



# THE 2019 STACK OVERFLOW DEVELOPER SURVEY: ANALYTICS

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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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- The 2019 Stack Overflow Developer Survey Analytics provides a comprehensive understanding of how professionals in the tech industry engage with data, tools, and emerging technologies.
- Methodology applied:
  - Collecting data using API and Web Scraping
  - Data Wrangling or Munging
  - Data visualization and analyzing the data distribution
- Current Technology Usage insights:
  - JavaScript, MySQL, Linux, jQuery are the most popular technologies worked with
- Future Technology Trends insights:
  - JavaScript, PostgreSQL, Linux, React.js are the most desired technologies to work with for the next year
- Demographics insights:
  - The majority of respondents are men aged 23-33 who live in the United States and possess a Bachelor's degree

# INTRODUCTION

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- Welcome to the unveiling of the 2019 Stack Overflow Developer Survey results!
- This annual survey has drawn insights from nearly 90,000 developers worldwide, shedding light on the pulse of the tech industry.
- Stack Overflow's Developer Survey is vast, yet our results may not uniformly represent the entire coding community.
- The methodology involved data collection through APIs and web scraping, followed by meticulous data wrangling, visualization, and analysis.
- Key analytics reveal current tech usage, future trends, and demographics, guiding steps for next year's improvements.

# METHODOLOGY

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- Data Collection:
  - APIs
  - Web Scraping
- Data Wrangling or Munging
  - Identifying and removing duplicates
  - Finding and imputing missing values
  - Normalizing the data
- Exploratory data analysis
  - Analyzing the data distribution
  - Handling outliers
  - Correlations
- Data Visualization
  - Creation of different plots to show the distribution of data
  - Building IBM Cognos Analytics Dashboards

# RESULTS

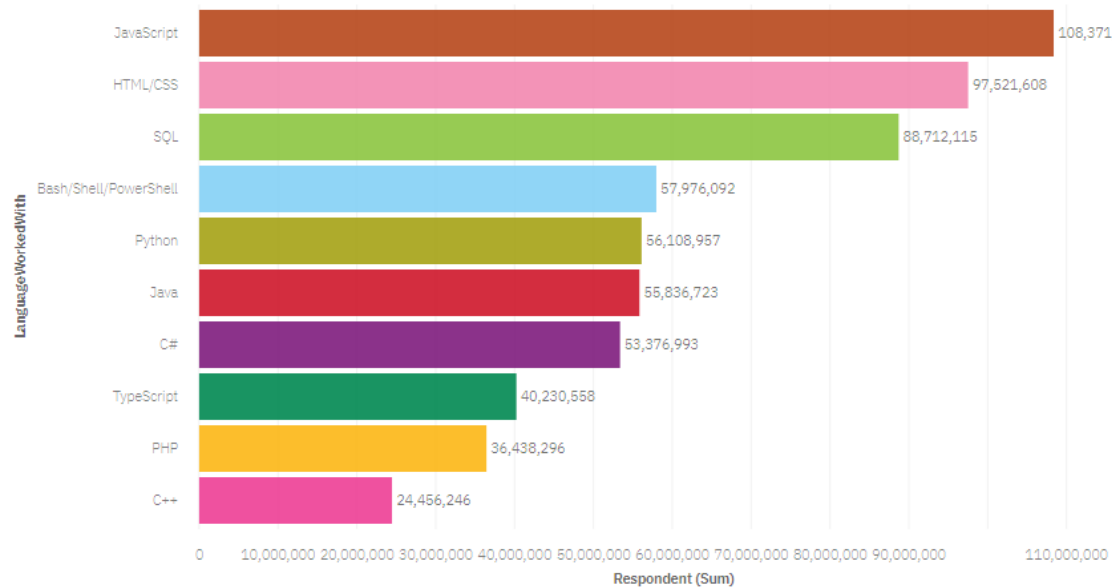
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# PROGRAMMING LANGUAGE TRENDS

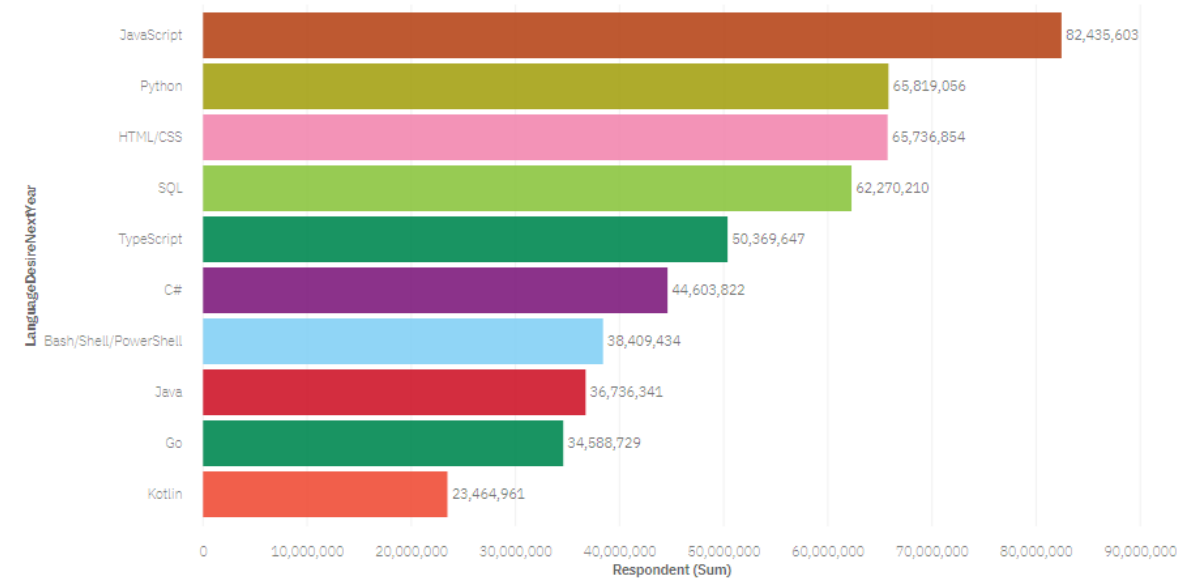
## Current Year

Top 10 Languages Worked With



## Next Year

Top 10 Languages Desired Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript stands as both the most popular and desired language for the upcoming year
- Python is the fastest-growing programming language
- The appearance of Go and Kotlin in the desired languages indicates a rising preference for these languages among developers for future projects

## Implications

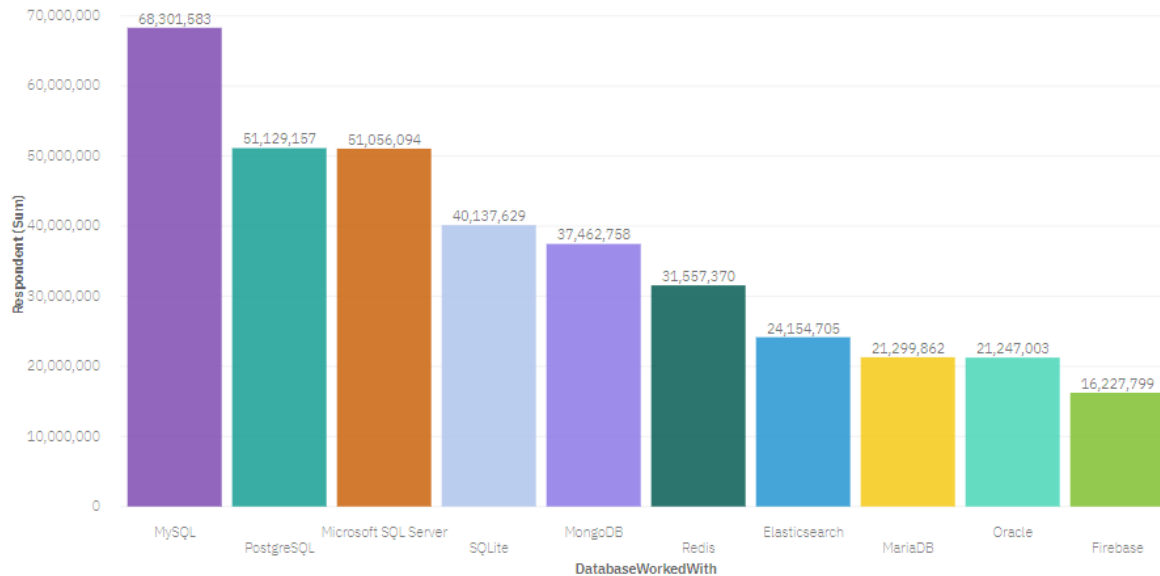
- Businesses and developers should continue investing in JavaScript-related technologies, given its sustained relevance in the industry
- Businesses and organizations should continue investing in Python-based solutions, tools
- Organizations should consider exploring the potential of Go and Kotlin in their tech stacks to align with the anticipated preferences of developers and leverage the strengths these languages offer



# DATABASE TRENDS

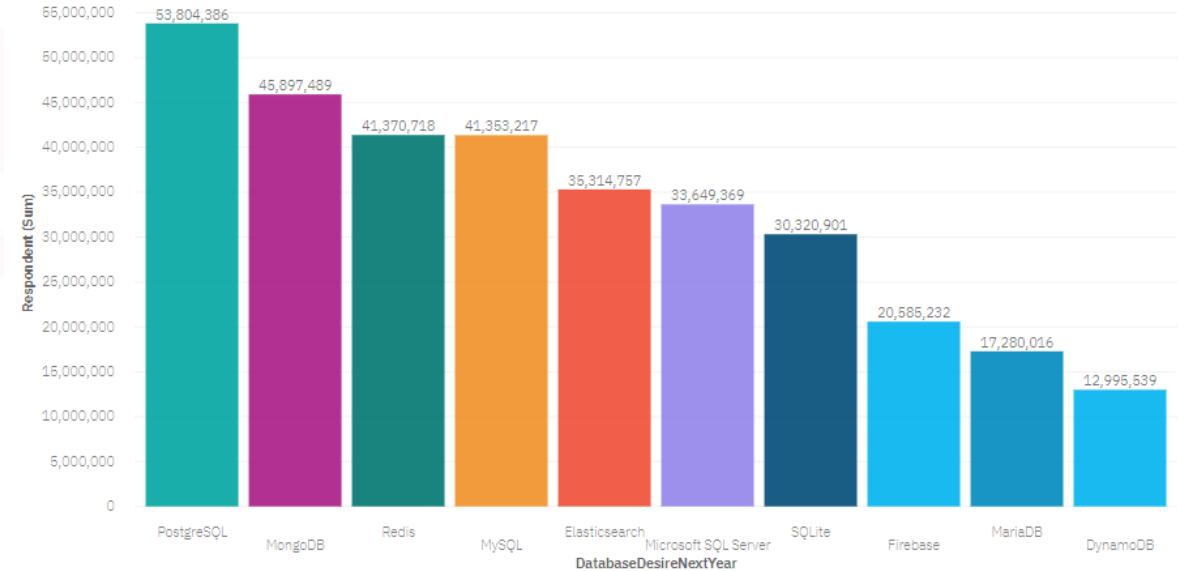
## Current Year

Top 10 Databases Worked With



## Next Year

Top 10 Databases Desired Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- PostgreSQL has gained a significant preference compared to MySQL, indicating a growing recognition for its features and performance.
- MongoDB and Redis are moving up in the desired list, suggesting a trend toward flexible schema and high-performance data storage.
- Redis and Elasticsearch are gaining prominence, reflecting a greater need for real-time data indexing and caching.

## Implications

- Investing in PostgreSQL and NoSQL database skills can be beneficial, aligning with the industry's direction and increasing professional value.
- Companies might seek more real-time data handling capabilities, demanding improved efficiency and speed from databases.

# DASHBOARD

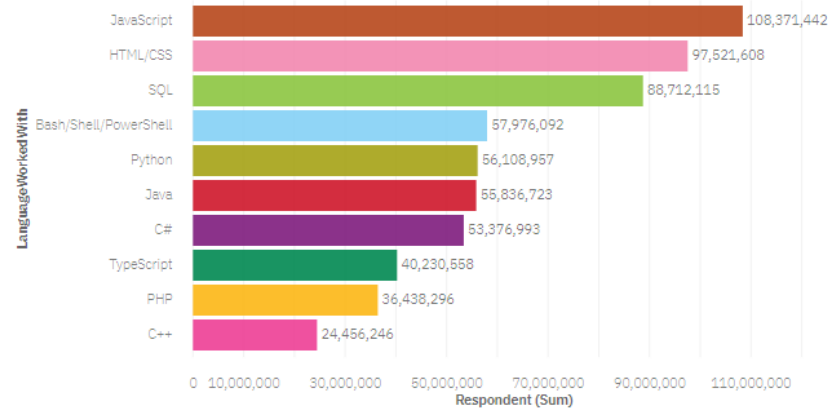
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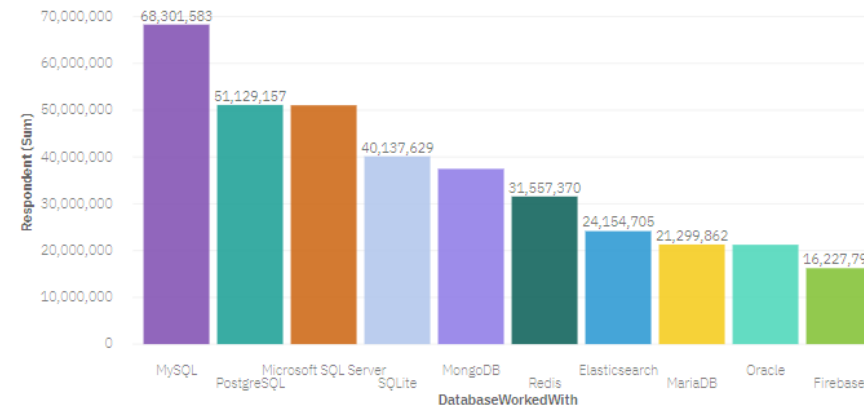
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# CURRENT TECHNOLOGY USAGE

Top 10 Languages Worked With



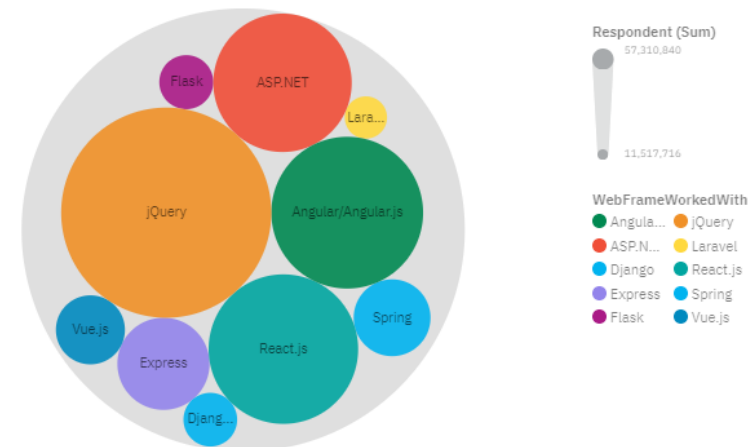
Top 10 Databases Worked With



Platforms Worked With

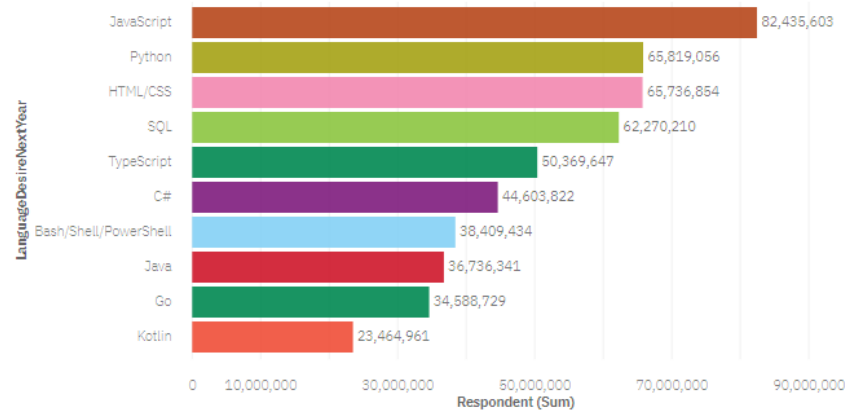


Top 10 Web Frames Worked With

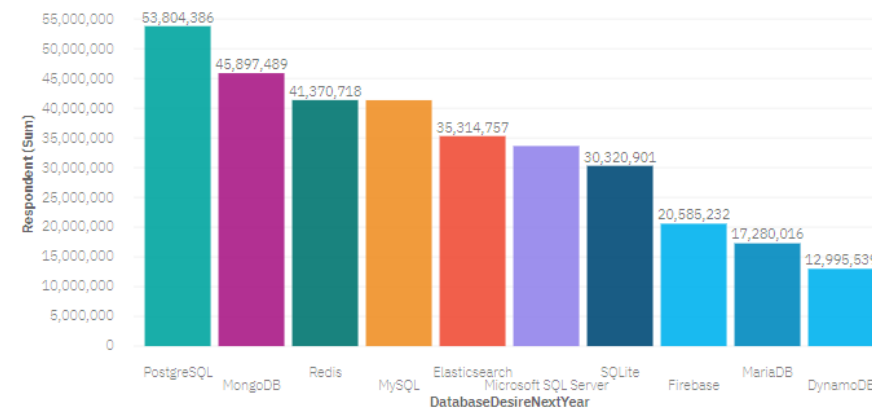


# FUTURE TECHNOLOGY TREND

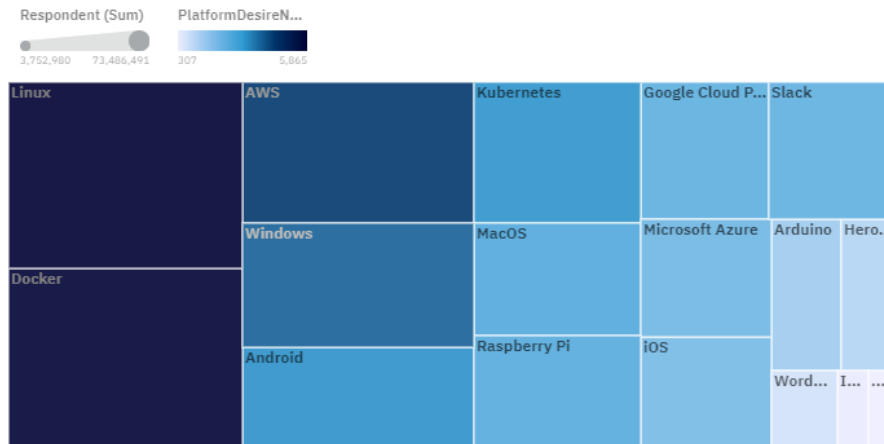
Top 10 Languages Desired Next Year



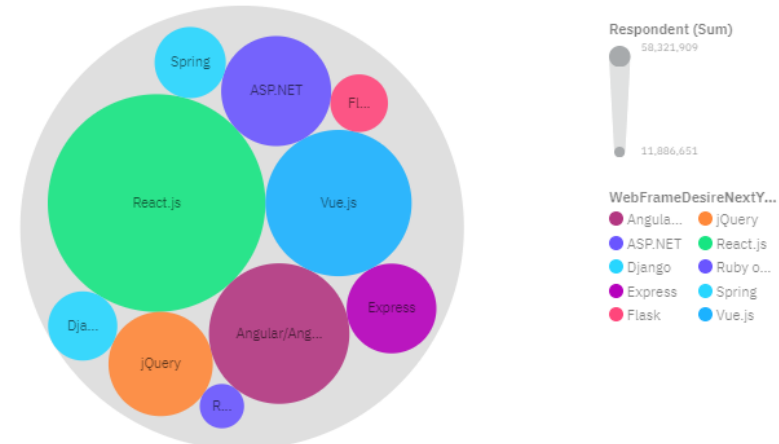
Top 10 Databases Desired Next Year



Platforms Desired Next Year

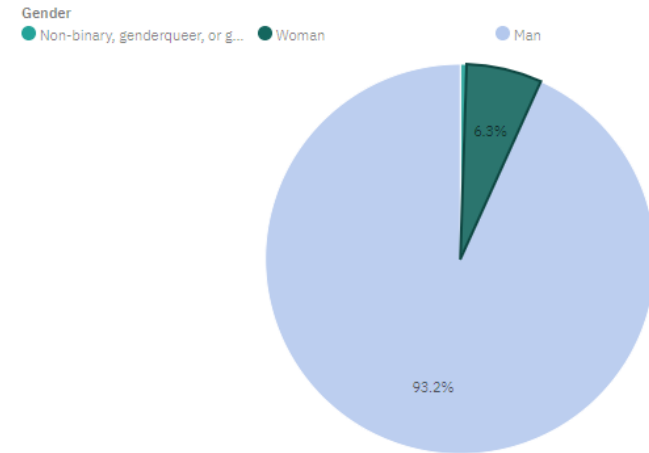


Top 10 Web Frames Desired Next Year

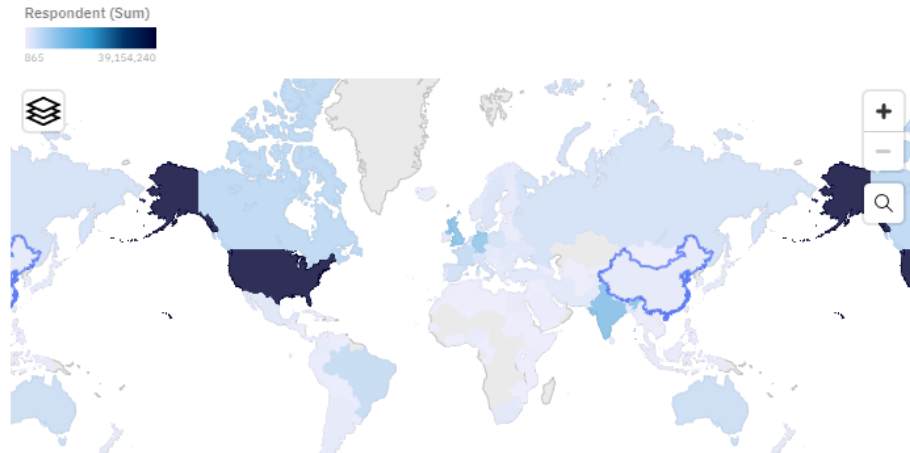


# DEMOGRAPHICS

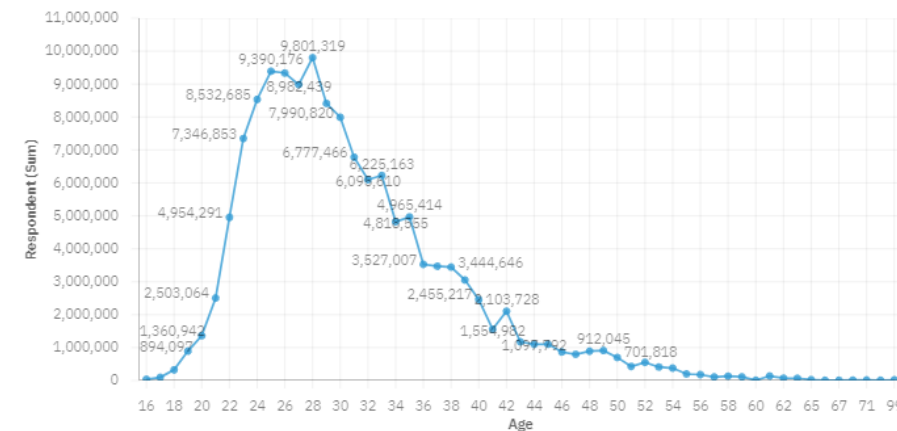
## Respondents by Gender



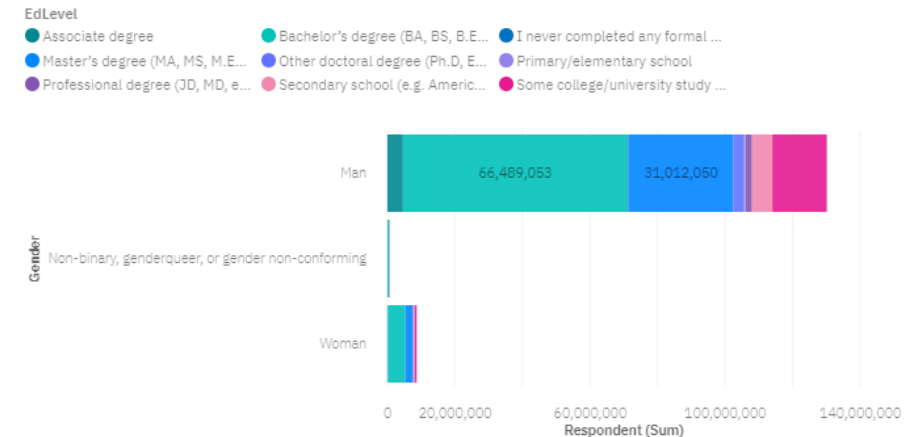
## Respondents Location



## Respondents by Age



## Respondent by Gender and Formal Education Level



# DISCUSSION

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# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- JavaScript, MySQL, Linux, jQuery are the most popular technologies worked with
- JavaScript, PostgreSQL, Linux, React.js are the most desired technologies to work with for the next year
- The majority of respondents are men aged 23-33 who live in the United States and possess a Bachelor's degree

## Implications

- Businesses and developers should continue investing in JavaScript- related technologies, given its sustained relevance in the industry
- Increasing interest in NoSQL databases like MongoDB and Redis prompts developers to deepen their understanding
- Companies might tailor educational resources and skill development programs toward the demographic survey result



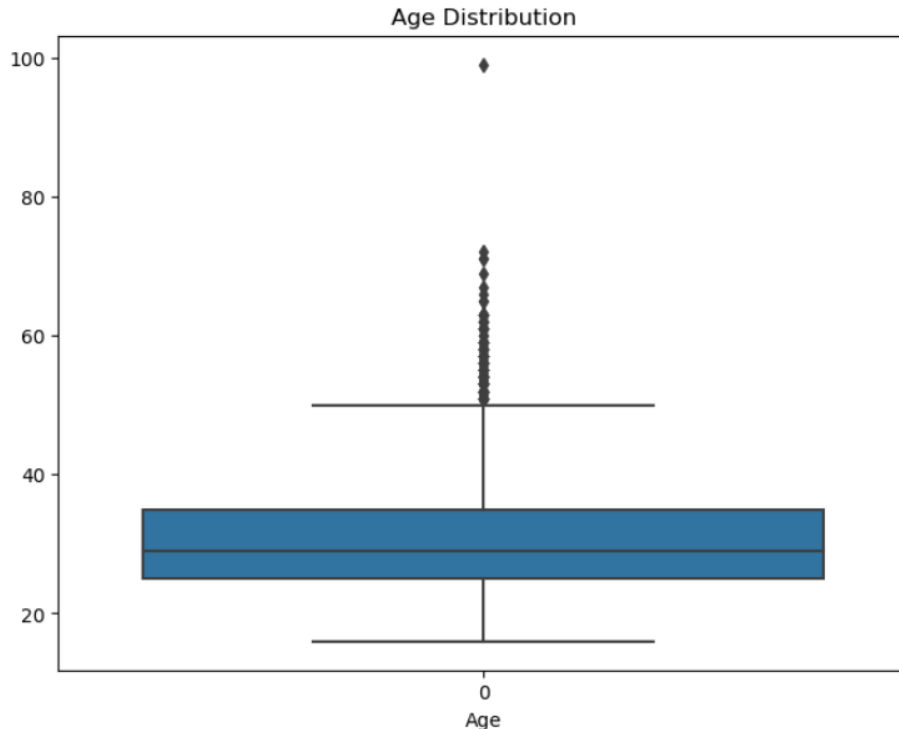
# CONCLUSION

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- JavaScript maintains its stronghold as the most popular and desired language, signaling its continued importance. Python's rapid growth solidifies its place and warrants continued investment in Python-based solutions and tools.
- Go and Kotlin's appearance as desired languages signifies a shifting preference among developers. Organizations should explore their potential to align with developer preferences and leverage their strengths.
- PostgreSQL's rising preference over MySQL indicates growing recognition for its capabilities. MongoDB and Redis's ascent signifies a trend toward flexible schema and high-performance data storage, while Redis and Elasticsearch's prominence highlights the need for real-time data handling capabilities.
- The demographic insights call for tailored educational resources and skill development programs, aligning with the majority's profile. Businesses and developers should invest in JavaScript and deepen proficiency in emerging technologies like NoSQL databases to meet evolving industry demands and demographic preferences.

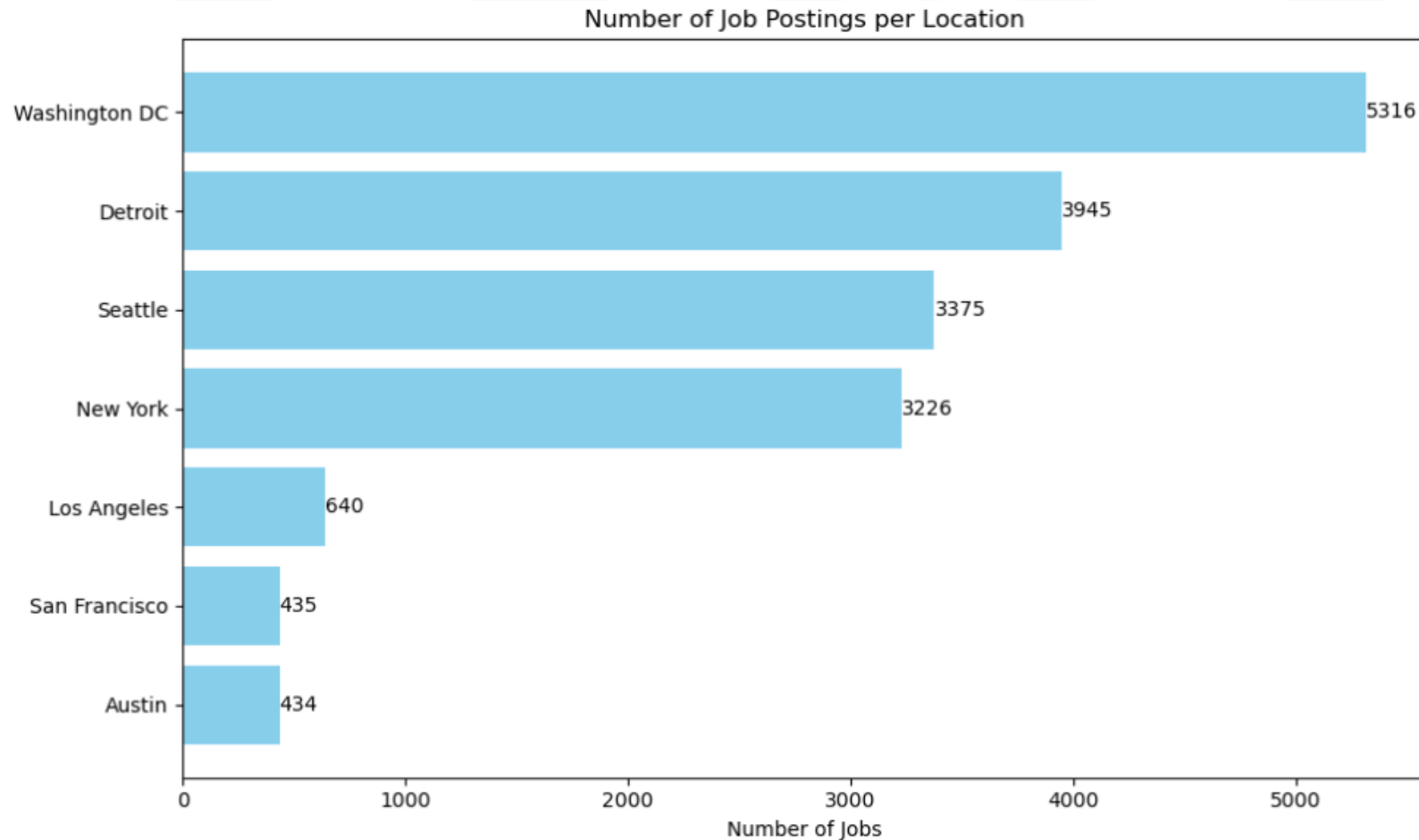
# APPENDIX



## Implications:

- Understanding the predominant age range helps in tailoring marketing strategies, product development, or services catering to the most prevalent demographic within the surveyed population.
- Investigating outliers could provide insights into potential errors in data collection or represent unique segments within the surveyed population that warrant further study or targeted strategies.
- Acknowledging the distribution and skewness helps in resource allocation, such as designing educational programs or career development initiatives tailored to different age groups.

# JOB POSTINGS



# POPULAR LANGUAGES

