



# The 2024 Stack Overflow Developer Survey

23 JUN 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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- Top programming languages in demand:
  - JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python
- Top database skills in demand:
  - My SQL, Microsoft SQL Server, PostgreSQL, SQLite, MongoDB
- Popular platforms:
  - Windows, Linux, Docker, AWS, Slack
- Popular Web Frames:
  - jQuery, Angular/Angular.js, React.js, ASP.NET, Express
- Future Technology Trend:
  - Python takes the third row, followed by SQL and TypeScript
  - Redis and Elasticsearch also place in Top 5
  - Android is in the Top 5 demanded platforms, the rest remains
  - React.js takes the first row and Vue.js is the latest addition as the

last

# INTRODUCTION

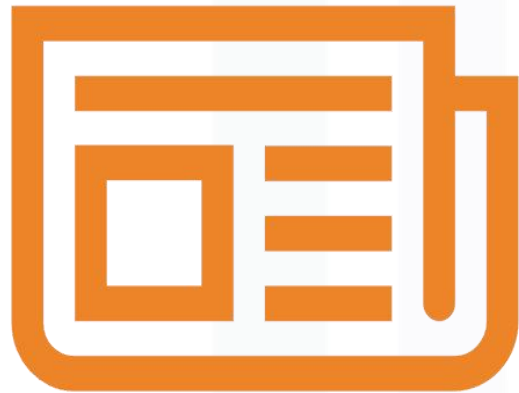
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- In the realm of programming and technology, several key trends have emerged in recent years.
  - These insights shed light on the evolving landscape of programming languages, web frameworks, and the demographics of professional developers.
  - Stack Overflow conducts an inclusive survey of individuals engaged in coding globally.
  - Covering a wide array of topics from preferred technologies to career aspirations, 2019 marks the 9th consecutive year of survey publication.
  - Nearly 90,000 developers participated in the 20 minute survey in 2019 Survey.
  - Let's explore some of the notable findings.

# METHODOLOGY

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- Data is based on the survey conducted by Stack Overflow from January 23 to February 14 and involved 88,883 software developers from 179 countries.
- Familiarization with this dataset was achieved through completing IBM labs on Coursera, which encompassed topics such as Web Scraping, Dataset Exploration, Data Wrangling, Exploratory Data Analysis, and Data Visualization
- Data analysis and visualization was conducted via IBM Cognos Analytics

# RESULTS

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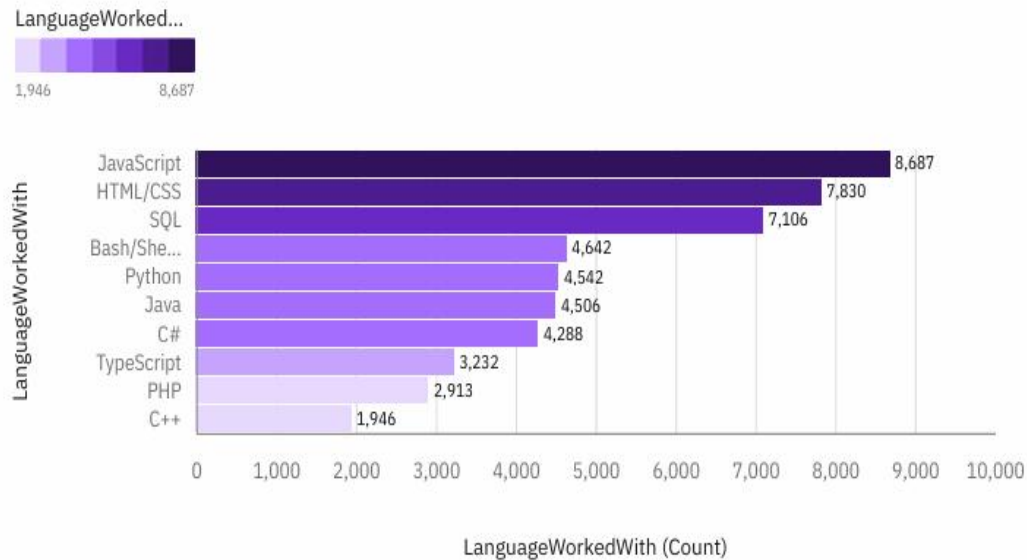
- Python overtakes Java, becoming the 5th most preferred language with significant growth. It stands as the fastest growing major programming language
- JavaScript remains the most used programming language.
- jQuery is the most widely used among web frameworks, with React.js surpassing Angular in developer usage this year.
- Globally, men represent approximately 90% of respondents, with higher female representation among students than professional developers in regions like the US, India, and the UK
- Around 3/4 of professional developers globally hold at least a bachelor's degree, aligning with past findings.
- 3/4 of survey respondents in professional developer roles are under 35 years old.

# PROGRAMMING LANGUAGE TRENDS

2019

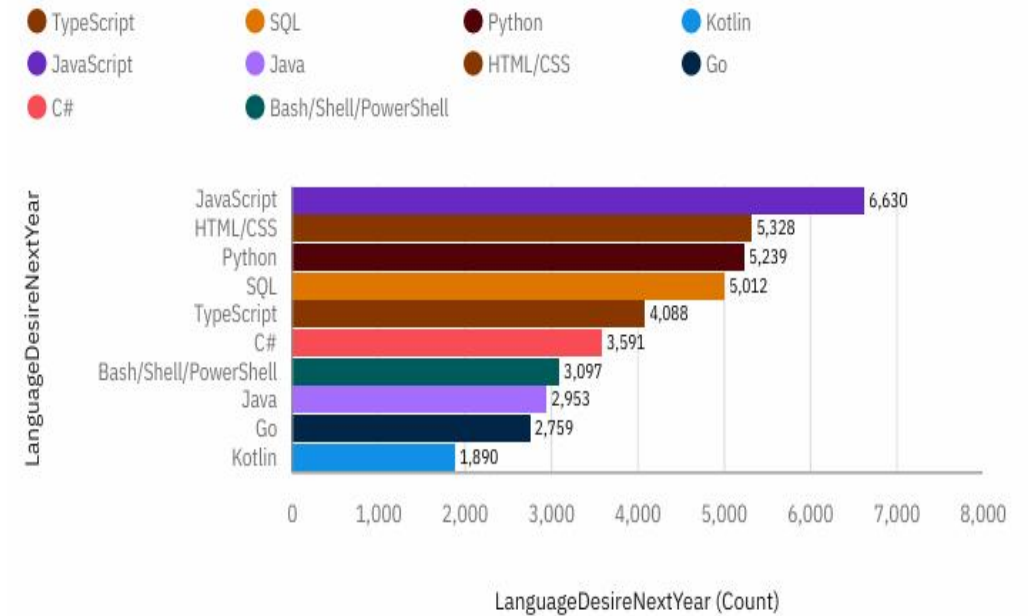
Current Technology Usage

Top 10 Language Worked With



Following Year

Top 10 Language Desire Next Year





# PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATION

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## FINDINGS

- JavaScript and HTML/CSS emerge as the most used programming languages among all respondents
- SQL also maintains a significant presence.
- Python just edged out Java in
- overall ranking

## IMPLICATIONS

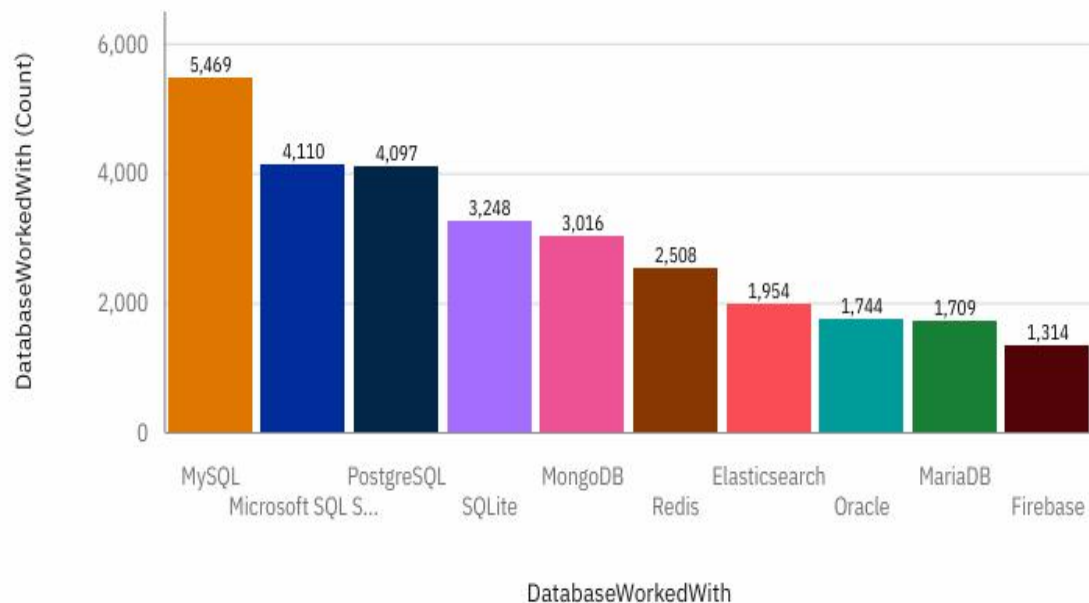
- The dominance of JavaScript and HTML/CSS underscores their indispensability in modern web development, highlighting the importance of mastering them for developers.
- The high usage of SQL emphasizes the critical role of data management and querying in modern software applications
- The rise of Python might also reflect



# DATABASE TRENDS

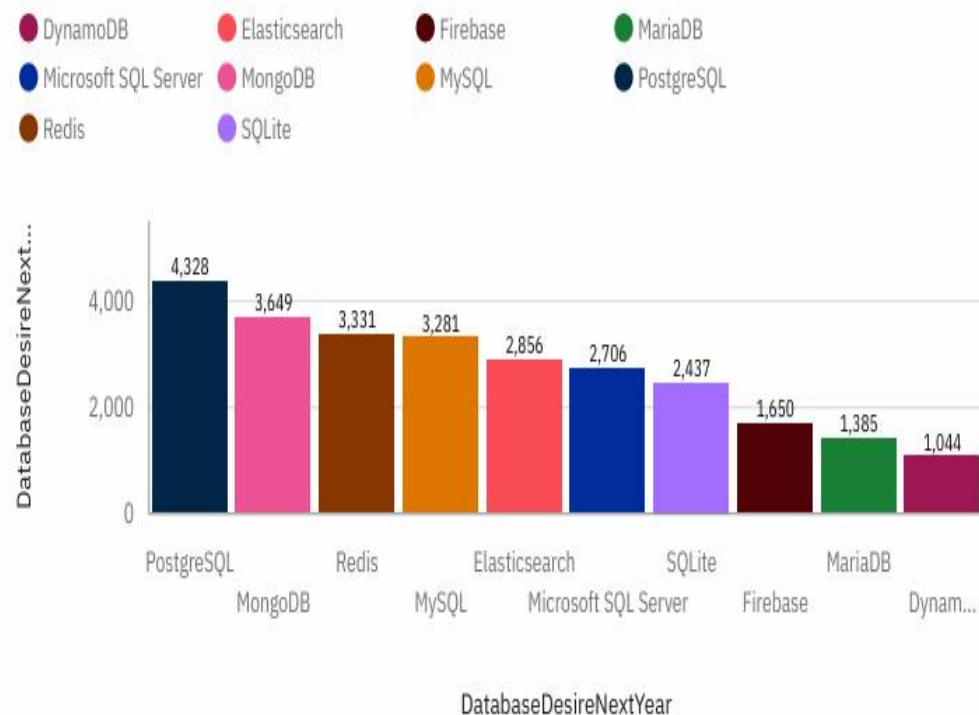
## 2019

### Top 10 Database Worked With



## Next Year

### Top 10 Database Desire Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- MySQL as most used database.
- Lack of interest in Microsoft SQL Server and SQLite.
- Increasing interest in PostgreSQL and MongoDB.

## Implications

- Microsoft SQL Server and SQLite losing ground in the market.
- PostgreSQL and MongoDB establishment in the market.

# DASHBOARD

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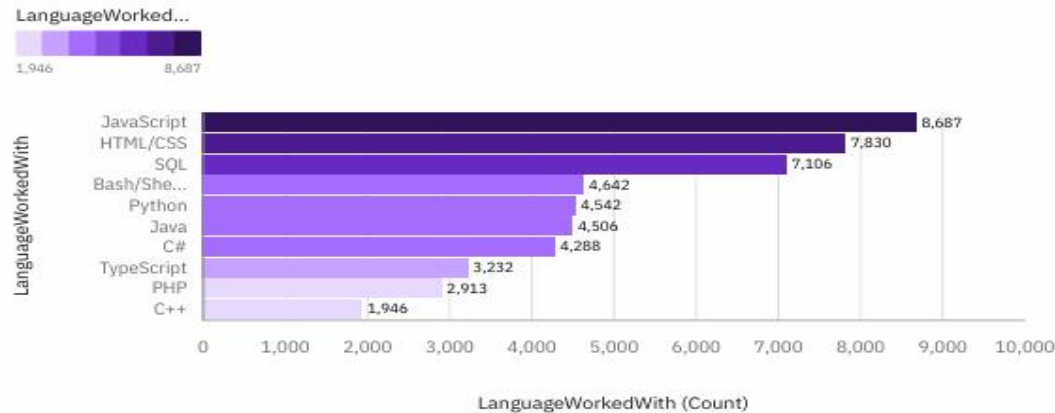


Created my dashboard can be find out below link

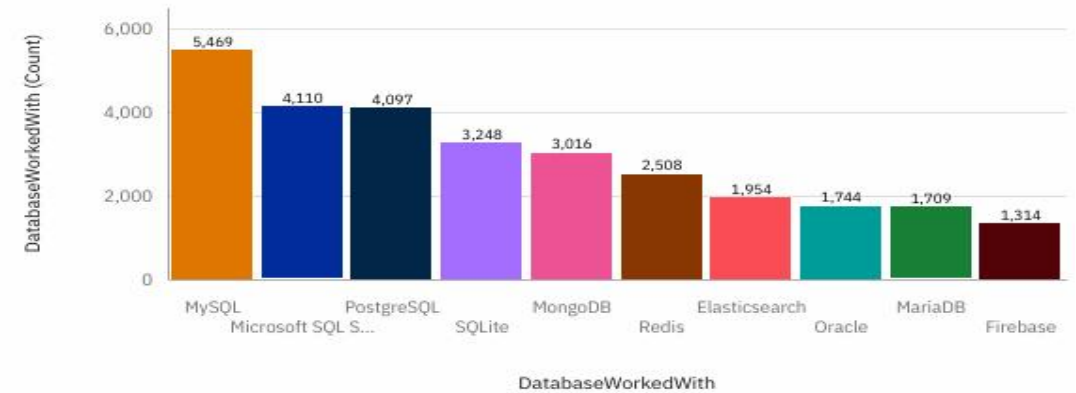
[https://github.com/zarnikhinkyi/Coursera-IBM-Data-Analyst-Capstone-Project/blob/main/Dashboards\\_on\\_CognosAnalyst.pdf](https://github.com/zarnikhinkyi/Coursera-IBM-Data-Analyst-Capstone-Project/blob/main/Dashboards_on_CognosAnalyst.pdf)

# CURRENT TECHNOLOGY USAGE

## Top 10 Language Worked With



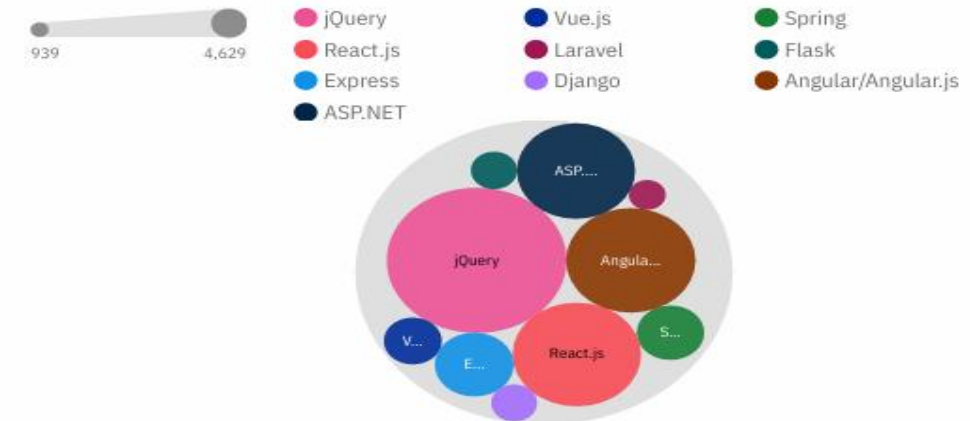
## Top 10 Database Worked With



## Platform Worked With

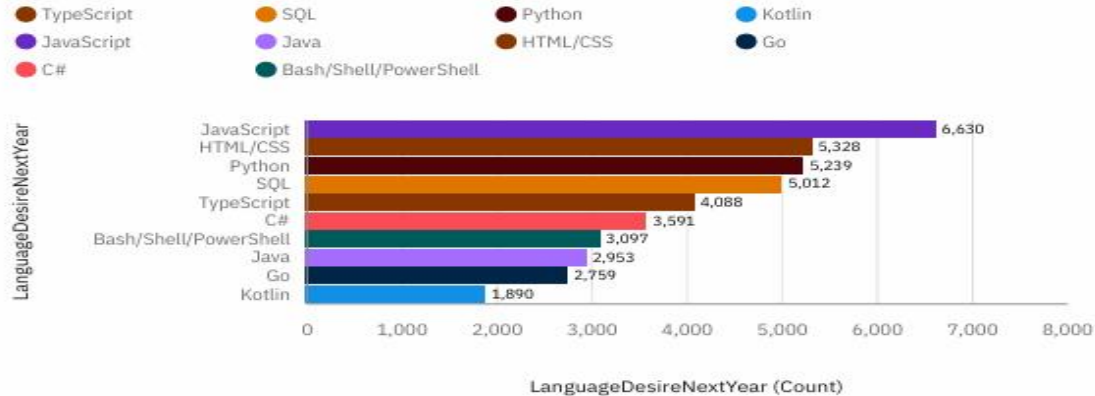


## Top 10 Web Frame Worked With

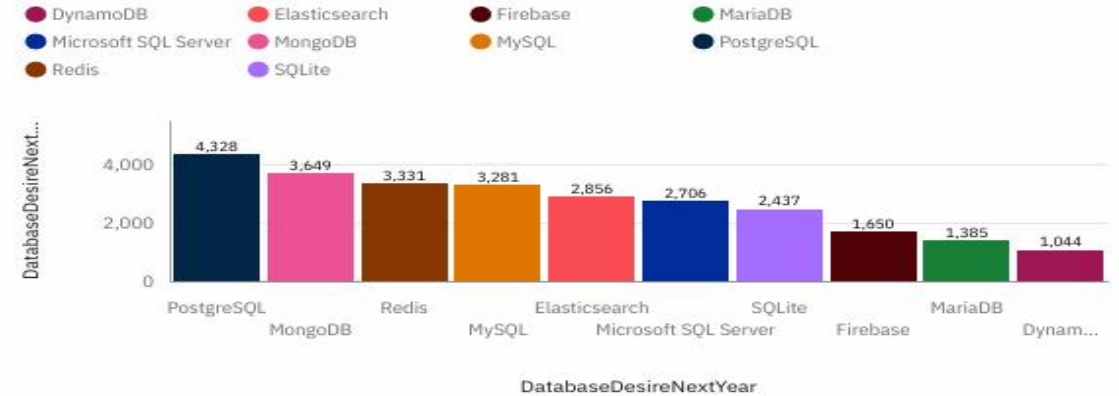


# FUTURE TECHNOLOGY USAGE

## Top 10 Language Desire Next Year



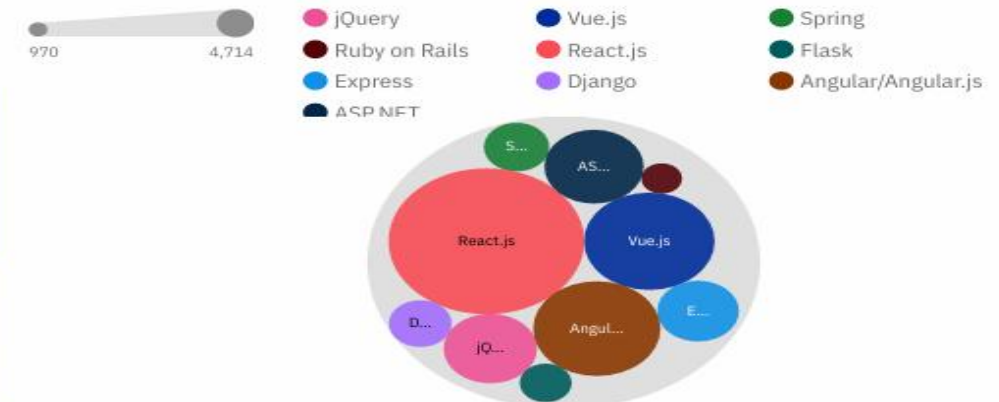
## Top 10 Database Desire Next Year



## Platform Desire Next Year

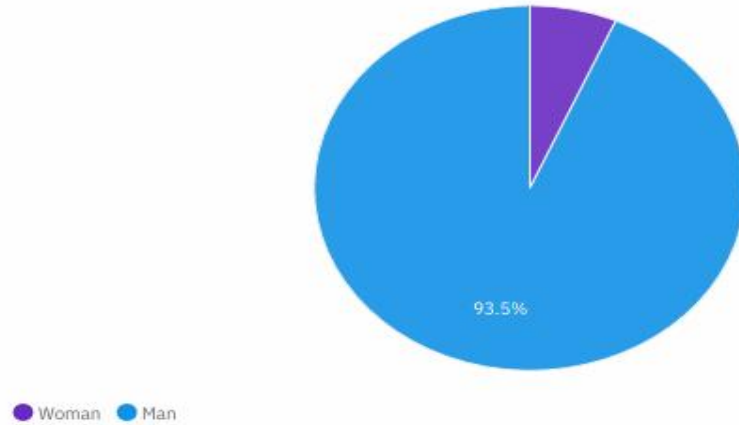


## Top 10 Web Frame Desire Next Year



# DEMOGRAPHICS

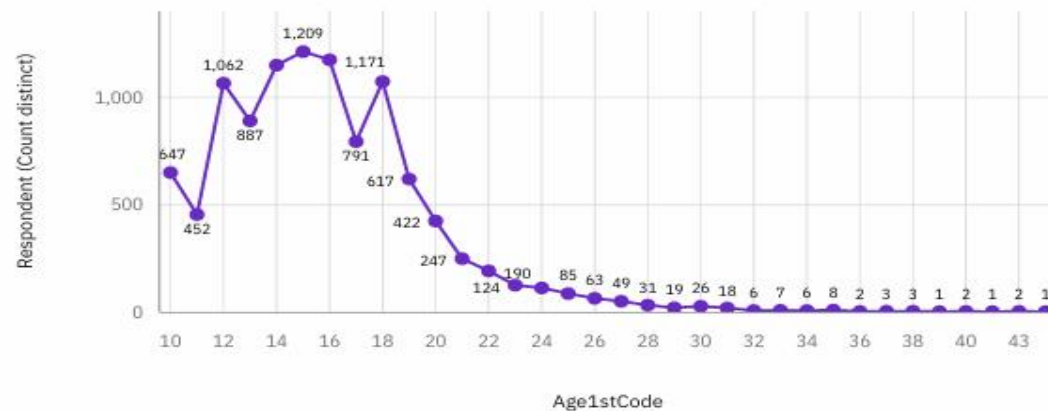
Respondent classified by Gender



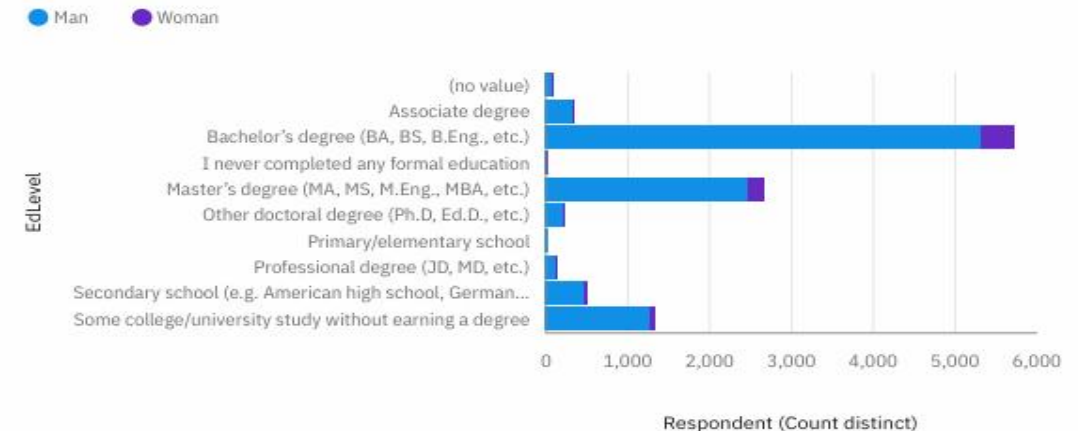
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Formal Education Level





# DISCUSSION

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- The dominance of JavaScript and HTML/CSS and the adoption of MySQL as the leading database management system
- Highlights the central role of web development in the programming landscape
- Opens up discussions on the significance of client-side scripting and styling, trends in web development frameworks, and the evolving nature of web technologies



# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- JavaScript widely used and TypeScript getting popular.
- Over 90% young male developers.
- Developers mostly located in developed countries.

## Implications

- JavaScript and TypeScript web frames gaining followers.
- Global polarization of developers location and gender.
- Young developers without postgrad studies on its majority.

# CONCLUSION

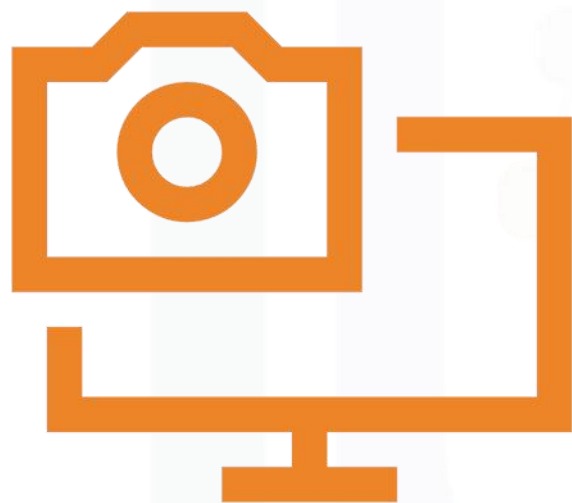
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- Developers are people with very marked characteristics.
- A good idea of popularity trends of different tools, platforms and languages can be obtained.
- There is a job to be done to spread accessibility of this labor market to countries in development.

# APPENDIX

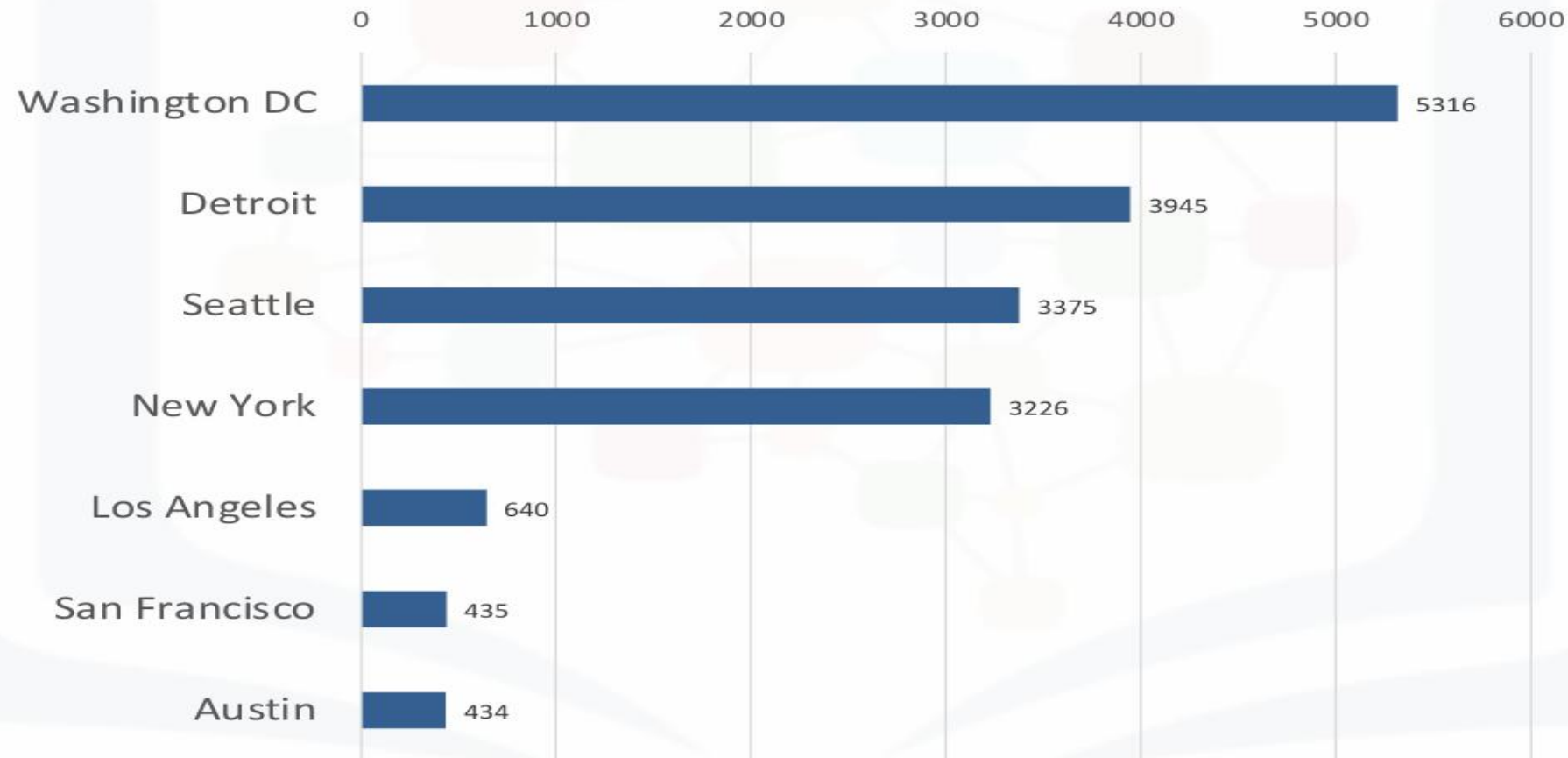
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- Job Postings Chart
- Popular Languages Chart

# JOB POSTINGS

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# POPULAR LANGUAGES

