

# Analyzing Global Developer Trends: Insights from the Stack Overflow Developer Survey

Karthikeyan R  
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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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- **Purpose:** Analyze Stack Overflow survey to identify current usage, future trends, and developer demographics.
- **Key Findings:**
  - **Languages:** JavaScript & SQL dominate; interest in these continues to rise.
  - **Databases:** PostgreSQL & MySQL lead; PostgreSQL & Redis show future growth.
  - **Platforms:** AWS & Microsoft Azure are top choices, with growing adoption.
  - **Webframes:** React & Node.js remain the most popular and continue to rise.
- **Implication:** Developers should focus on cloud skills, modern frameworks, and trending databases to stay competitive.



# INTRODUCTION

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- **Purpose:**
  - Analyze the Stack Overflow Developer Survey to uncover current technology usage, future trends, and developer demographics.
- **Target Audience:**
  - **Developers & Students** – to plan skill development
  - **Recruiters & Tech Companies** – to align hiring and tech adoption strategies
- **Value:**
  - Provides data-driven insights to identify in-demand skills, emerging technologies, and industry trends for better decision-making.



# METHODOLOGY

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- **Data Source:**
  - Stack Overflow Developer Survey (survey\_data\_updated 5.csv)
- **Data Collection:**
  - Official survey responses from global developers
  - Covers languages, databases, platforms, web frameworks, and demographics
- **Data Wrangling Steps:**
  - Cleaned missing and inconsistent values
  - Filtered & grouped top 10 technologies for current and future trends
  - Aggregated & visualized data into dashboards using Cognos Analytics

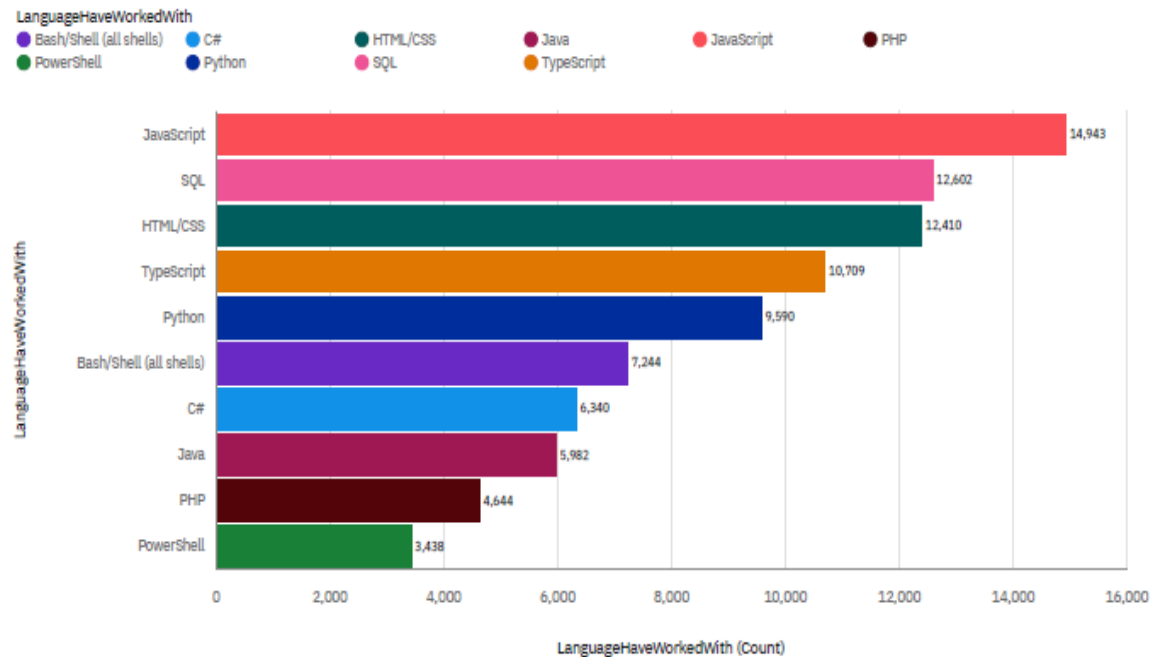


# PROGRAMMING LANGUAGE TRENDS

## Current Year

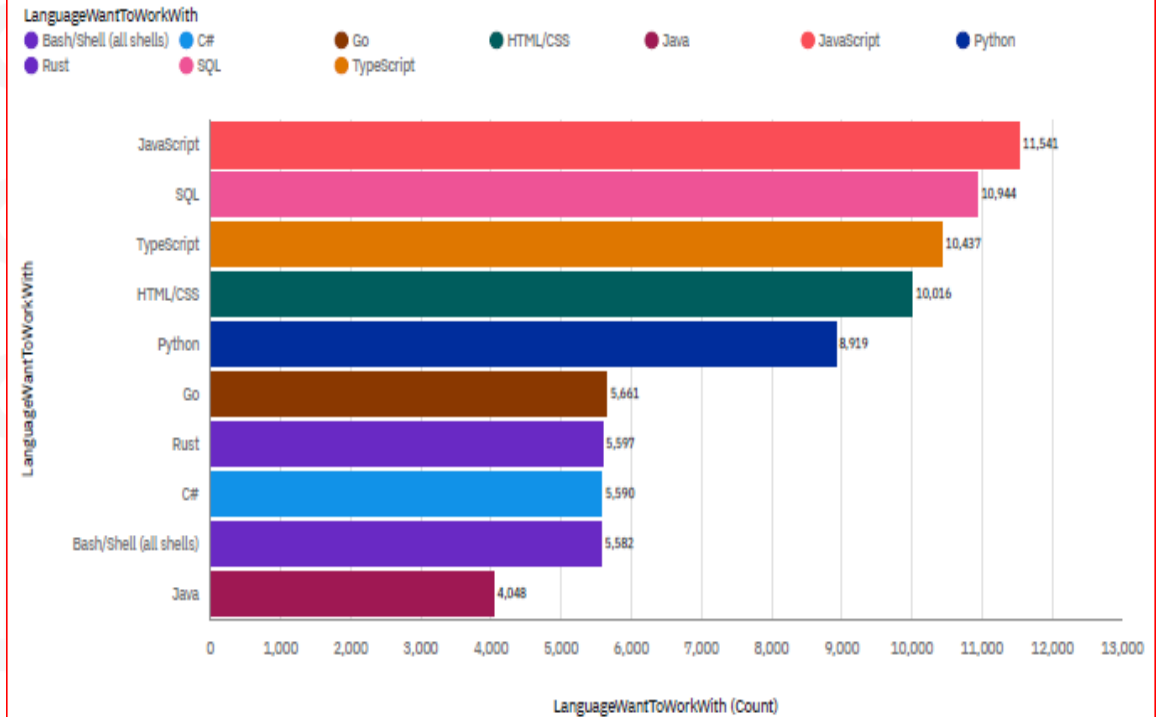
### Current Technology Usage

#### Top 10 Programming Languages Worked With



## Next Year

### Top 10 Programming Languages Want to Work With



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

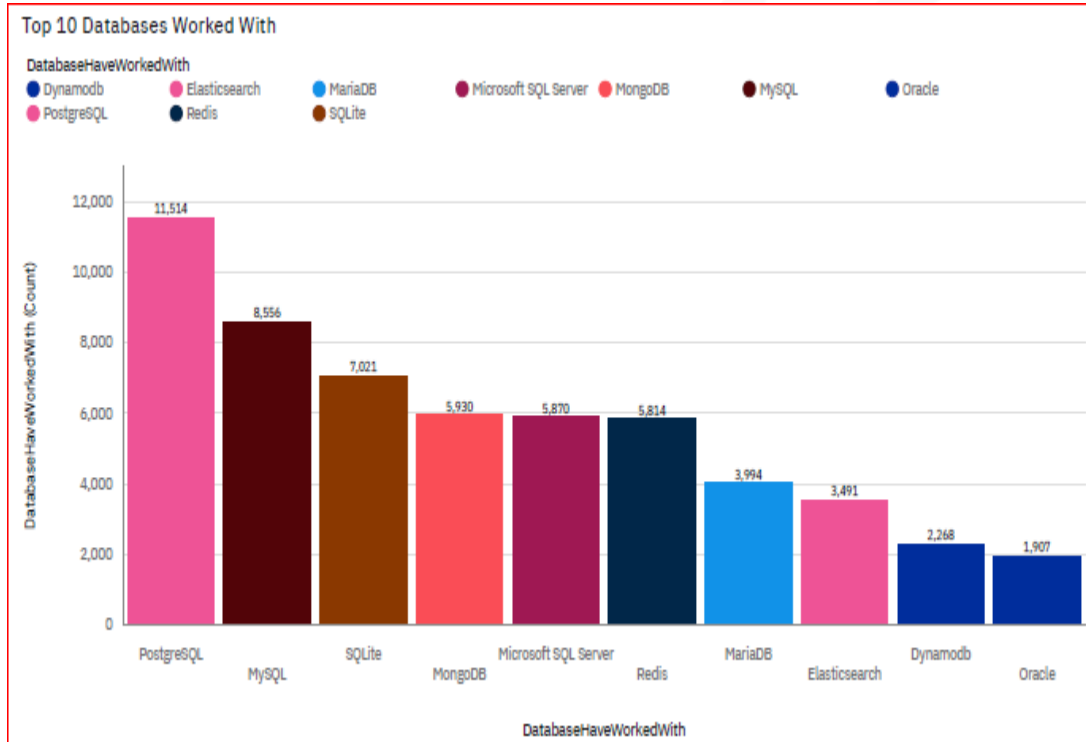
- JavaScript leads in current usage, with nearly 15,000 developers actively working with it.
- Python ranks highest in future interest, signalling its growing relevance in emerging fields.
- TypeScript maintains strong momentum in both current and future preferences.

## Implications

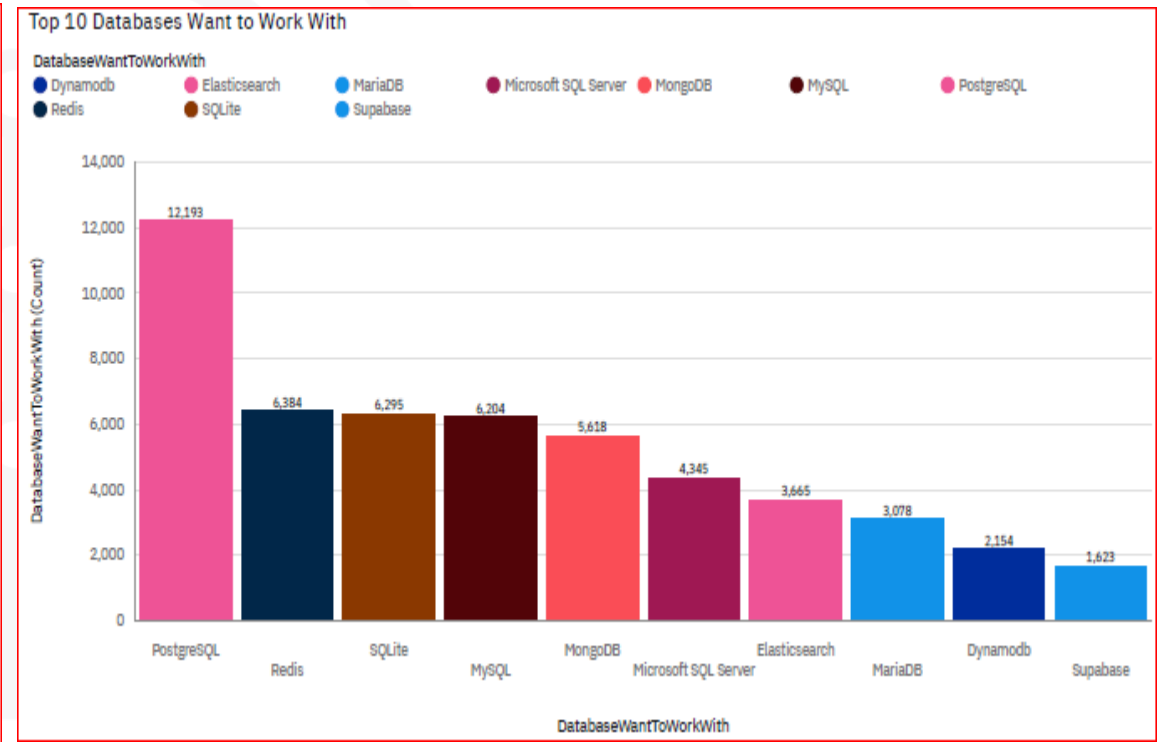
- JavaScript's dominance reinforces its role as a foundational skill for web development.
- Python's rising popularity suggests increased demand for data-centric and AI-related roles.
- TypeScript's growth reflects a shift toward more robust and maintainable JavaScript codebases.

# DATABASE TRENDS

## Current Year



## Next Year





# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- PostgreSQL leads in both current usage and future interest, confirming its reliability and versatility across use cases.
- Redis and SQLite are gaining traction, especially for lightweight, fast, and embedded data solutions.
- Supabase shows strong future interest, indicating growing adoption of developer-friendly cloud-native platforms.

## Implications

- PostgreSQL's continued dominance makes it a safe and strategic choice for scalable relational systems.
- The rise of Redis and SQLite suggests increasing demand for performance-optimized and resource-efficient databases.
- Supabase's momentum points to a broader shift toward simplified backend development and serverless architectures.



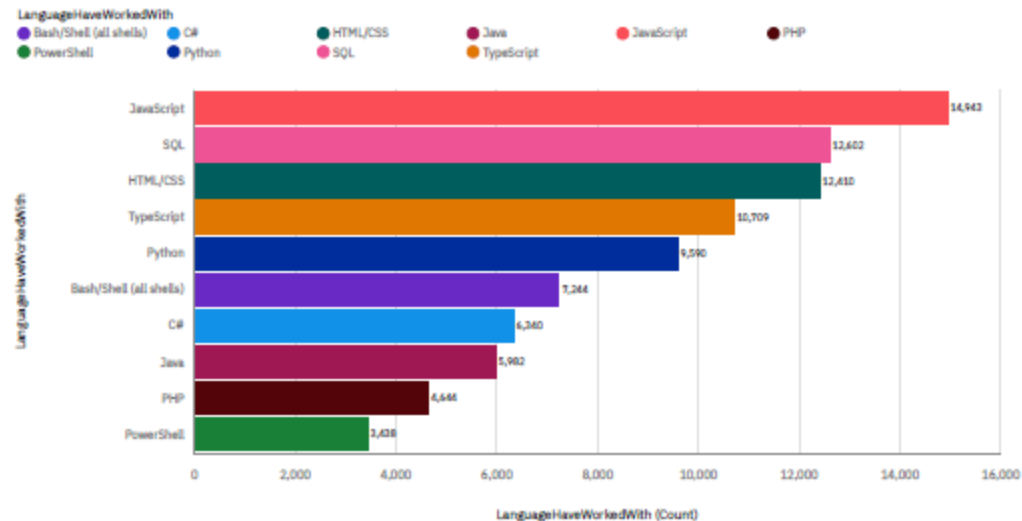
# DASHBOARD

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## Top 10 Programming Languages Worked With

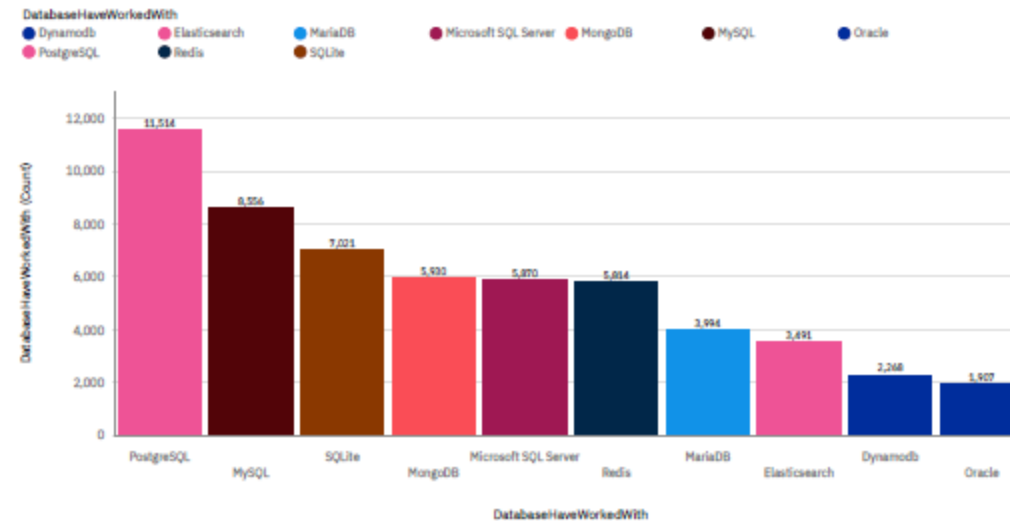
LanguageHaveWorkedWith



Platform: Java: Net



DatabaseHaveWorkedWith

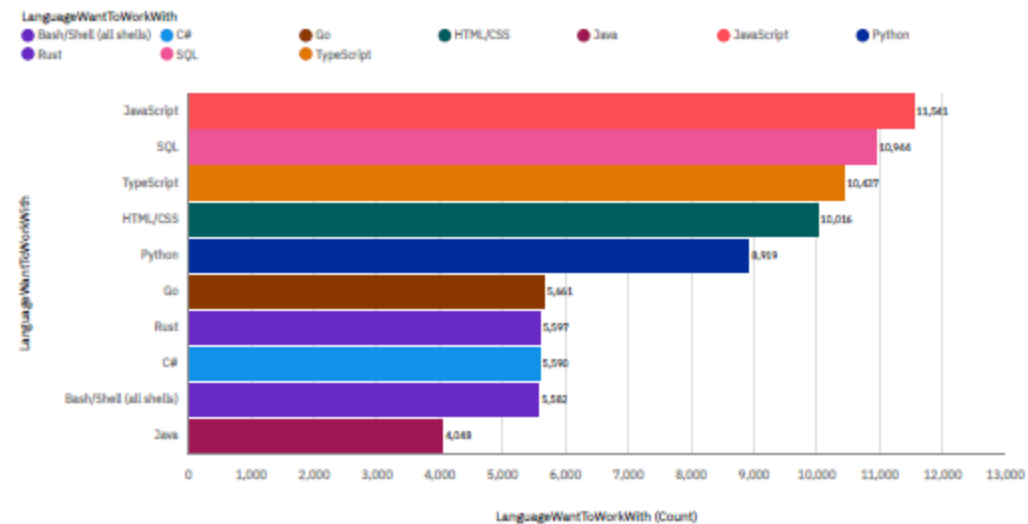


Webframe1.html Webframe1.html

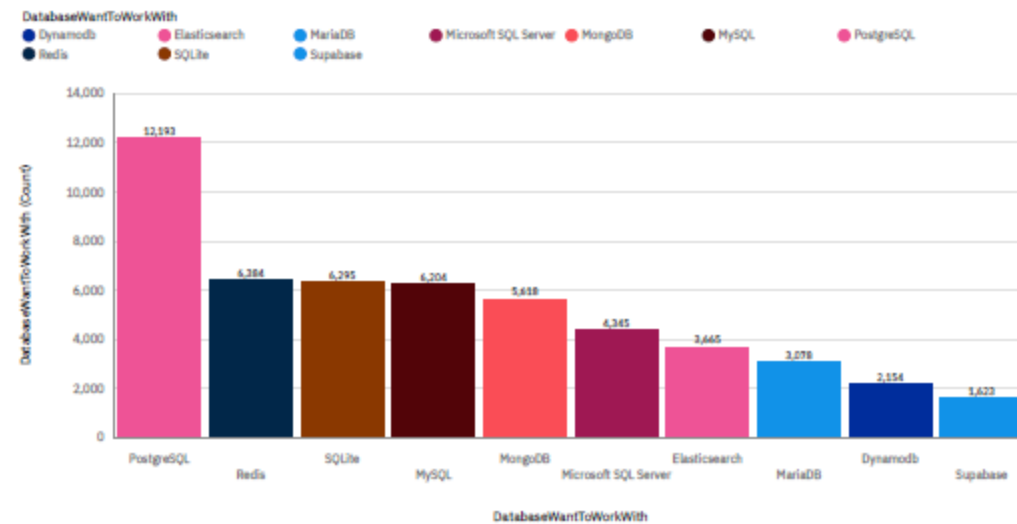


## Future Technology Trend

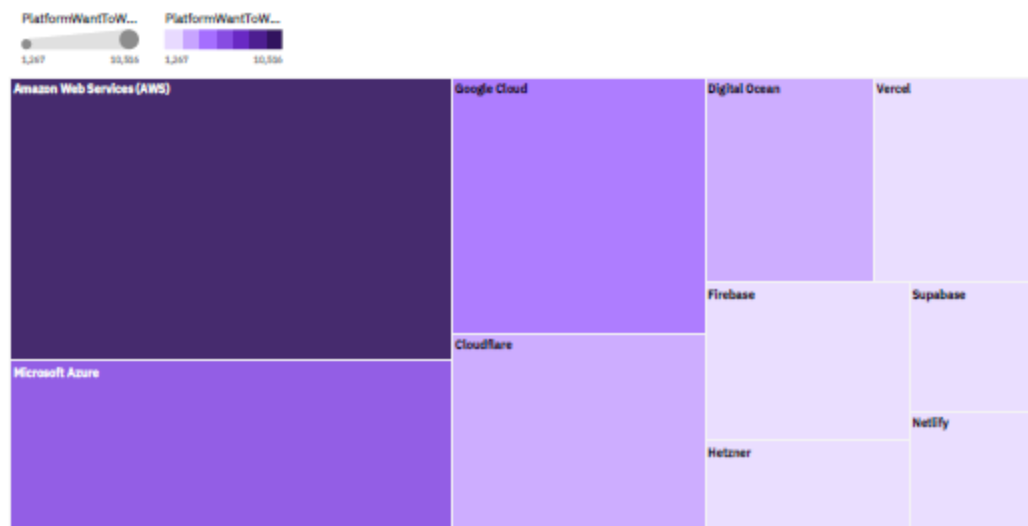
Top 10 Programming Languages Want to Work With



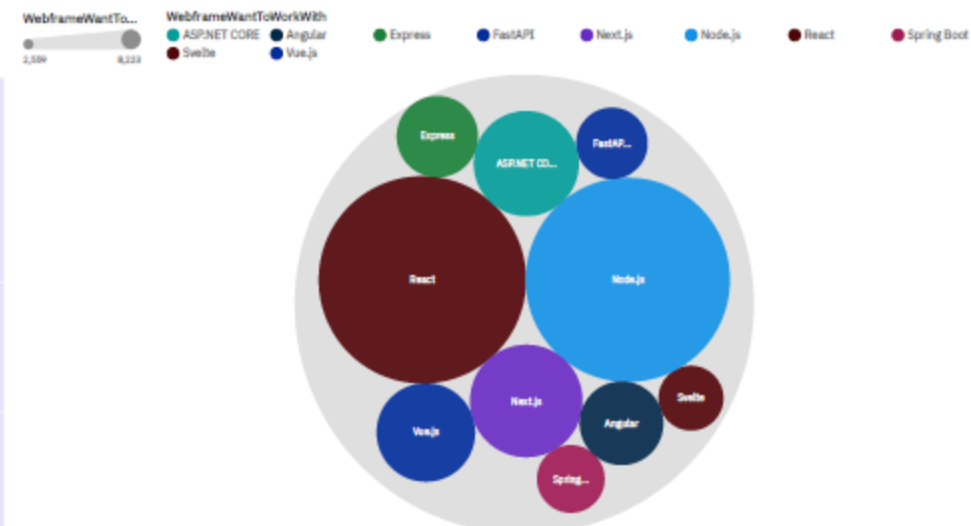
Top 10 Databases Want to Work With



Top 10 Platforms Want to Work With



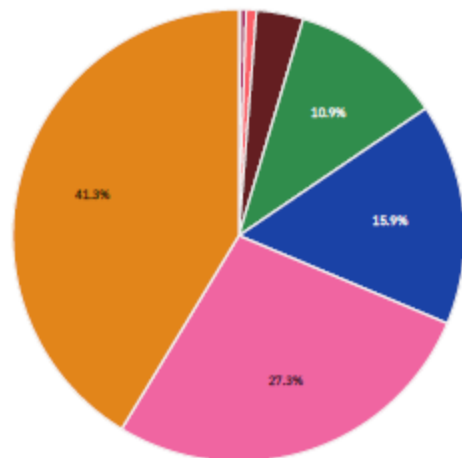
Top 10 Webframes Want to Work With



## Demographics

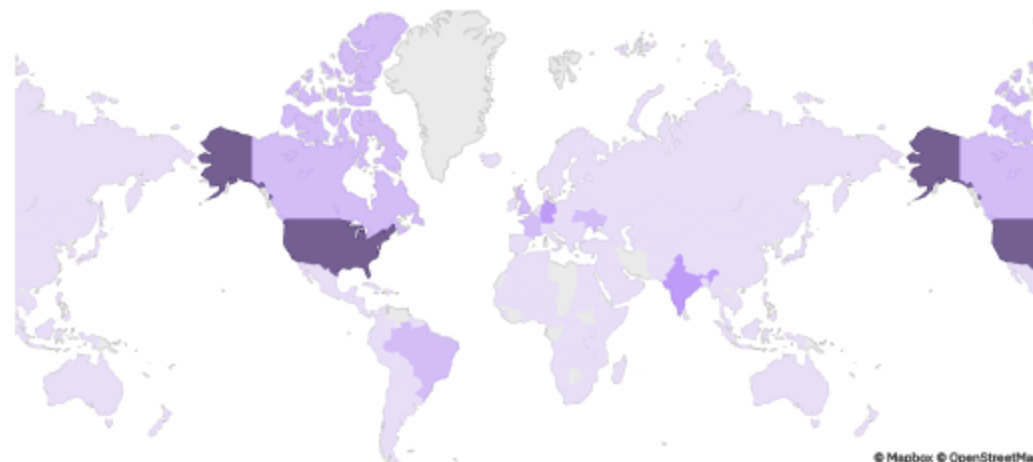
Respondent Distribution by Age

Age  
 Prefer not to say 65 years or older Under 18 years old 55-64 years old 45-54 years old 18-24 years old 35-44 years old 25-34 years old

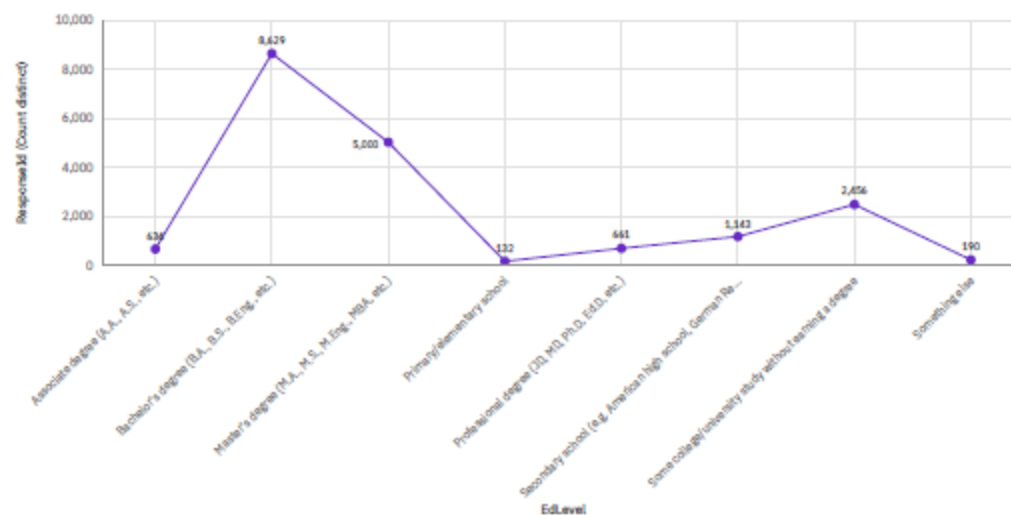


Respondent Count by Country

ResponseId (Count)  
 1 3,465

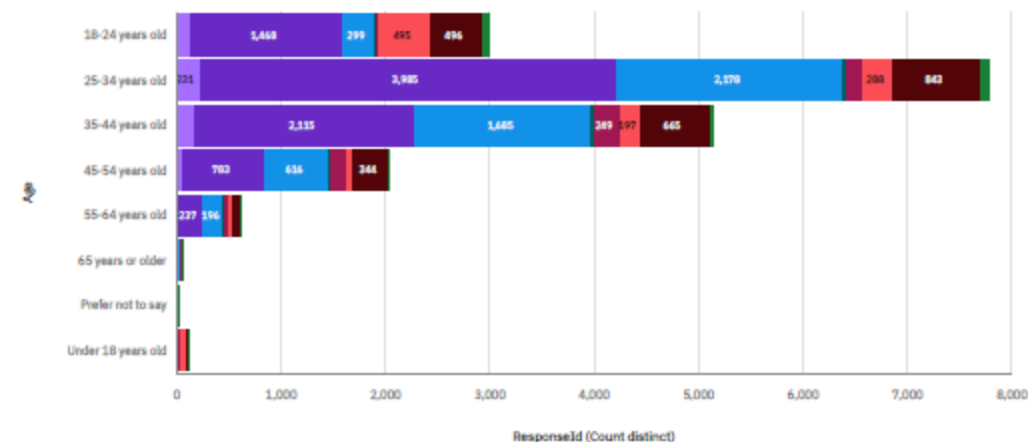


Respondent distribution by Formal Education Level



Respondent Count by Age Classified by Education Level

EdLevel  
 Associate degree (A.A., A.S., etc.) Bachelor's degree (B.A., B.S., B.E., etc.) Master's degree (M.A., M.S., M.Eng., M.B.A., etc.) Primary/elementary school  
 Professional degree (JD, MD, Ph.D., etc.) Secondary school (e.g., American high school, German Realschule, etc.) Some college/university study without earning a degree Something else



# DISCUSSION

## Dashboard insights

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- **Top Languages:** JavaScript and Python dominate current and future usage.
- **Database Choices:** PostgreSQL and MongoDB lead in developer preference.
- **Platform Adoption:** Linux and Docker show strong usage across roles.
- **Frameworks:** React and Node.js are most popular for web development.
- **Demographics:** Majority aged 25–34, with global representation and high education levels.



# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- JavaScript, Python & TypeScript dominate usage and developer interest.
- PostgreSQL, MongoDB & Supabase are the most preferred databases.
- Cloud platforms (AWS, Google Cloud) and frameworks (React, Node.js) lead adoption.

## Implications

- Prioritize these languages for hiring and training to build robust full-stack teams.
- Adopt scalable, cloud-friendly databases to support modern application needs.
- Shift toward cloud-native and component-driven development for agility and competitiveness.

# CONCLUSION

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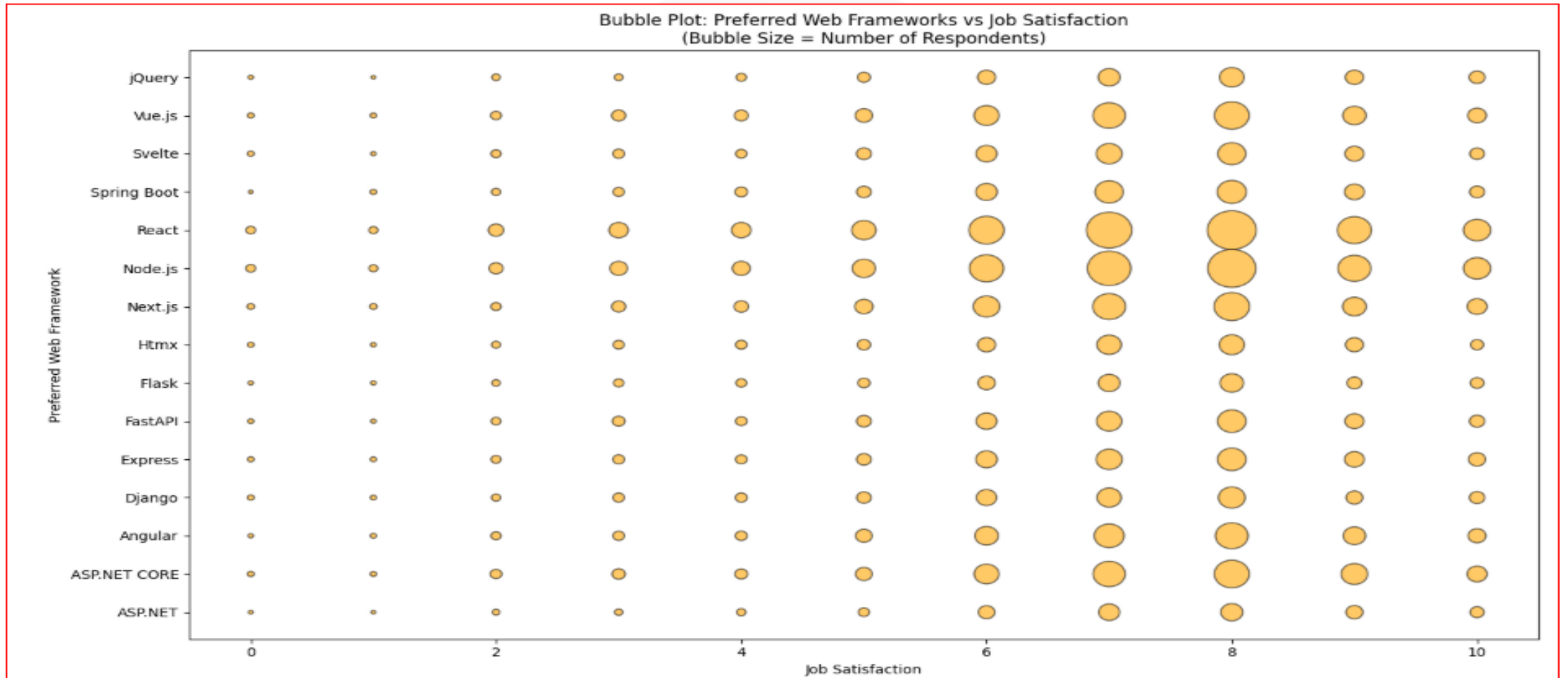
- JavaScript, Python, and cloud platforms are leading the current and future tech landscape.
- Developers prefer scalable, modern databases like PostgreSQL, MongoDB, and Supabase.
- The global developer community is young, educated, and driving rapid tech adoption.
- Aligning with these trends helps organizations stay competitive and attract top talent.



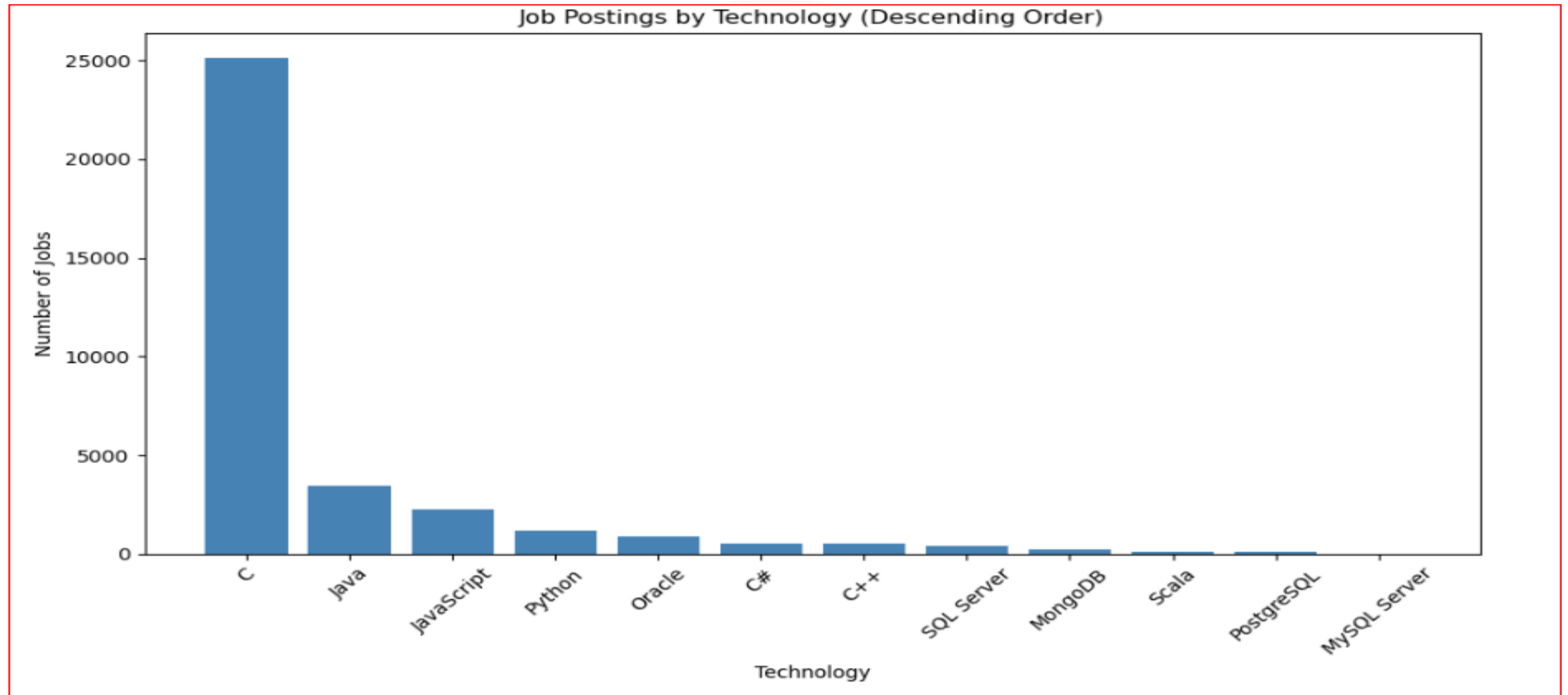


# APPENDIX

## Unique Addition – Bubble Plot



# JOB POSTINGS



# POPULAR LANGUAGES

