

Stack Overflow Developer Survey Insights

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OUTLINE



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EXECUTIVE SUMMARY



- Top programming languages in demand:
 - JavaScript, HTML/CSS, SQL, Python, PHP, TypeScript, C#
- Top database skills in demand:
 - MySQL, Microsoft SQL Server, PostgreSQL, MongoDB
- Popular platforms:
 - Amazon Web Services (AWS), Digital Ocean, Google Cloud, Microsoft Azure
- Popular Web Frames:
 - Next.js, Node.js, React, ASP.NET;ASP.NET CORE, Express
- Future Technology Trend:
 - C#, HTML, JavaScript, SQL, TypeScript will be trending the most
 - Azure and Google Cloud retain relevance, while emerging platforms (Cloudflare, Hetzner) suggest a diversification trend.
 - Indicates growing demand for open-source, flexible, and high-performance databases over traditional systems like MySQL/SQL Server.
 - Spring Boot takes the most space and Flask is the latest addition to the last as web frame

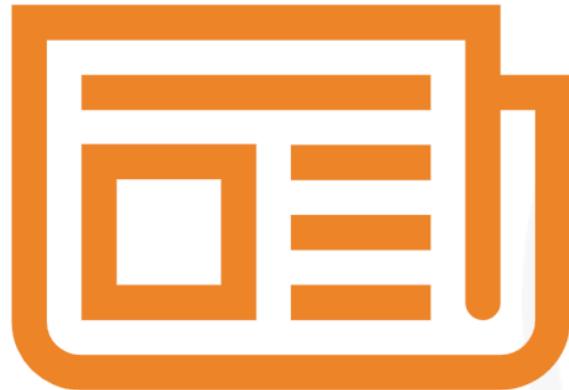


INTRODUCTION



- Stack Overflow conducts an inclusive survey of individuals engaged in coding globally.
- Nearly 65,500 developers participated in this latest survey.
- This survey shed light on the evolving landscape of programming languages, web frame and platforms of professional developers.
- These insights help the developers to keep themselves in trend with the upcoming technologies.

METHODOLOGY



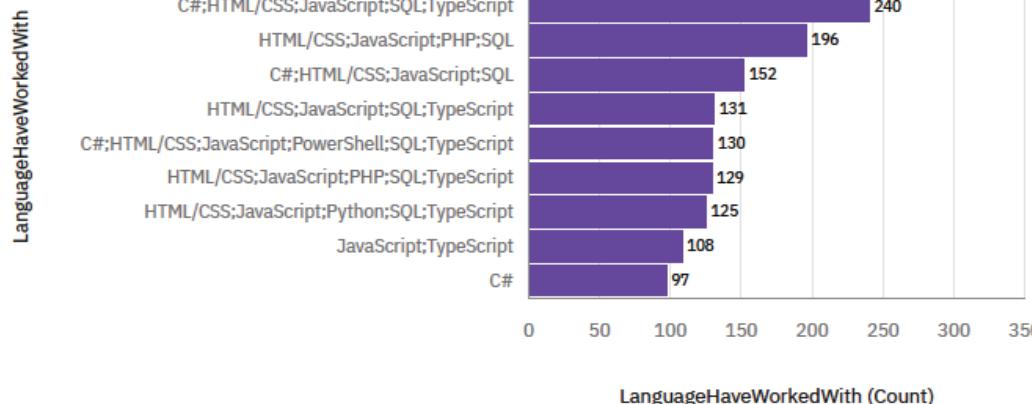
- Data is based on the survey conducted by Stack Overflow involved ~65,500 software developers from 186 countries.
- Familiarization with this dataset was achieved through completing IBM labs on Coursera.
- Data analysis and visualization was conducted via IBM Cognos Analytics.



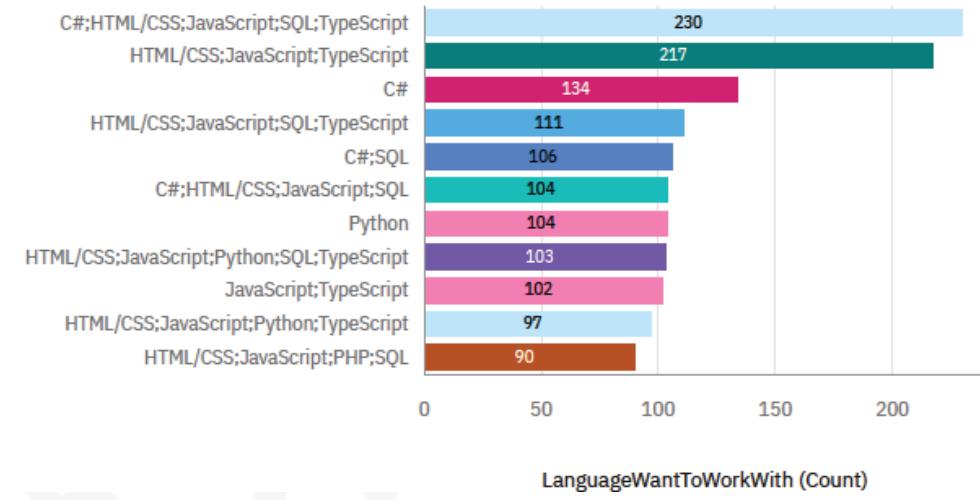
PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages Respondents Have Worked With



Top 10 Languages Respondents Want To Work With



Upcoming Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML, CSS, SQL, TypeScript are the most used language at present and also in demand in the future.
- PowerShell is popular now but not mentioned in top 10 future demands.
- Respondents rely heavily on web development stacks (HTML, CSS, JS, SQL) today, but future interest shows a strong rise in Python and TypeScript.

Implications

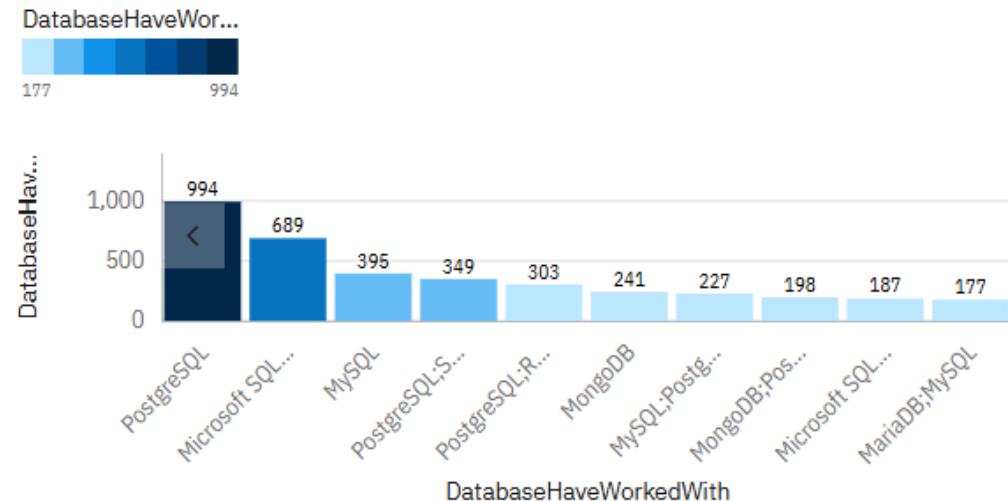
- JavaScript and HTML/CSS highlights their importance of mastering them for developers in the current time and also in future.
- The rise of Python might also reflects its versatility and ease of use.
- This reflects a shift toward data science, AI, and scalable enterprise solutions.
- The importance of data management can be identified by the high usage of SQL and it's demand in the upcoming years.



DATABASE TRENDS

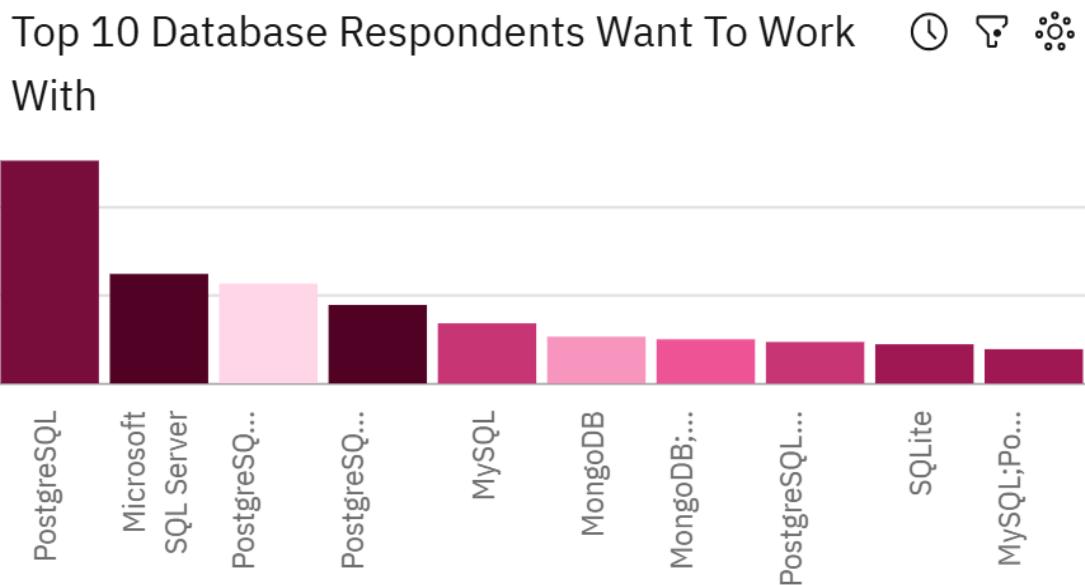
Current Year

Top 10 Databases Respondents Have Worked With



Next Year

Top 10 Database Respondents Want To Work With



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL shows both high current use and the strongest future preference.
- Indicates growing demand for open-source, flexible, and high-performance databases over traditional systems like MySQL/SQL Server.

Implications

- The popularity of PostgreSQL, Microsoft SQL Server indicates the importance of relational databases in various step of development.
- The diverse range of database systems utilized by developers indicates the importance of selecting the right tool for the job.

DASHBOARD



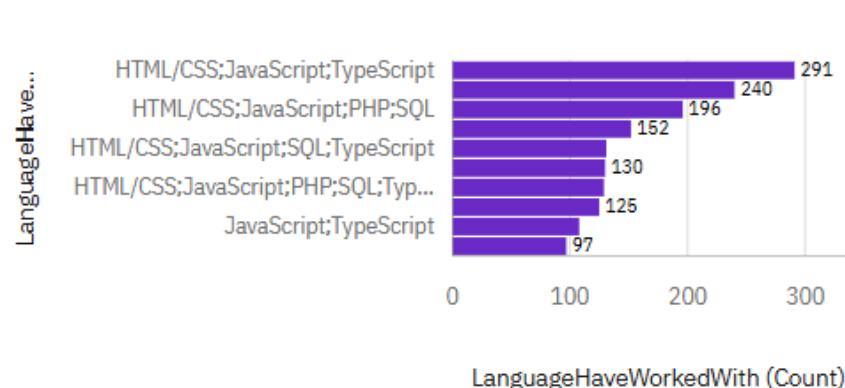
GitHub Link:

https://github.com/AsmaKM/Stack_Overflow_Survey_Analyzation/blob/main/Stack_Overflow_Survey_Dashboard.pdf

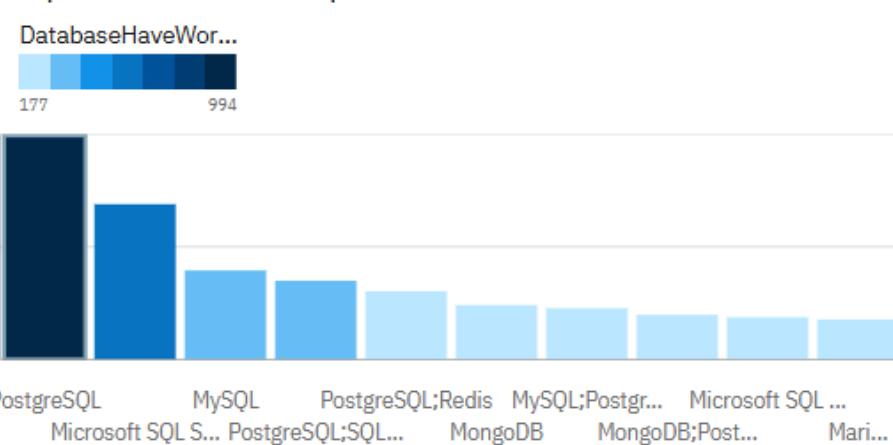


CURRENT TECHNOLOGY TREND

Top 10 Languages Respondents Have Worked With



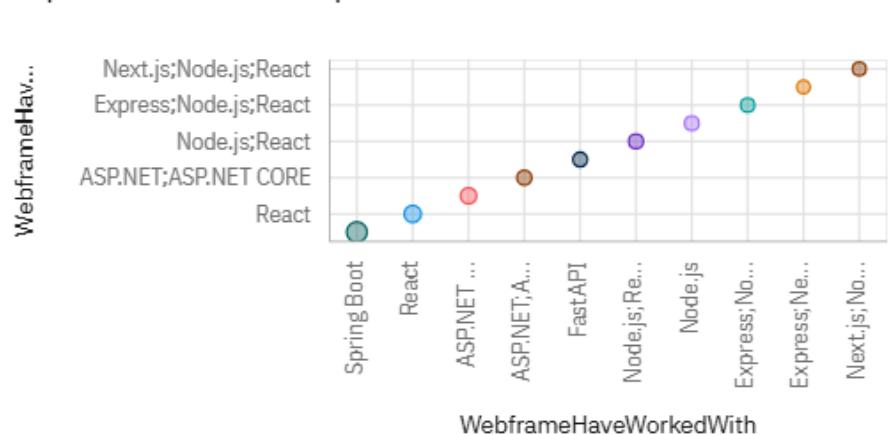
Top 10 Databases Respondents Have Worked With



Top 10 Platforms Have Respondents Worked With

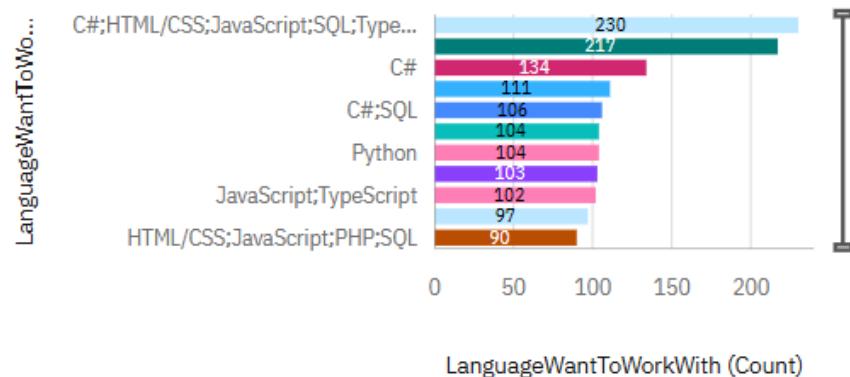


Top 10 Web frame Respondents Have Worked With

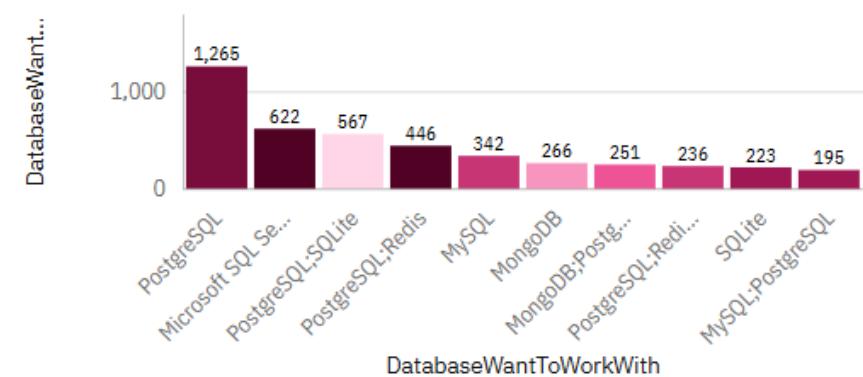


FUTURE TECHNOLOGY TREND

Top 10 Languages Respondents Want To Work With



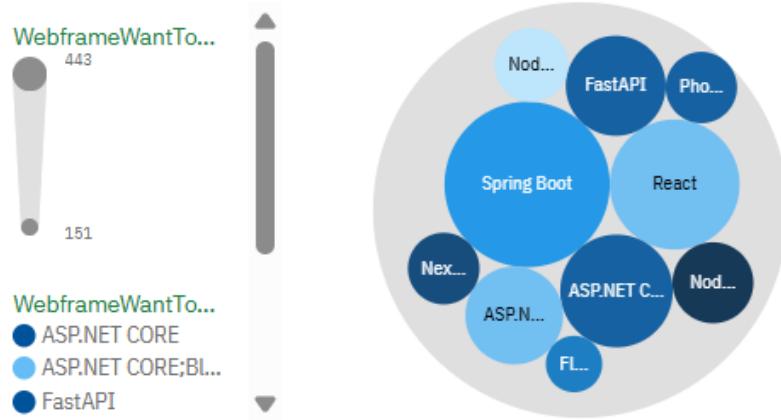
Top 10 Database Respondents Want To Work With



Top 10 Platforms Respondents Want To Work With



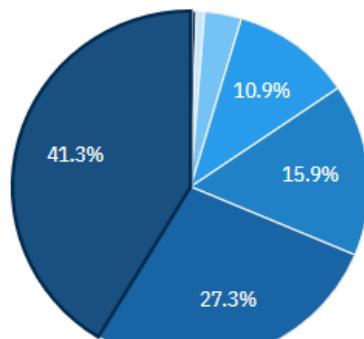
Top 10 Web frame Respondents Want To Work With



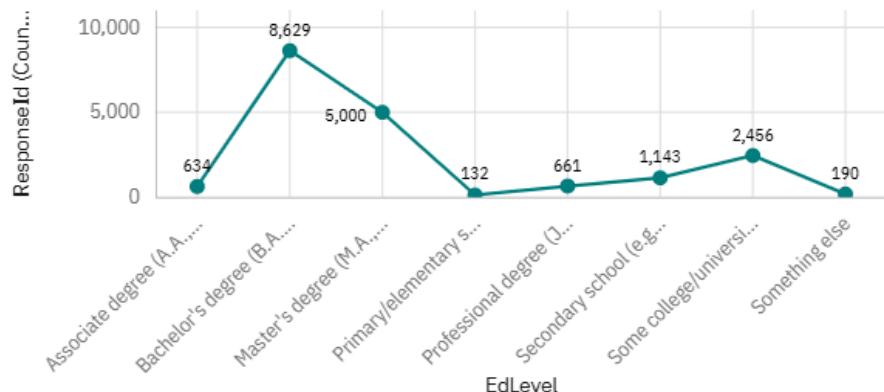
DEMOGRAPHICS

Respondent distribution by Age

- Age
- Prefer not to say
 - 65 years or older
 - Under 18 years old
 - 55-64 years old
 - 45-54 years old
 - 18-24 years old
 - 35-44 years old
 - 25-34 years old



Respondent distribution by Formal Education Level

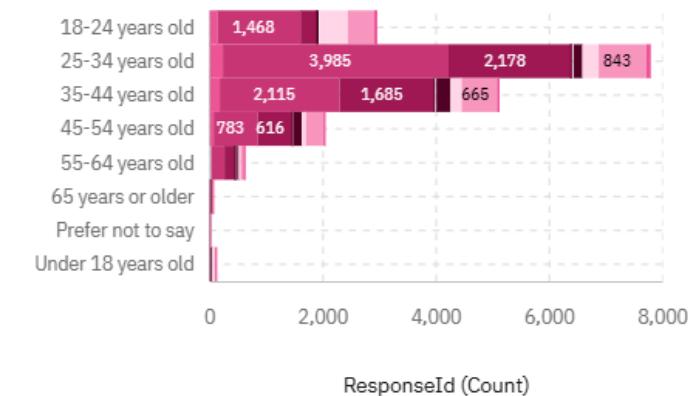


Respondent Count by Country

RespondId (Count)



Respondent Count by Age and Education Level



- Associate degree (A.A.)
- Bachelor's degree (B.A.)
- Master's degree (M.A.)
- Primary/elementary school
- Professional degree (e.g., Psy.D.)
- Secondary school (e.g., GED)
- Some college/university
- Something else



DISCUSSION



- Tech professionals are moving toward open-source, cloud-native, and developer-friendly tools.
- The industry is balancing web development dominance with growing needs in data/AI and scalable APIs.
- Organizations should invest in PostgreSQL, cloud infrastructure, and modern frameworks to align with workforce trends.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Majority of respondents are male
- Most of the respondents were between the ages of 18-44
- The most important factor for a Job is the Languages and Technologies used
- Most of the respondents are from developed English speaking nations
- Python has one of the highest salaries and most jobs available, that could be the reason for the surge in desire

Implications

- The respondents being more on the young side could explain the tendency to want to adopt newer languages and technologies
- Since developers choose jobs based on technologies used it could sway employers to embrace those technologies to draw in talent
- The high usage of MySQL, PostgreSQL, and Microsoft SQL Server highlights the critical role of effective data management in software development.



CONCLUSION



- Developers are focusing on the following factors while choosing languages and technologies
 - Languages that are syntactically simple
 - Tools that require less overhead
 - Tools that are less error prone and ease of use
- The database systems are becoming essential to meet the demands of modern application.



APPENDIX

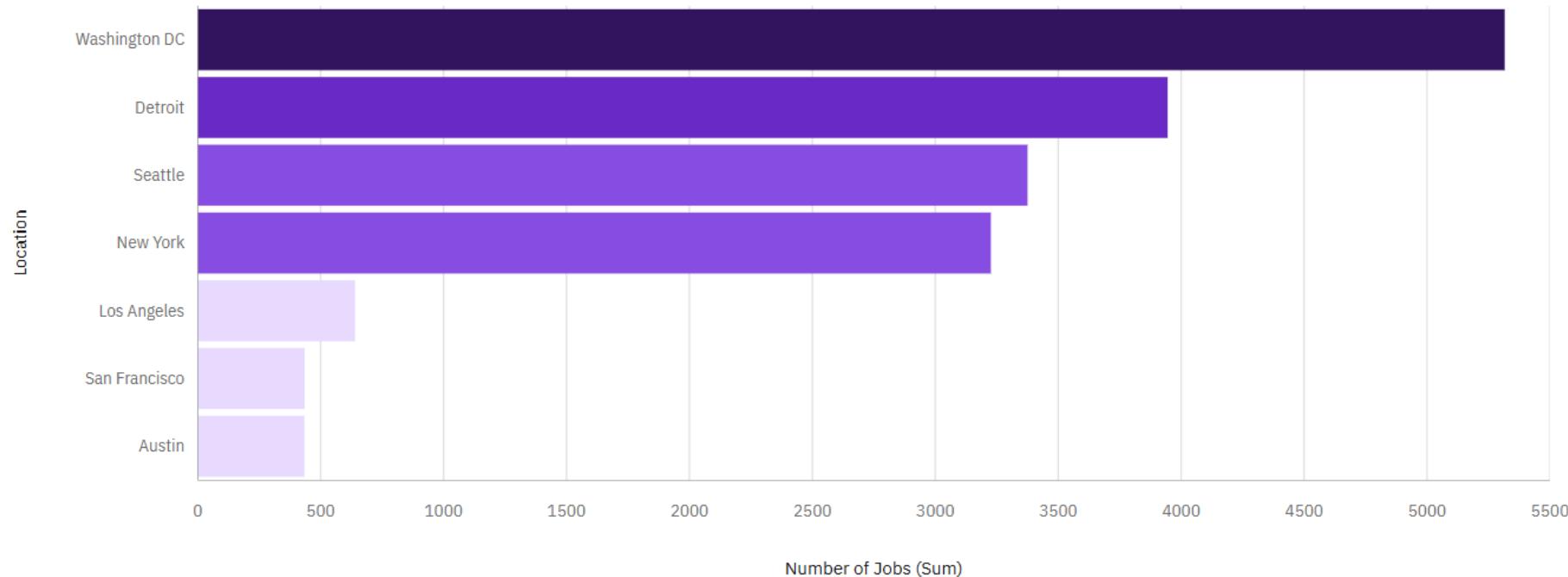
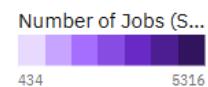


- Include any relevant additional charts, or tables that you may have created during the analysis phase.



JOB POSTINGS

Number of Jobs by Location



POPULAR LANGUAGES

Average Annual Salary by Language

Average Annual S...

