Tech Labor Market & Stack Trends: 2025 Outlook

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Executive Summary

- Some of the most in-demand programming languages are JavaScript, HTML/CSS, and SQL
- For databases, PostgreSQL has the highest usage, followed by MySQL and SQLite

Introduction

- The purpose of this report is to identify emerging and/or the most sought-after programming skills, allowing both job seekers and employers to stay competitive and well-informed in a rapidly evolving technological landscape.
- Working in a consulting firm, the target audience would be people in the tech industry, which would include both job seekers and employers.
- For job seekers, this would allow them to focus on skills that will help them get their dream job.
- For employers, this would allow them to optimize their work and possibly even help them allocate their funds wisely.

Methodology

Methods

- API
- Webscraping

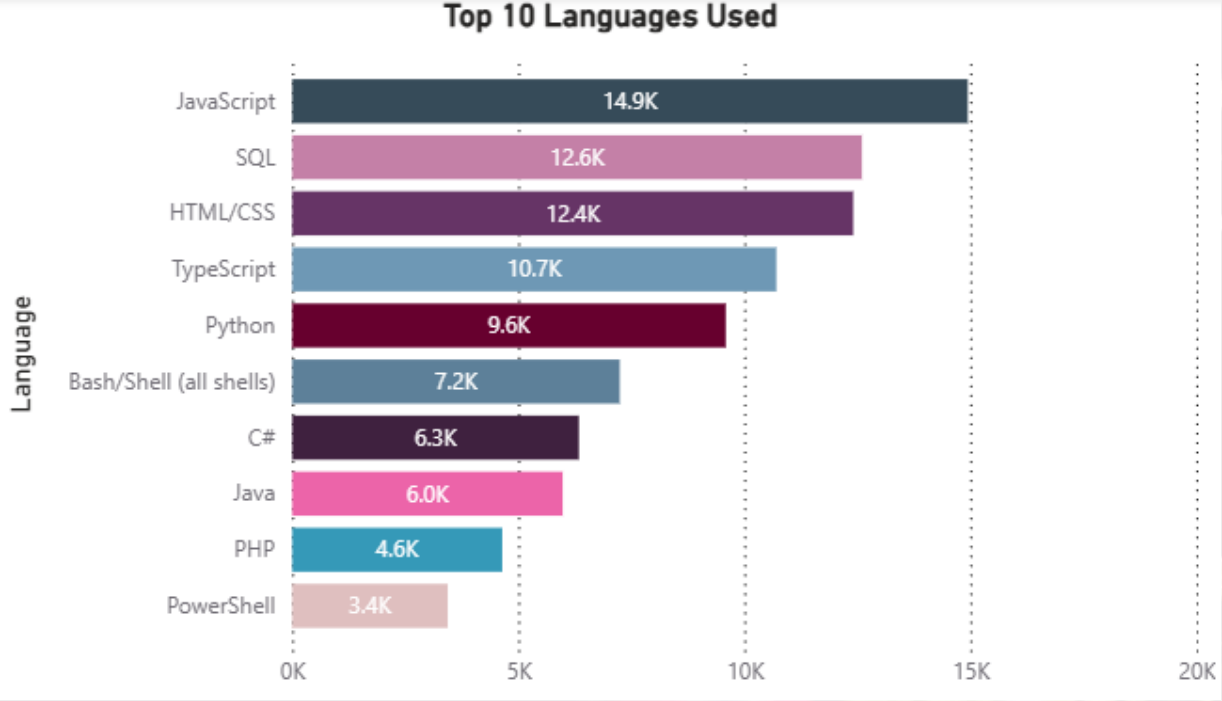
Sources

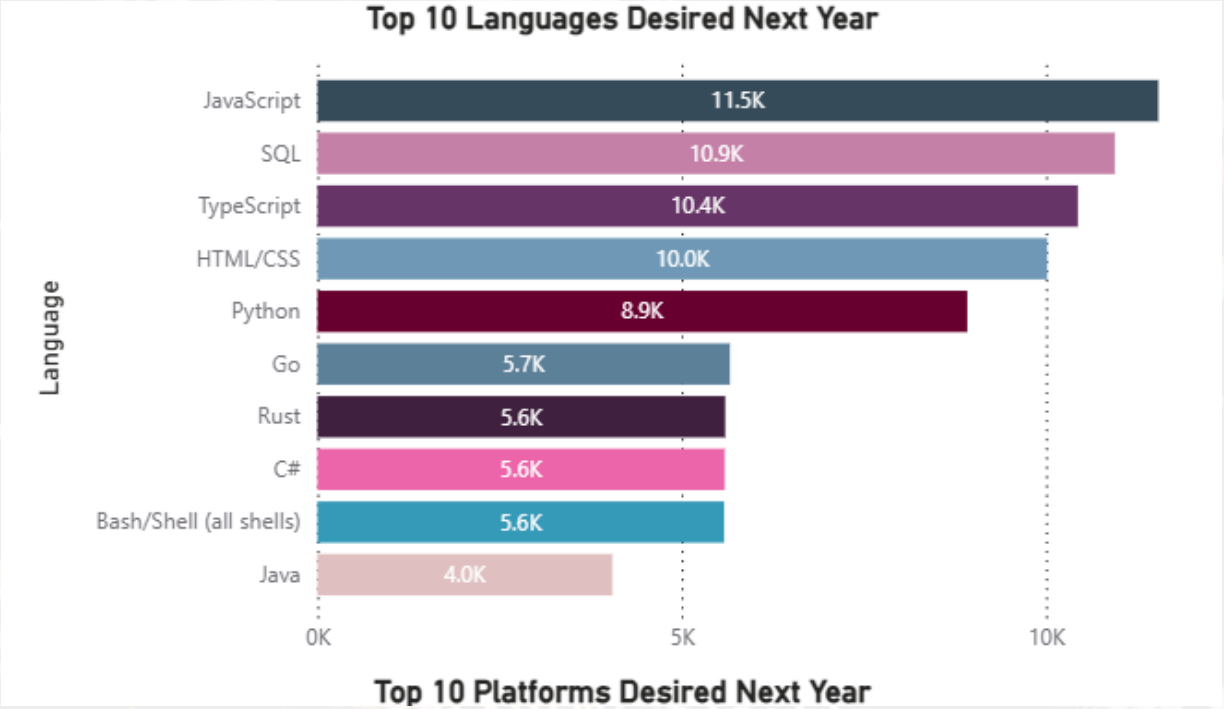
- Job postings
- Training portals
- Stack Overflow Developer Survey

Data Wrangling

- Finding and Removing Duplicates
- Finding and Removing/Imputing Missing Values
- Normalizing Data

Programming Languages Trends





Current

Future

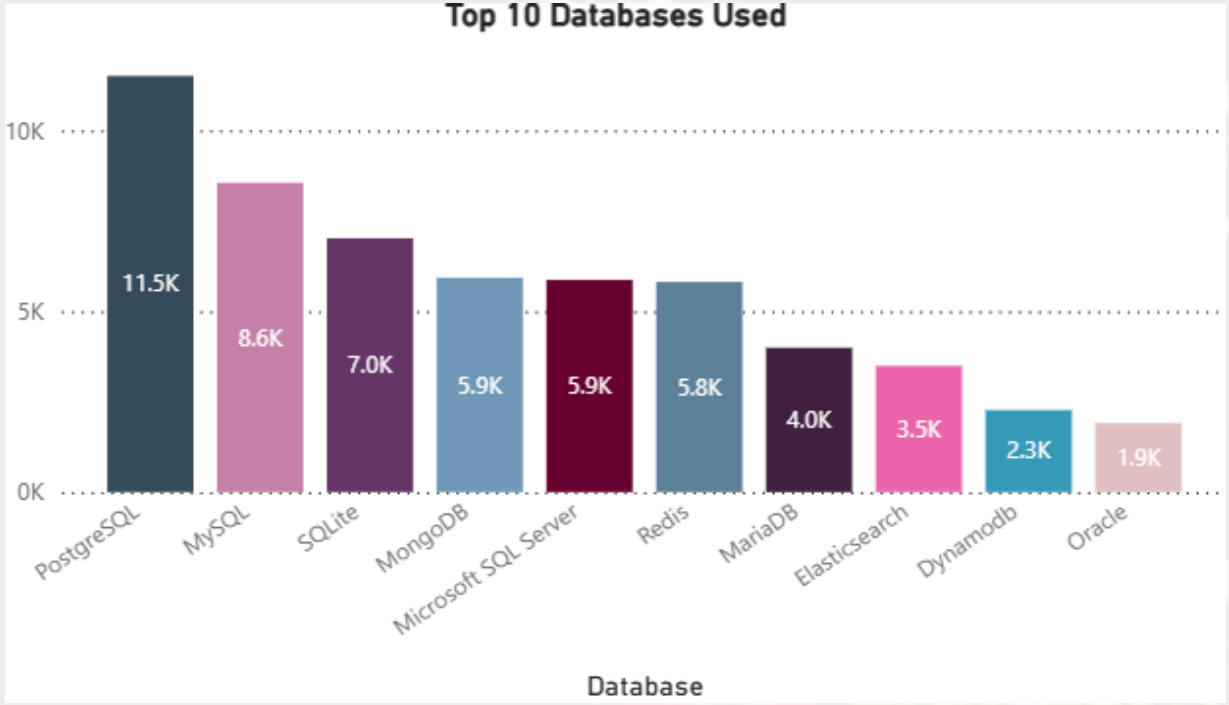
Findings and Implications

Overview:
Analysis of the top 10 languages used in 2024 vs. the top 10 languages developers want to use in 2025 reveals shifts toward modern, efficient, and web-centric technologies.

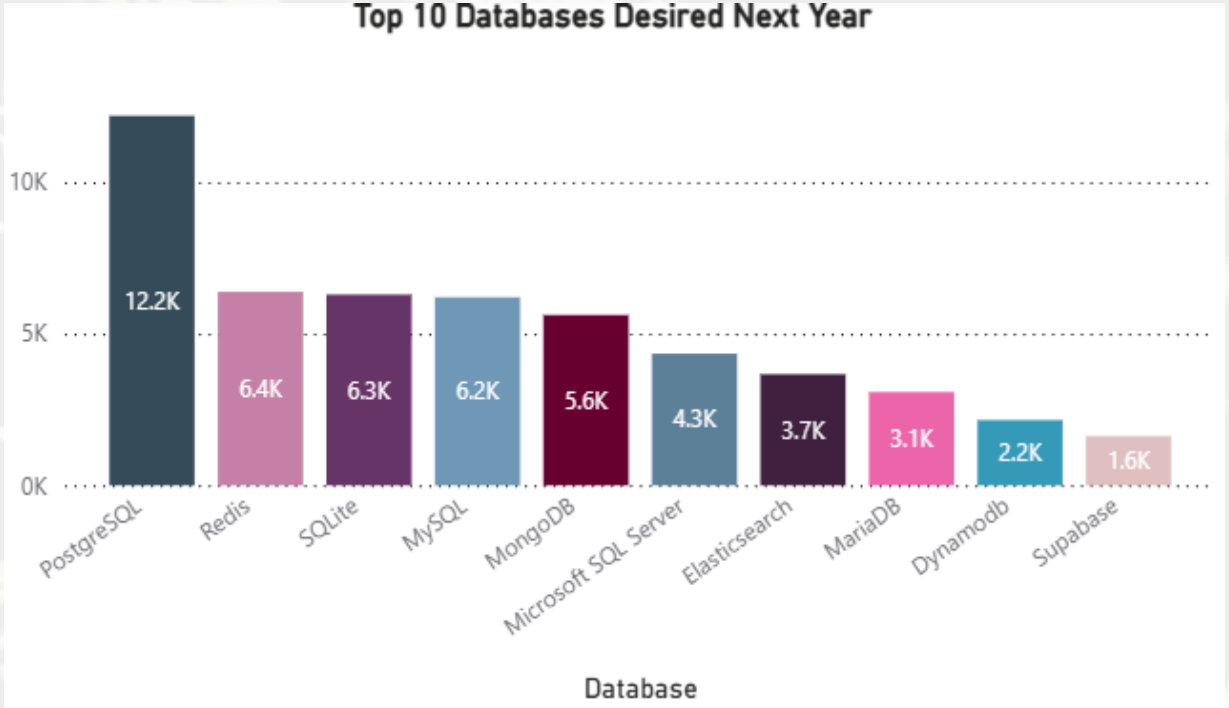
Key Insights:
- **JavaScript remains the dominant language**, ranking #1 in both usage and future demand.
- **SQL and Python continue to anchor data-driven work**, though Python shows a slight softening in forward interest.
- **TypeScript accelerates**, moving toward top-3 status in future demand as teams modernize JavaScript ecosystems.
- **Go and Rust emerge as rising priorities**, entering the 2025 demand list despite not being in the 2024 top-use list.
- **HTML/CSS remains stable**, underscoring its continued foundational role in all web development.
- **Java declines in forward interest**, indicating a gradual shift away from legacy enterprise stacks.

Implications for 2025:
- **Web development remains core** → continued investment in JS/TS frameworks expected.
- **Structured and scalable front-end development rises** → TypeScript becomes increasingly essential.
- **Cloud-native and systems programming gain traction** → Go/Rust skills become valuable differentiators.
- **Data engineering demand stays high** → SQL + Python remain critical in analytics and ML pipelines.
- **Legacy ecosystems face shrinking developer interest** → organizations using Java may encounter talent constraints.

Database Trends



Current



Future

Findings and Implications

Overview:
Analysis of the top 10 databases used in 2024 vs. the top 10 databases developers want to use in 2025 shows consolidation around PostgreSQL and rising interest in high-performance NoSQL and cloud-native solutions.

Key Insights:
PostgreSQL remains the clear leader, ranking #1 in both usage and future desire, with the largest absolute growth heading into 2025.
Redis shows major momentum, climbing from #7 in usage to #2 in future desire, reflecting its increasing importance for caching and real-time workloads.
SQLite maintains strong, stable interest, holding the #3 position in both years due to its reliability in embedded and lightweight applications.
MySQL and SQL Server decline in forward ranking, signaling a shift away from traditional relational systems toward PostgreSQL and modern NoSQL alternatives.
MongoDB holds a steady mid-tier position, remaining the top document database with durable developer adoption.
Supabase emerges as a new entrant, appearing in the 2025 desire list despite not ranking in 2024 usage, highlighting rising demand for integrated backend-as-a-service platforms.

Findings and Implications

Implications for 2025:

Relational standardization shifts → PostgreSQL continues its rise as the default relational database for new systems.

Performance-first architectures expand → Redis adoption accelerates for real-time, low-latency, and microservices workloads.

Talent markets realign → Hiring challenges increase for MySQL, SQL Server, and Oracle as developer preference shifts toward PostgreSQL.

Cloud-native and specialized systems grow → DynamoDB and Elasticsearch remain important for scalable NoSQL and search-driven applications.

Developer productivity platforms gain traction → Supabase signals a broader trend toward ecosystem-based tooling that accelerates backend development.

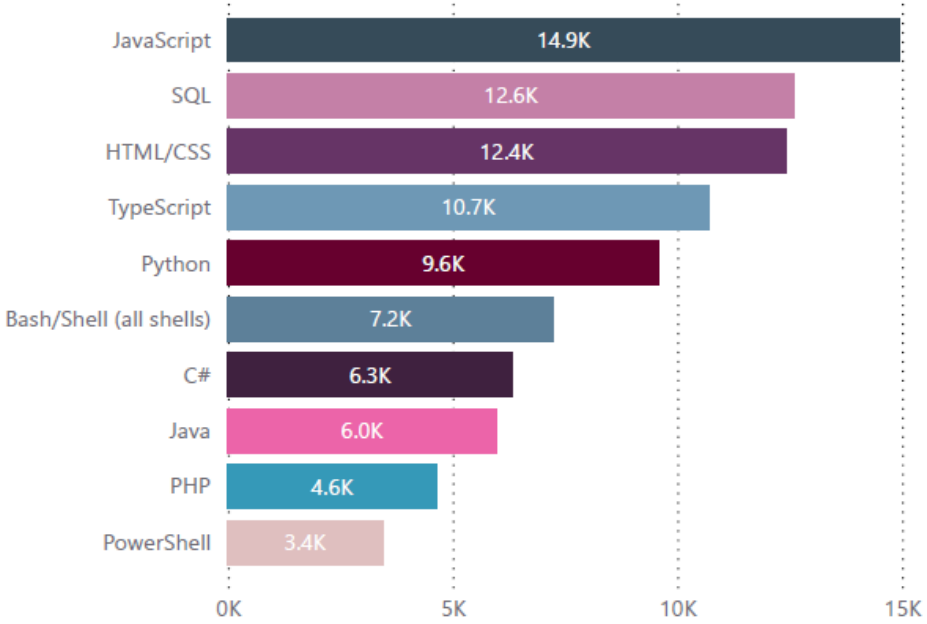
Dashboard Link

Revuyyyy / IBM-Data-Analyst-Capstone

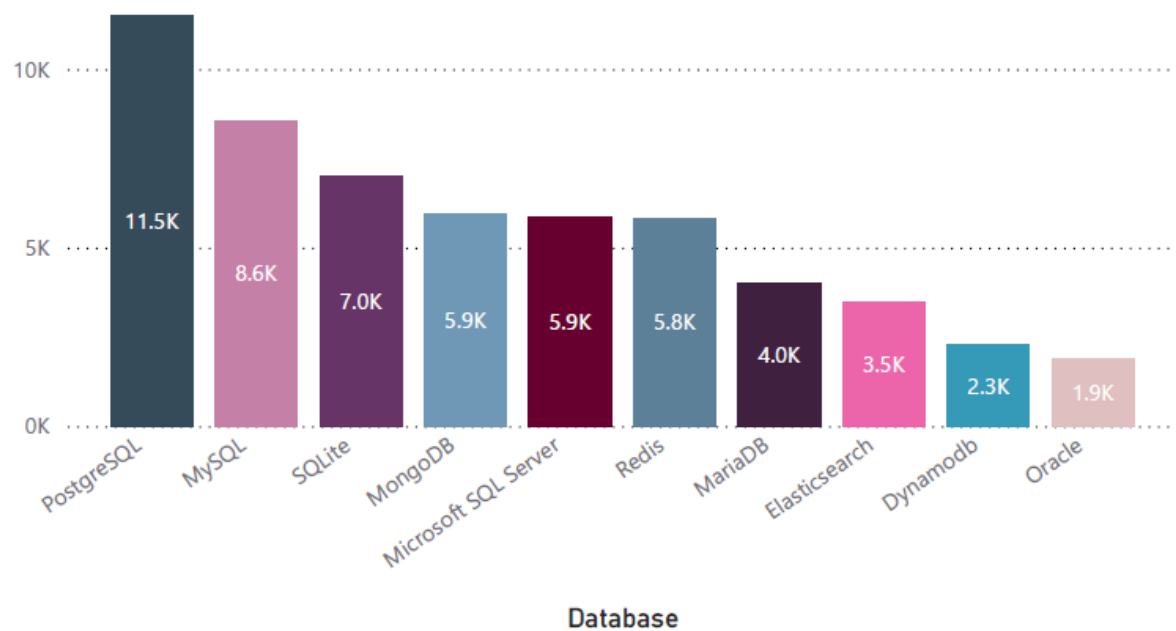
Created with Power BI and hosted on Github

Current Trends

Top 10 Languages Used

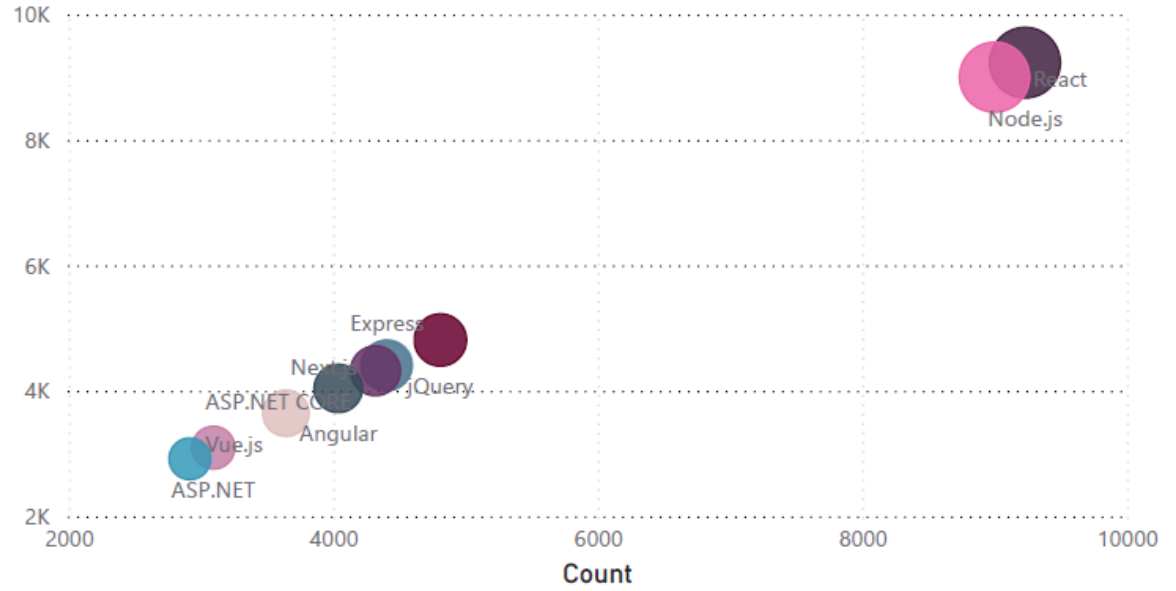


Top 10 Databases Used



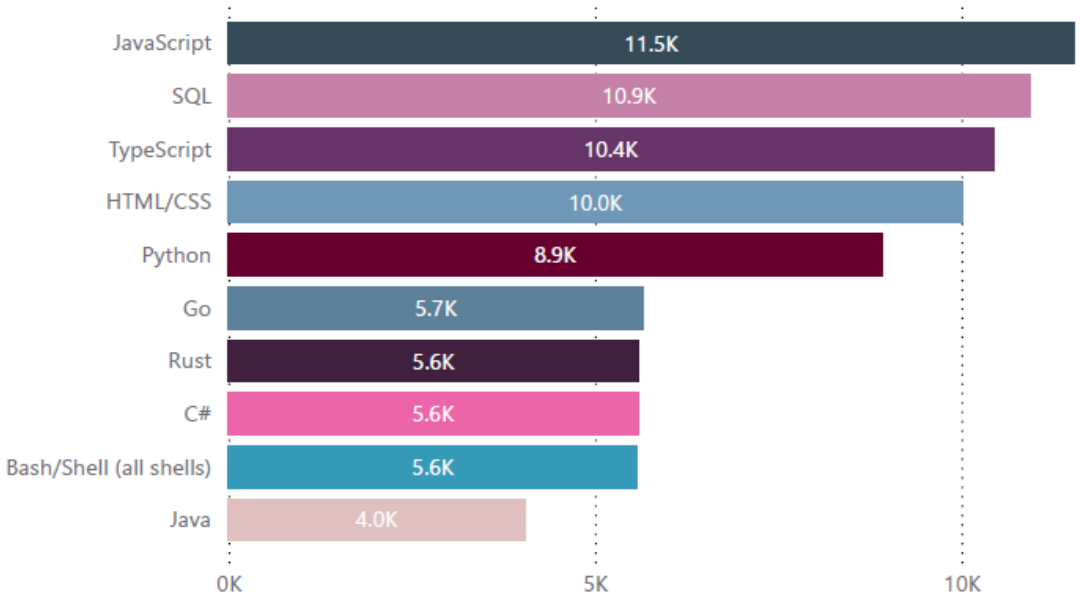
Top 10 Platforms Used

Top 10 Web Frames Used

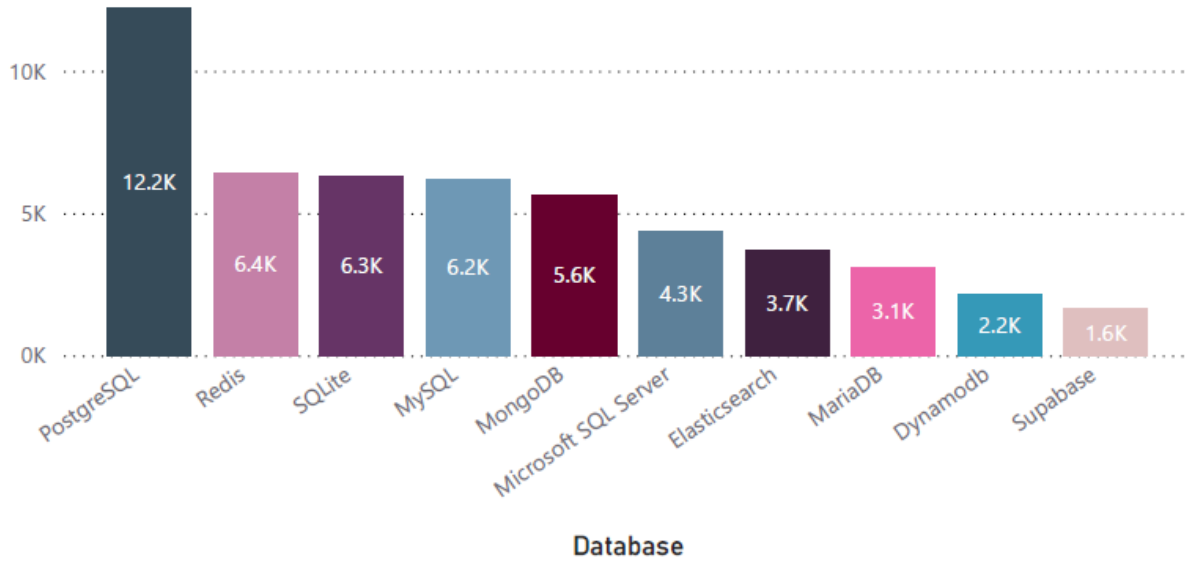


Future Trends

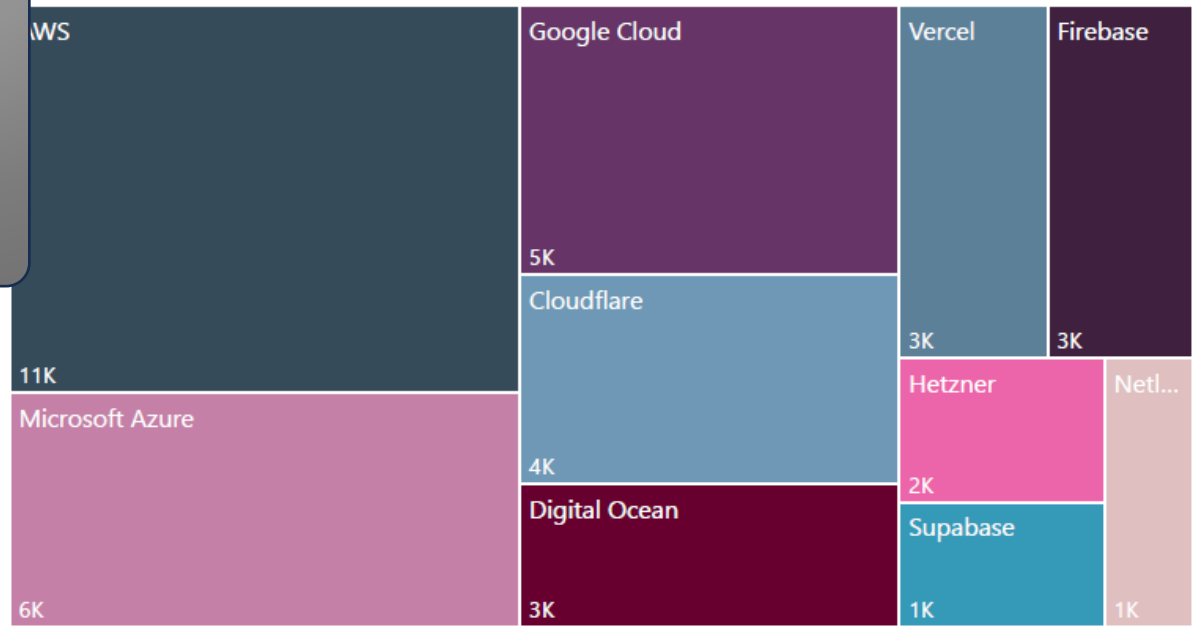
Top 10 Languages Desired Next Year



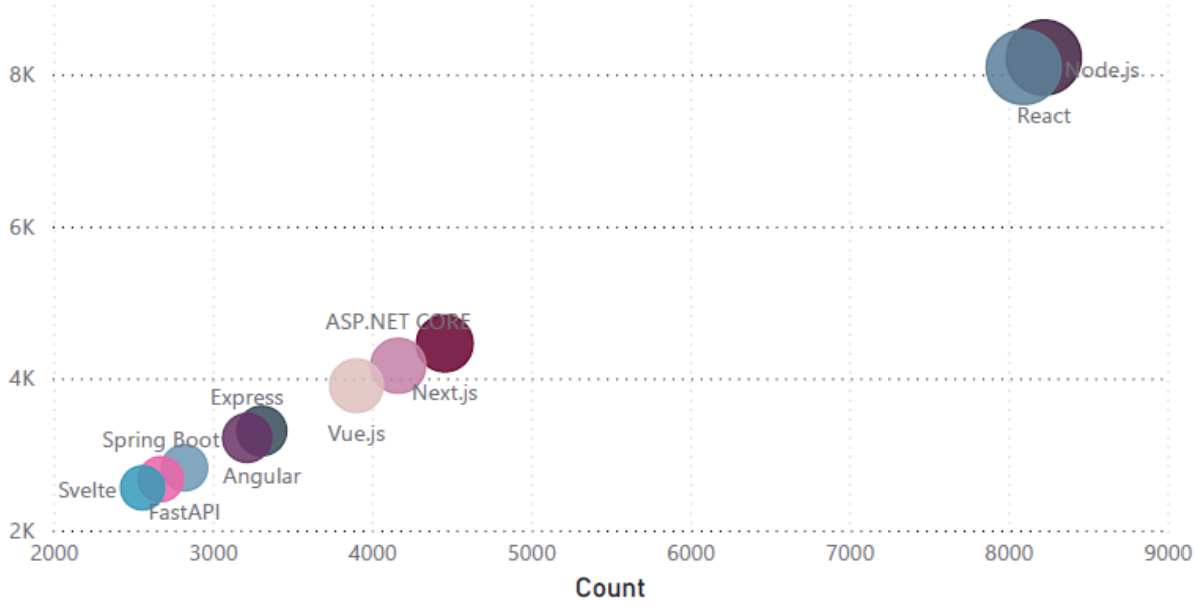
Top 10 Databases Desired Next Year



Top 10 Platforms Desired Next Year

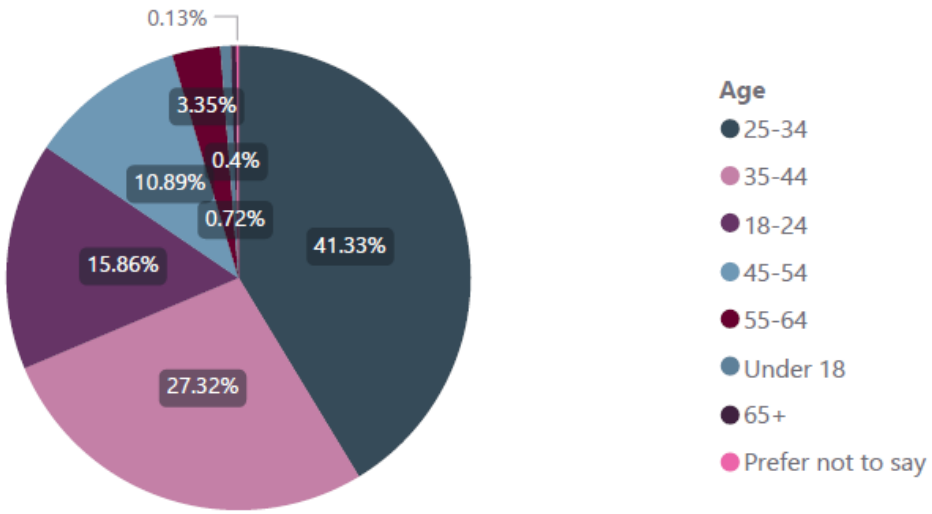


Top 10 Web Frames Desired Next Year

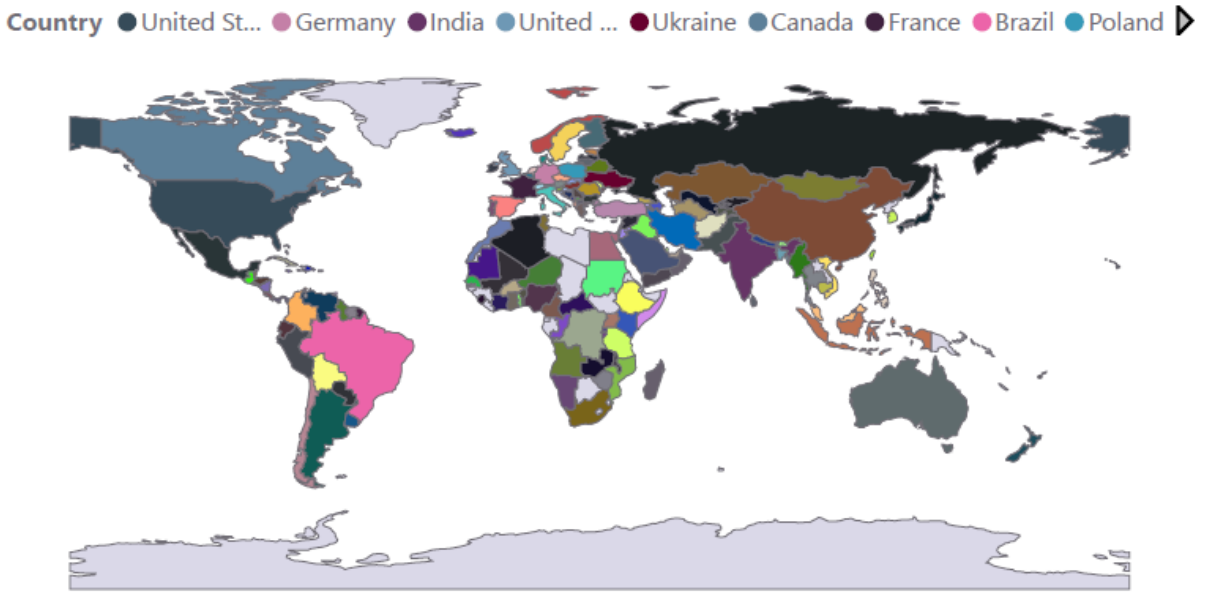


Demographics

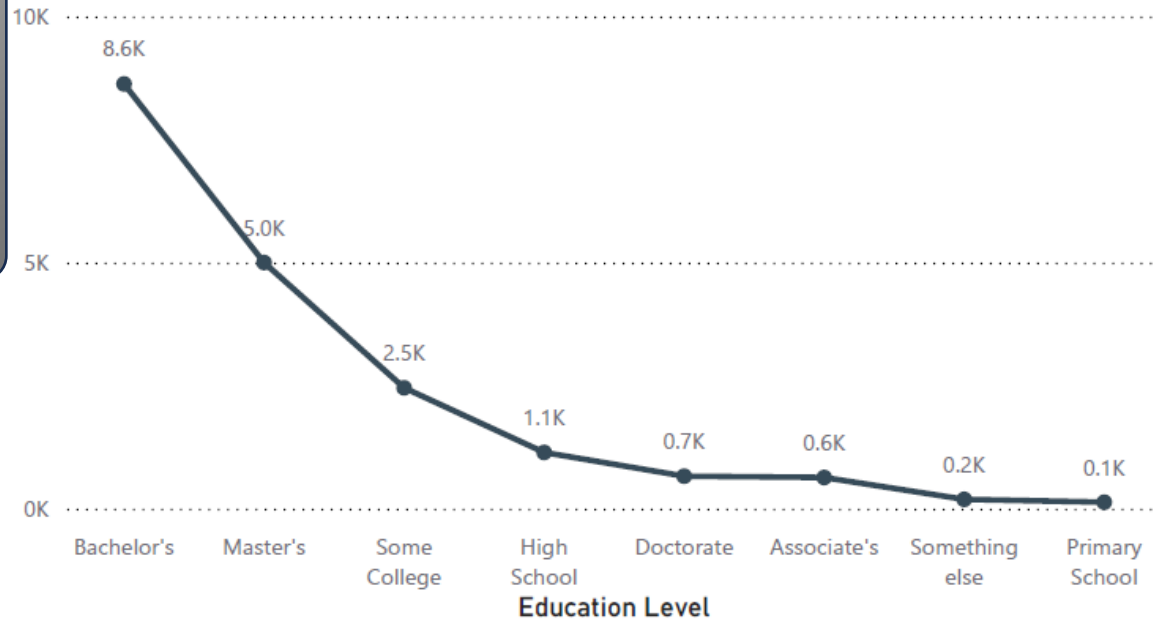
Respondent Distribution by Age



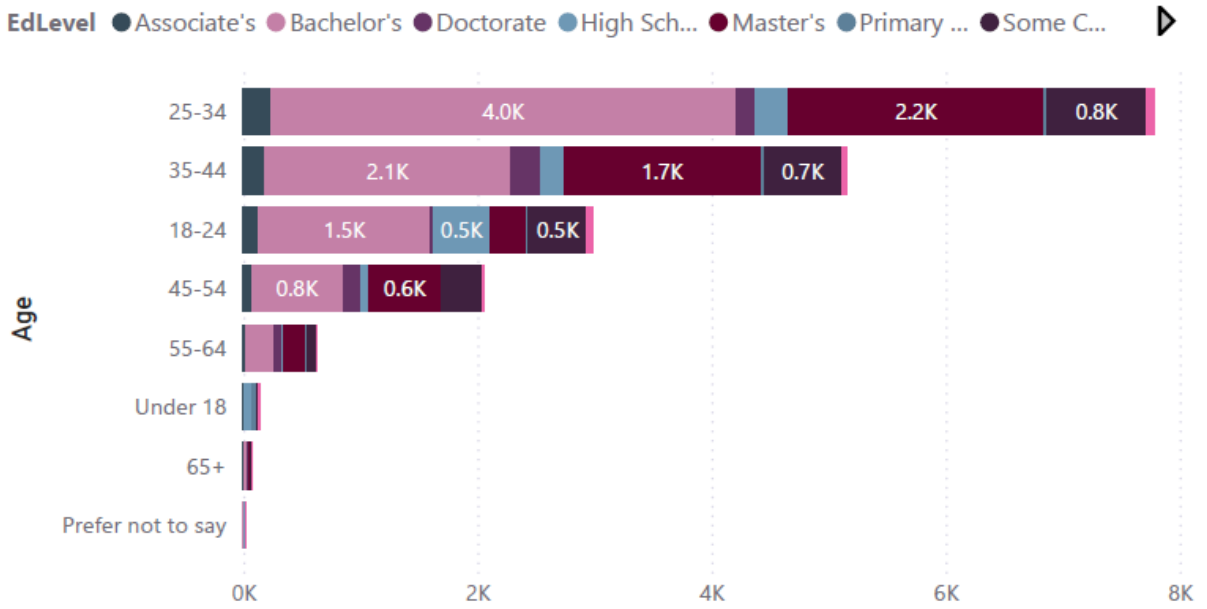
Respondent Count by Country



Respondent distribution by Formal Education Level



Respondent Count by Age, classified by Education Level



Insights from Dashboard

Overview:
Analysis of Programming Languages, Web Frameworks, and Cloud Platforms—supported by demographic insights—reveals a strong shift toward modern, efficient, strongly-typed, and full-stack technologies. Developers are moving away from legacy tools and toward solutions that improve developer experience, scalability, and cloud optimization.

Demographics Context:

- **Age:** Majority (≈69%) are within the key working range of 25–44 years old.
- **Education:** Highly educated audience; most hold a **Bachelor's (8.6K)** or **Master's (5.0K)** degree.
- **Geographic Reach:** Global representation led by the United States, India, Germany, and the United Kingdom.

Insights from Dashboard

Key Insights:

- **TypeScript & Rust Accelerating:** TypeScript rises from Usage #4 to Desire #2; Rust jumps to Desire #4 despite not being in the top 10 used.
- **Web Framework Consolidation:** React dominates both usage and desire; Vue.js moves up to Desire #3 while jQuery and Angular decline.
- **Cloud Platform Momentum:** AWS leads in usage, but Google Cloud rises to Desire #2 and Vercel enters strongly at Desire #6.
- **JavaScript Remains Core:** JavaScript and its ecosystem (React, Node.js) anchor the modern stack across all categories.
- **Legacy Decline:** PHP and Java show significant drops in forward interest, signaling migration away from enterprise-legacy technologies.

Implications for 2025:

- **Youth-Driven Modernization:** Adoption of TypeScript, Vue.js, and Svelte aligns with the preferences of younger, highly-educated developers.
- **Performance as a Differentiator:** Rust and Go gain value for high-performance, cloud-native, and systems programming workloads.
- **Evolving Cloud Strategy:** AWS remains central, but integrating Google Cloud (data/AI) and Vercel (frontend/serverless) will enhance infrastructure strategy.
- **Recruiting Risk:** Teams using older stacks (Java, PHP, Angular, jQuery) will face growing challenges in attracting and retaining talent.

Overall Findings and Implications

Key Insights

- **High-Value Skills:** Swift ($131K), Python ($114K), JavaScript ($111K); TypeScript & Rust rising.
- **Market Friction:** PostgreSQL highly desired (12.2K) but few jobs (88).
- **Legacy Demand:** C & Java dominate hiring despite declining interest.
- **Web & Cloud:** React leads; Vue.js & Svelte gaining; AWS central, Google Cloud & Vercel rising.

Implications

- **Recruitment Gaps:** Legacy stacks (Java, PHP, MySQL) hard to staff; PostgreSQL competitive.
- **Modernization Priority:** Shift to TypeScript, Rust, Go; adopt modern frameworks & hybrid-cloud strategies.
- **Safe Investments:** JavaScript/TypeScript & Python remain versatile and high-return.

Bottom Line:

Modern, strongly-typed, cloud-native technologies attract developers, improve performance, and future-proof teams.

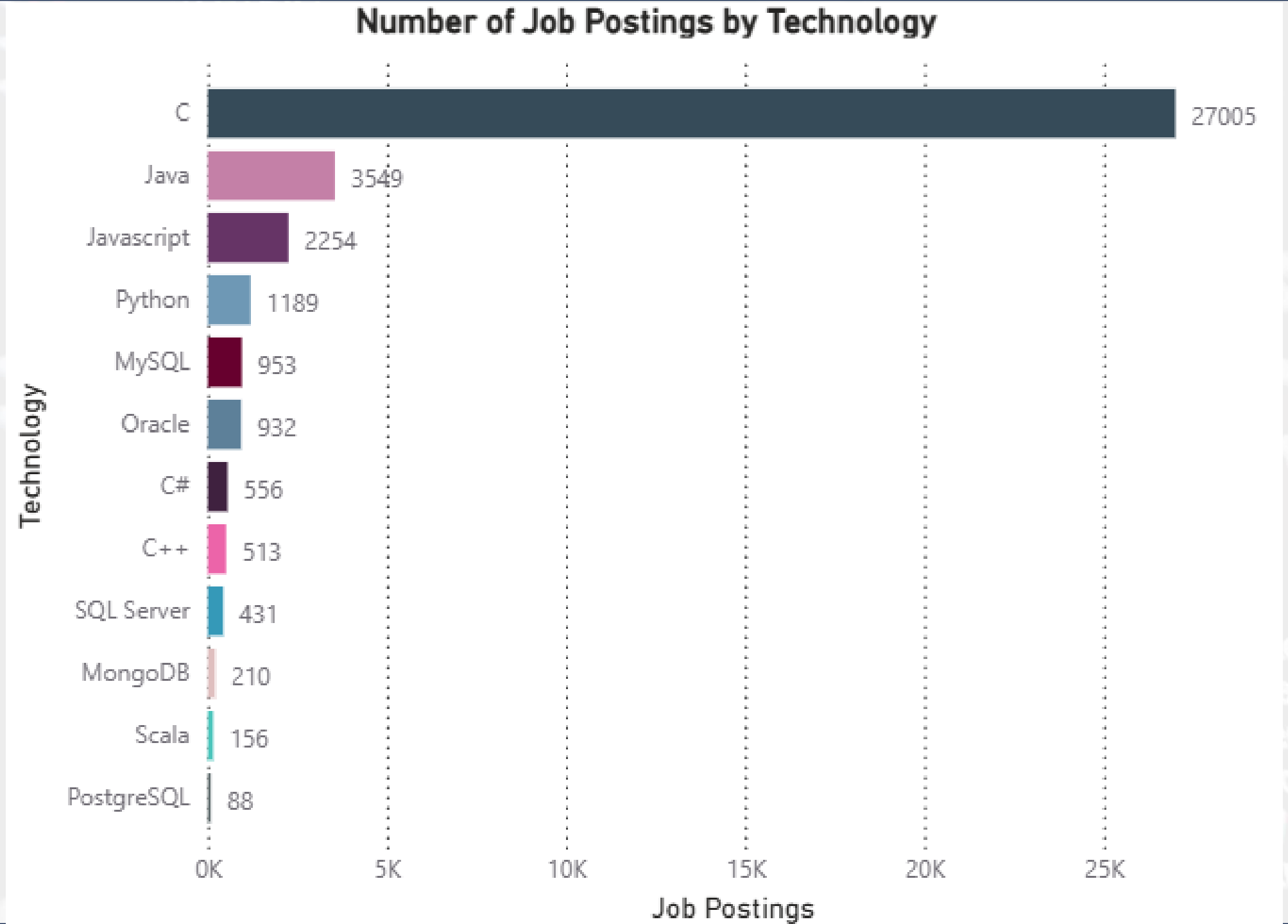
Conclusion

- **Shift to Modern Tech:** Developers favor TypeScript, Rust, Go, and modern web frameworks, while legacy stacks (Java, C, PHP) face declining interest.

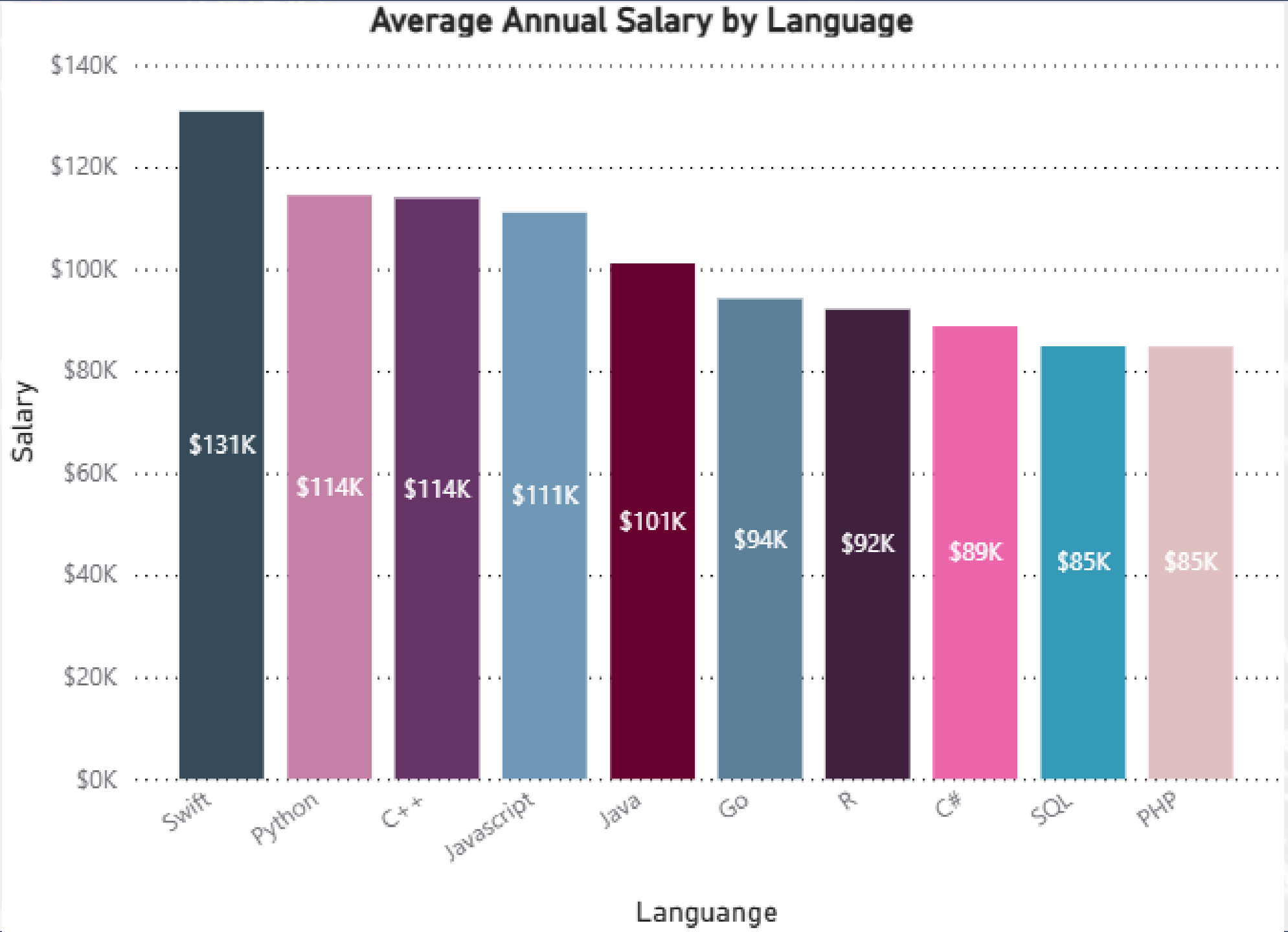
- **Talent & Market Gaps:** High-desire skills like PostgreSQL and modern languages may require upskilling or premium hiring; legacy skills face short-term recruitment ease but long-term challenges.

- **Strategic Focus:** Invest in JavaScript/TypeScript, Python, cloud-native platforms, and performance-oriented languages to attract talent, improve scalability, and future-proof technology stacks.

Appendices


Number of Job Postings by Technology
C
27005
Java
3549
Javascript
2254
Python
1189
MySQL
953
Oracle
932
C#
556
C++
513
SQL Server
431
MongoDB
210
Scala
156
PostgreSQL
88
Technology
0K
5K
10K
15K
20K
25K
Job Postings

Appendices


Average Annual Salary by Language
$140K
$120K
$100K
$80K
$60K
$40K
$20K
$0K
Salary
$131K
$114K
$114K
$111K
$101K
$94K
$92K
$89K
$85K
$85K
Swift
Python
C++
Javascript
Java
Go
R
C#
SQL
PHP
Languange