



# Analysis on Emerging Technology Skills and Trends

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June 18<sup>TH</sup> 2024

# OUTLINE

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

# EXECUTIVE SUMMARY

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- This analysis analyzes data to identify current and future trends in the demand for programming, database, and technology skills. It also investigates the demographics of professionals in the technology industry..
- Data was acquired from a Stack Overflow survey, IBM website, and GitHub job posts. Data was collected, cleaned, analyzed, and visualized using dashboards.
- Result: Presentation Finding with Visual Support

# INTRODUCTION

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- This presentation uses data analytics to show the existing and forecast demand for programming language, database, platform, and web frame expertise.
- This research aims to present IT professionals, HR managers, and anyone interested in the IT sector on the most in-demand IT skills in their fields that will remain relevant in the future.
- Able to gain insight the following:
  - Gender in the workforce
  - Education level
  - Demand of programming languages for recent job posting and average annual salary range

# METHODOLOGY

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- The GitHub jobs API on Python was used to collect data in several formats.
- The dataset from the 2019 Stack Overflow developer survey was downloaded and saved.
- Python was utilized to clean and analyze the data. An exploratory data analysis was conducted to evaluate data distribution, identify outliers, and correlate distinct dataset columns.
- Data visualizations, including charts, graphs, and dashboards was done on multiple platform:
  - Python
  - IBM Cognos Analysis

# RESULTS

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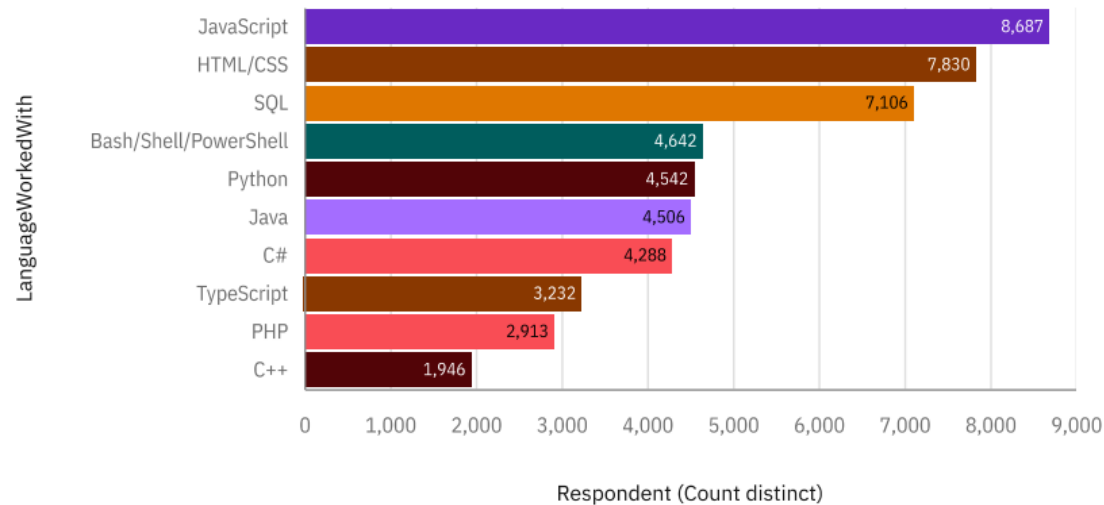


# PROGRAMMING LANGUAGE TRENDS

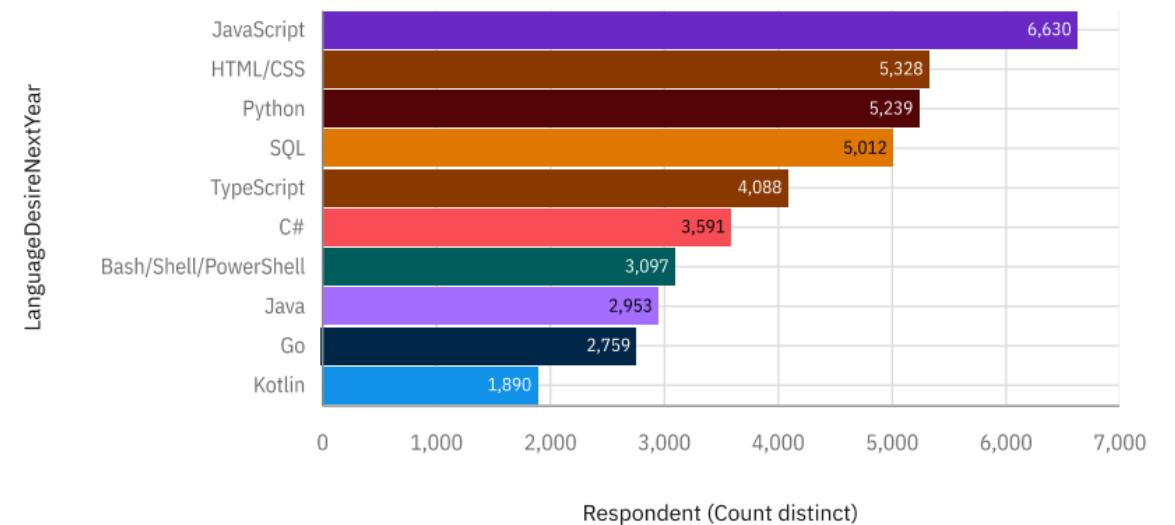
## Current Year

## Next Year

Top 10 Language Worked With



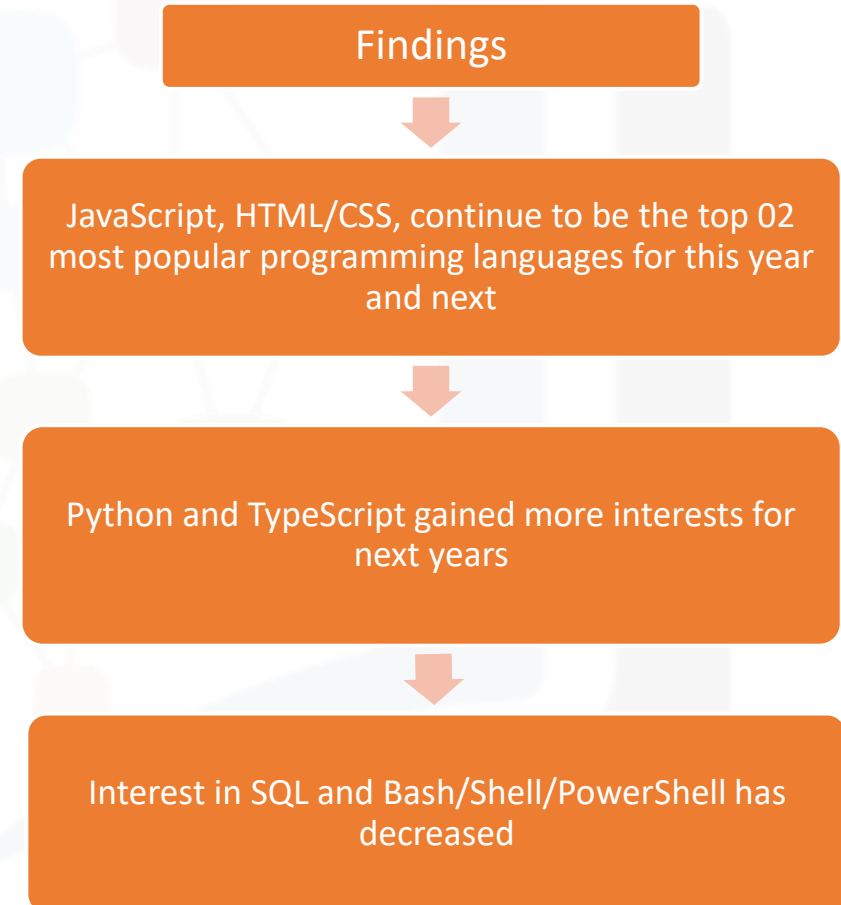
Top 10 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Implications

- JavaScript and HTML are used for web development which means that web development as a tech skill has the highest demand, especially as Typescript is getting viral
- Python is gaining more and more traction due to the increase in demand for AI and ML skills
- SQL is still the most relevant language for data professionals. It is important for aspiring data analysts, scientists, business analysts etc. to have SQL skills

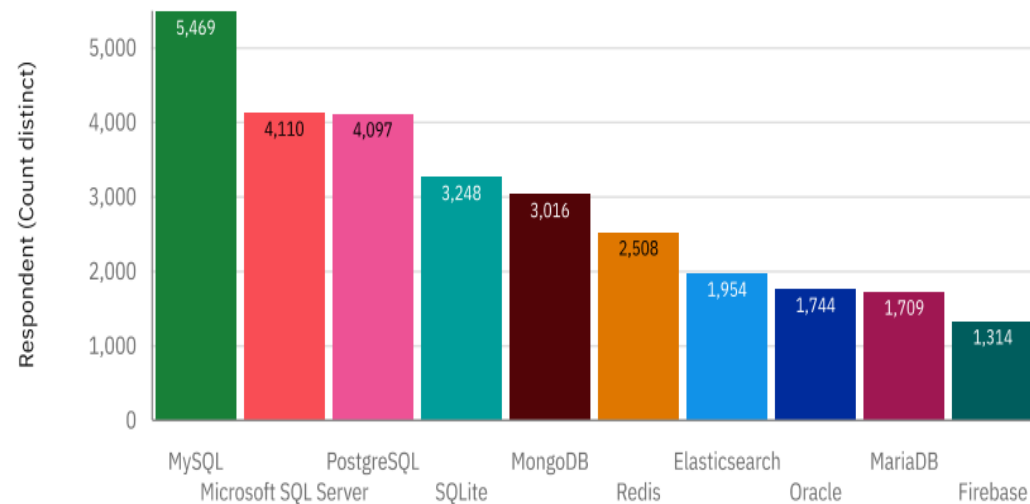




# DATABASE TRENDS

## Current Year

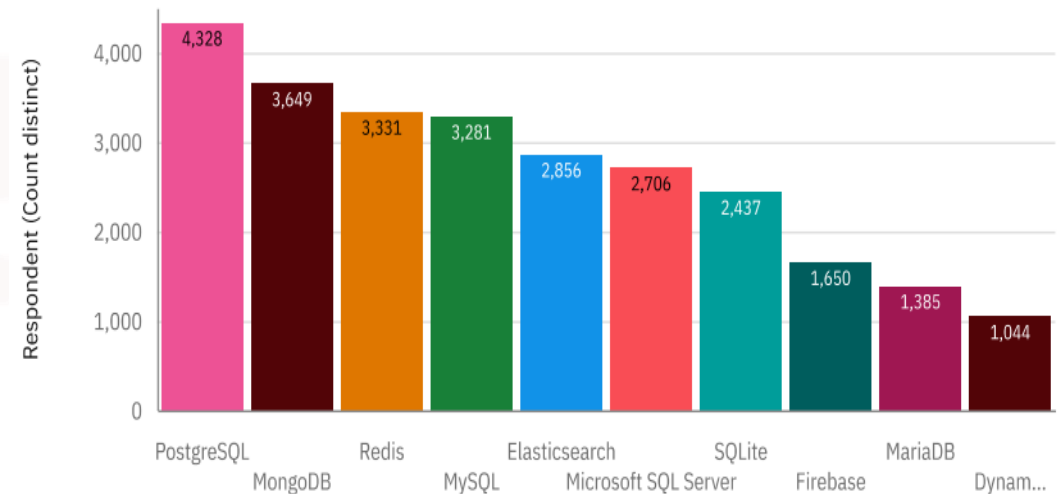
Top 10 Database Worked With



DatabaseWorkedWith

## Next Year

Top 10 Database Desire Next Year

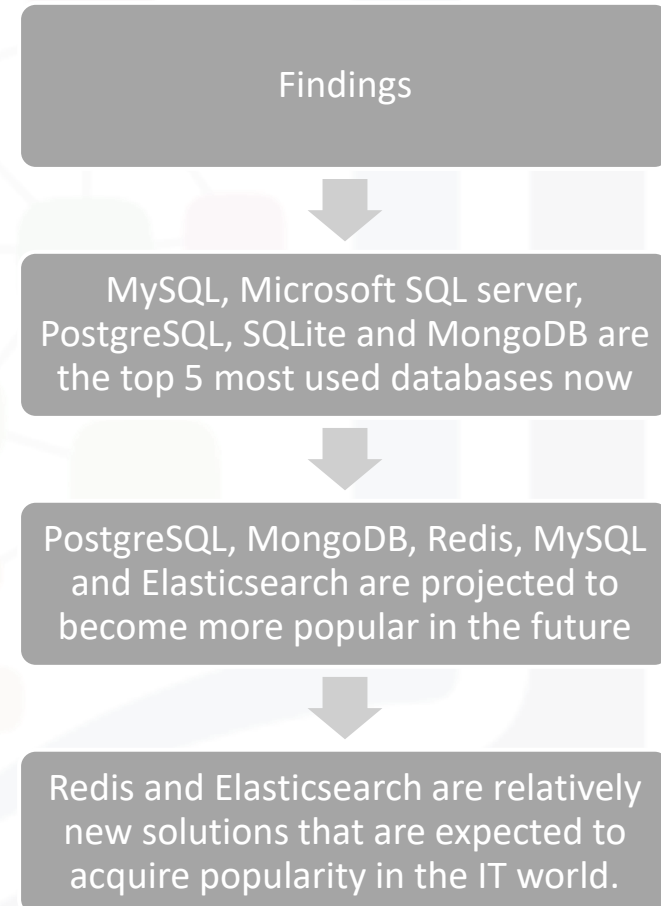


DatabaseDesireNextYear

# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Implications

- SQL is still a top tool to watch out for in data specialists
- Companies still prefer Open-source databases.
- Oracle SQL was not in the top 10. It is becoming increasingly out of date.



# DASHBOARD

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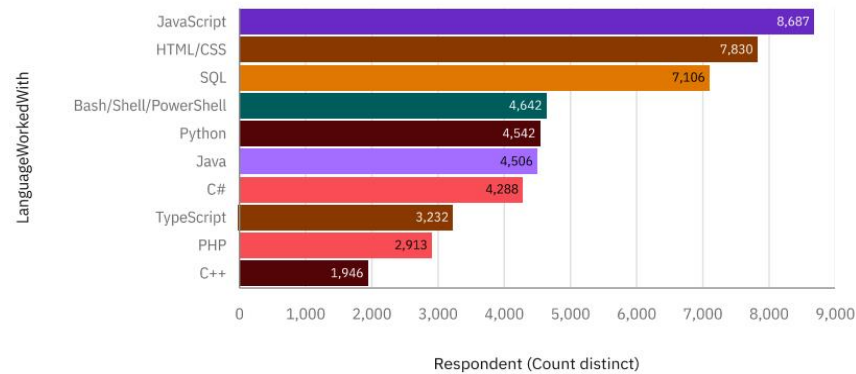


[GitHub link of the Dashboard \(click to open\)](#)

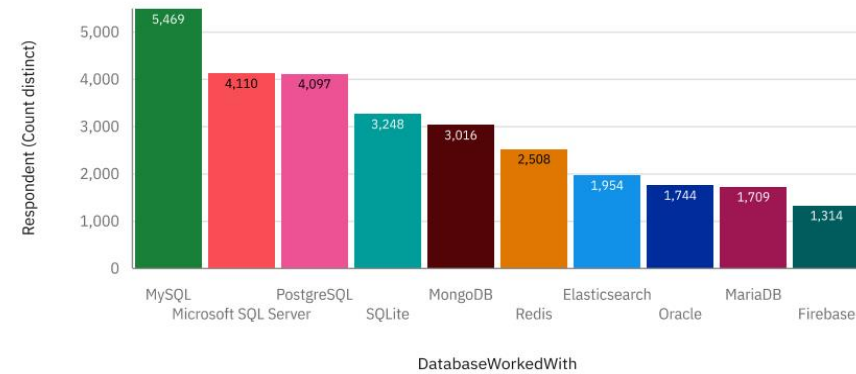
# DASHBOARD TAB 1

## Current Technology Usage

Top 10 Language Worked With



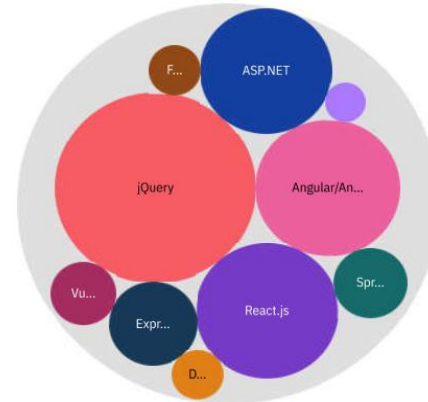
Top 10 Database Worked With



Platform Worked With



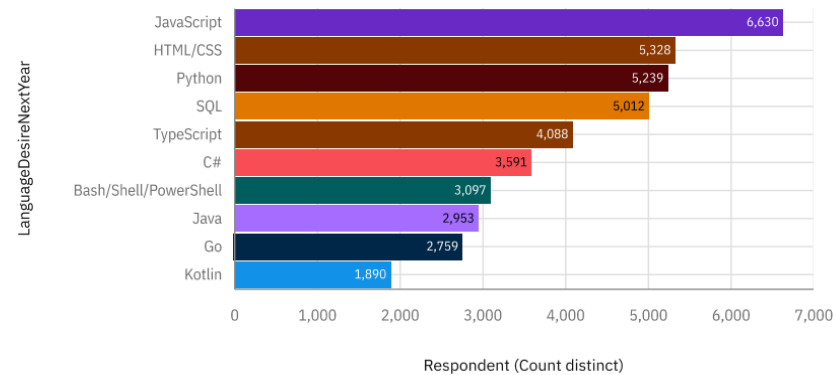
Top 10 Web Frame Worked With



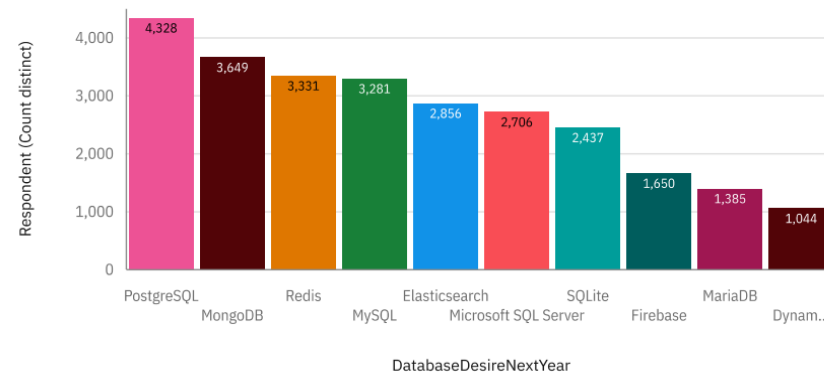
# DASHBOARD TAB 2

## Future Technology Trend

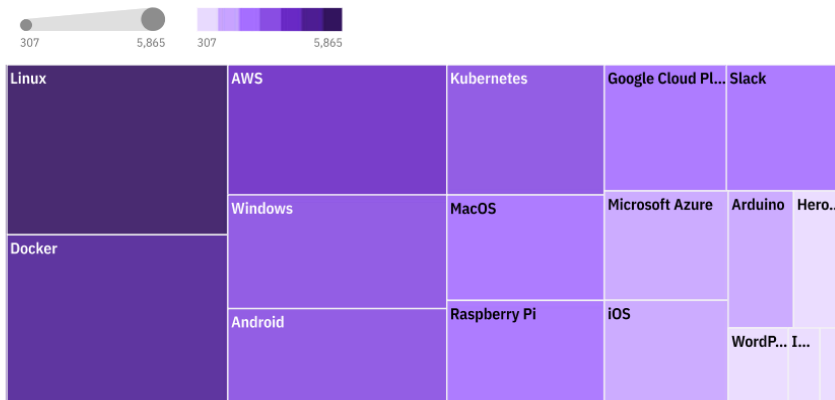
Top 10 Language Desire Next Year



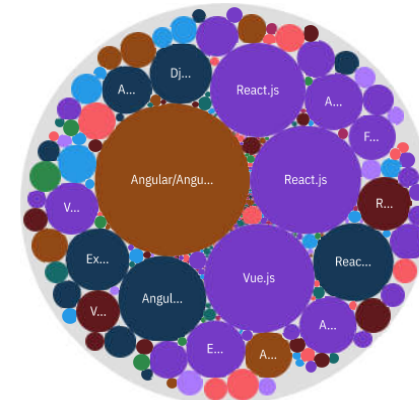
Top 10 Database Desire Next Year



Platform Desire Next Year



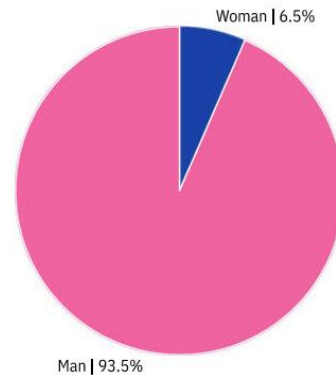
Web Frame Desire Next Year



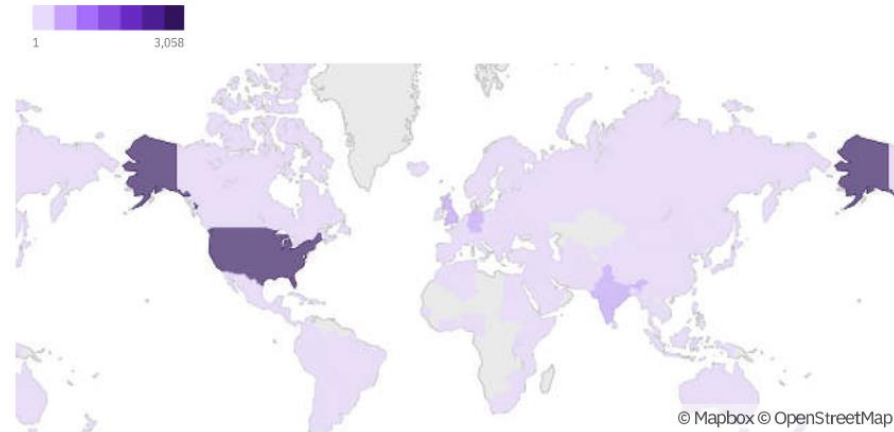
# DASHBOARD TAB 3

## Demographics

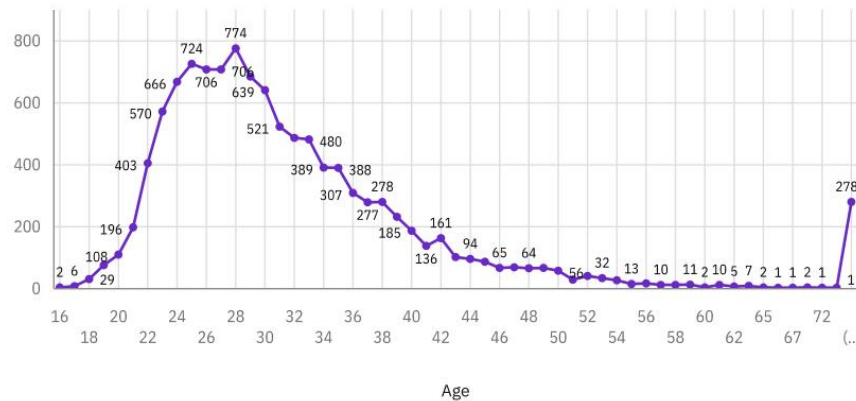
Respondent classified by Gender



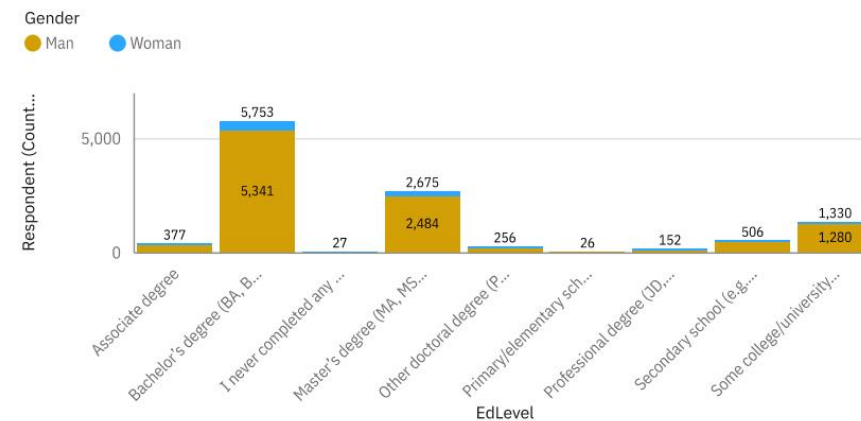
Respondent count for Country



Respondent count by Age



Respondent count classified by education level



# DISCUSSION

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- How can we close the large gender gap in the IT sector?
- Is obtaining a master's or doctorate degree truly required?
- As Kotlin becomes more popular, there is an increase in demand for mobile development.
- As MongoDB is gaining market share, will non-SQL will be great demand in coming years?

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Most people in the IT field have a Bachelors' degree.
- Web development languages are the most popular and on-demand tools in the IT field currently.
- The technology sector is primarily made up of young workers under the age of 40.
- Most respondents want to learn PostgreSQL and React JS next year.

## Implications

- Data specialists must learn NoSQL as well as SQL databases.
- Web development is still a very lucrative skill.



# CONCLUSION

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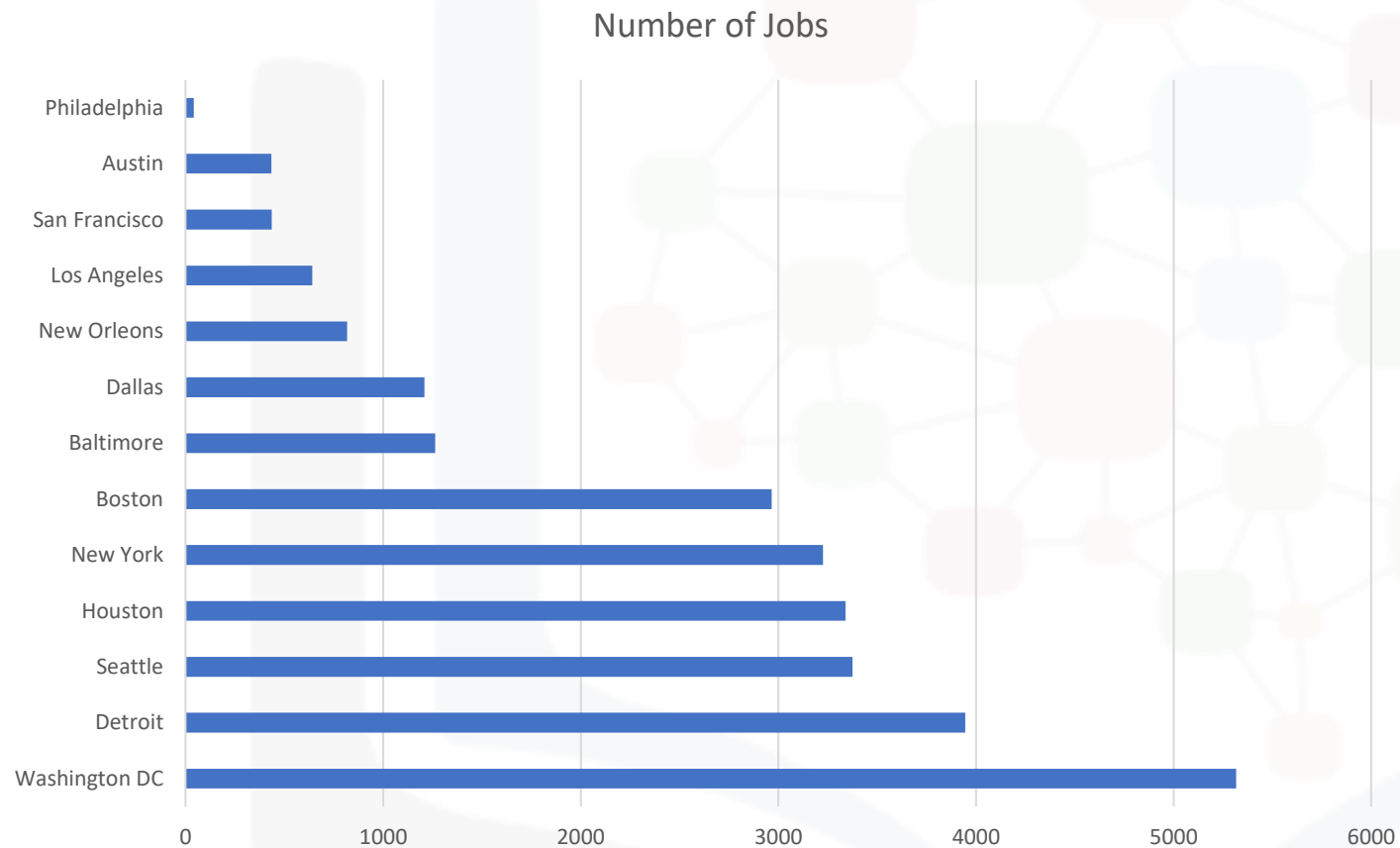
- Trend analysis allows us clear insights into the popularity of various technologies, platforms, and languages.
- Webpage interactive languages are still in great demand and well paid
- Python is the upcoming programming languages
- Accessibility challenge: initiatives are needed to improve access to this job market in developing nation

# APPENDIX

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# JOB POSTINGS



# POPULAR LANGUAGES

