Survey Insights on Technology Trends and Developer Preferences

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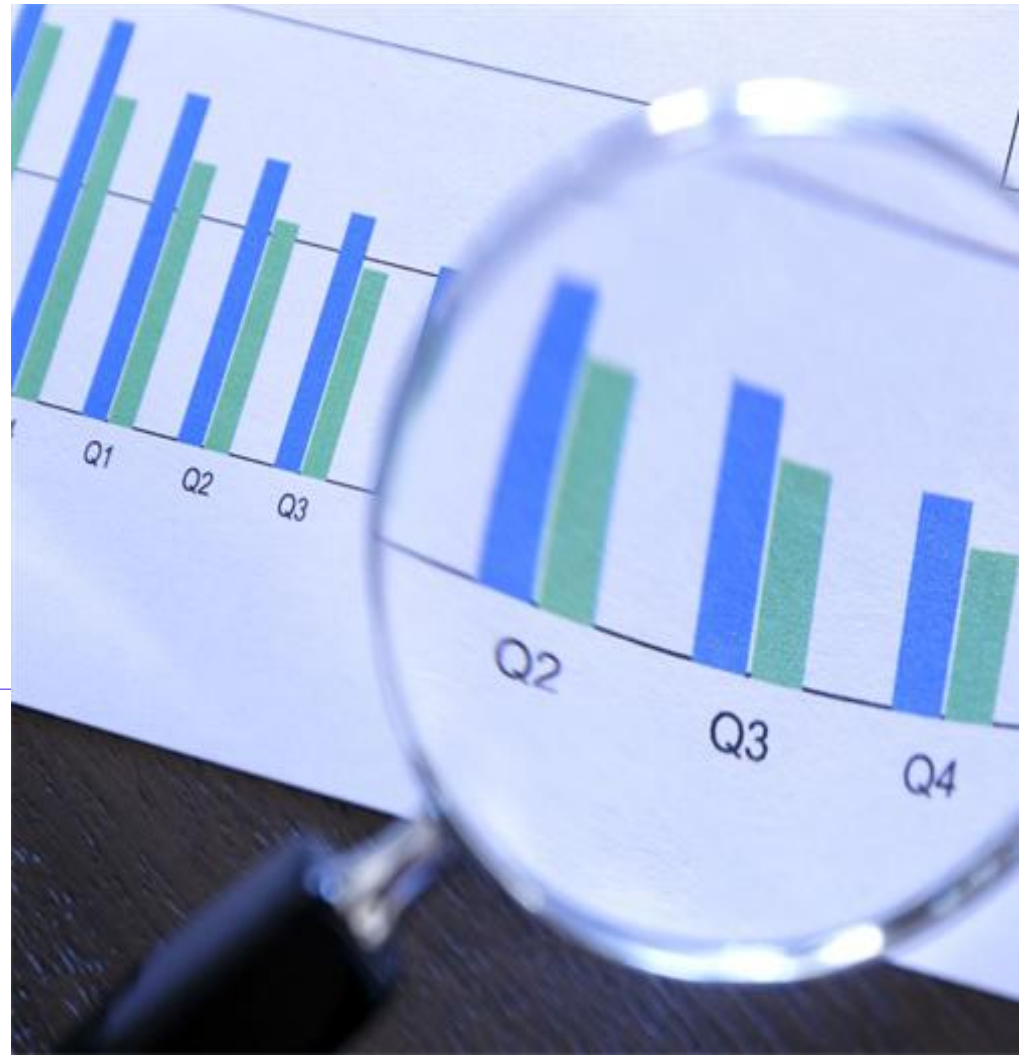


OUTLINE

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

EXECUTIVE SUMMARY

- This report analyzes global developer trends based on survey data.
- Key insights include:
  - **Top programming languages:** JavaScript, Python, SQL.
  - **Most used databases:** PostgreSQL, MySQL, SQLite.
  - **Future preferences:** Growing interest in Rust, TypeScript, and cloud platforms.
  - **Demographics:** Majority are aged 25–34 with a Bachelor’s or Master’s degree.
- Dashboards were built using IBM Cognos Analytics to provide visual storytelling.

INTRODUCTION

- **Purpose of the Report:**

To identify current and future technology preferences among developers.

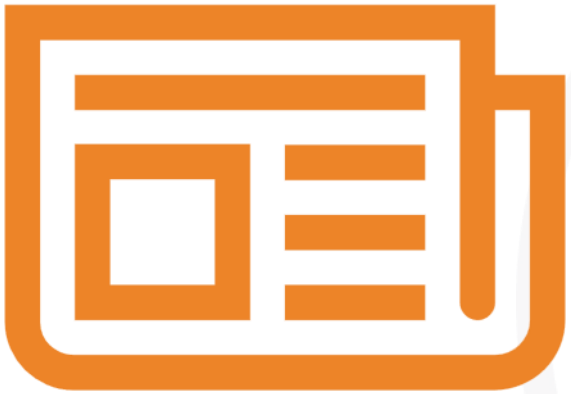
- **Target Audience:**

- Tech company decision-makers
- Developers and students
- Researchers and hiring managers

- **Importance:**

- Informs hiring, training, and tech strategy.
- Highlights shifts in the developer ecosystem.
- Guides educational and organizational planning.

METHODOLOGY



Data Sources:

•Primary dataset: survey_data_updated.csv (developer survey data)

- **Data Processing:**

•Multi-value responses (e.g., languages, databases) were cleaned and split using Python and Excel.

•Top 10 values were visualized using bar, word cloud, treemap, and hierarchy charts.

- **Tools Used:**

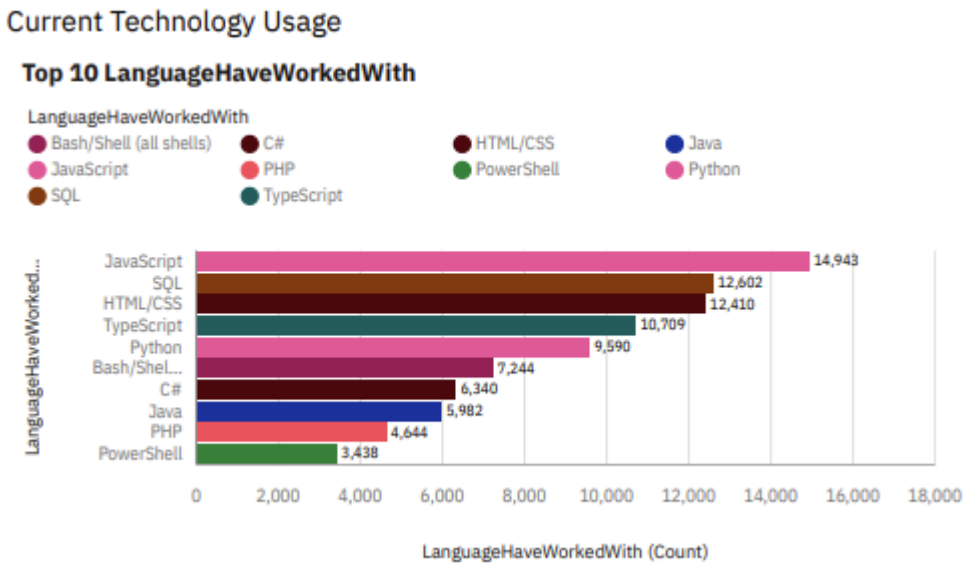
•IBM Cognos Analytics (for dashboard design and interactivity)

•Python (Pandas for data preprocessing)

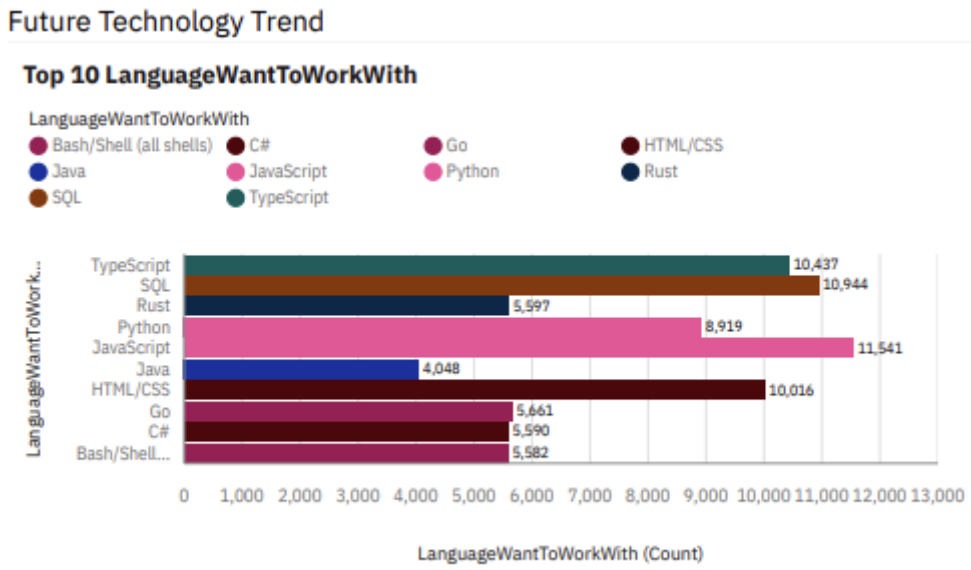
•Excel (for structuring multi-select fields)

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

Finding 1:

JavaScript, SQL, and Python are the most used languages today, with Java, C#, and HTML/CSS close behind.

Finding 2: TypeScript and Rust are among the most wanted languages for future work, reflecting a shift toward modern and typed languages.

Finding 3:

Traditional scripting languages (e.g., Bash/Shell) remain widely used, but demand for newer, niche languages like Go and Rust is rising.

Implications

Implication 1:

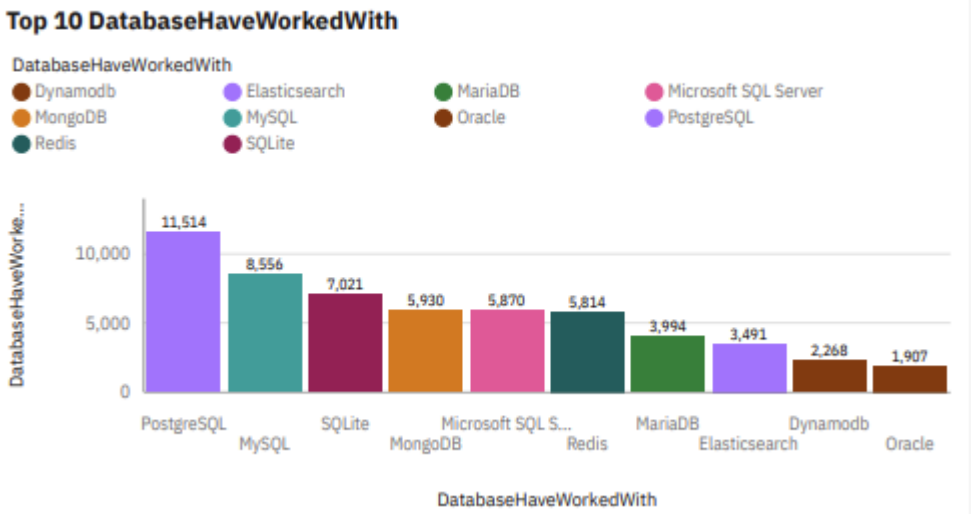
Companies should prioritize JavaScript and Python skills for current workforce development.Implication 2:

Adoption of TypeScript and Rust indicates increasing focus on type safety and performance — training programs should align with this.Implication 3:

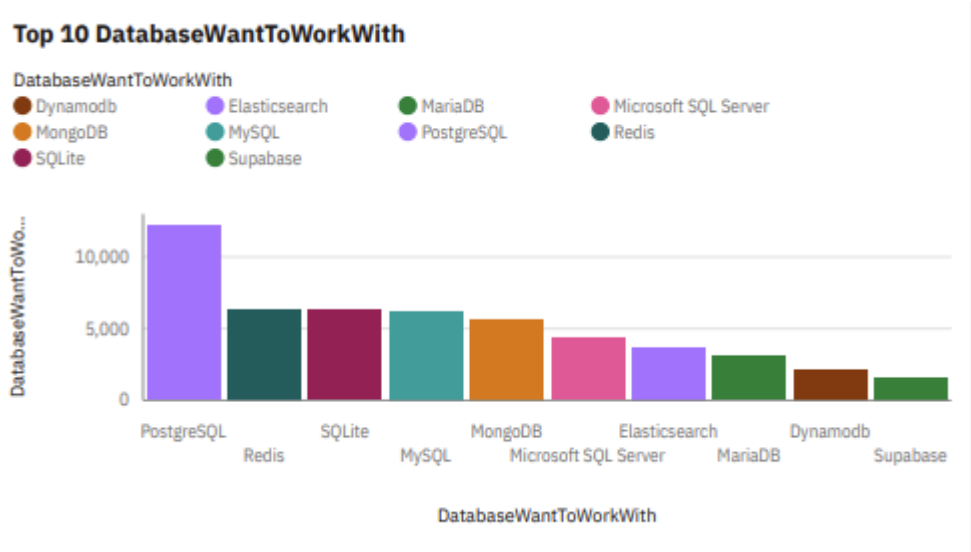
Educational institutions and bootcamps can realign offerings to include modern tools while reinforcing foundational languages.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

FindingsFinding 1:

PostgreSQL and MySQL are the most-used databases, followed closely by SQLite and MongoDB.

Finding 2:

Redis, Supabase, and DynamoDB appear prominently in future preferences, suggesting developers want modern, high-performance solutions.

Finding 3:

Microsoft SQL Server remains popular across both current and future use, showing its stability in enterprise environments.

Implications

Implication 1:

PostgreSQL and MySQL should remain a strong focus for organizations managing structured data.

Implication 2:

Teams should explore cloud-friendly databases like DynamoDB and Supabase for modern apps.

Implication 3:

Educational and upskilling programs should continue emphasizing SQL, while introducing scalable NoSQL and real-time solutions like Redis.

DASHBOARD

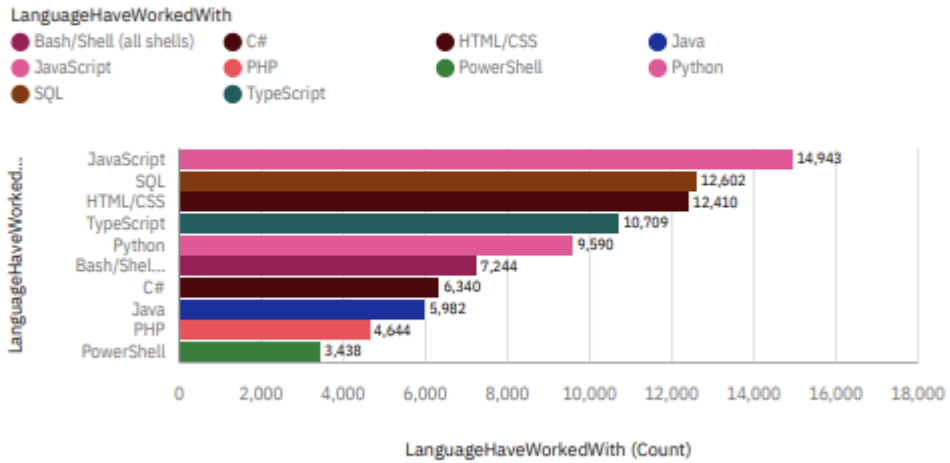
Slide 11 – Current Technology Usage DashboardScreenshot of the first dashboard tab (Languages, Databases, Platforms, WebFrames)Add a label: "Current Technology Usage Dashboard (Tab 1)“

Slide 12 – Future Technology Trend DashboardScreenshot of the second dashboard tab (Languages Want, DB Want, Platform Want, WebFrames Want)Label it: "Future Technology Trends Dashboard (Tab 2)"

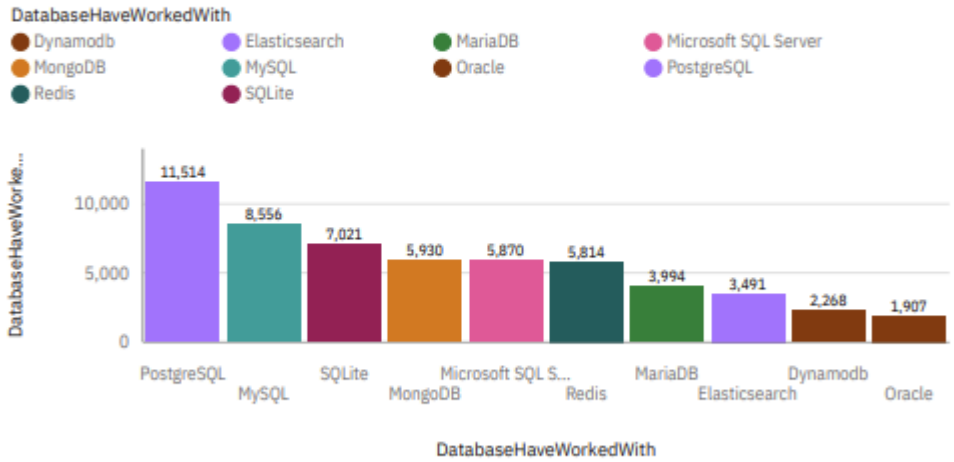
Slide 13 – Demographics DashboardScreenshot of the third tab (Age distribution, Country map, Education level)Label it: "Demographics Dashboard (Tab 3)"

Current Technology Usage

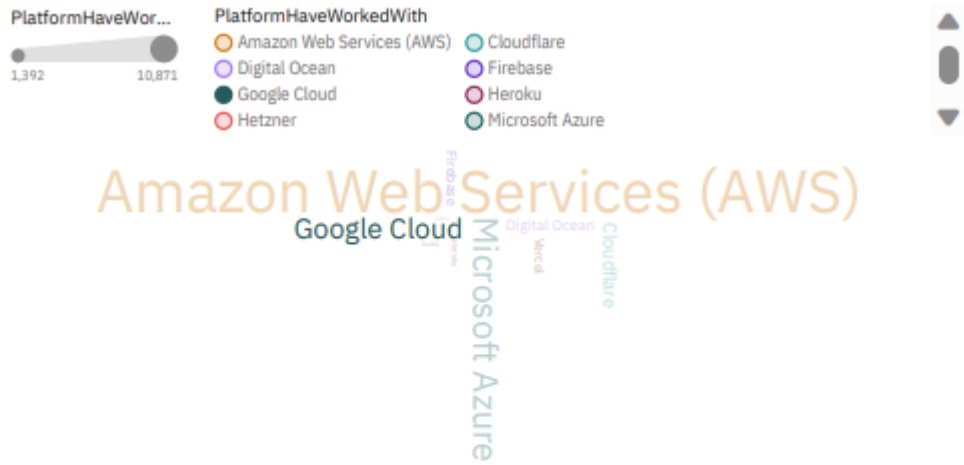
Top 10 LanguageHaveWorkedWith



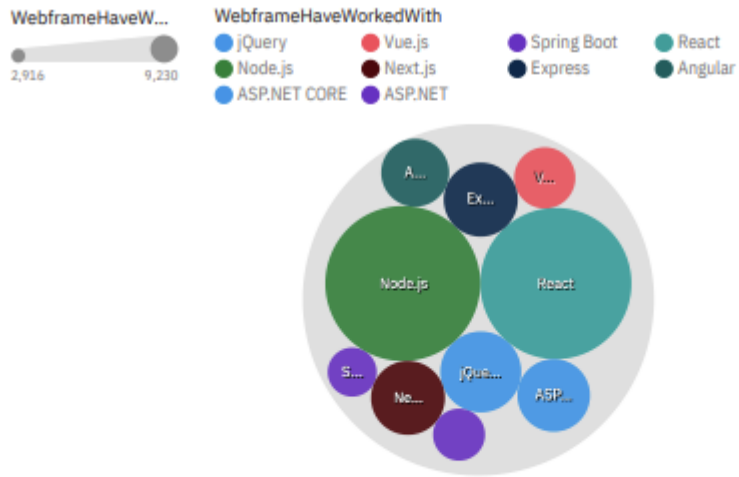
Top 10 DatabaseHaveWorkedWith



Top 10 PlatformHaveWorkedWith

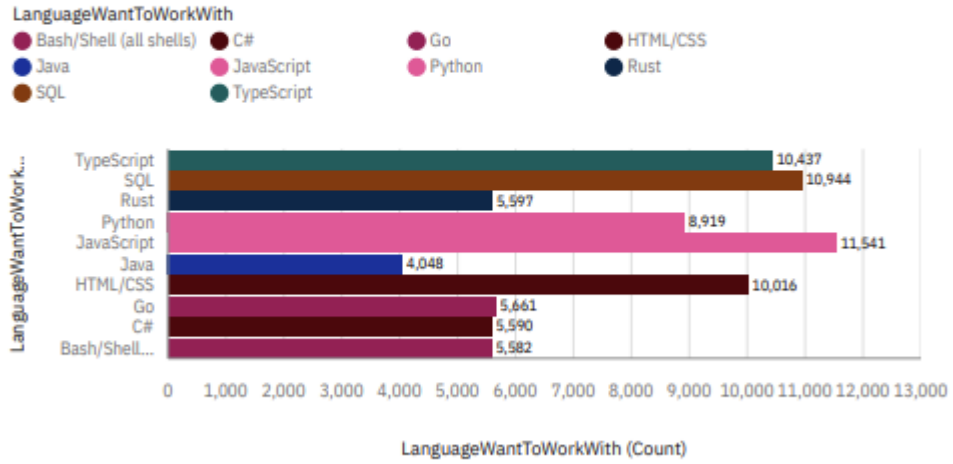


Top 10 WebFrameHaveWorkedWith

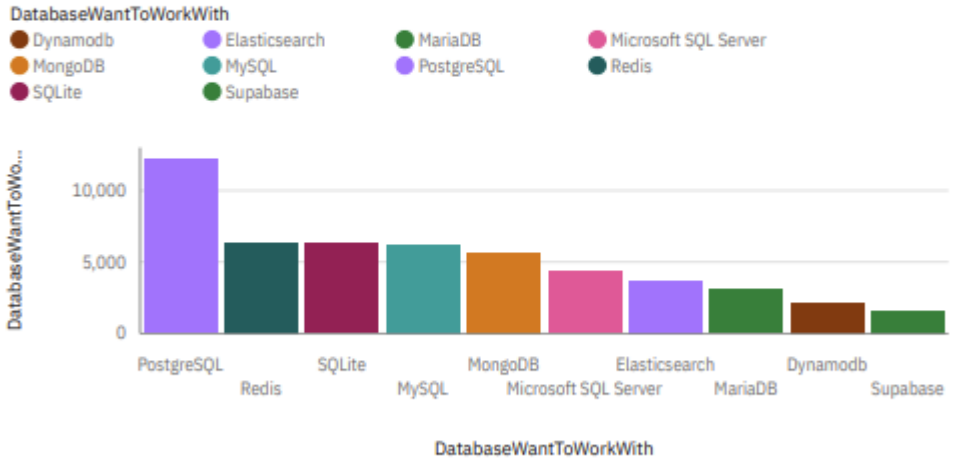


Future Technology Trend

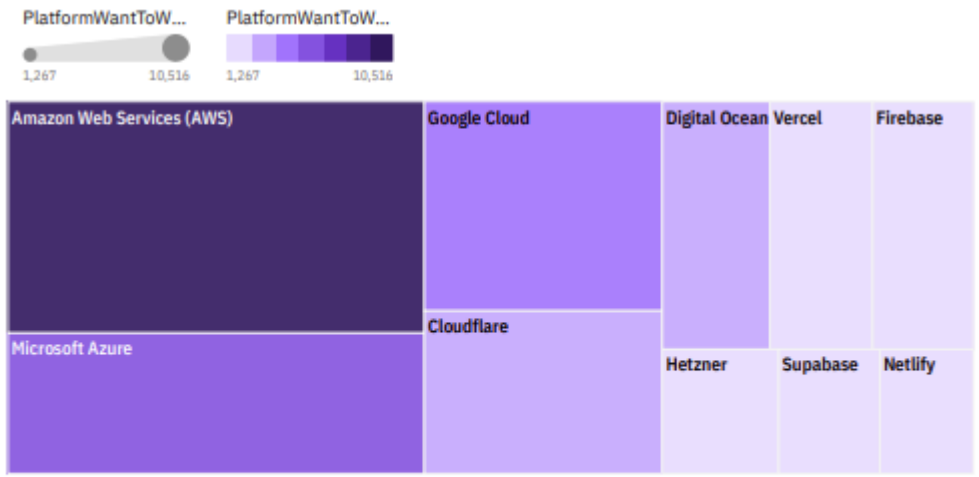
Top 10 LanguageWantToWorkWith



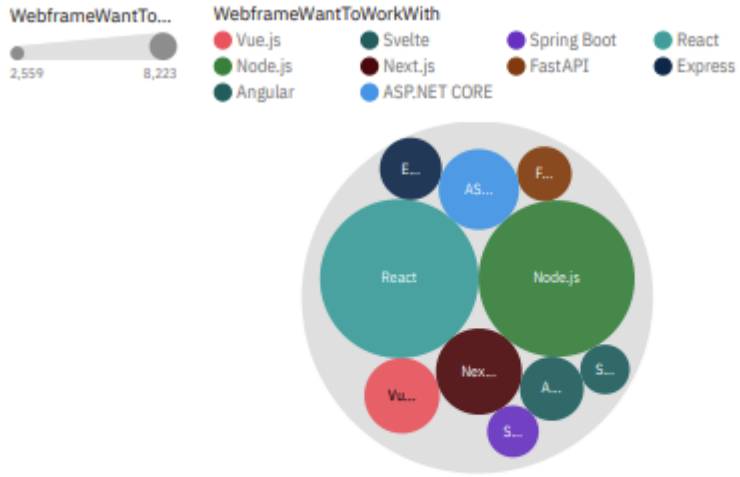
Top 10 DatabaseWantToWorkWith



Top 10 PlatformWantToWorkWith

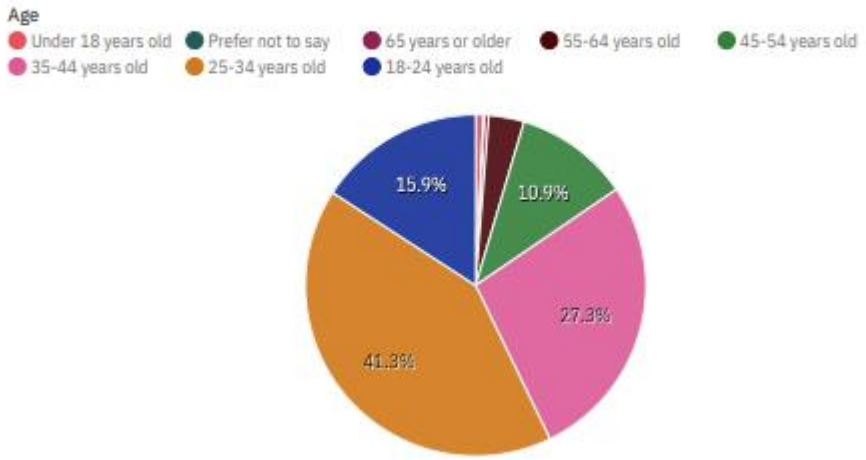


Top 10 WebframeWantToWorkWith

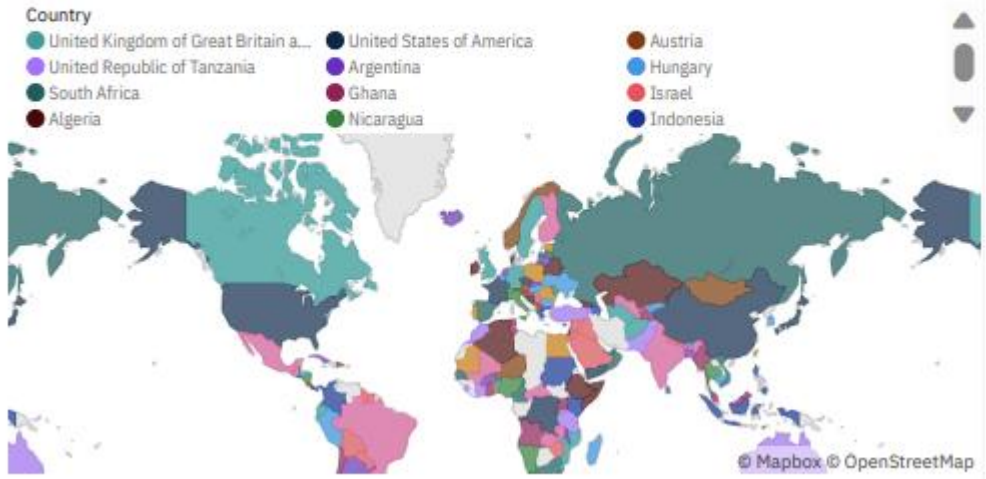


Demographics

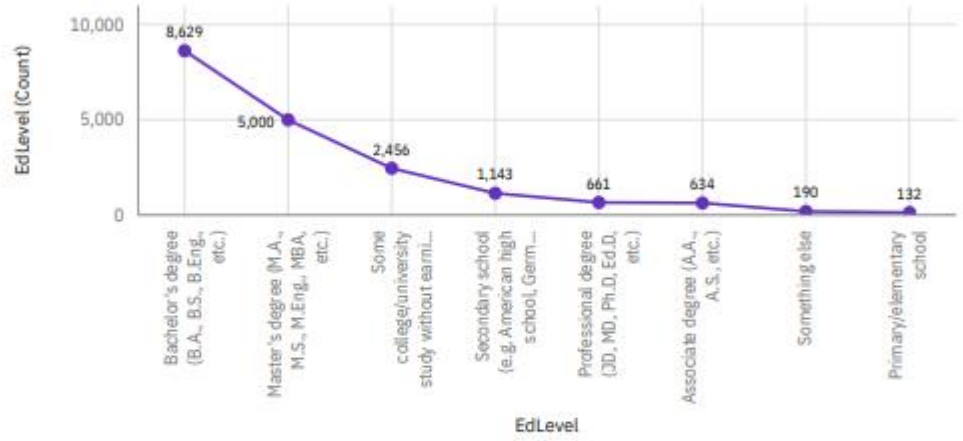
Respondent distribution by Age



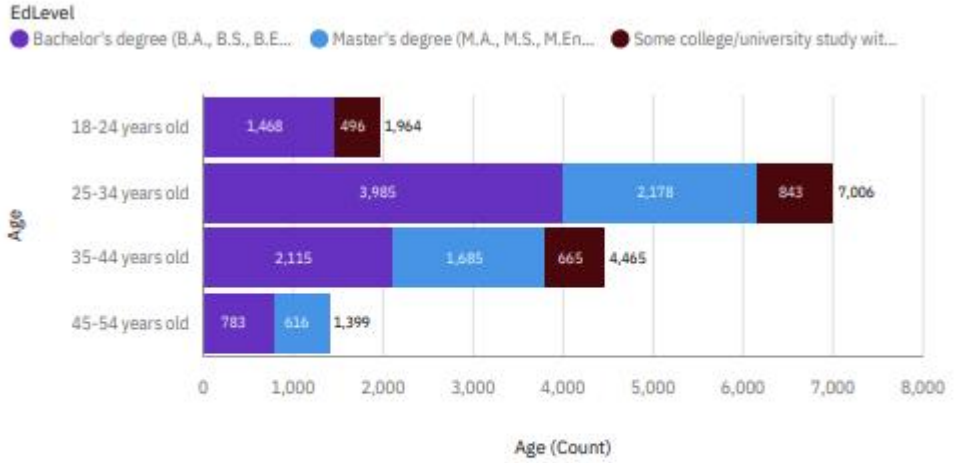
Country for Country regions



Line Chart: Education Level



Age by Education



DISCUSSION

- These dashboards provide valuable insights into developer preferences, emerging technology trends, and key demographic segments, helping companies and educators align strategies with industry direction

OVERALL FINDINGS & IMPLICATIONS

Findings

Finding 1:

Developers strongly favor JavaScript, SQL, and Python across both current and future use cases.

Finding 2:

There is rising interest in newer technologies like Rust, TypeScript, and Supabase.

Finding 3:

The majority of respondents are aged 25–34 with formal education in tech, suggesting a well-informed, evolving community.

Implications

Implication 1:

Tech teams should continue investing in core technologies while preparing to onboard emerging ones.

Implication 2:

Organizations must design continuous learning programs to upskill in future-demand technologies.

Implication 3:

Education providers and bootcamps can align their curriculum to emphasize both foundational and forward-looking tools

CONCLUSION

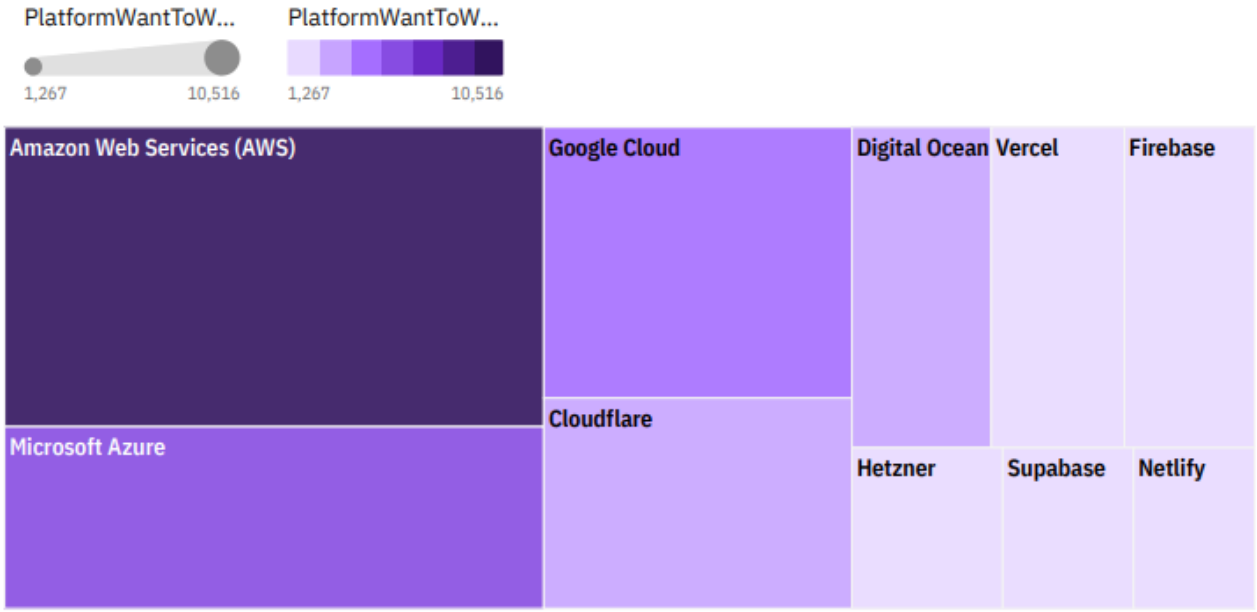
Technology preferences are shifting — while core languages like JavaScript, SQL, and Python remain dominant, there's growing adoption of newer tools like Rust, TypeScript, and Supabase.Cloud platforms and web frameworks are central to development environments, with strong interest in AWS, Azure, React, and Vue.js across current and future use.Education matters — most respondents have higher education and are concentrated in the 25–34 age range, indicating a skilled and evolving global tech workforce.Organizations and educators must adapt by aligning training, tools, and hiring practices with both present technologies and future trends.

APPENDIX

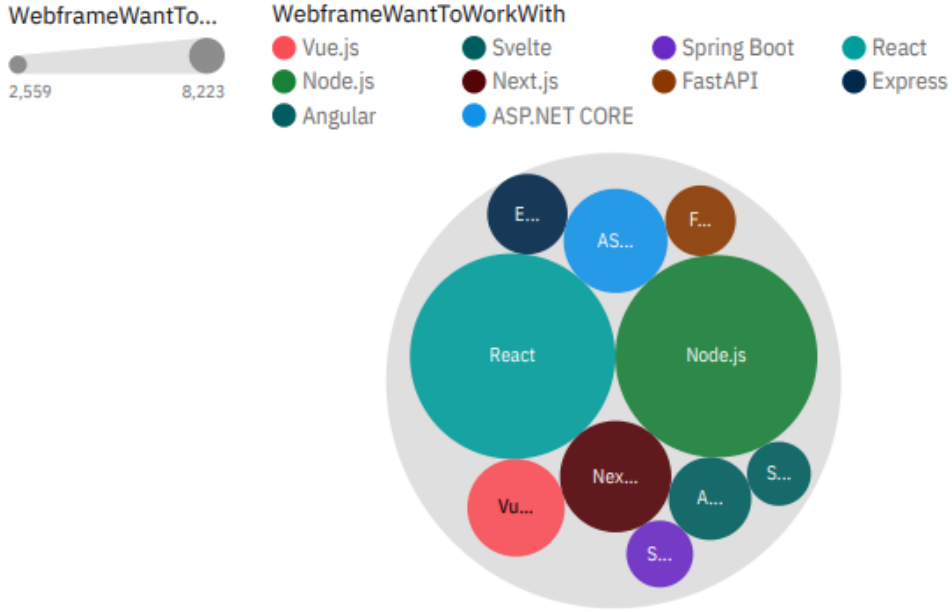
LanguageWantToWorkWith (Count)

DatabaseWantToWorkWith

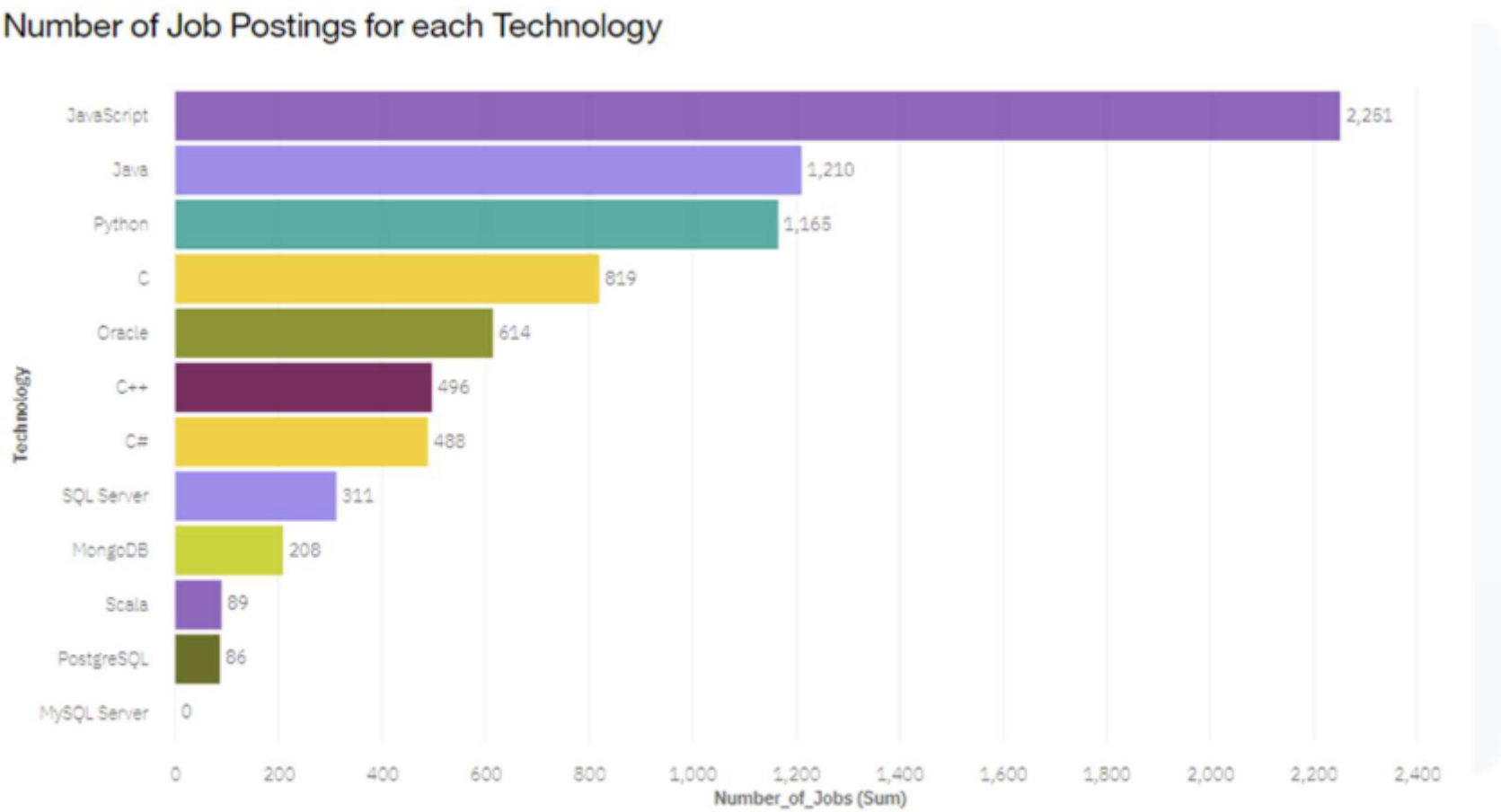
Top 10 PlatformWantToWorkWith



Top 10 WebframeWantToWorkWith



JOB POSTINGS



POPULAR LANGUAGES