

# Capstone Project

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## Part 1



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# OUTLINE

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



# EXECUTIVE SUMMARY

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- Trend for programming languages is trending toward web-based/web-dependent languages
- Interest in C-based languages like C# remains strong
- Python rising as a language of interest
- Interest in SQL expected to remain strong



# INTRODUCTION

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- Programming language and database interests show certain trends rising compared to respondents' prior experiences, information key to anyone seeking work in the technology field
- Swift and Python among highest required languages in recent job postings
- Job postings centered on several cities, primarily:
  - Washington, D.C.
  - Detroit, Michigan
  - Seattle, Washington
  - New York City, New York



# METHODOLOGY

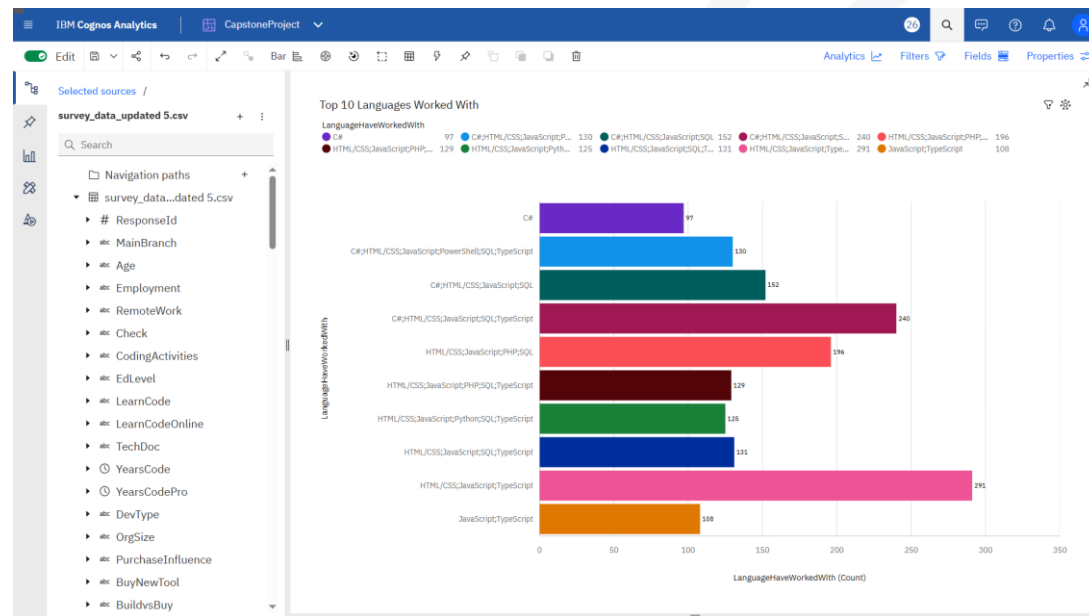
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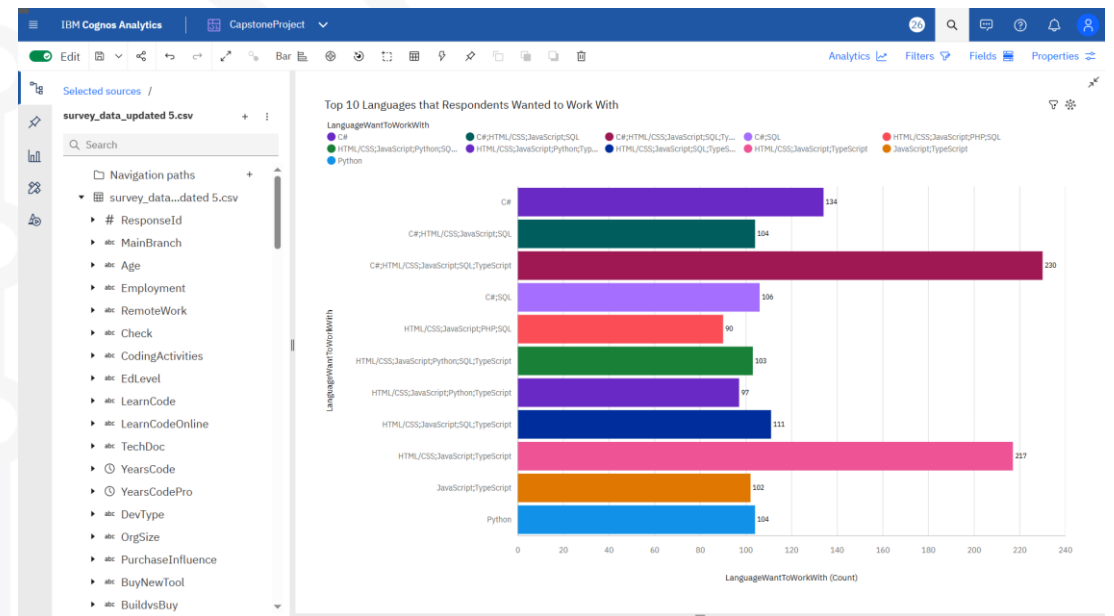
- Survey taken of 18,846 respondents regarding their age, country, job satisfaction, coding languages worked with, etc.
  - Survey results analyzed for likely trends in language and database trends
- Web scraping of job descriptions to provide details regarding languages and salaries associated with them
- Utilitization of API to find most common cities listed for coding jobs

# PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- C# was highly ranked on both lists
- HTML/CSS, Javascript, Python, and Typescript were most often found together on both lists
- Python and C# were a high priority as future languages

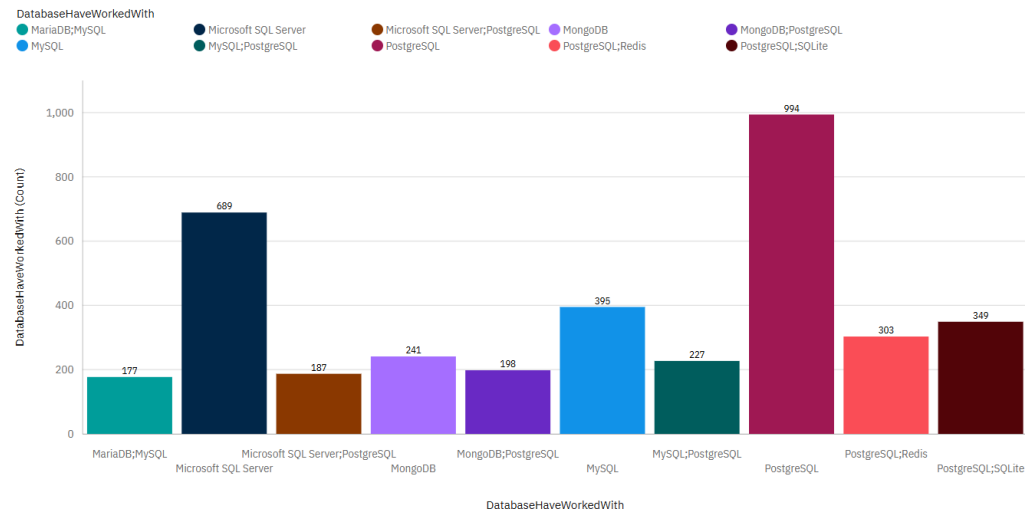
## Implications

- C# remains valuable and is expected to remain important
- There is a strong trend toward web-heavy development
- Python is viewed as highly important

# DATABASE TRENDS

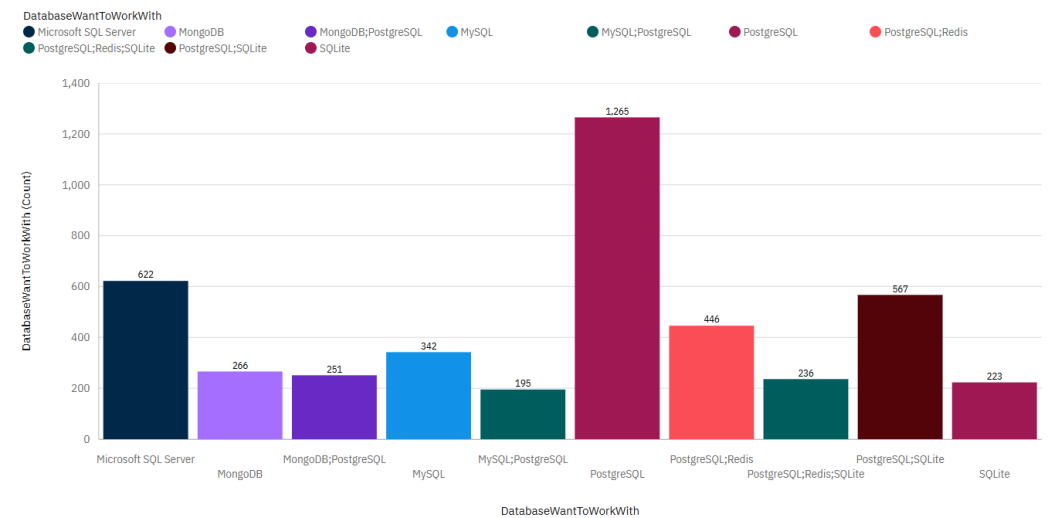
## Current Year

Top 10 Databases Worked With



## Next Year

Top 10 Databases that Respondents Wanted to Work With





# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Various SQL (MySQL, Microsoft SQL, PostgreSQL, etc.) listed on both lists
- Redis and MongoDB appeared several times on Future list, but at less frequency than prior
- Rise in number of people wanting to work with PostgreSQL vs. already worked with

## Implications

- Need for SQL databases remains high
- NoSQL databases like Redis and MongoDB waning slightly
- PostgreSQL expected to become more key to know how to work with



# DASHBOARD

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The following slides demonstrate the analysis of programming languages, databases, platforms, and webframes that respondents were asked about.

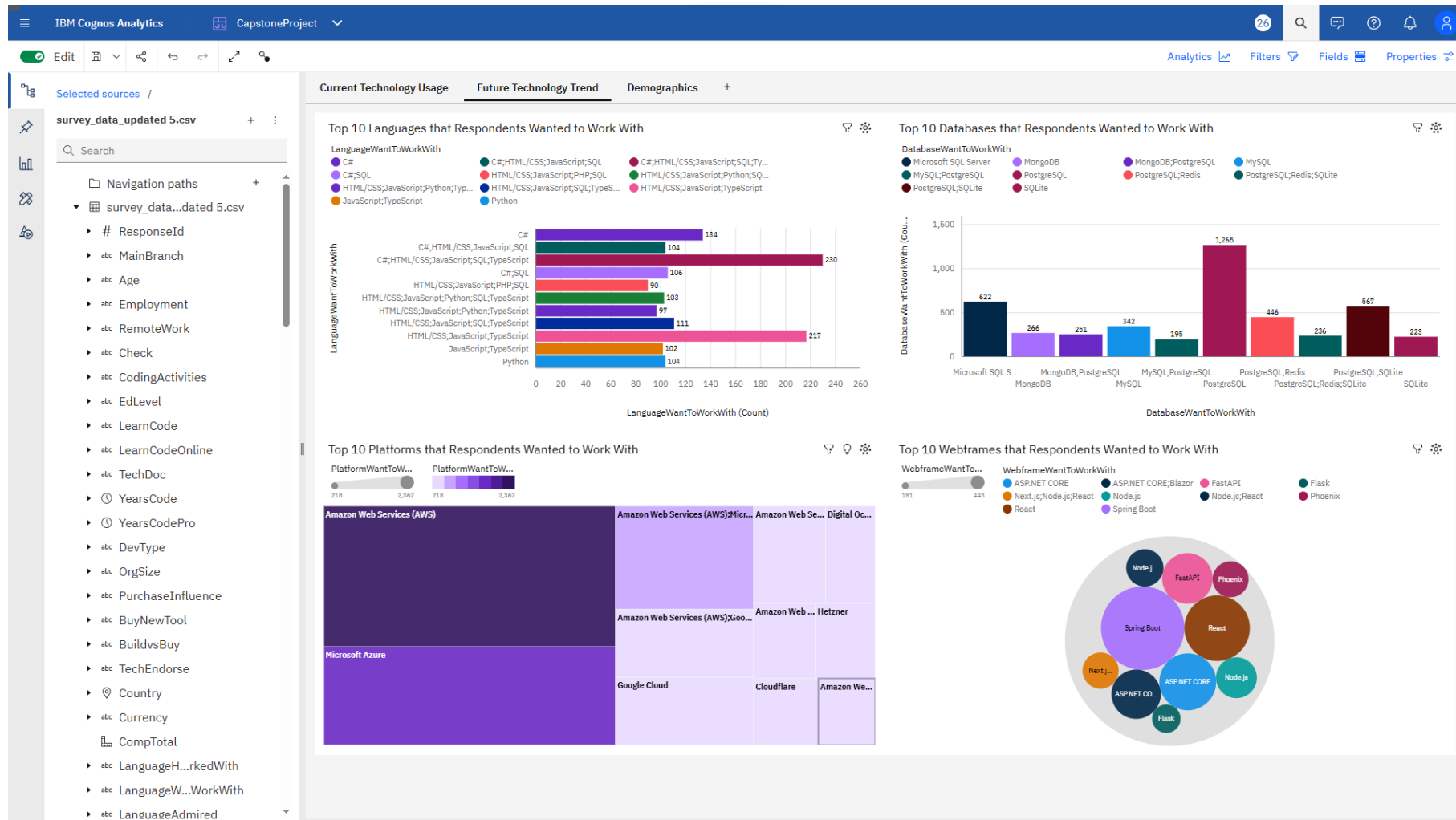


The screenshot displays the IBM Cognos Analytics interface. On the left is a navigation pane with a search bar and a list of sources, including 'survey\_data\_updated 5.csv'. The main area contains four charts:

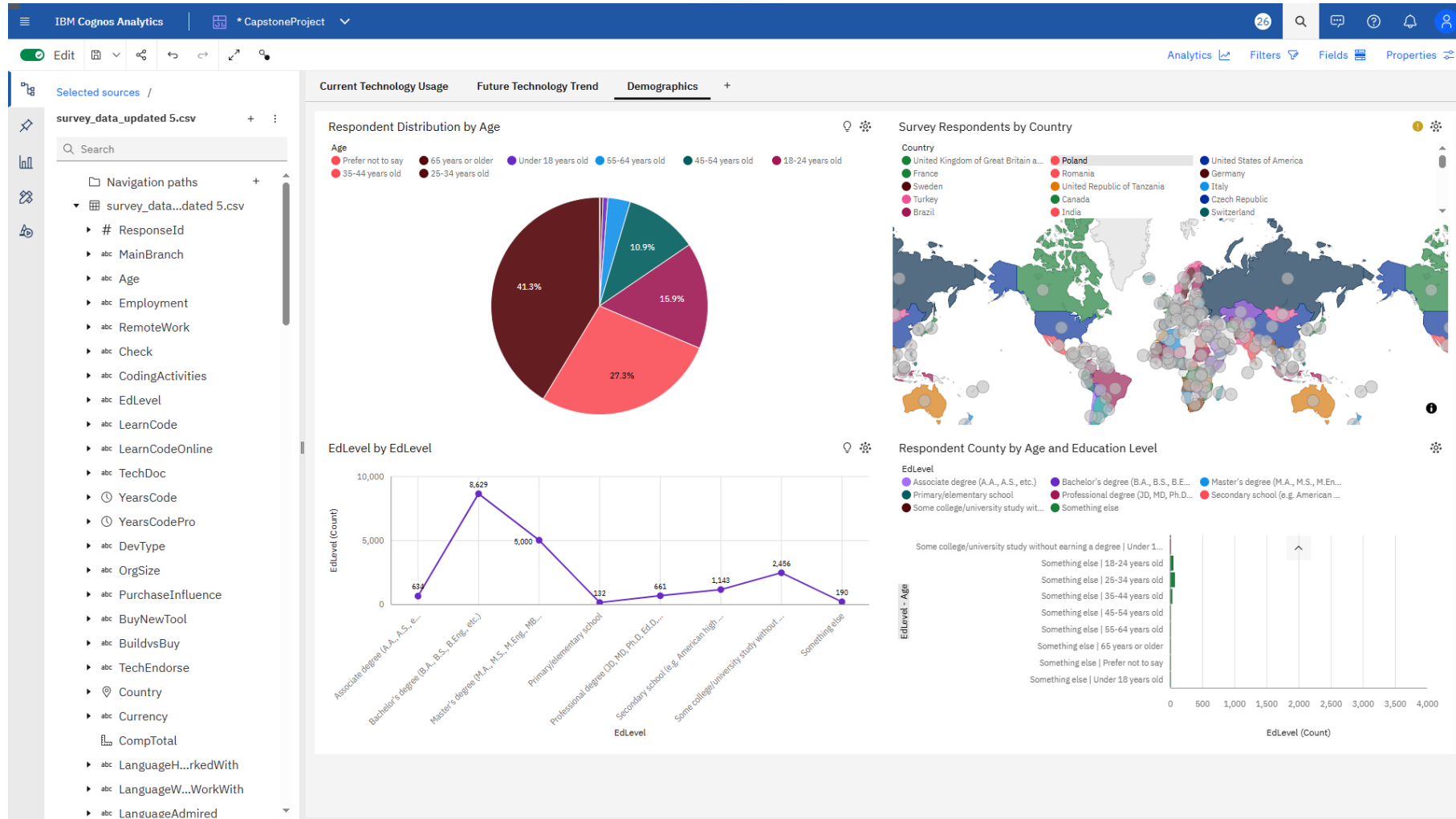
- Top 10 Languages Worked With:** A horizontal bar chart showing the count of languages. The top languages are C#, C#;HTML/CSS;JavaScript;PowerShell;SQL;TypeScript (130), C#;HTML/CSS;JavaScript;SQL (152), C#;HTML/CSS;JavaScript;PHP;SQL (240), HTML/CSS;JavaScript;PHP;SQL (196), HTML/CSS;JavaScript;SQL;TypeScript (240), HTML/CSS;JavaScript;PHP;SQL (129), HTML/CSS;JavaScript;Python;SQL;TypeScript (125), HTML/CSS;JavaScript;SQL;TypeScript (131), HTML/CSS;JavaScript;TypeScript (291), and JavaScript;TypeScript (108).
- Top 10 Databases Worked With:** A vertical bar chart showing the count of databases. The top databases are MariaDB;MySQL (177), Microsoft SQL Server (689), Microsoft SQL Server;PostgreSQL (187), MongoDB;PostgreSQL (241), PostgreSQL (198), MySQL (395), MySQL;PostgreSQL (227), PostgreSQL;Redis (994), PostgreSQL (303), and PostgreSQL;SQLite (349).
- Top 10 Platforms Worked With:** A horizontal bar chart showing the count of platforms. The top platforms are Amazon Web Services (AWS);Cloud (191), Amazon Web Services (AWS);Digital Ocean (2,391), Amazon Web Services (AWS);Google Cloud (191), Amazon Web Services (AWS);Microsoft Azure (191), Amazon Web Services (AWS);Google Cloud (191), Amazon Web Services (AWS);Microsoft Azure (191), Amazon Web Services (AWS);Google Cloud (191), Amazon Web Services (AWS);Microsoft Azure (191), Amazon Web Services (AWS);Google Cloud (191), and Amazon Web Services (AWS);Microsoft Azure (191).
- Top 10 Webframes Worked With:** A bubble chart showing the count of webframes. The top webframes are ASP.NET;ASP.NET CORE (159), Express;Node.js;React (398), Express;Node.js;React (159), Express;Node.js;React (159), Express;Node.js;React (159), Express;Node.js;React (159), Express;Node.js;React (159), Express;Node.js;React (159), Express;Node.js;React (159), and Express;Node.js;React (159).

The interface also includes a top toolbar with icons for filters, fields, and properties, and a bottom toolbar with icons for navigation and search.

# DASHBOARD TAB 2



# DASHBOARD TAB 3



# DISCUSSION

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# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Skills in C++ and C# remain highly valuable to learn and retain
- Salaries for Python coders are among the highest offered, and interest in Python has also increased

## Implications

- Despite being older languages, C languages still integral
- Python appears to become more integral to the tech sector as a whole

# CONCLUSION

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- Python is highly important to build skills for when entering or remaining the tech sector





# APPENDIX

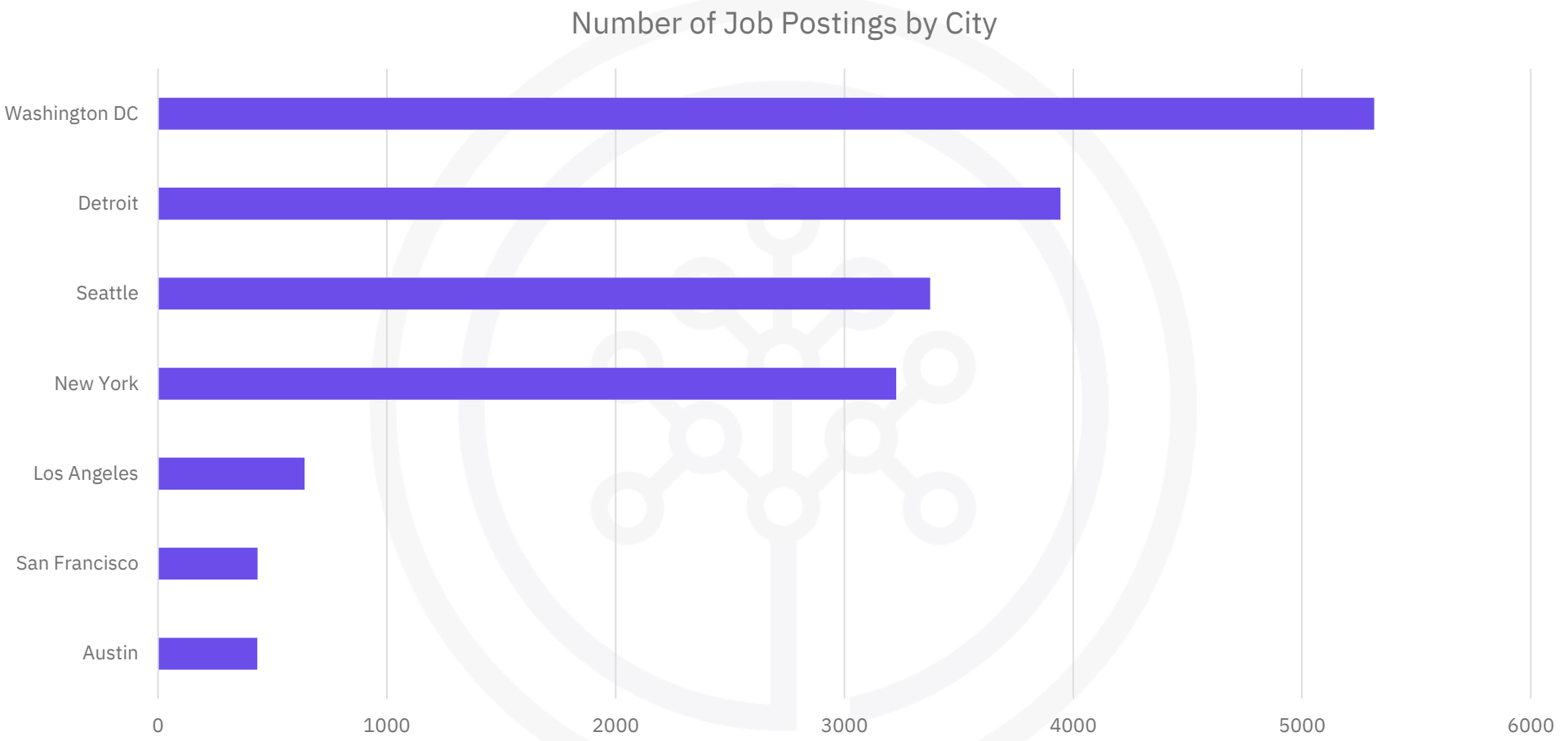
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- Job Postings and Popular Languages bar charts



# JOB POSTINGS



# POPULAR LANGUAGES

