



# Data Analyst Capstone

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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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- Web development languages are the most popular in use and will remain as such
- AI and Machine learning are driving trends language use
  - Python and SQL are growing in popularity.
  - Interpreted languages, easier to learn, are trending up
  - The most popular languages are all focused on manipulating data
- A noticeable shift in databases away from MySQL towards PostGres is developing
- NoSQL databases are trending
- Platform usage is dominated by web centered frameworks.

# INTRODUCTION

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- The most popular languages remain those focused on web development.
- A growing trend is a group of languages related to data and machine learning.
- Older compiled languages are continue to lose popularity
- Databases show a shift in the most popular open source database.
  - MySQL is dropping in popularity.
  - PostGres is replacing MySQL.
  - Microsoft SQL server remains the most used licensed database

# METHODOLOGY

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- Data was gathered from several websites and portals.
  - Job posting content was scraped from and IT job website.
  - Content was pulled from Portals.
  - APIs were used to collect survey data from a leading IT board.
- Once the data was collected, the data sets were explored and reviewed to decide how to proceed with normalization.
- The data was cleaned and prepared for analysis.
  - Duplicate rows and data sets were removed.
  - Missing values were dealt with.
  - Some data values were normalized or formatted for better analysis

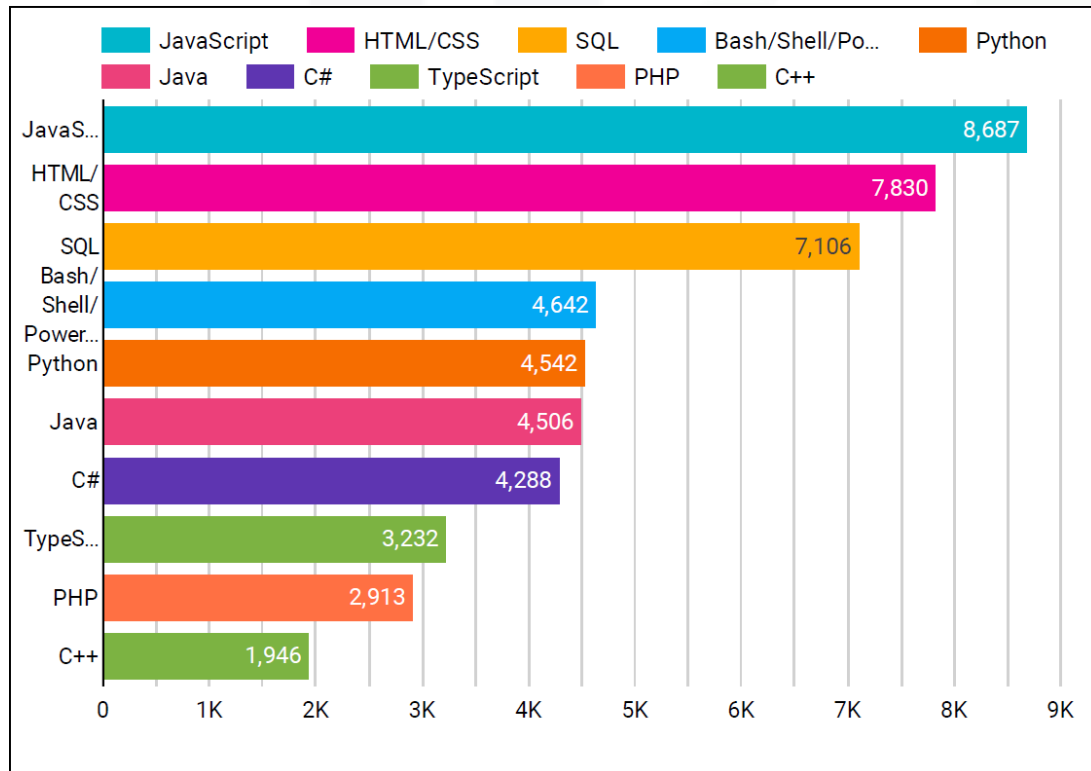
# RESULTS

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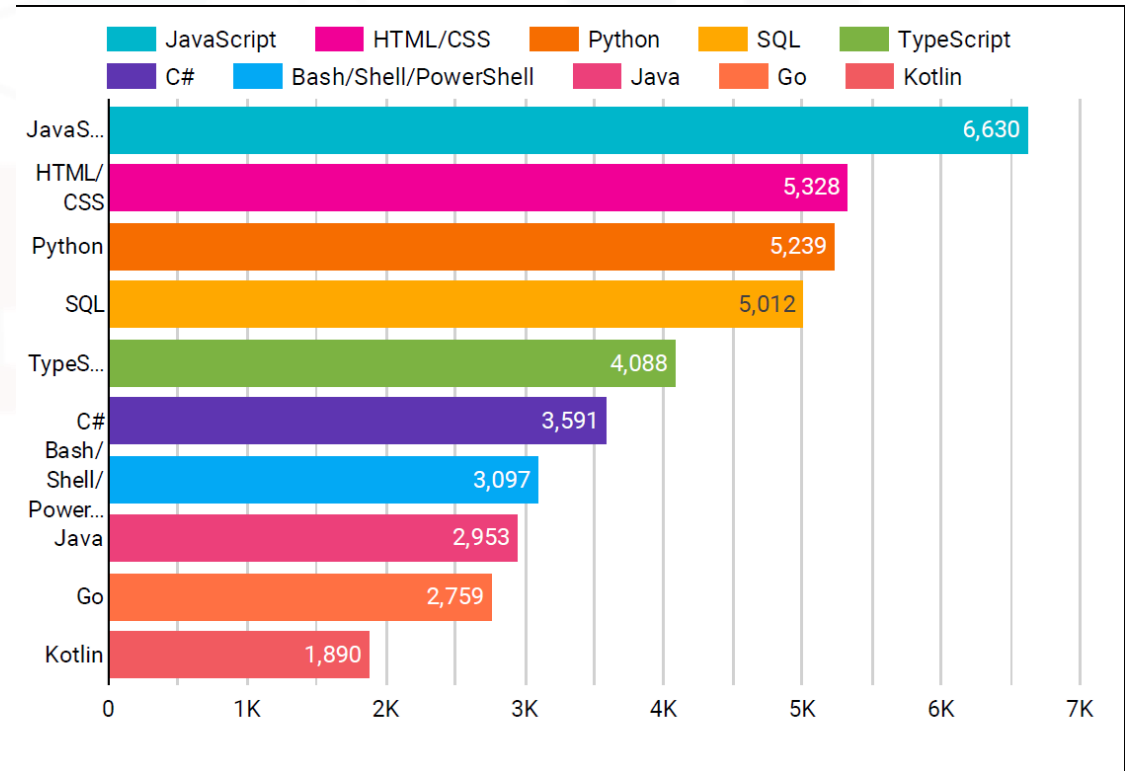


# PROGRAMMING LANGUAGE TRENDS

## Current Year



## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Javascript and HTML are the top languages for this year and next.
- Python will play a larger role next year
- SQL will remain in the top 5 languages

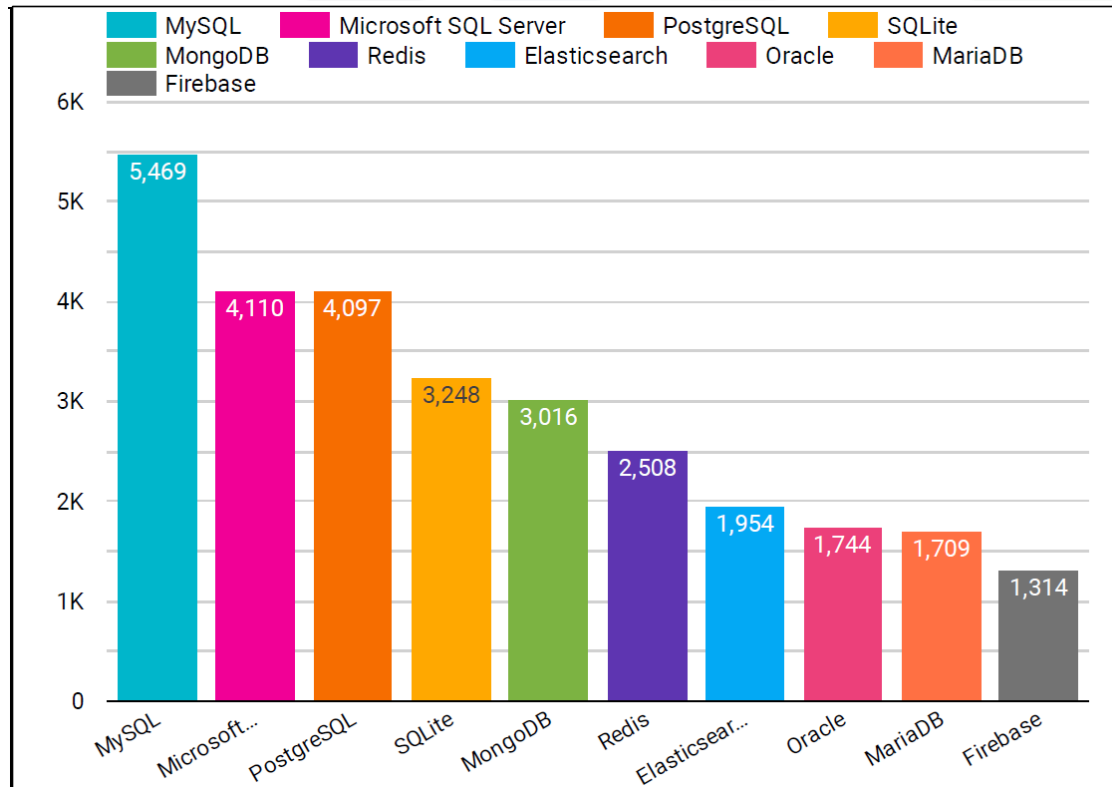
## Implications

- Languages integral to the internet are popular and will remain so.
- The highest-ranking languages are interpreted rather than compiled.
- The Internet and AI drive the rankings

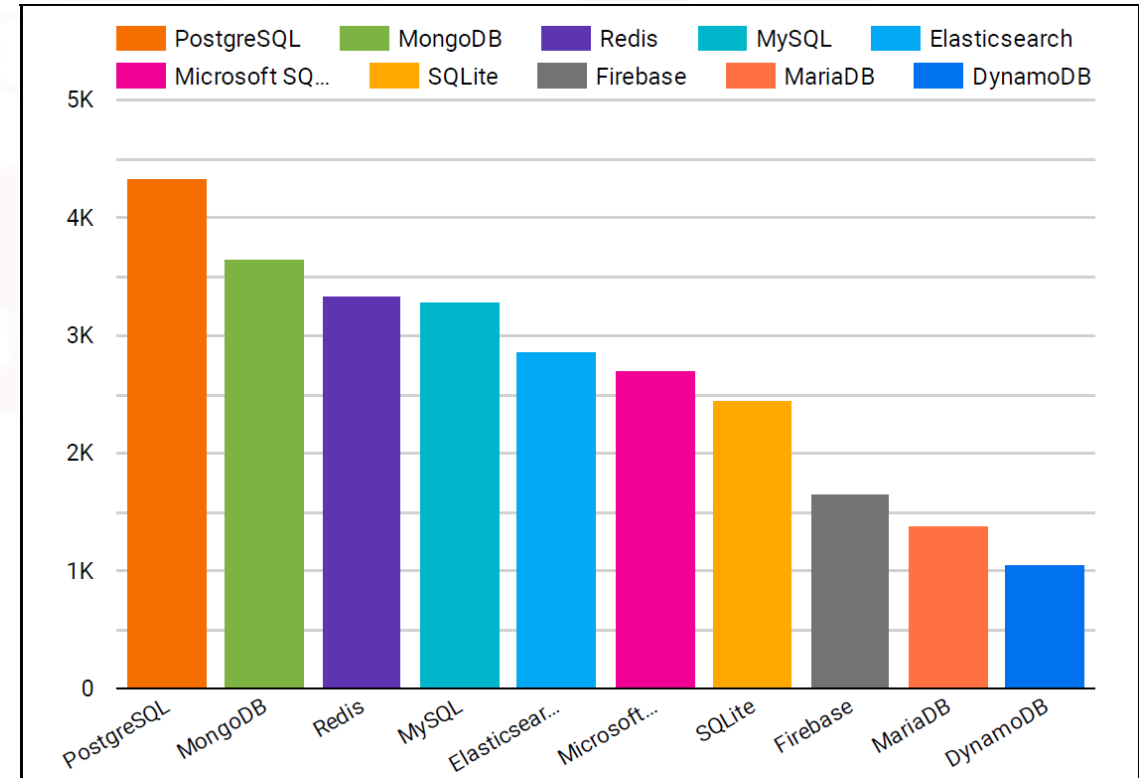


# DATABASE TRENDS

## Current Year



## Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Open source databases occupy most of the top slots
- MS SQL is losing popularity
- Mongo DB, a NoSQL database is expected to grow next year

## Implications

- Open source databases are popular due to features and cost
- Databases from large corporations are dropping in popularity.
- NoSQL databases may take a larger role as AI develops

# DASHBOARD

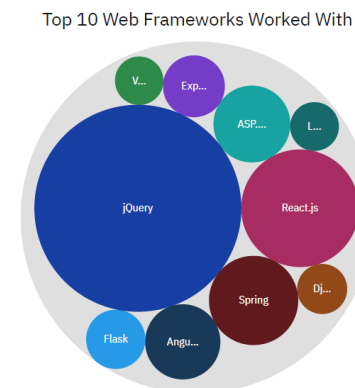
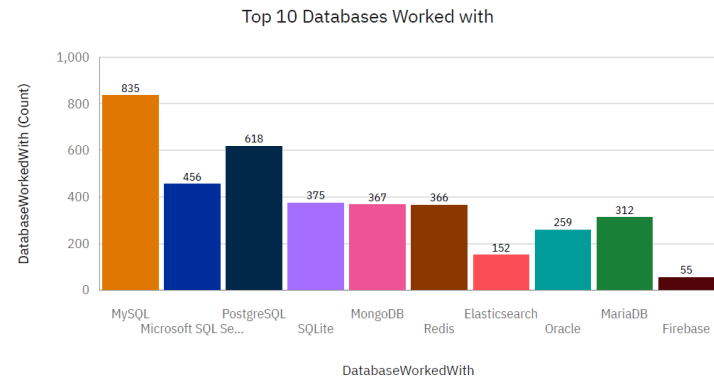
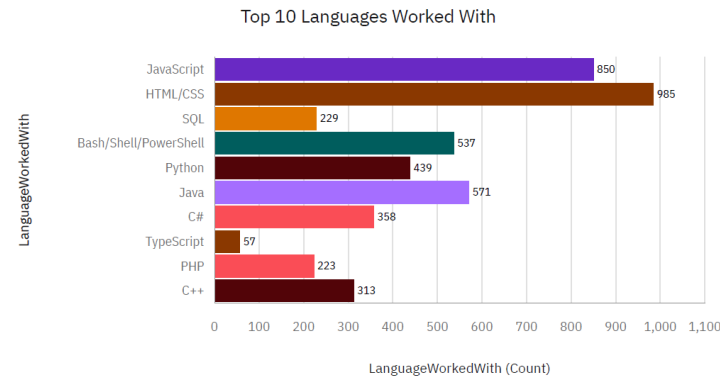
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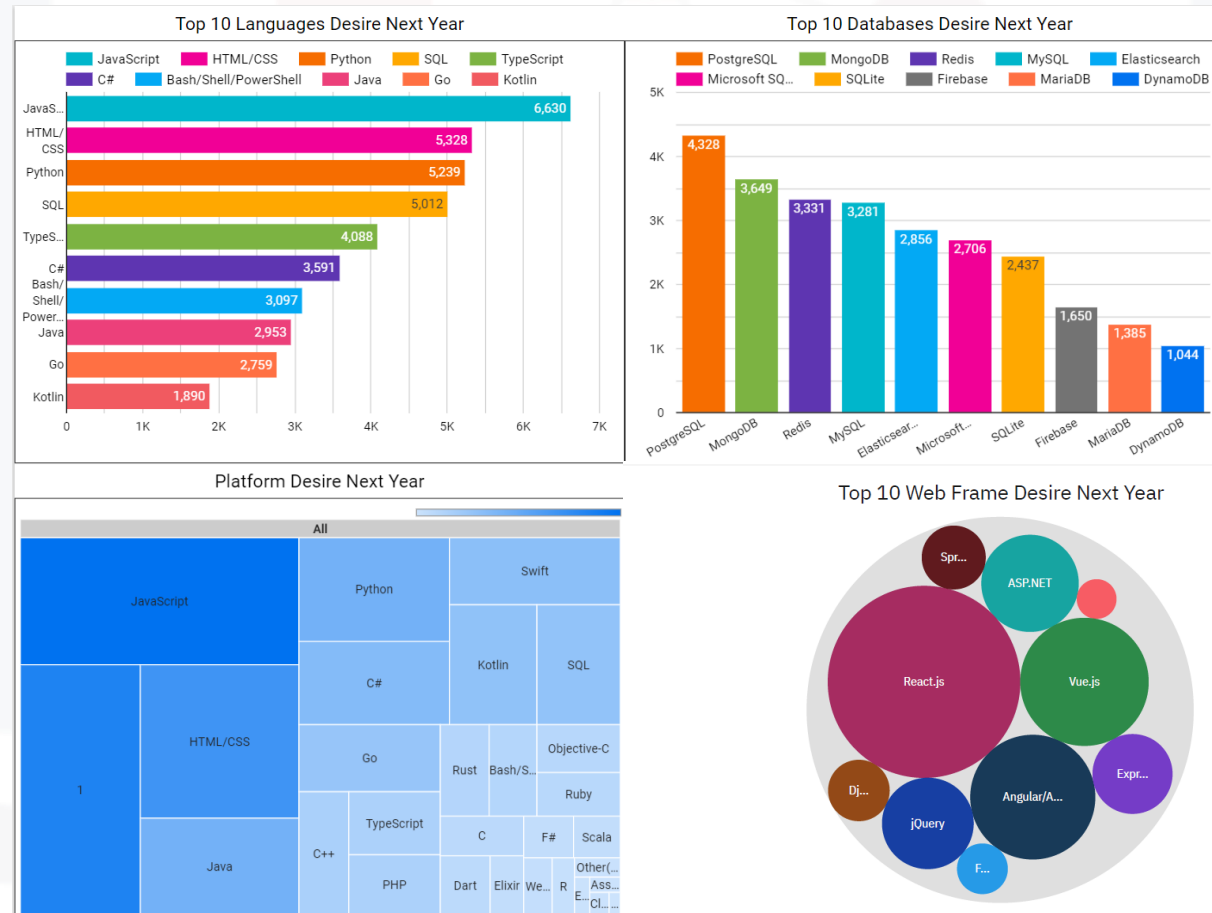
[https://github.com/Matthew-Paige/IBM\\_Data\\_Analyst.git](https://github.com/Matthew-Paige/IBM_Data_Analyst.git)

# DASHBOARD TAB 1

## Current Technology Usage

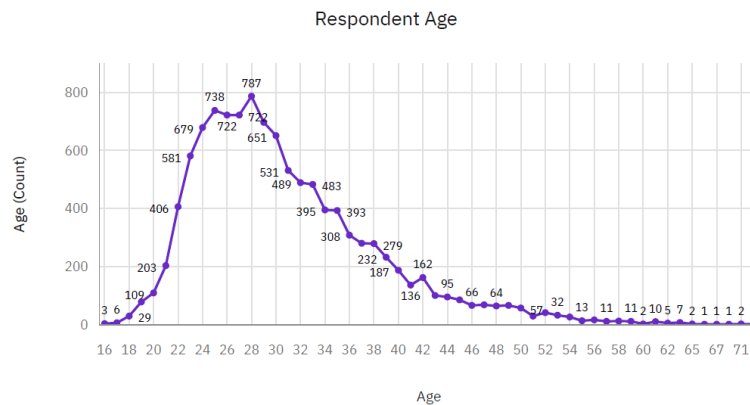
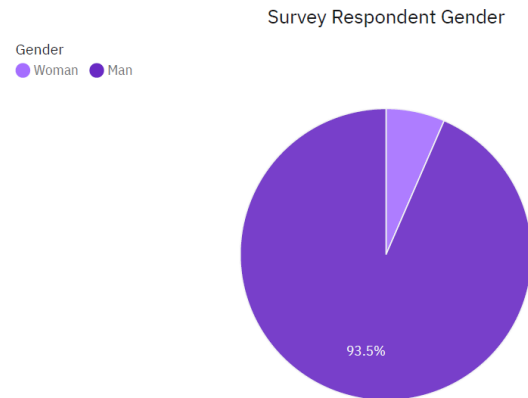


# DASHBOARD TAB 2

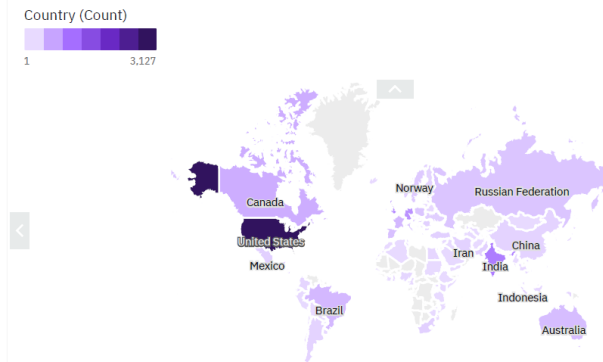


# DASHBOARD TAB 3

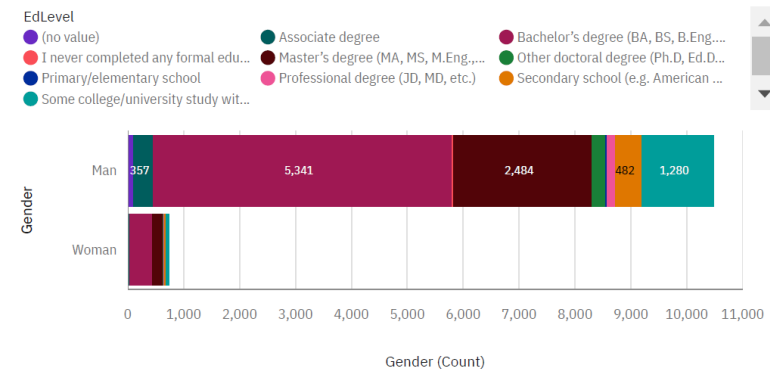
## Demographics



## Respondents Countries



## Education by Gender



# DISCUSSION

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# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Languages for internet development dominate the most popular languages.
- Interpreted languages focused on AI and data science becoming popular.
- Open source databases are trending

## Implications

- Web development dominates most development.
- AI activity is driving future trends in language use.
- Large companies are losing ground in their database usage reach.



# CONCLUSION

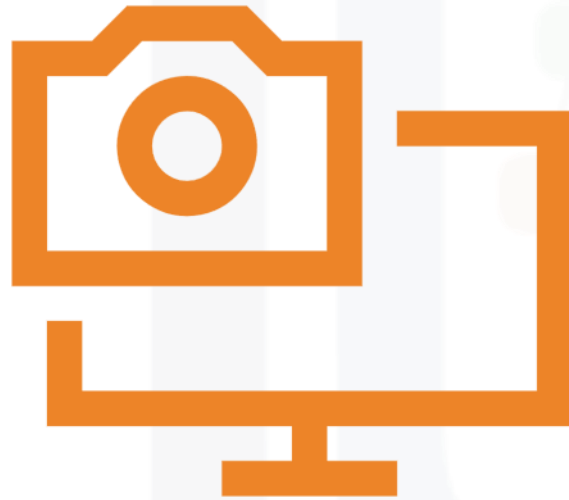
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- The most popular languages, platforms and databases change from year to year.
- Languages that focus on the web and AI hold the tops spots consistently.
- A shift in databases towards open source is visible in the data.
- The IDE platforms are trending towards Web and AI focused platforms.

# APPENDIX

- Sample of data collected



## Respondent MainBranch

41 am a developer by profession  
91 am a developer by profession

131 am a developer by profession  
161 am a developer by profession

171 am a developer by profession  
191 am a developer by profession

I am not primarily a developer, but I write code sometimes as part of my  
20work

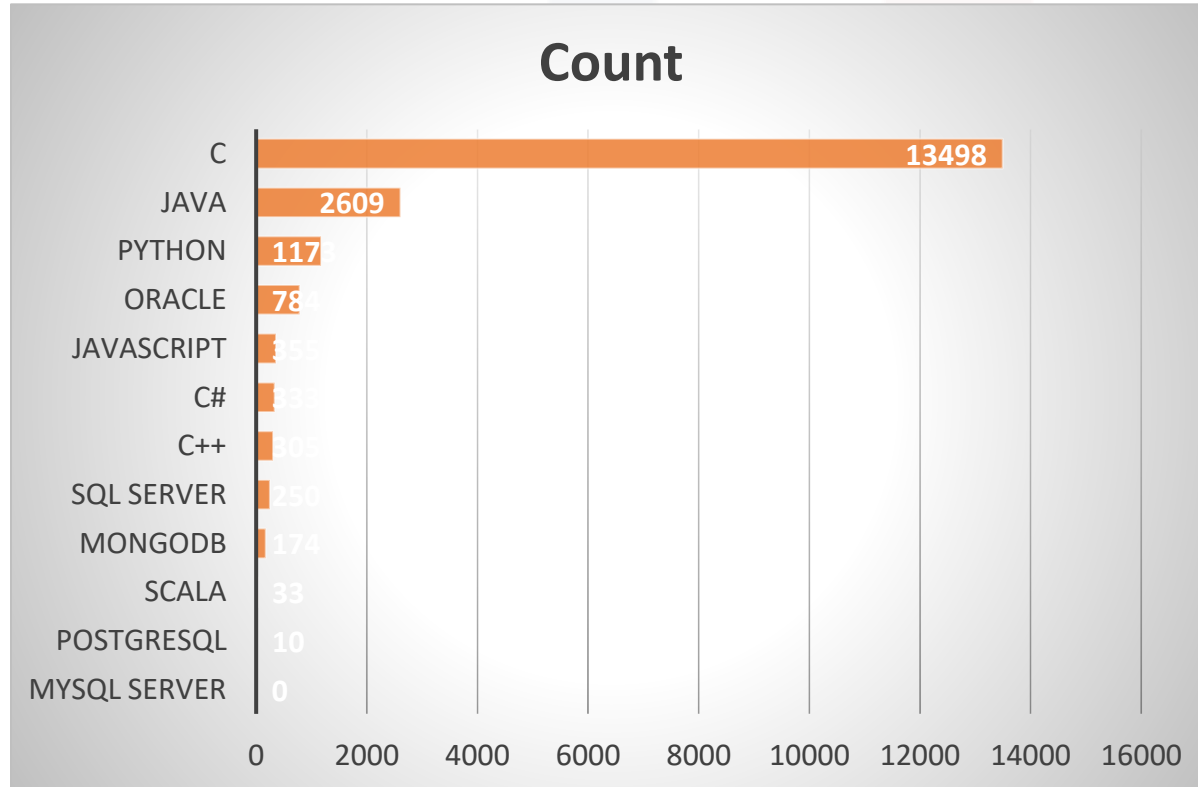
221 am a developer by profession  
231 am a developer by profession  
241 am a developer by profession  
251 am a developer by profession  
261 am a developer by profession

291 am a developer by profession  
321 am a developer by profession  
381 am a developer by profession

## Hobbyist OpenSourcer

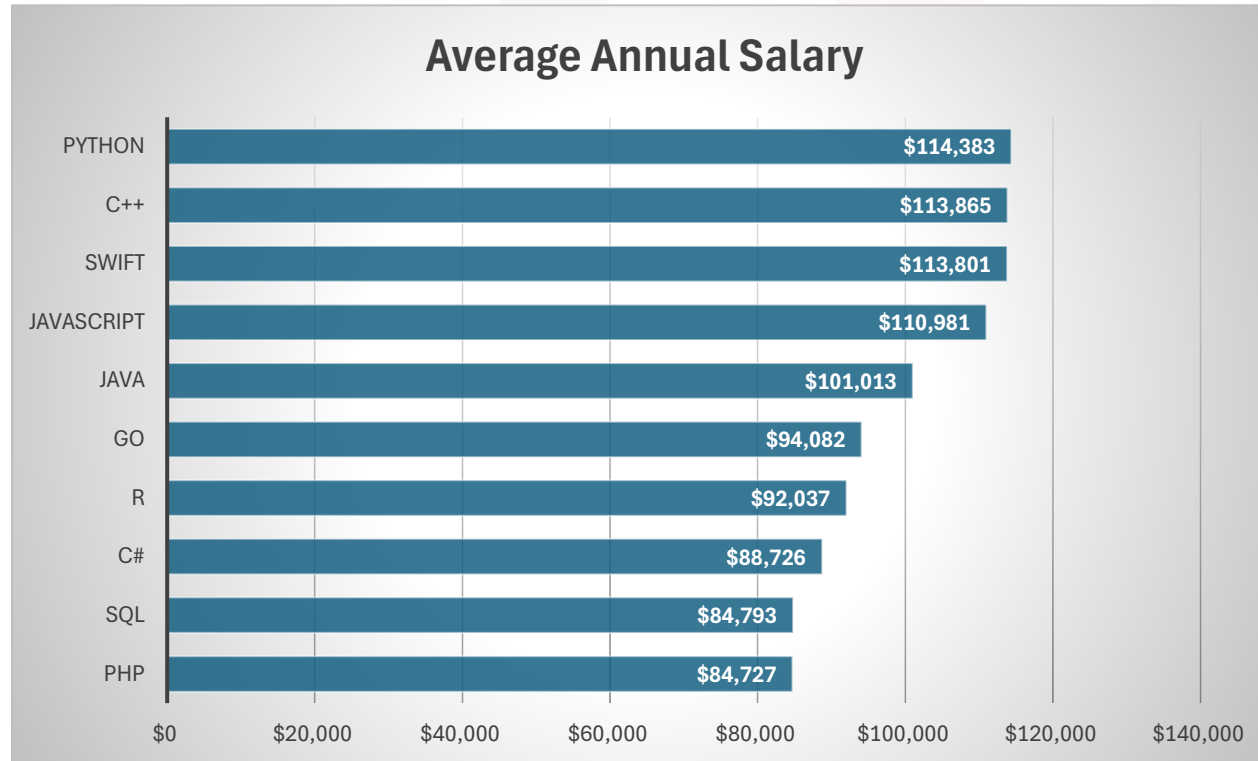
No	Never
Yes	Once a month or more often
	Less than once a month but more than once per year
Yes	Never
	Less than once a month but more than once per year
Yes	Never
Yes	Never
No	Never
Yes	Less than once per year
Yes	Less than once per year
Yes	Never
No	Never
Yes	Less than once per year
	Less than once a month but more than once per year
Yes	year
No	Never
Yes	Never

# JOB POSTINGS



- Job postings pulled from the job board. Count of jobs via language keywords.

# POPULAR LANGUAGES



- Popular languages based on average salary