



# Language Trends in Software CodeCraft: Insights for Developers

Tesfaldet Petros Sbhatu  
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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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- **Dominance of Web and Cloud Technologies** – This reflects the current core of modern software development, which is essential for understanding the present tech landscape.
- **Growing Popularity of Emerging Languages** – It's important to address the shift toward Kotlin, Go, and TypeScript, as these represent future trends and demand in the industry.
- **Demographic Imbalance** – Highlighting the significant gender gap and younger workforce can drive discussions on diversity and inclusion, which is a growing concern for many organizations.

# INTRODUCTION

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- Technology is an ever-changing space and developers who have updated skillsets stay ahead of the curve
- This report explores:
  - Current Demands in Technology highlighting the dominant technologies in use today
  - Future Technology Trends highlighting emerging technologies by tracking survey responses from the tech space
  - Demographic trends in Technology
  - Demand for employees by cities

# METHODOLOGY

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- Data was obtained from different platforms such as Kaggle and StackOverflow
- The data was gathered using WebScraping and API requests
- The data was wrangled by Python and saved in both CSV and XLXS formats
- Visualisation and dashboarding was done using Excel, Python, IBM Watson Studio and Google Looker

# RESULTS

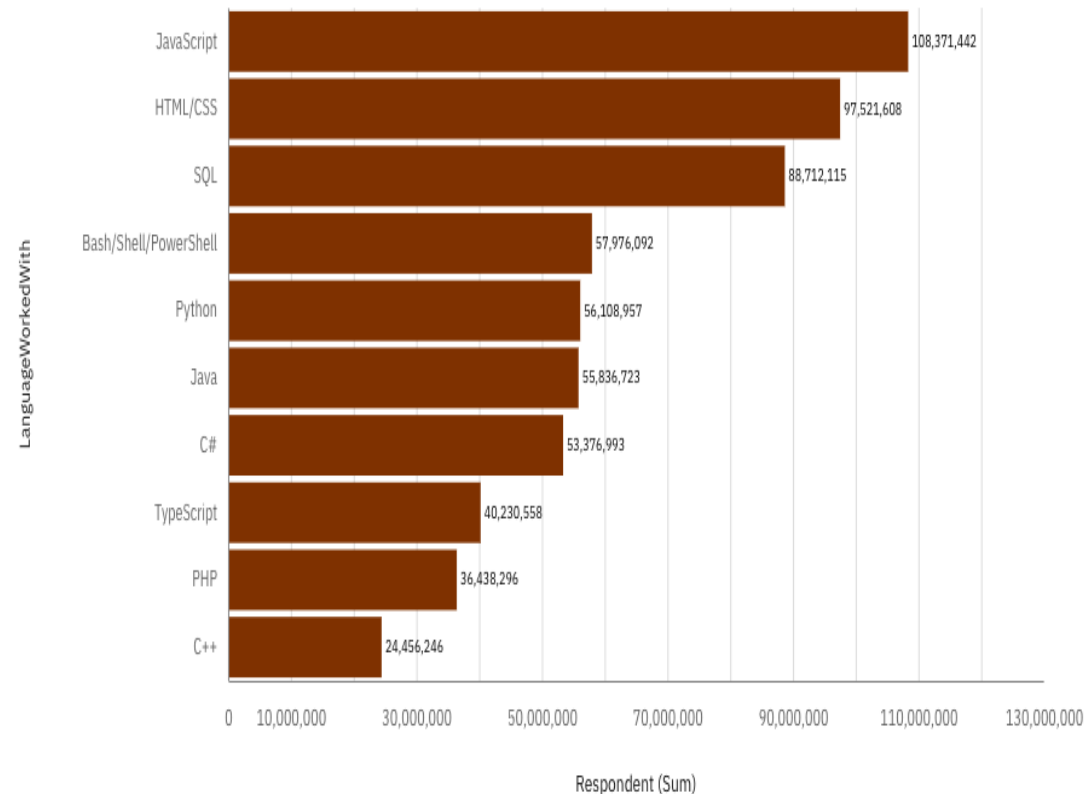
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- Programming Language Trends
- Database Trends

# PROGRAMMING LANGUAGE TRENDS

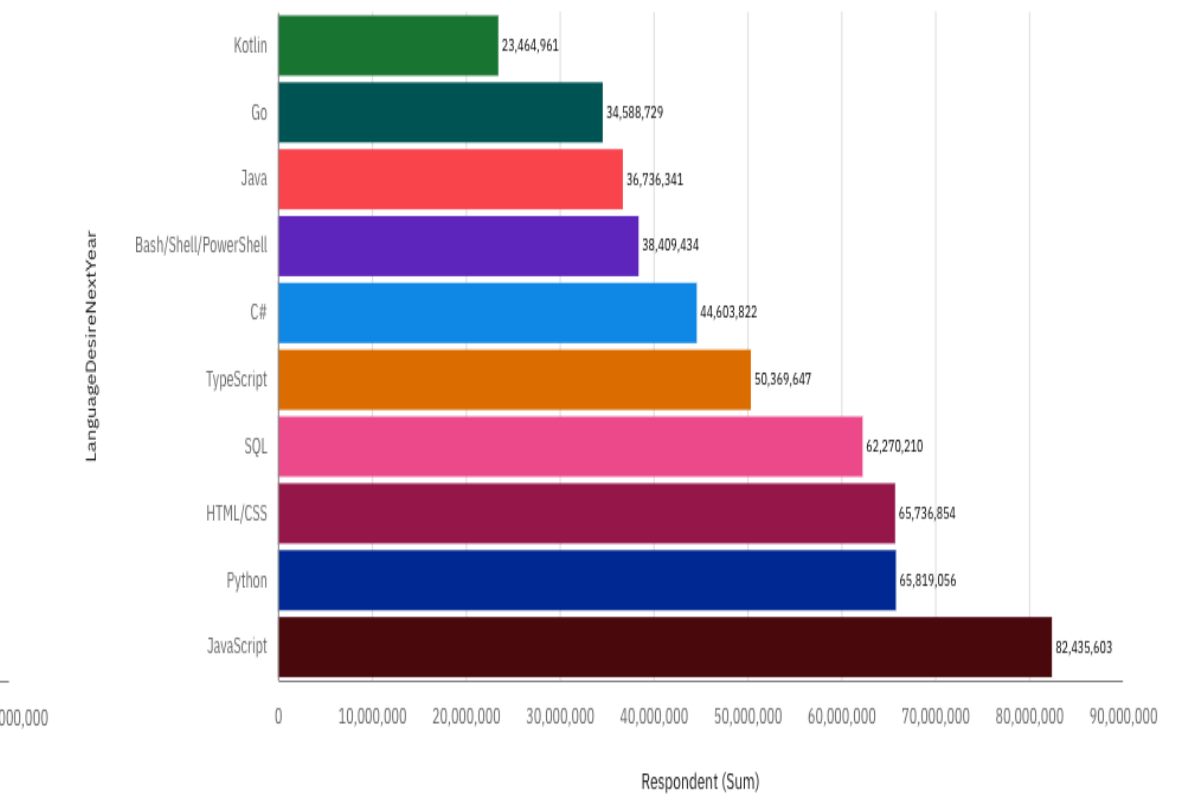
## Current Year

Top 10 Languages Used by Respondents



## Next Year

Top 10 Languages Respondents Want to Use in the Following Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Persisting interest in Javascript
- Declining interest in C++
- Rising interest in Python

## Implications

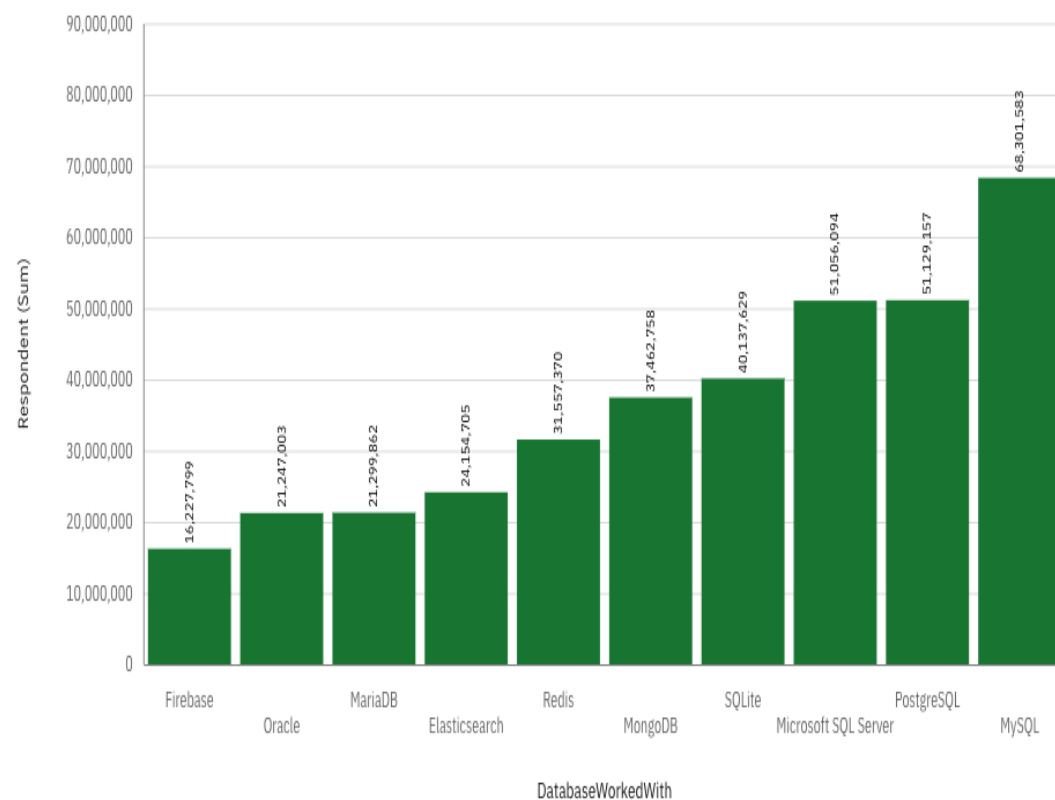
- Javascript is currently the most utilized language. Hence, programmers should use it more
- Despite C++ current popularity, interest in using it signals programmers should focus on other languages
- A rising demand from the employment market of Python developers.



# DATABASE TRENDS

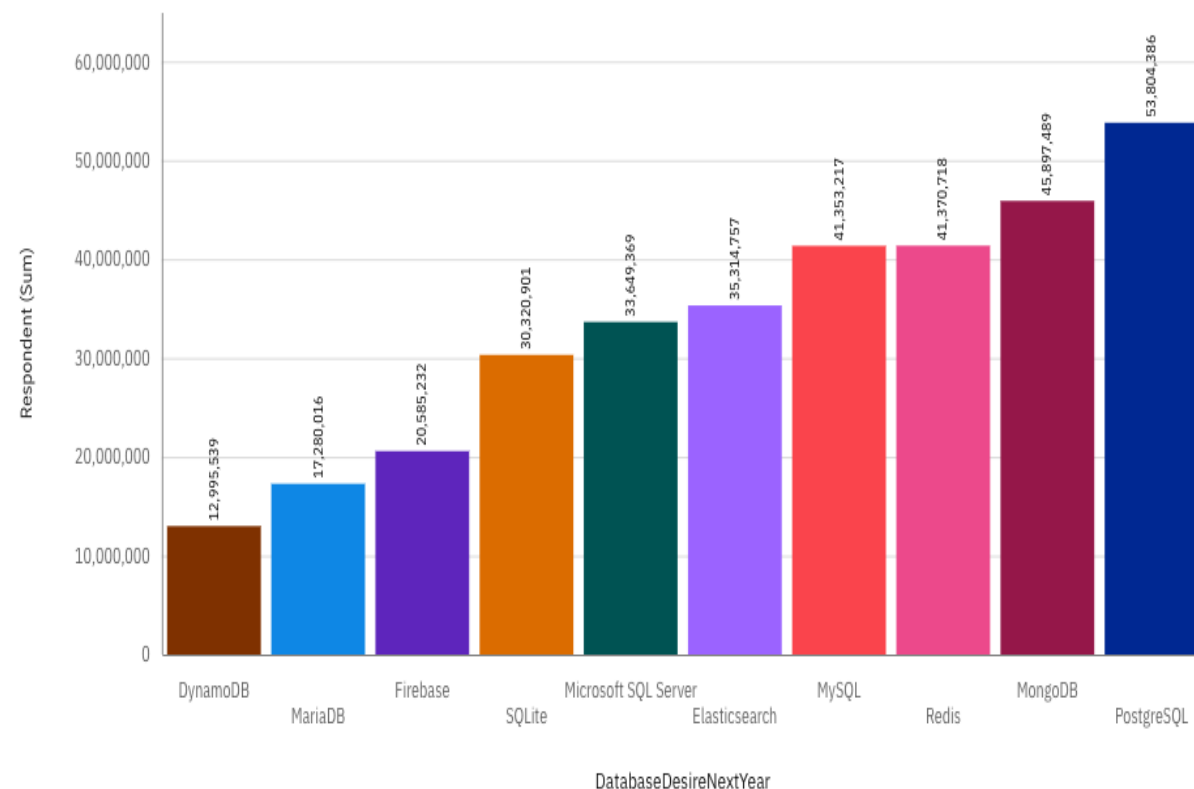
## Current Year

Top 10 Database Used by Respondents



## Next Year

Top 10 Databases Respondents Want to Use in the Following Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Rising interest in PostgreSQL.
- Declining interest in MicrosoftSQL Server.
- Interest in databases such as DynamoDB.

## Implications

- Developers should learn this as it is the most desired database to be used by respondents.
- MicrosoftSQL Server is becoming less popular among employers.
- Using less popular databases could provide a niche edge for developers.

# DASHBOARDS

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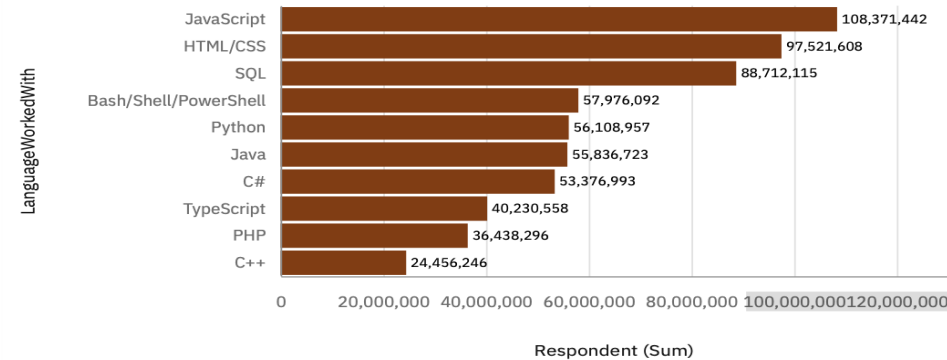
- Current Trends in Technology
- Future Trends in Technology
- Demographics in Tech

Source:

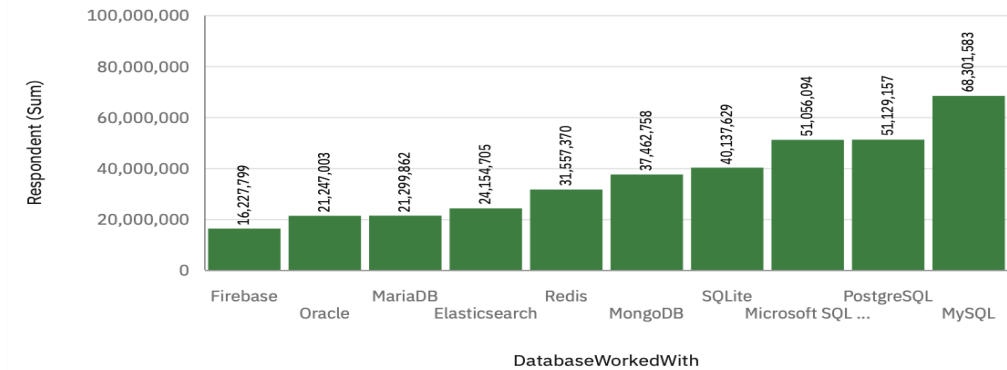
<https://github.com/atarod0/IBMCapstoneProject/tree/main/Dashboard>

# CURRENT TECHNOLOGY DASHBOARD

Top 10 Languages Used by Respondents



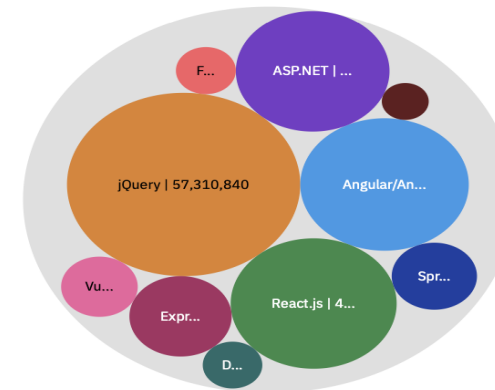
Top 10 Database Used by Respondents



Platforms Used by Respondents

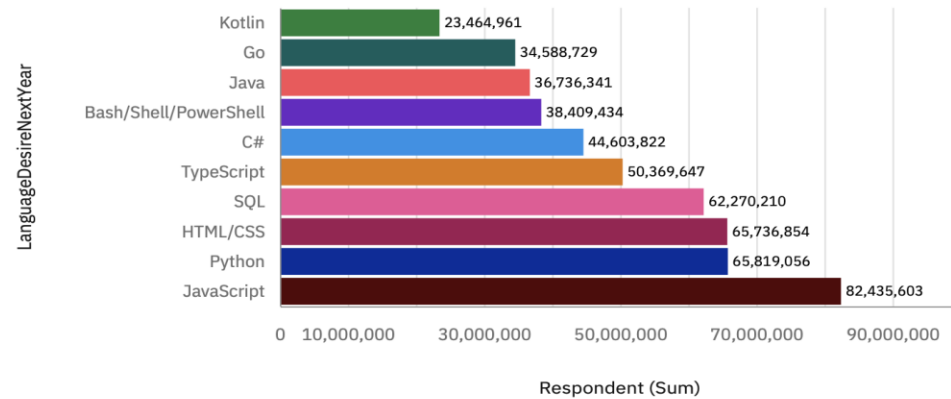


Top 10 Web Frames Used

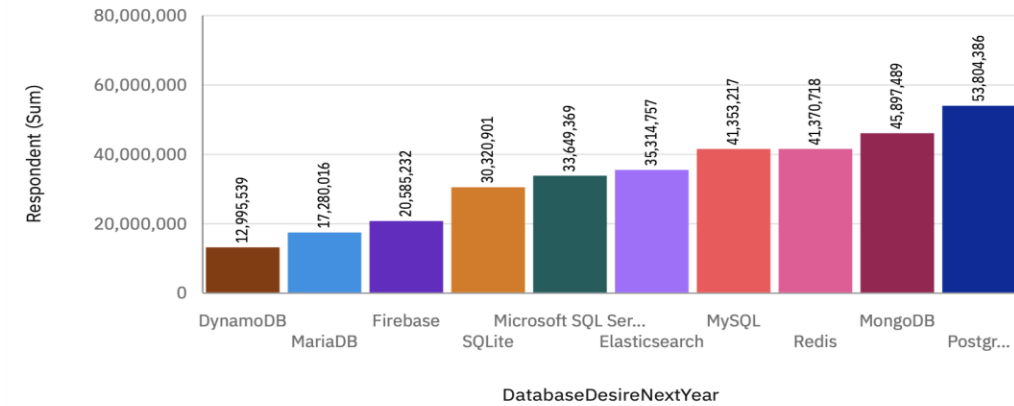


# FUTURE TECHNOLOGY DASHBOARD

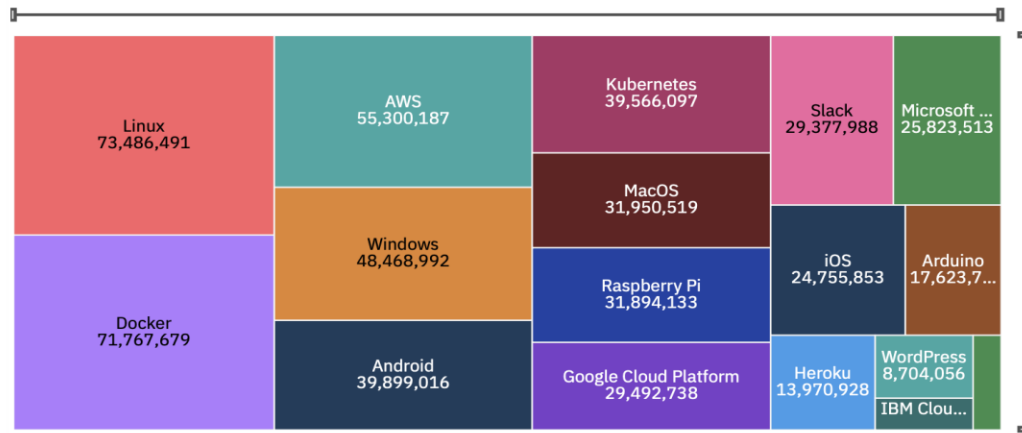
Top 10 Languages Respondents Want to Use in the Following Year



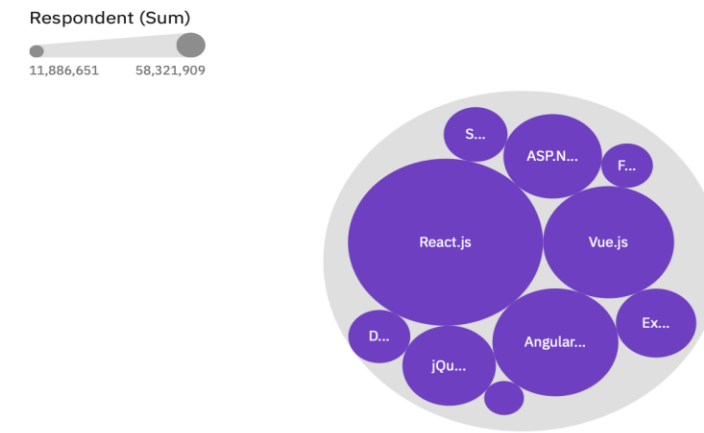
Top 10 Databases Respondents Want to Use in the Following Year



Platforms Respondents Want to Use in the Following Year



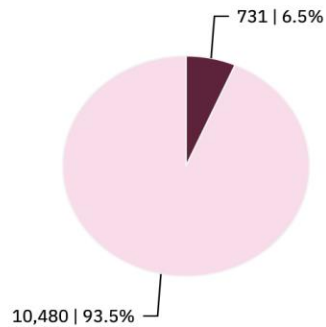
To 10 Web Frames Respondents Want to Use in the Following Year



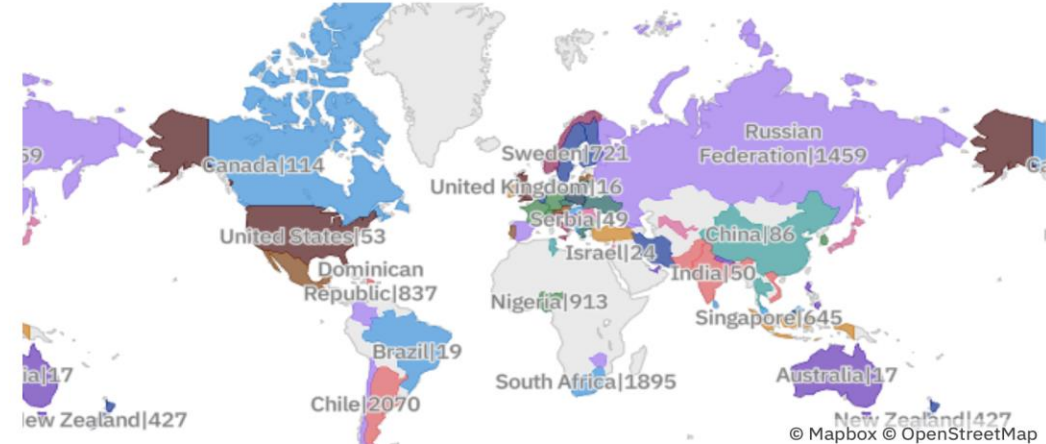
# DEMOGRAPHICS DASHBOARD

Gender of Respondents

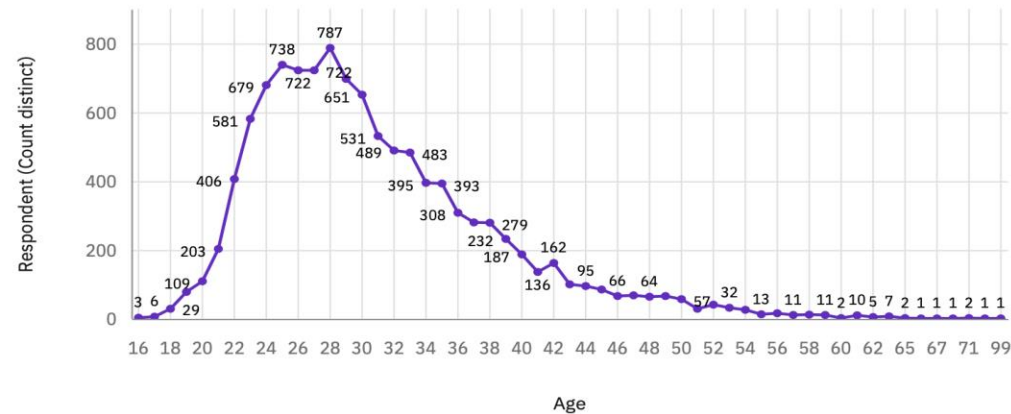
Gender  
● Woman ● Man



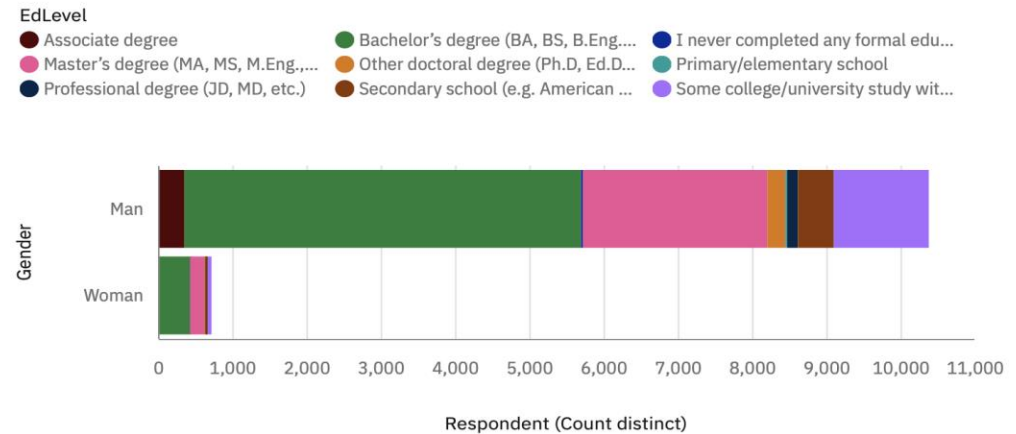
Countries of Respondents



Age Distribution of Respondents



Gender and Education Level of Respondents



# DISCUSSION

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- What are the current trends in tech?
- Future Trends in Tech?
- What are the demographics like?

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- JavaScript, HTML/CSS and SQL dominate the programming languages landscape.
- Rising interest in Kotlin, Go, and TypeScript for future projects
- Gender disparity in the tech space despite young workforce

## Implications

- Web development is currently popular as these are core tools for it.
- Demanded skills switching to mobile development as Kotlin and Go are for mobile development
- Limitation of innovation through different perspectives



# CONCLUSION

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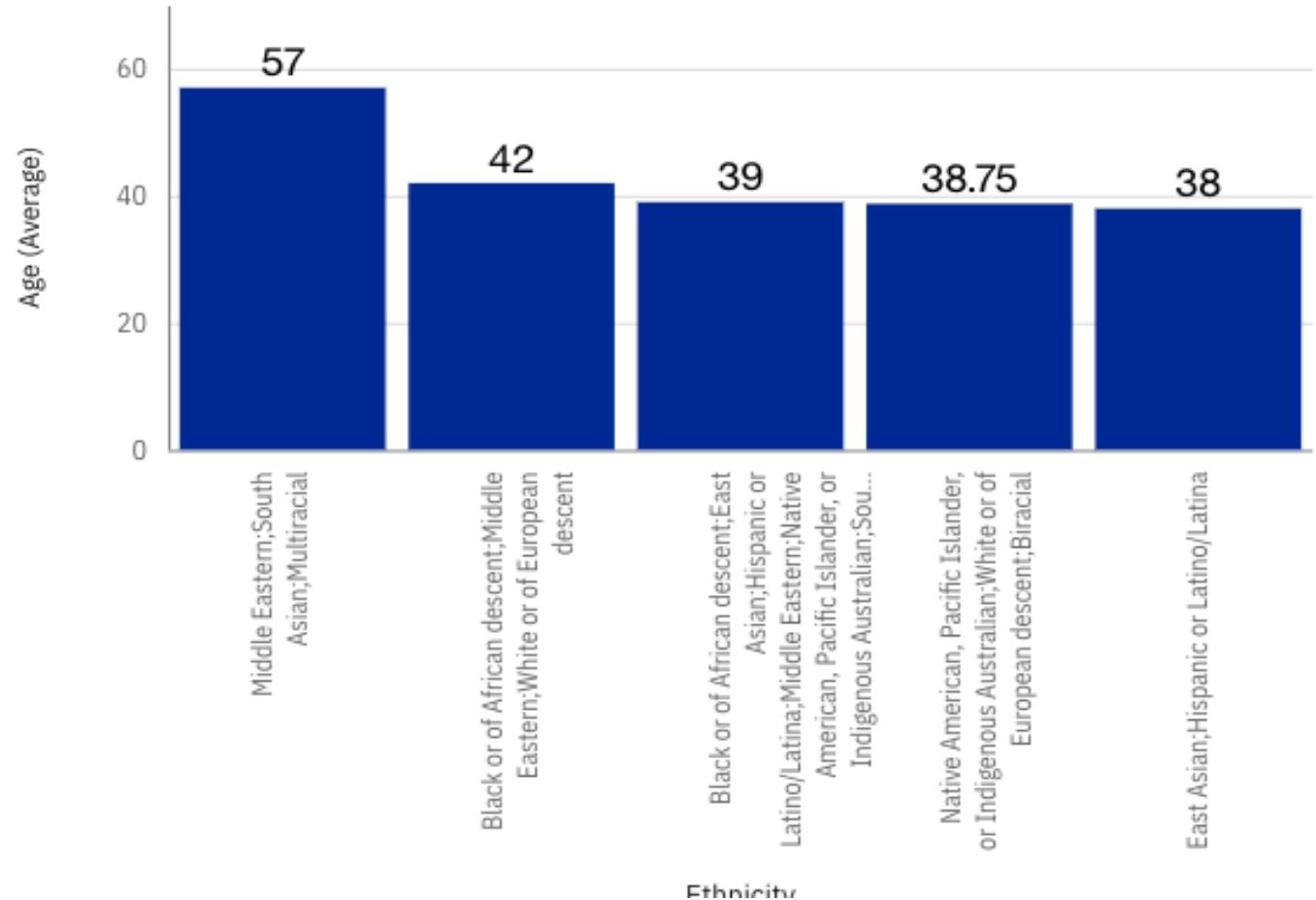
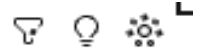


- **Web Development and Cloud Domination:** JavaScript, HTML/CSS, and SQL are extensively used, indicating web development's stronghold, while platforms like AWS, Linux, and Docker suggest the growing prominence of cloud computing and containerization in modern tech stacks.
- **Emerging Tech Skills and Database Preferences:** Kotlin, Go, and TypeScript are gaining traction, signalling the need for up-skilling in mobile and systems development. Open-source databases like MySQL and PostgreSQL are top choices, highlighting their scalability and flexibility.
- **Demographic Imbalance and Opportunities:** The significant gender gap (93.5% men) and younger workforce (25-30 age peak) in tech underline the need for more diversity and inclusion efforts, offering potential for innovation through varied perspectives.

# APPENDIX

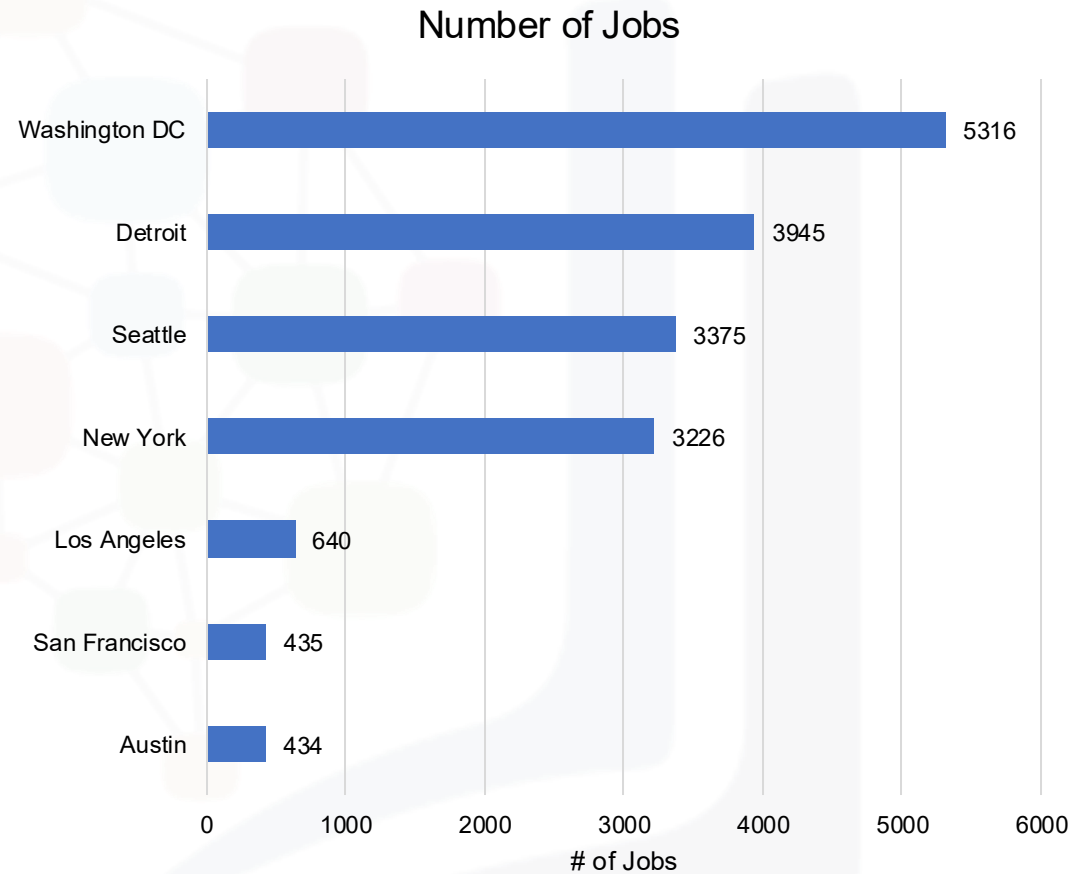


Oldest Ethnicities in the Data



# JOB POSTINGS

- High supply of jobs in Washington DC, Detroit and Seattle
- Declining supply of jobs in typical tech hubs Los Angeles and San Francisco



# POPULAR LANGUAGES

- The data shows that traditional, well-established technologies like C, Java, and Oracle still have high demand.
- Emerging technologies like Python and MongoDB are gaining traction.
- Demand for more niche technologies like Scala and PostgreSQL is relatively low, suggesting they are more specialized.

