2024 Stack Overflow Survey Dashboard Highlights

NAME: SANTOSH KUMAR MAJHI

DATE: 16/04/2025

AGENDA

1. Introduction

2. Current Technology Usage

3. Future Technology Trends

4. Developer Demographics

5. Key Takeaways

CURRENT TECHNOLOGY USAGE – PROGRAMMING LANGUAGES

► JavaScript remains the most widely used programming language.

► PostgreSQL, MySQL, and SQLite dominate current database preferences.

► React and AWS lead in frameworks and platforms usage.

► Python and Redis are among the top desired technologies for the future.

► The majority of developers are between 25–34 years old with Bachelor's or Master's degrees.

► Participation in the survey spans globally, with high engagement from the US, India, and Europe.

CURRENT TECHNOLOGY USAGE – DATABASES

▶ Purpose: To analyze and present key insights from the 2024 Stack Overflow Developer Survey.

▶ Target Audience: Technology leaders, developers, educators, and stakeholders in the tech industry.

▶ Value: Provides a comprehensive overview of current and emerging technology trends, developer preferences,

▶ and demographic patterns to support strategic decision-making and innovation.
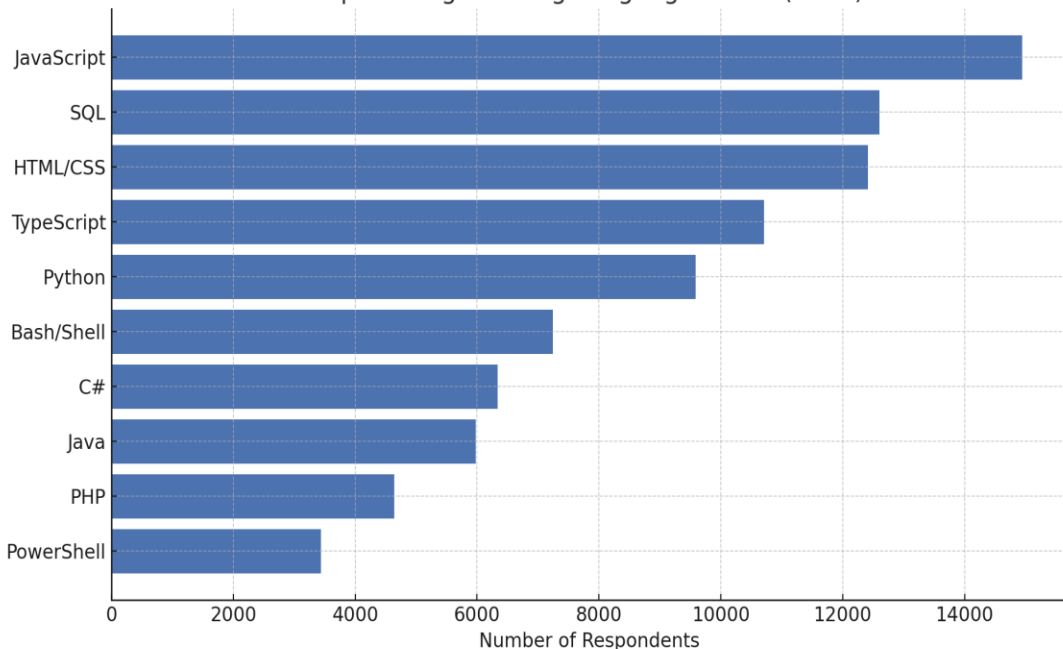
CURRENT TECHNOLOGY USAGE – WEB FRAMEWORKS & PLATFORMS

▶ Data Source: 2024 Stack Overflow Developer Survey Dashboard PDF.

▶ Collection Method: Self-reported survey responses from developers worldwide.

▶ Data Wrangling:

▶ - Extracted visual insights and tabular data from the published dashboard.

▶ - Interpreted bar chart counts and response metrics manually.

▶ - Categorized findings by usage, desire, and demographics.

▶ - Summarized and grouped data for clarity in presentation format.
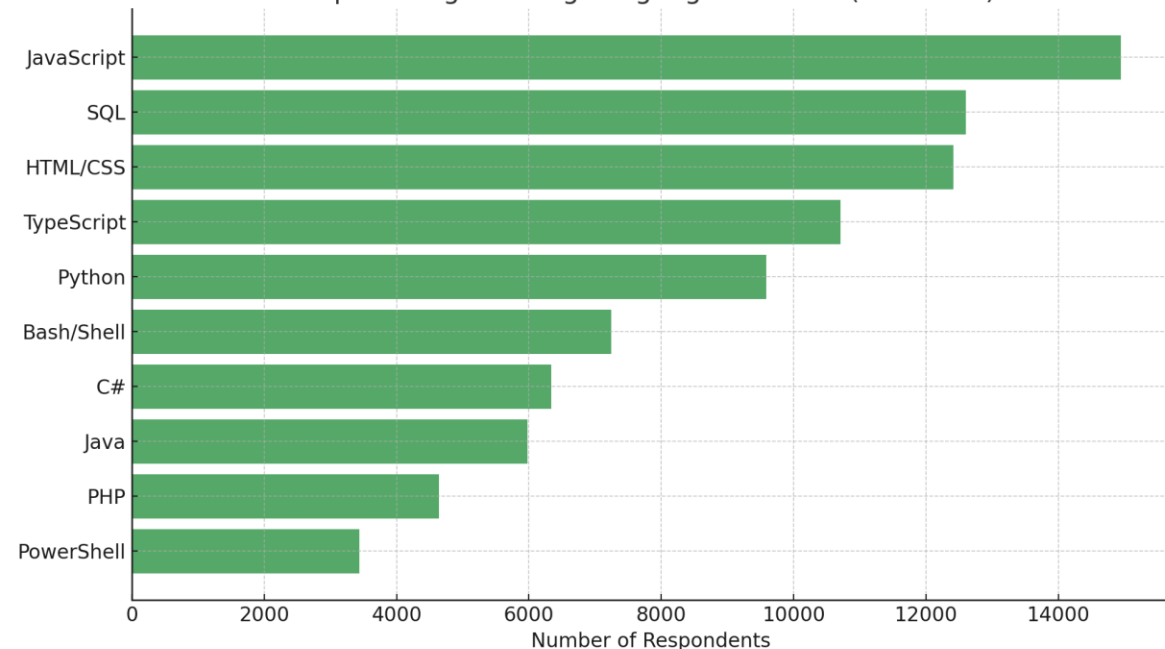
PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Programming Languages Used (2024)

Top 10 Programming Languages Desired (Next Year)

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript leads in usage, followed by SQL, HTML/CSS, and TypeScript.

- Python remains a dominant choice, reflecting its popularity across web, data, and AI.

- Traditional languages like Java and PHP are still relevant, though usage is tapering.
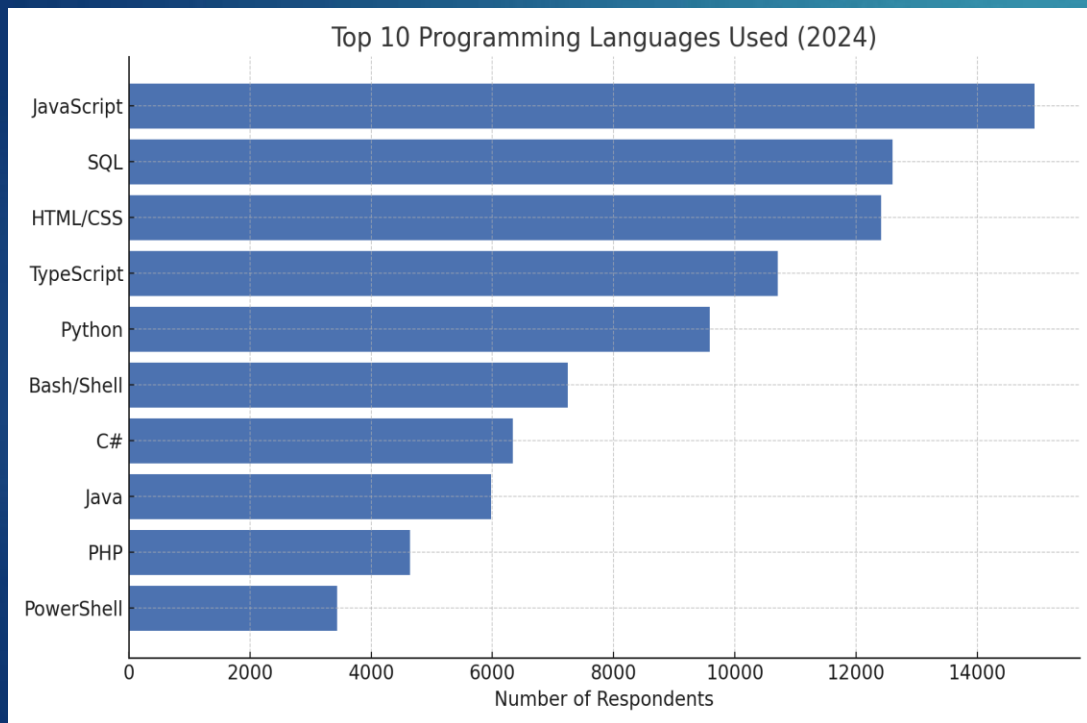
Implications

- JavaScript and Python remain top choices developers want to learn or use more.

- TypeScript continues gaining traction due to its robust typing on top of JavaScript.
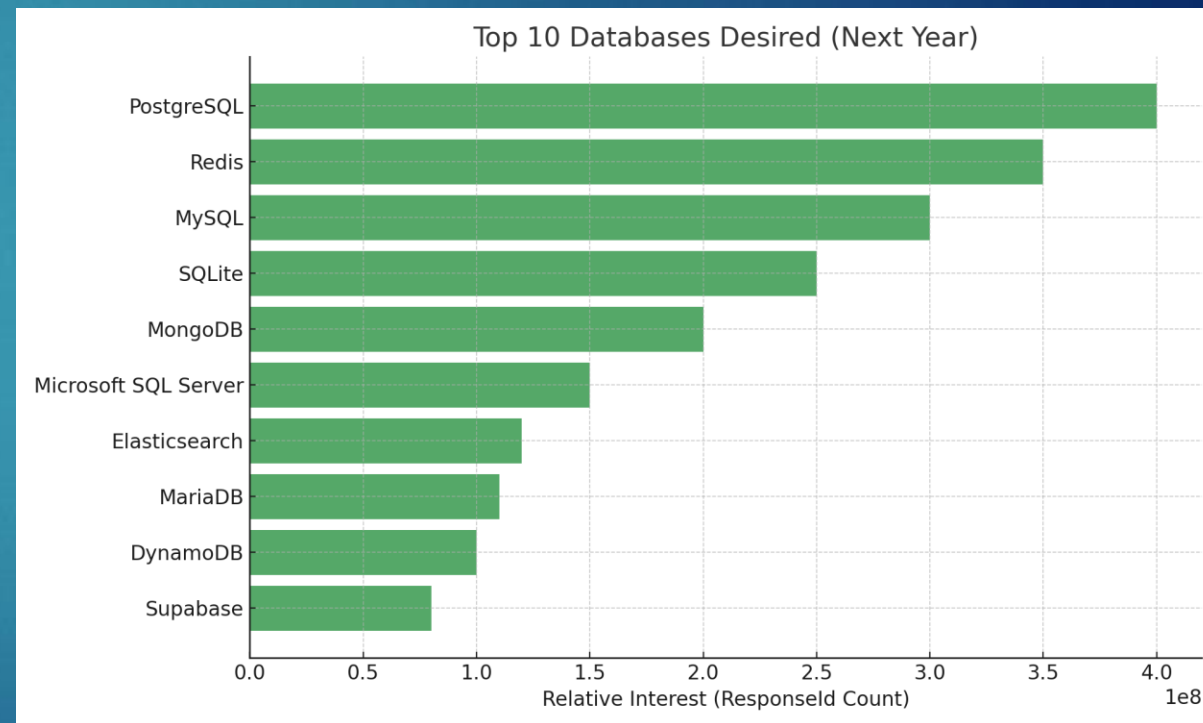
- The interest in scripting languages like Bash/Shell also remains significant.

DATABASE TRENDS

Current Year

Next Year

Top 10 Programming Languages Used (2024)
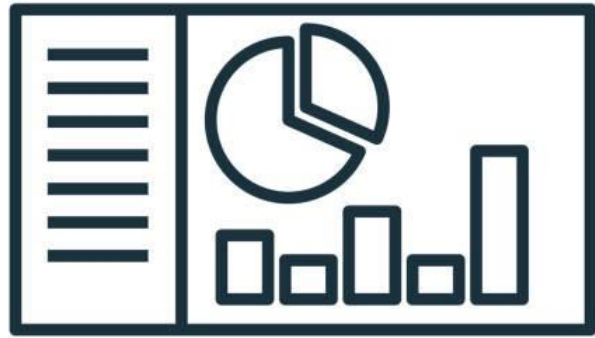

Top 10 Databases Desired (Next Year)

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL leads as the most used database, indicating its strong adoption in modern development.

- MySQL and SQLite continue to be reliable, popular choices, especially for small to mid-size projects.

- NoSQL options like MongoDB and Redis show notable presence, highlighting flexibility in data handling.

Implications

- PostgreSQL and Redis are the most desired databases, reflecting interest in open-source and performance-focused solutions.

- Newcomers like Supabase are gaining traction as developer-friendly backend-as-a-service platforms.

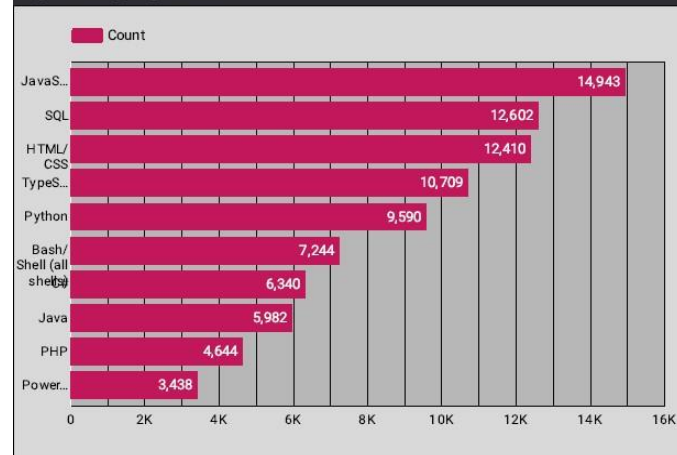- Continued demand for scalable and flexible database architectures is shaping future adoption.
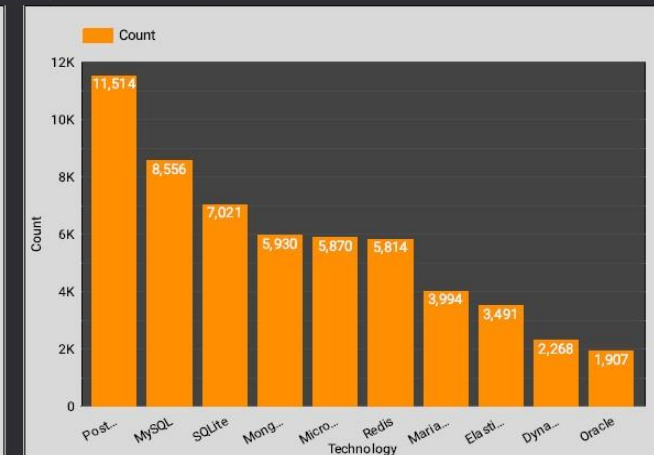
DASHBOARD
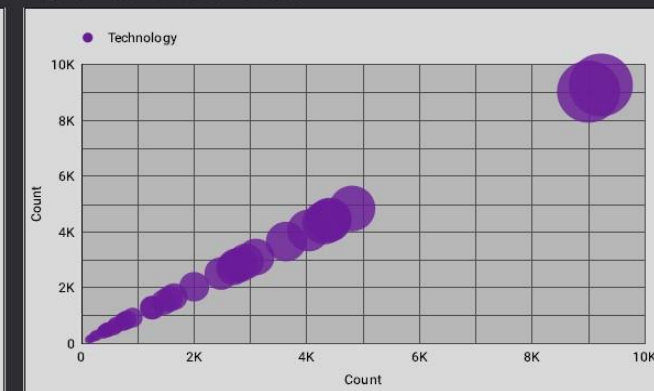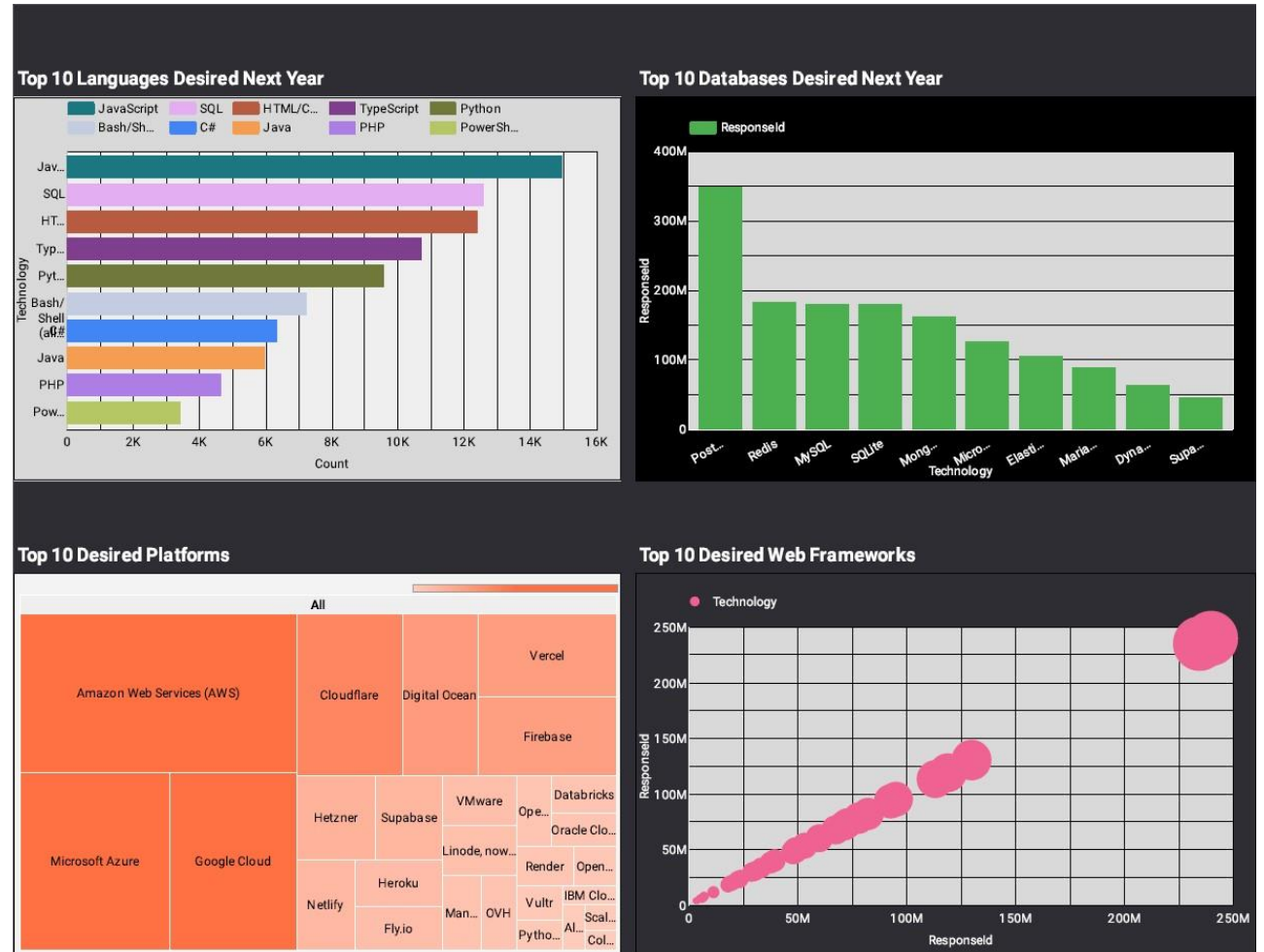
DASHBOARD TAB 1

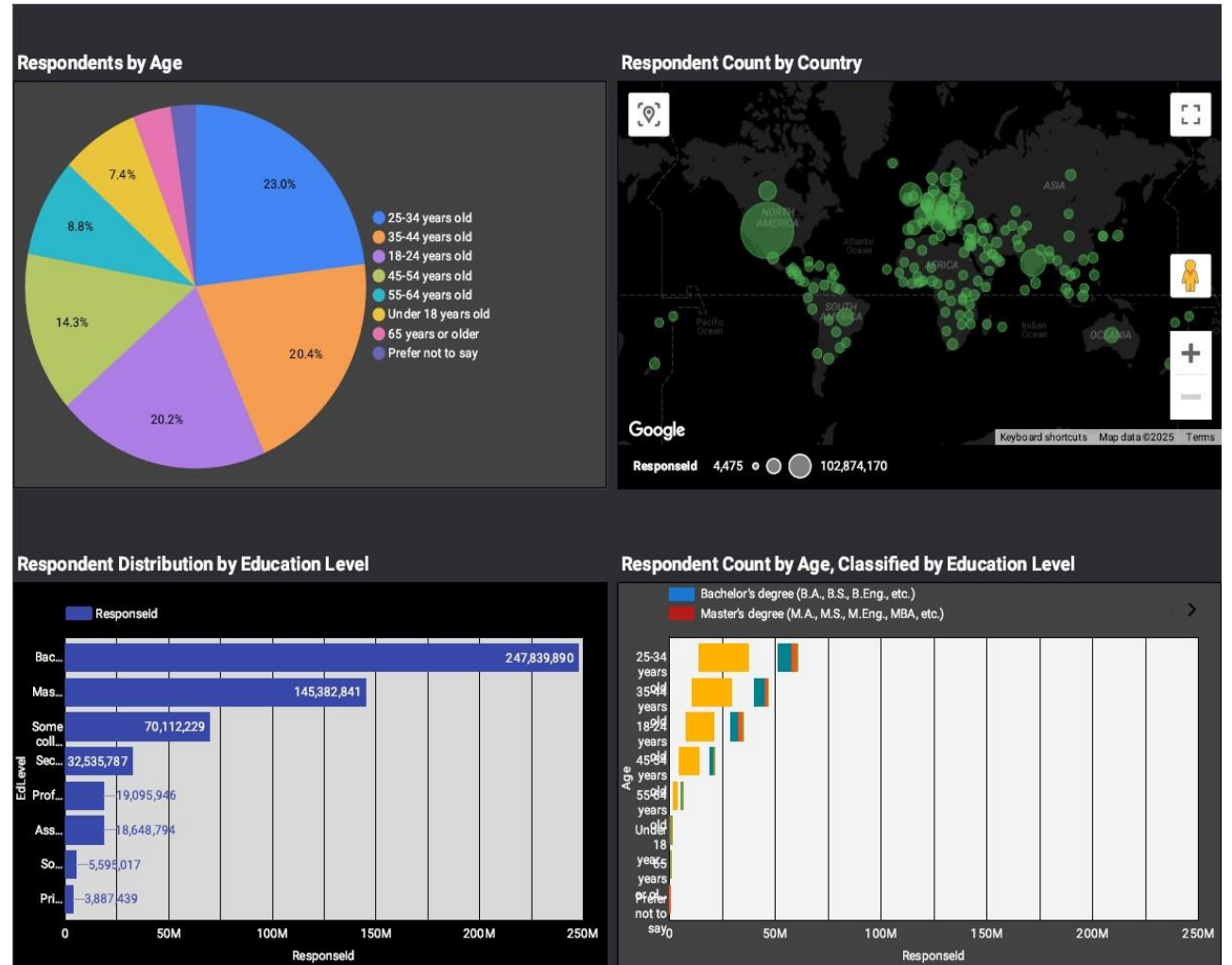▶ Current Technology Usage

DASHBOARD TAB 2

▶ Future Technology Trends

DASHBOARD TAB 3

▶ Demographics

Insights from Dashboard

▶ JavaScript, SQL, and Python dominate both current usage and future interest.

▶ PostgreSQL leads in database usage and is also the most desired for the future, along with Redis.

▶ Web frameworks and cloud platforms such as React and AWS maintain a strong presence in the developer stack.

▶ Developers are increasingly gravitating toward modern, scalable, open-source technologies.

▶ The community is diverse, skewing younger and highly educated, with a global spread across regions.

▶ Tools like Supabase and Redis are rising in popularity, signaling shifts in backend preferences.

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript and Python are most popular languages.
- PostgreSQL and Redis are widely used and desired.
- Cloud platforms like AWS are top deployment choices.
- TypeScript and Supabase show rising adoption.
- Developers are mostly young and well-educated.
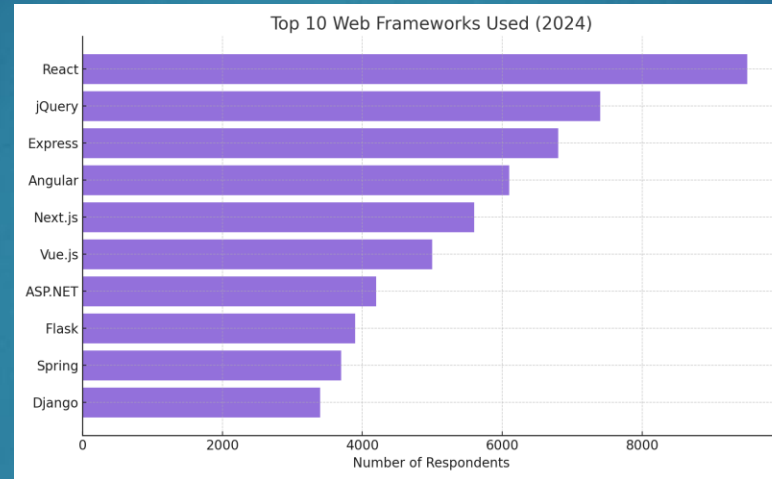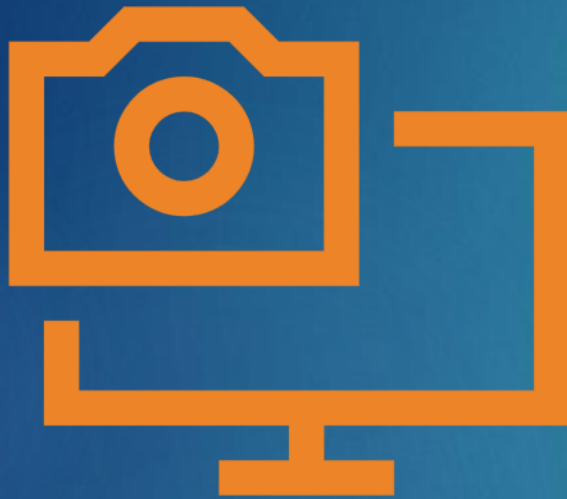
Implications

- Teams should maintain strong JavaScript/Python skillsets.
- Emphasis on open-source, scalable databases is growing.
- Investment in cloud-native infrastructure is key.
- Consider modern stacks to attract developer talent.
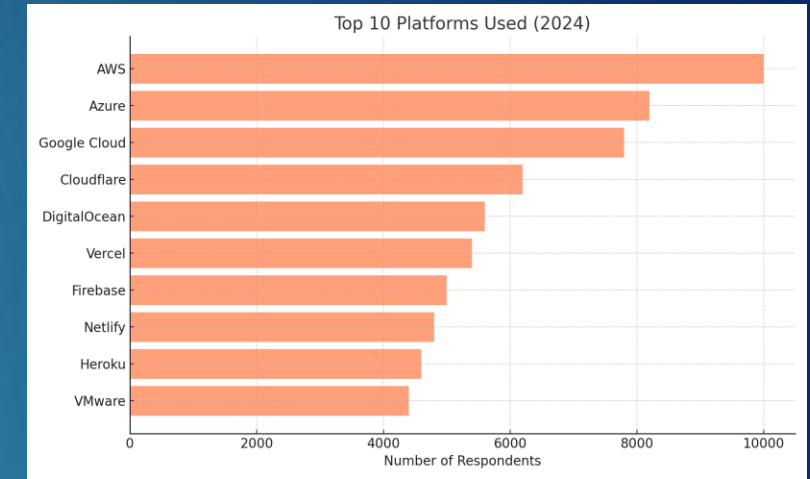- Training programs should target newer technologies.

CONCLUSION

- JavaScript, Python, and TypeScript lead in both usage and future interest.

- PostgreSQL and Redis have strong momentum among database technologies.

- Cloud platforms and modern frameworks are core to the developer ecosystem.

- Developer demographics are youthful, skilled, and globally distributed.

- Trends indicate a shift toward scalable, open-source, and serverless tools.

- Understanding these patterns can guide strategic tech and talent decisions.

APPENDIX

Top 10 Web Frameworks Used (2024)
- React
- jQuery
- Express
- Angular
- Next.js
- Vue.js
- ASP.NET
- Flask
- Spring
- Django

Number of Respondents

Top 10 Platforms Used (2024)
- AWS
- Azure
- Google Cloud
- Cloudflare
- DigitalOcean
- Vercel
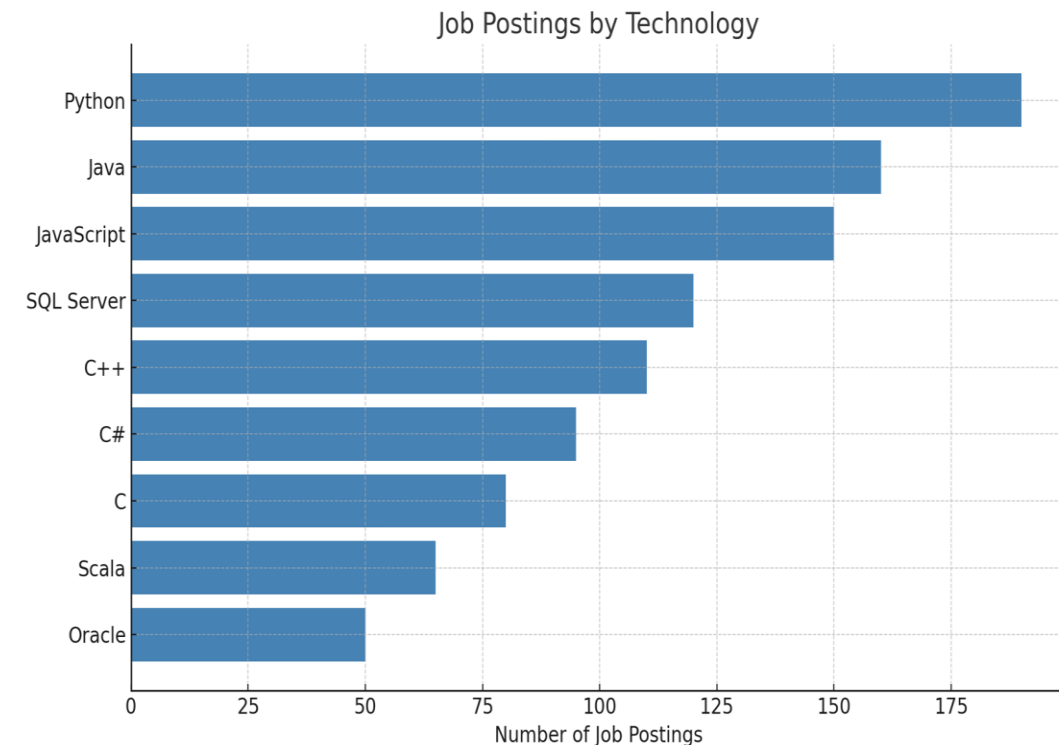- Firebase
- Netlify
- Heroku
- VMware

Number of Respondents

• React continues to dominate web development.

• Other major frameworks include Angular, Vue.js, and Express, reflecting modern front-end and back-end preferences.

• AWS leads in platform usage, followed by Microsoft Azure and Google Cloud.

• Emerging platforms like Vercel and Netlify are popular in modern web deployments.

JOB POSTINGS BY TECHNOLOGY (API EXTRACTED)

▶ Job counts were retrieved using an API for various programming skills.

▶ This chart represents actual technologies queried from the .ipynb notebook:

▶ Python, Java, JavaScript, SQL Server, C++, C#, C, Scala, Oracle.

Job Postings by Technology

POPULAR LANGUAGES BY SALARY

▶ This chart shows programming languages ranked by average salary,based on web scraping of an online developer salary table.

▶ Python and Go lead with the highest reported average salaries.

Popular Programming Languages by Average Salary (Web Scraped)