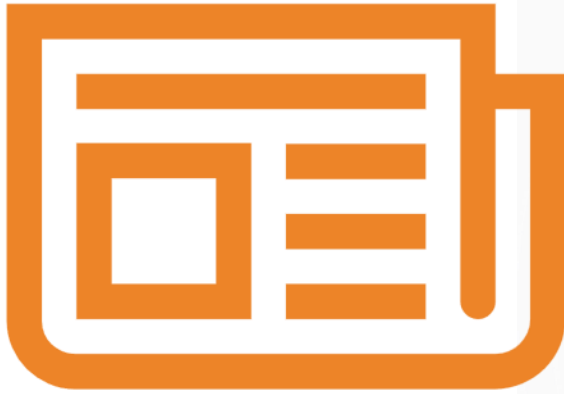
INTRODUCTION

- Purpose of Report: Deliver insights into trends between languages, databases, and web frames in the current year and next year

- Target Audience: Technical Management Teams and IT Executives

- Value of Report: Prioritize workforce perspectives on languages, databases, and web frames
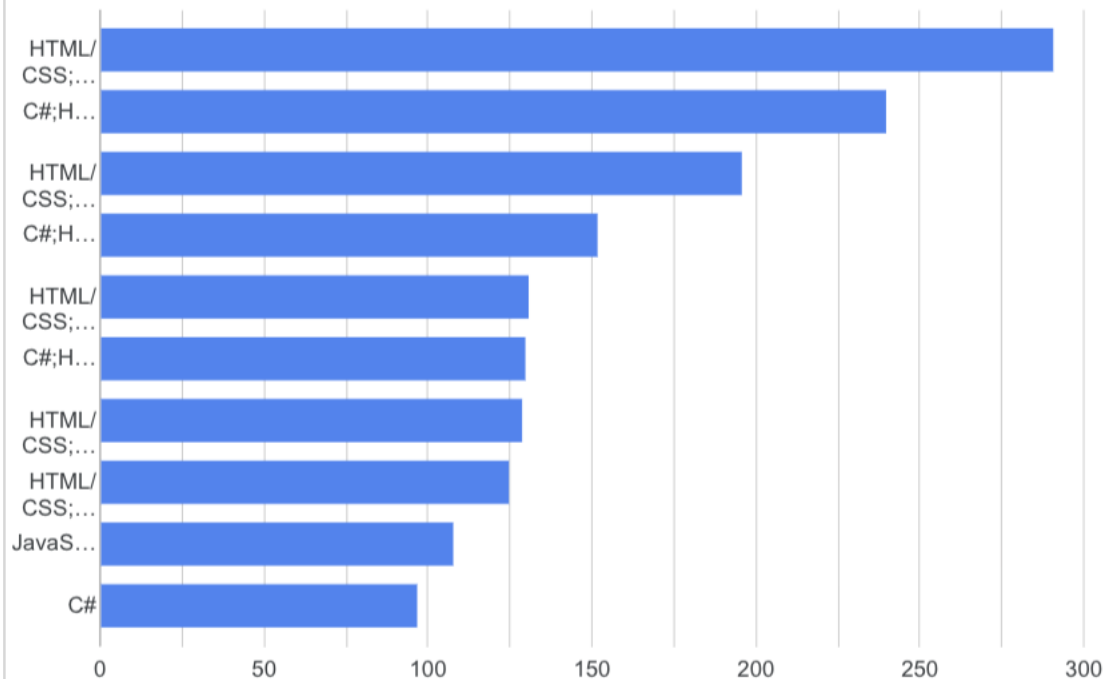
METHODOLOGY

- Utilized Stack Overflow API to access data

- Cleaned, Wrangled, and created initial visualizations

- Performed Exploratory Data Analysis

  - Found correlations

  - Removed duplicates, imputed missing values using most frequent value, drop mostly empty columns

  - Normalized salary data for numerical comparison

- Created Dashboard summarizing key trends
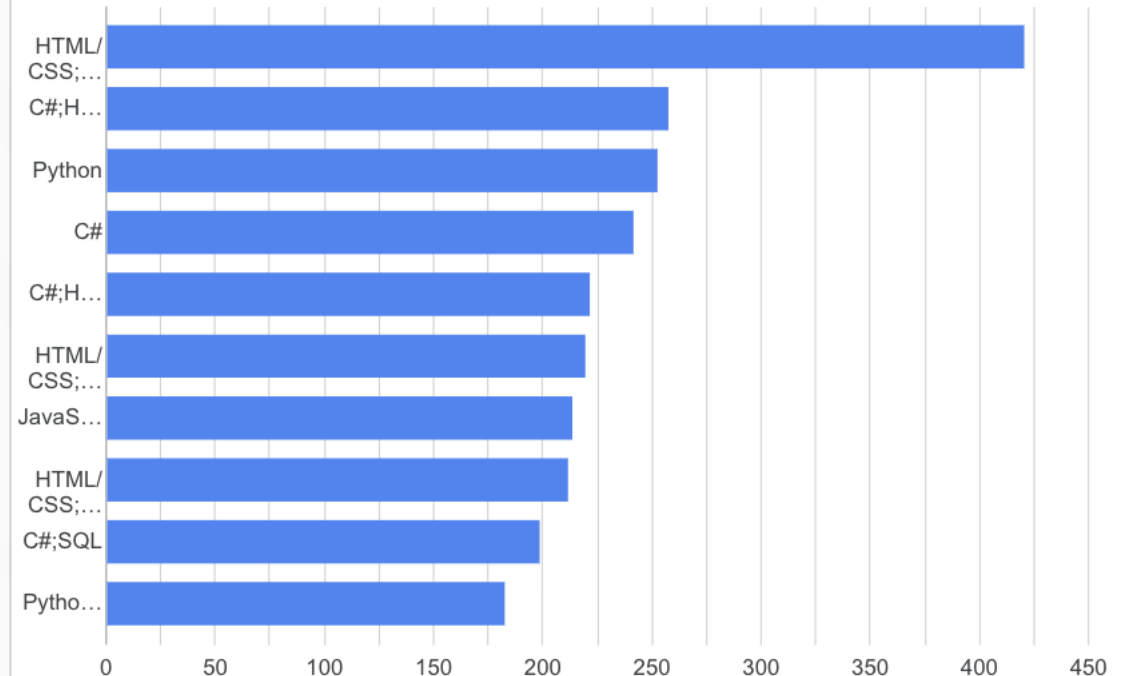
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 10 languages currently used heavily dominated by HTML, C#

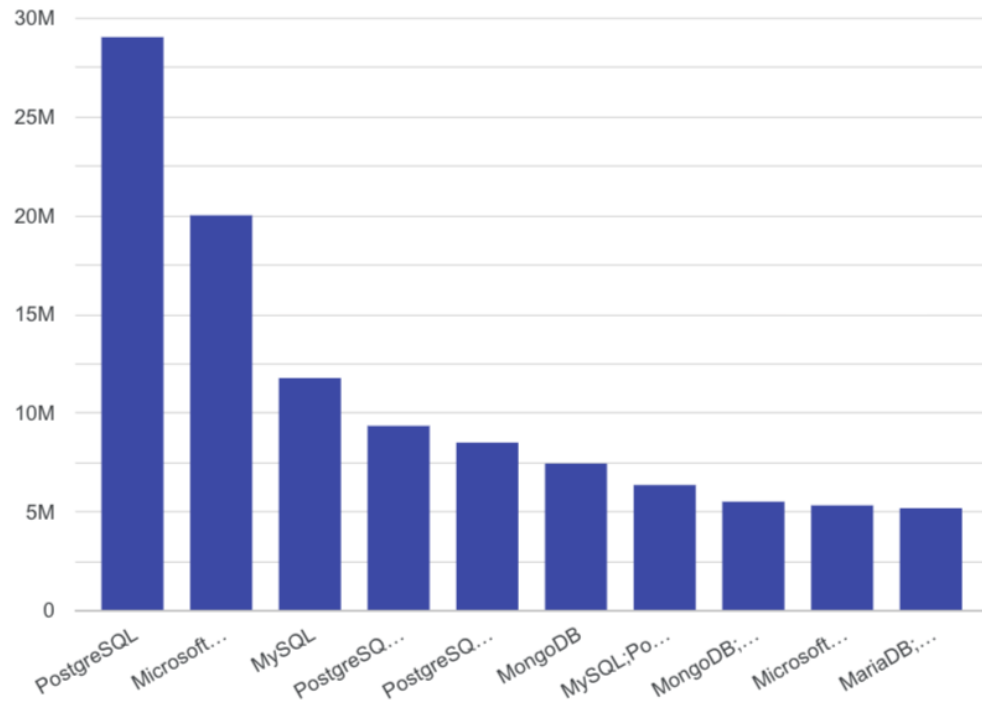- Top 10 languages wanted to be worked with revolve around HTML and Python

Implications

- Heavy correlation between languages currently used and those desired to learn

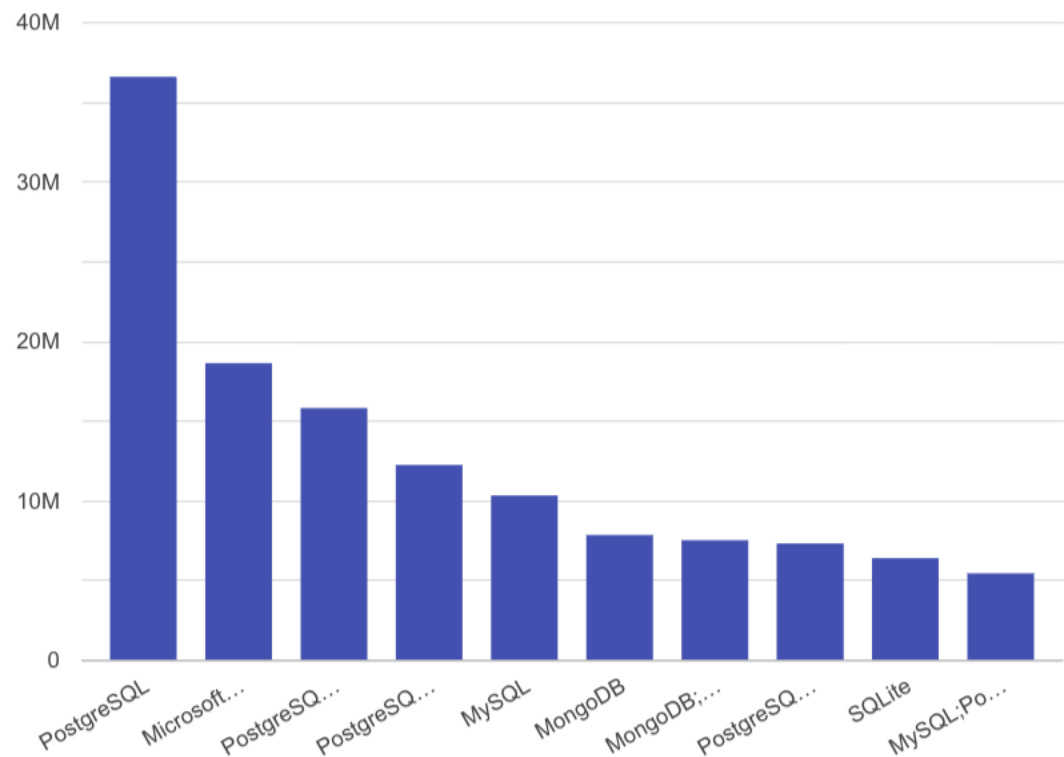- HTML is viewed as a necessity in the workforce, and is reflected in desire to learn it

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DATABASE TRENDS

Current Year

Top Ten Databases Used

Next Year

Top Ten Databases Want to Work With
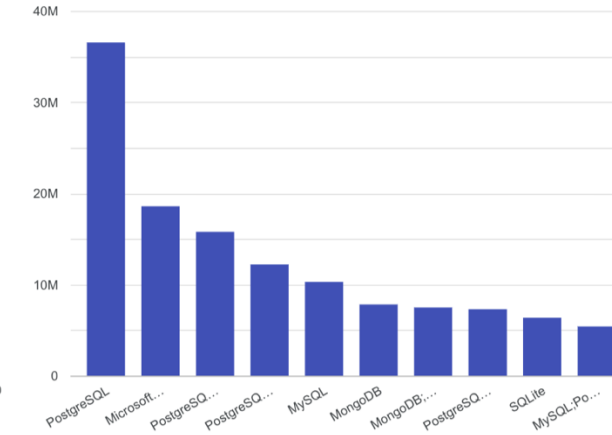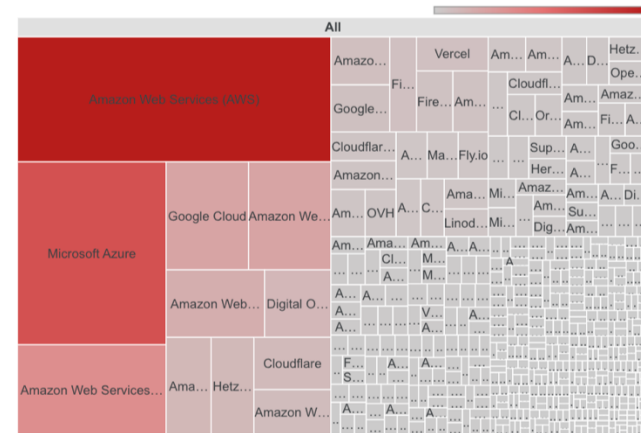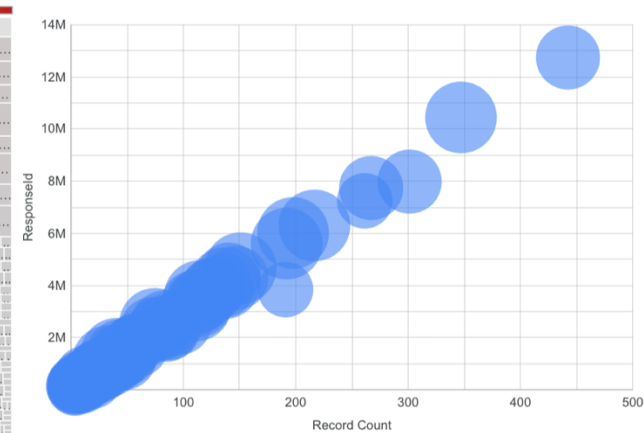
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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL is most popular database to use and to want to learn
- SQL databases maintain majority of Top Ten Databases
- Microsoft databases have strong presence

Implications

- SQL and Microsoft database knowledge is critical in the workforce
- Desire to learn these databases indicates potential opportunity for learning platforms

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DASHBOARD

Dashboard Available At:

https://github.com/thomasbarber21/IBM_Data_Analyst_Certification_Capstone_Project/blob/main/IBM_Professional_Data_Analyst_Certification_Dashboard.pdf
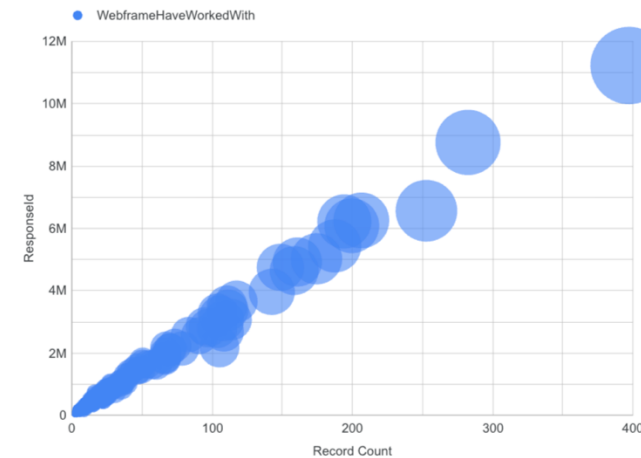
DASHBOARD TAB 1

DASHBOARD TAB 2

DASHBOARD TAB 3
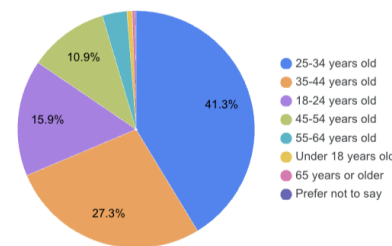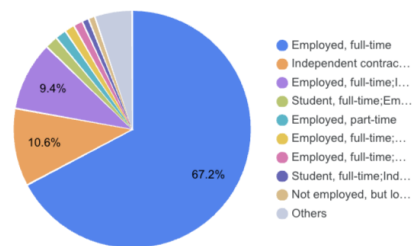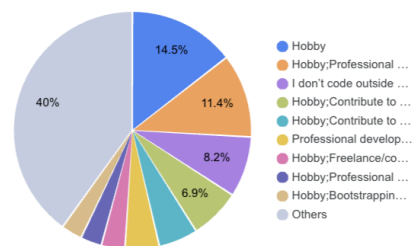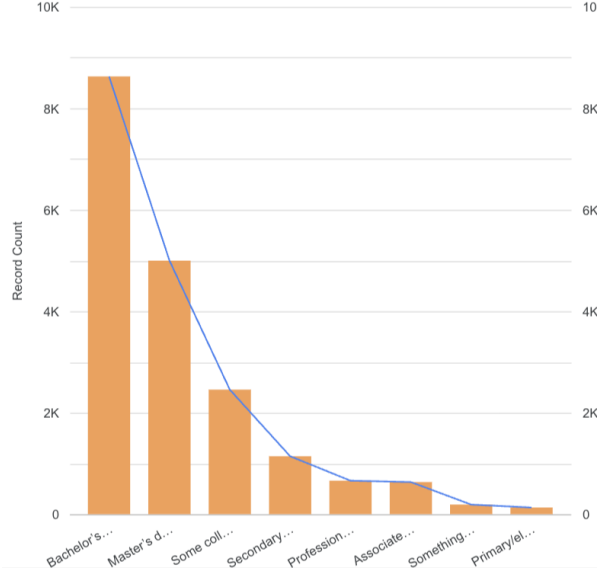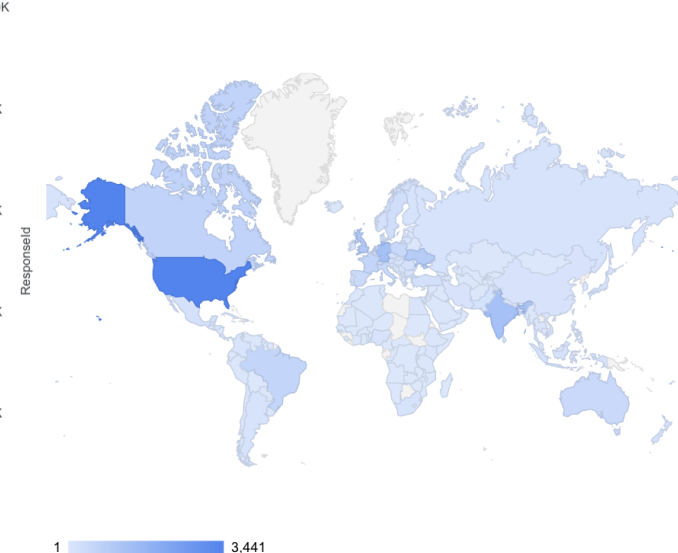
DISCUSSION

- Majority of respondents are college educated, work full time, and are primarily from the US

- Potential demographics limit conclusions from being made about broader audiences

- Thoughts and Questions?

OVERALL FINDINGS & IMPLICATIONS

- Strong correlation between languages and databases used in the workforce and those desired to learn

- Potential bias in survey respondents, not representative of larger trends

- HTML, C#, SQL and Microsoft database knowledge is of high importance in the workforce and the eyes of learners
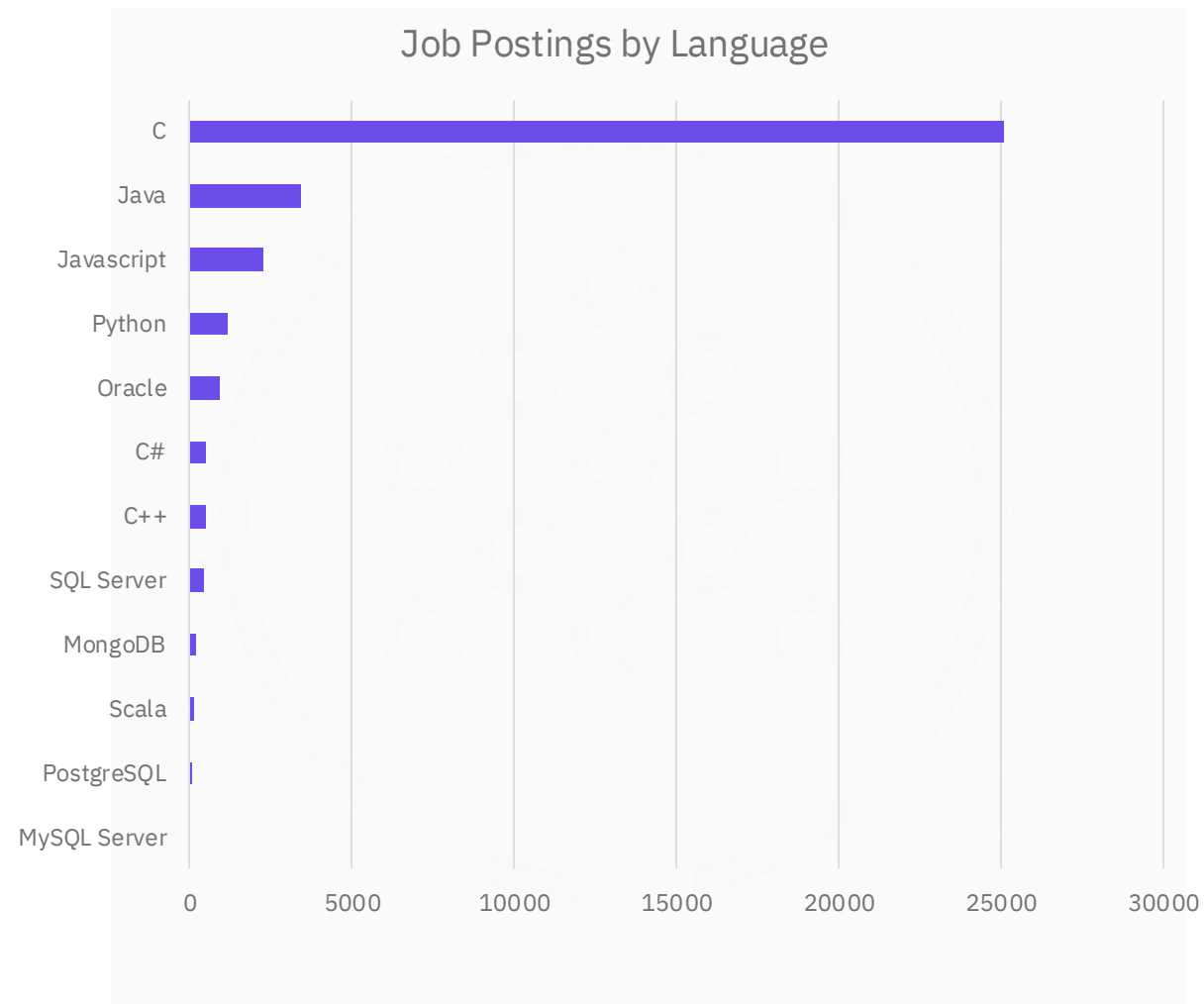

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CONCLUSION

- Strong desire to learn languages used in the workforce

- Strong desire to learn databases used in the workforce

- Heavy correlation between languages, databases, and web frame trends in the current and next year

- Prioritization should be placed on HTML, C#, SQL and Microsoft Databases for workplace satisfaction and efficiency

JOB POSTINGS

Job Postings by Language

POPULAR LANGUAGES