

Stack Overflow Developer Survey: Data Trends & Insights

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EXECUTIVE SUMMARY



Python, JavaScript, and SQL are the most desired languages by developers globally.



MySQL and PostgreSQL lead in current and future database preferences.



Linux and Windows dominate as platforms developers want to work with.



React.js and Node.js are top web frameworks developers aim to work with.



Most respondents are from the **United States**, followed by India and Germany.



Majority of developers hold a **Bachelor's degree; self-taught paths** are also rising.



Developer interest in **open-source platforms** and **cross-platform tools** is steadily growing.



INTRODUCTION



Purpose

Extract actionable insights from developer survey data to understand emerging technology trends.



Target Audience

Hiring managers | Tech recruiters | Educators | Industry leaders



Value Proposition

Empowers strategic decisions in hiring, training, and investment by aligning with real-world developer preferences and trends.



METHODOLOGY (Part-1)



Data Sources

- Stack Overflow Developer Survey (ODbL)
- Data accessed from:

insights.stackoverflow.com/survey



Collection Methods

- API requests and web scraping (using Flask, BeautifulSoup)
- CSV & Excel imports from Kaggle and public job datasets



METHODOLOGY (Part-2)



Data Wrangling & Cleaning

- Removed duplicates, handled nulls, imputed values
- Normalized formats and standardized categorical fields



Tools & Technologies

- Python (Pandas, NumPy, Seaborn, Matplotlib)
- SQLite for structured storage
- Power BI & Cognos for dashboards and visualizations

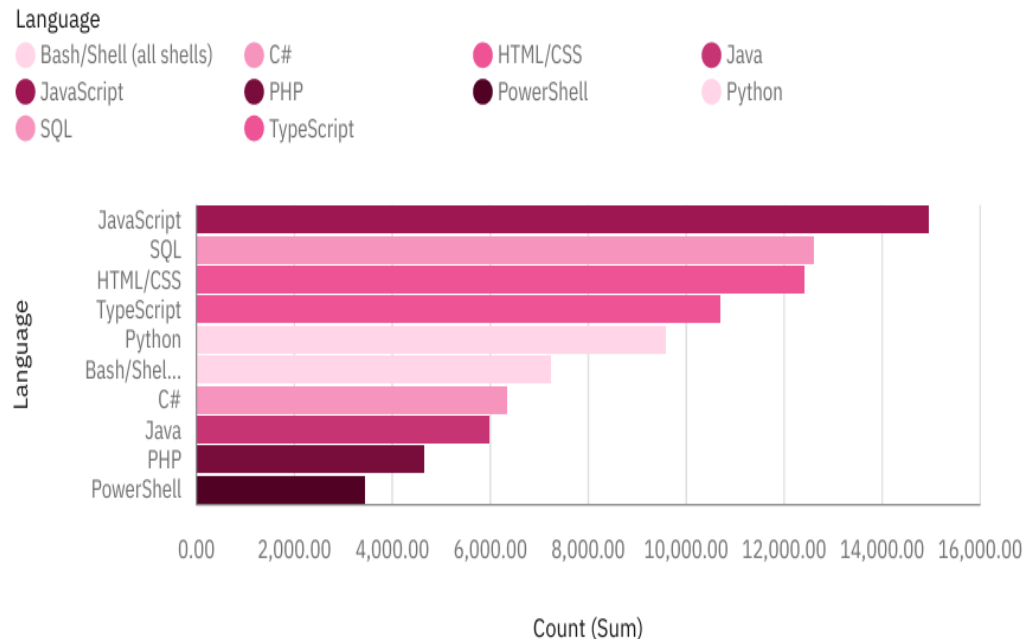


PROGRAMMING LANGUAGE TRENDS

Current Year

Current Technology Usage

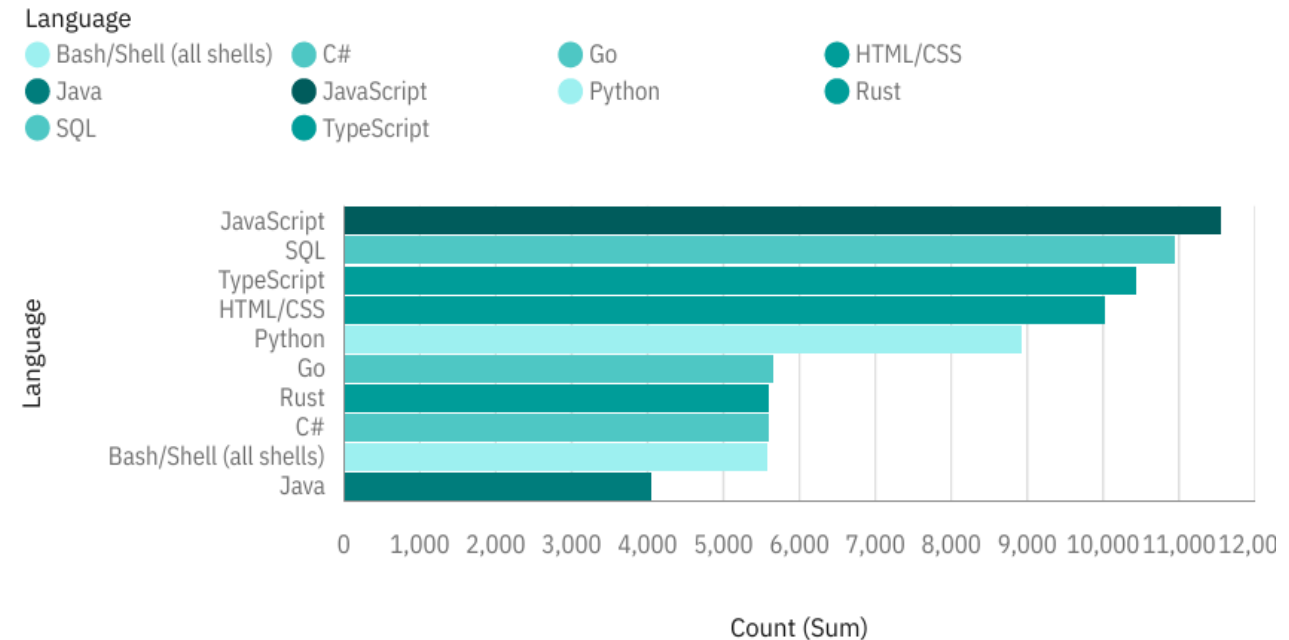
Top 10 Programming Languages Used



Next Year

Future Technology Trend

Top 10 Language Want To Work With



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- ◆ **JavaScript** remains the most used and most desired language across current and future trends.
- ◆ **SQL** ranks high in both current use and future preference, signaling strong foundational relevance.
- ◆ **TypeScript** and **Python** show consistent popularity, indicating their growing adoption in modern development.

Implications

- ✓ **JavaScript's dominance** highlights demand for full-stack and web development roles.
- ✓ **SQL proficiency** is critical across roles in data analysis, backend, and BI development.
- ✓ Learning **TypeScript & Python** equips candidates for scalable web apps and AI/ML domains.

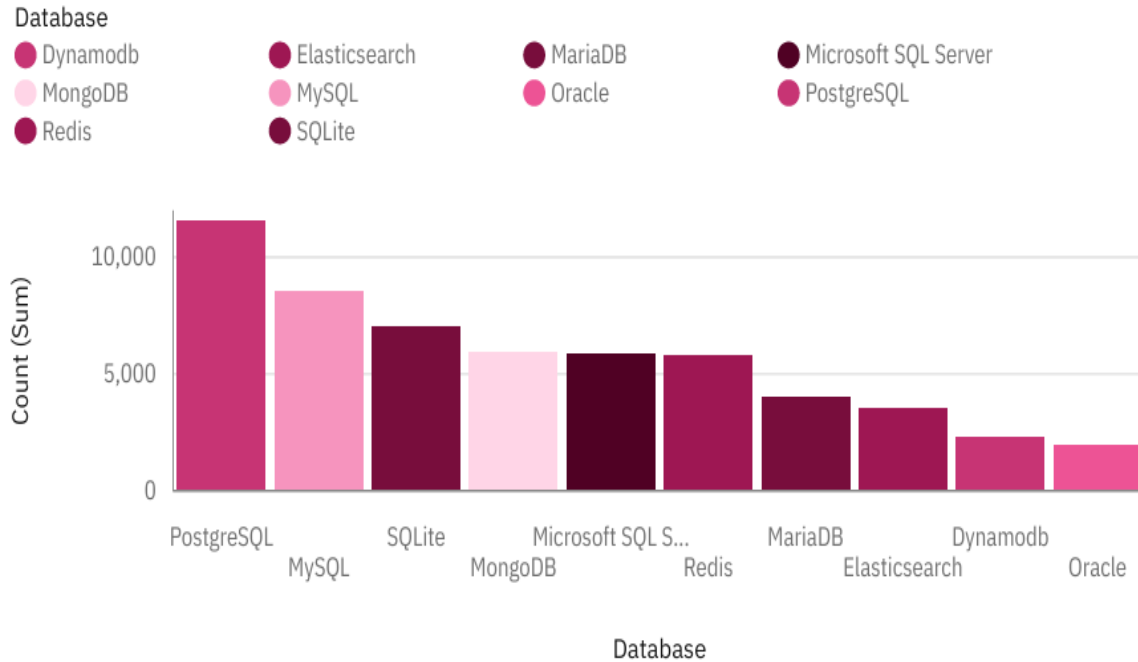


DATABASE TRENDS

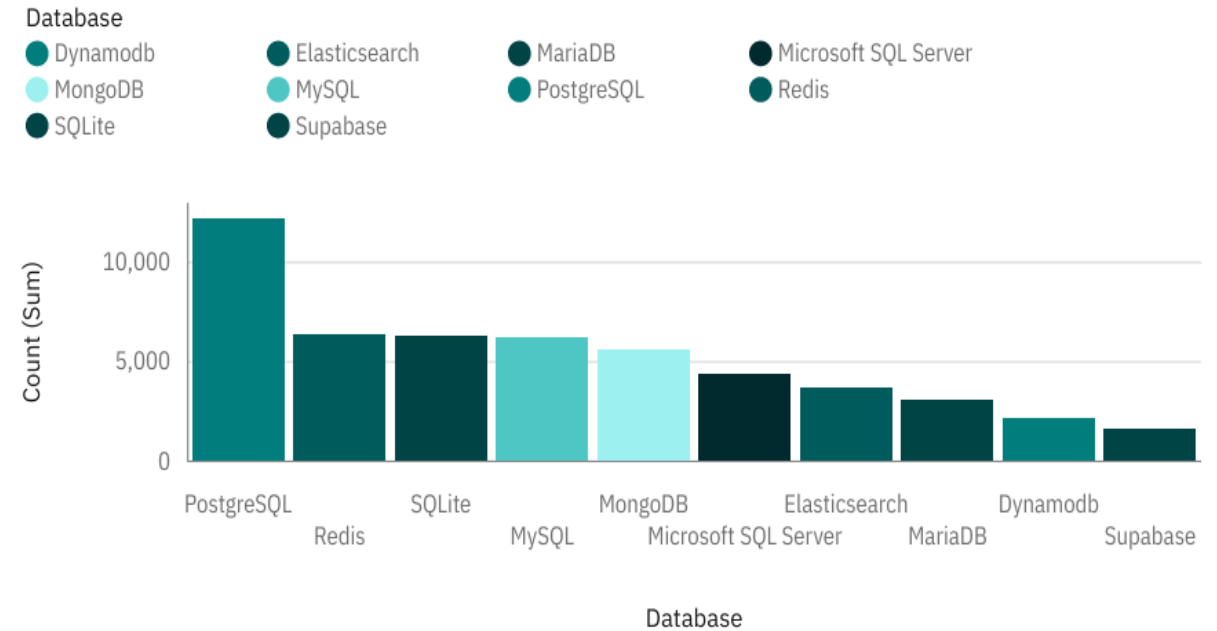
Current Year

Next Year

Top 10 Databases Used



Top 10 Database Want To Work With



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **PostgreSQL, MySQL, and SQLite** are currently the top 3 databases in active use.
- PostgreSQL dominates both current use and future interest—ranking first in both charts.
- Emerging interest in **Redis** and **Supabase** indicates a growing demand for fast, scalable data solutions.

Implications

- ✓ **PostgreSQL's** sustained popularity suggests its importance in **full-stack** and **data engineering** roles.
- ✓ The rise of **Redis** and **Supabase** highlights an industry shift toward **real-time** and **cloud-native databases**.
- ✓ Skills in PostgreSQL, Redis, and Supabase may provide a competitive edge in job markets moving forward.



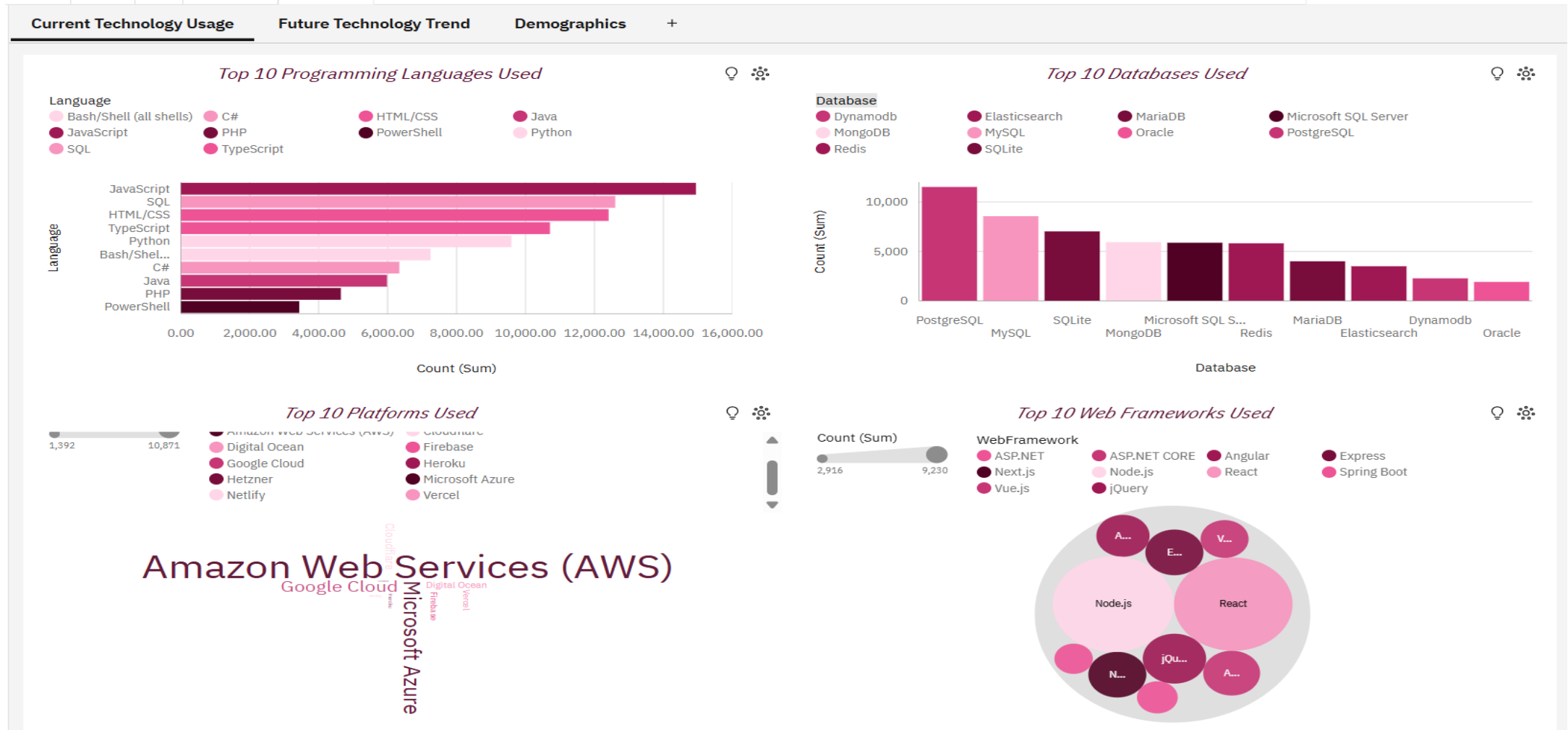
DASHBOARD



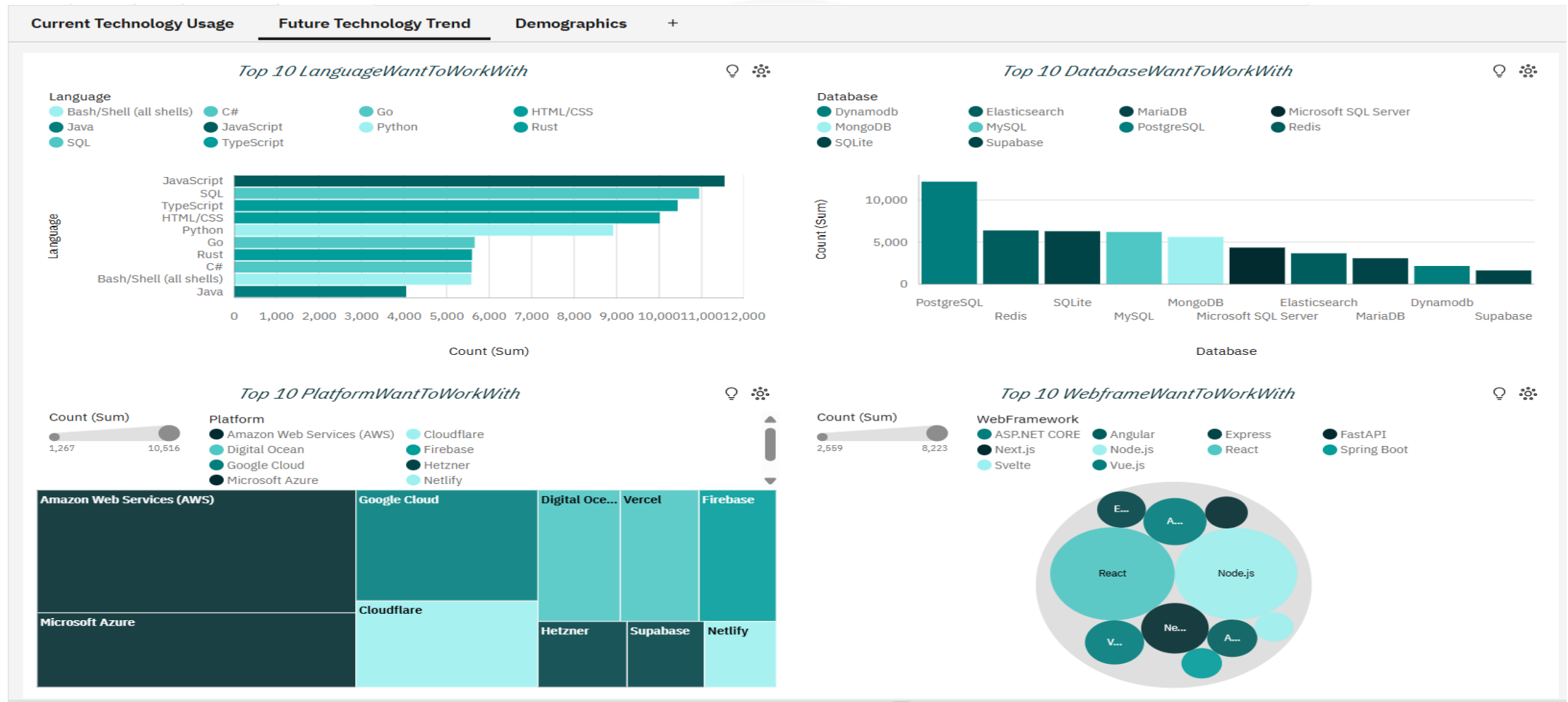
StackOverFlow Developer Survey Dashboard



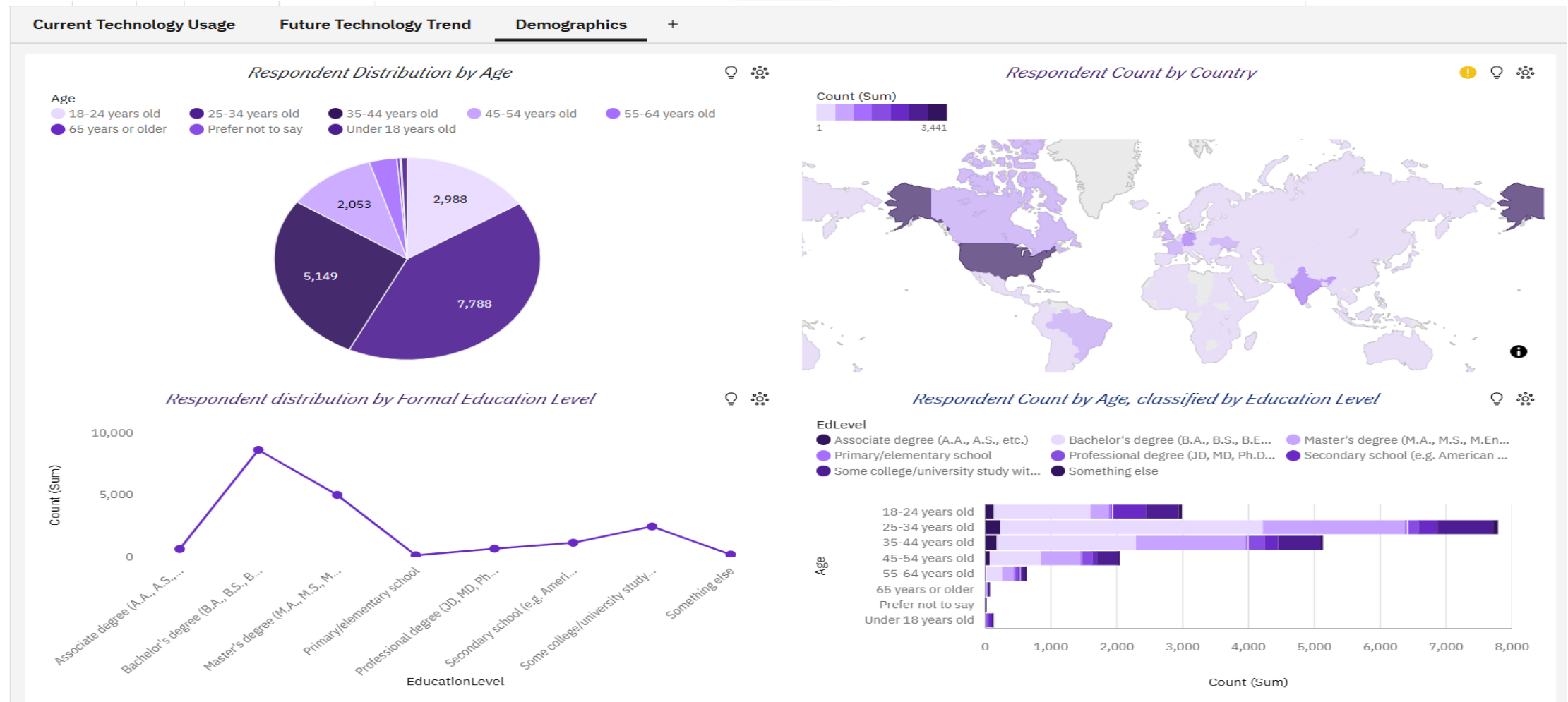
DASHBOARD TAB 1: Current Technology Usage



DASHBOARD TAB 2: Future Technology Trends



DASHBOARD TAB 3: Demographics



DISCUSSION



◆ Technology Usage (Current)

- ❑ JavaScript, SQL, and HTML/CSS dominate current programming use.
- ❑ PostgreSQL leads in databases, with AWS as the top cloud platform.
- ❑ React and Node.js are the most used frameworks.

◆ Future Trends

- ❑ Developers aspire to work more with TypeScript, Go, and Rust.
- ❑ PostgreSQL remains top, while Supabase and Redis are rising
- ❑ Cloudflare, Vercel, and Netlify gain traction for future deployments.

◆ Demographics

- ❑ Majority of respondents are 18–34 years old with Bachelor's or Master's degrees.
- ❑ Highest participation from United States, India, and Germany.
- ❑ Most career transitions are happening in the 25–34 age bracket.



OVERALL FINDINGS & IMPLICATIONS

Findings

- ❑ PostgreSQL and SQLite lead in database trends
- ❑ AWS, React, Node.js dominate tech stacks
- ❑ JavaScript, SQL, Python top both usage and preference
- ❑ Go, Rust, Supabase, FastAPI show rising demand
- ❑ Majority are young, degree-holding global developers

Implications

- ✓ Upskill teams in modern, in-demand tools
- ✓ Prioritize cloud-native and open-source solutions
- ✓ Target early-career, global tech talent
- ✓ Align training with trending technologies
- ✓ Leverage PostgreSQL and React for scalable, in-demand product stacks
- ✓ Invest in emerging tech (Rust, Supabase) to future-proof development strategies

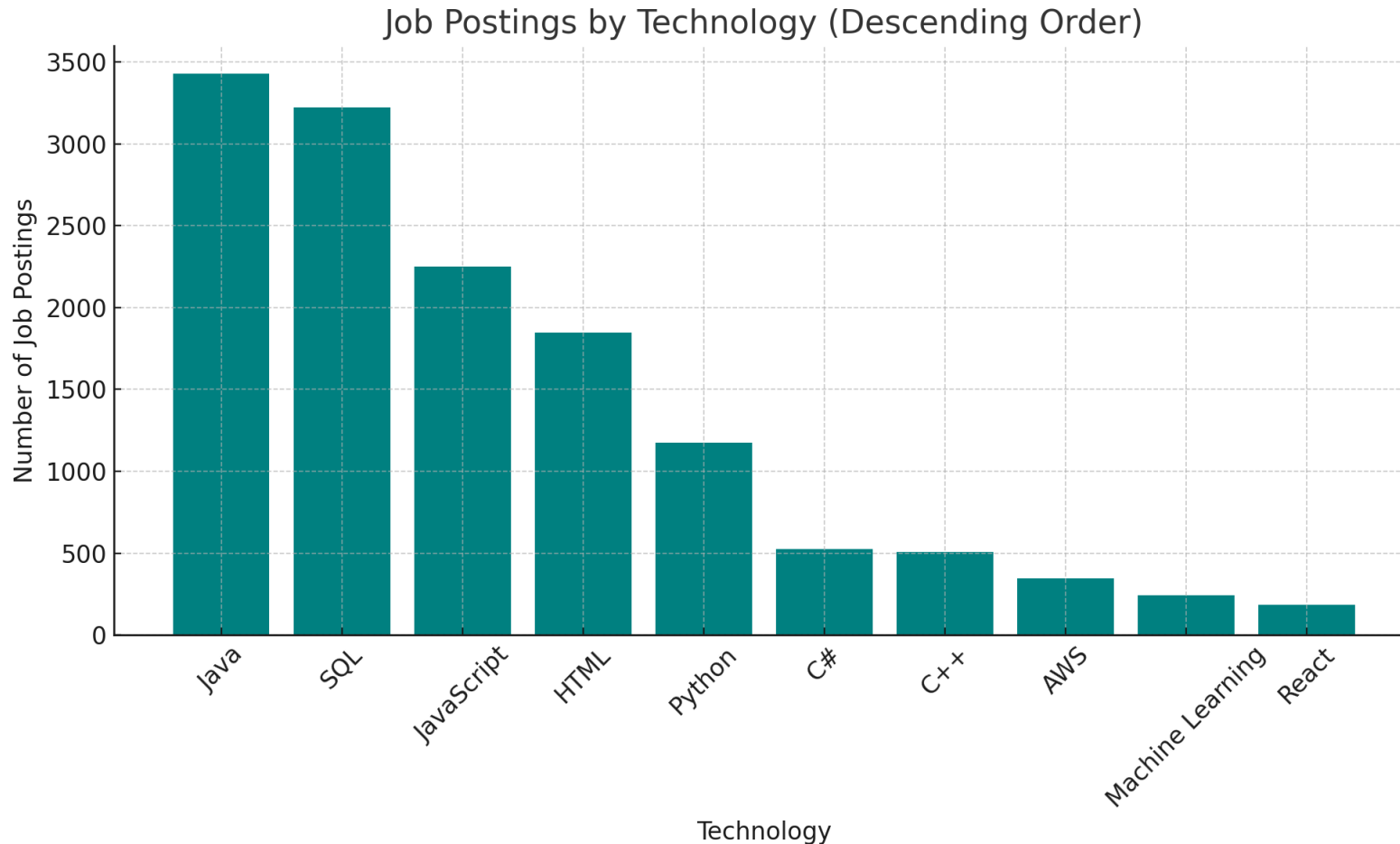
CONCLUSION



- Stack Overflow survey data reveals current and future tech demand.
- JavaScript, SQL, and Python dominate usage and interest.
- PostgreSQL and SQLite are top choices for databases now and in the future.
- Developers favour open-source platforms like AWS, React, and Node.js.
- Young, globally distributed talent shapes the tech landscape.
- Data-driven insights can guide hiring, upskilling, and tech investments.



JOB POSTINGS

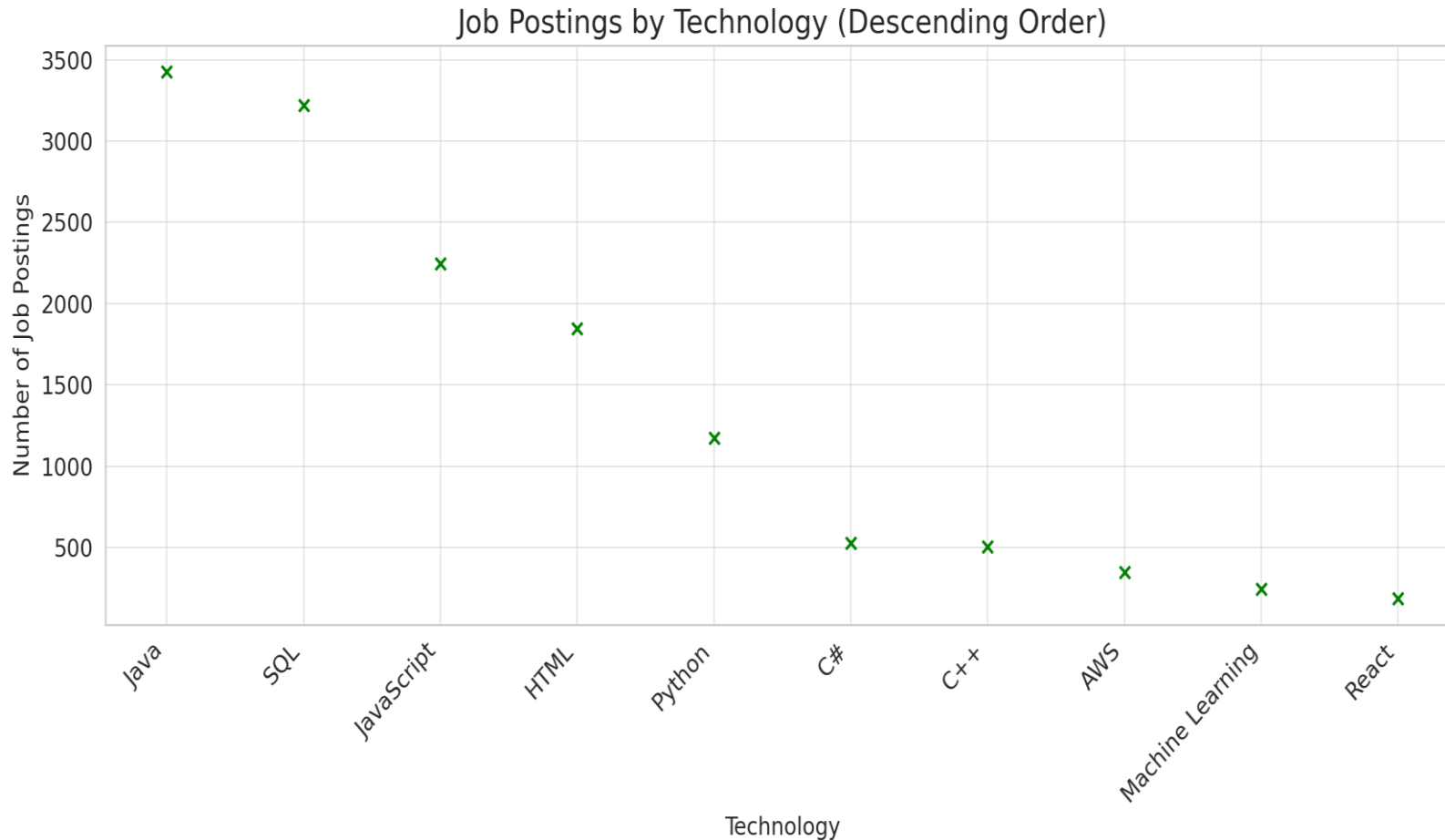


💡 Insight

JavaScript and Python dominate job demand, reflecting industry reliance on web development and data-centric applications.



JOB POSTINGS



💡 Insight

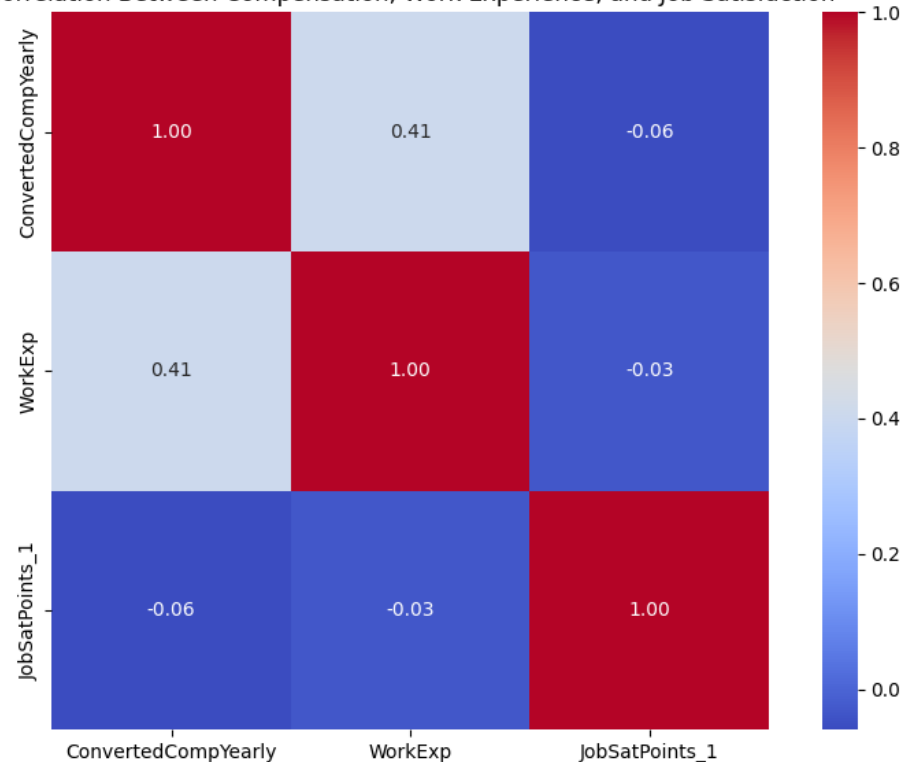
Java and SQL top job demand, indicating strong industry focus on enterprise systems and data management skills.



APPENDIX

Correlation Insights – Compensation, Experience & Satisfaction

Correlation Between Compensation, Work Experience, and Job Satisfaction



Key Takeaways

- **Work Experience ↔ Pay:** Moderate link (**0.41**) — more experience = higher salary.
- **Job Satisfaction ↔ Pay/Experience:** Weak or negative link — satisfaction driven by other factors.

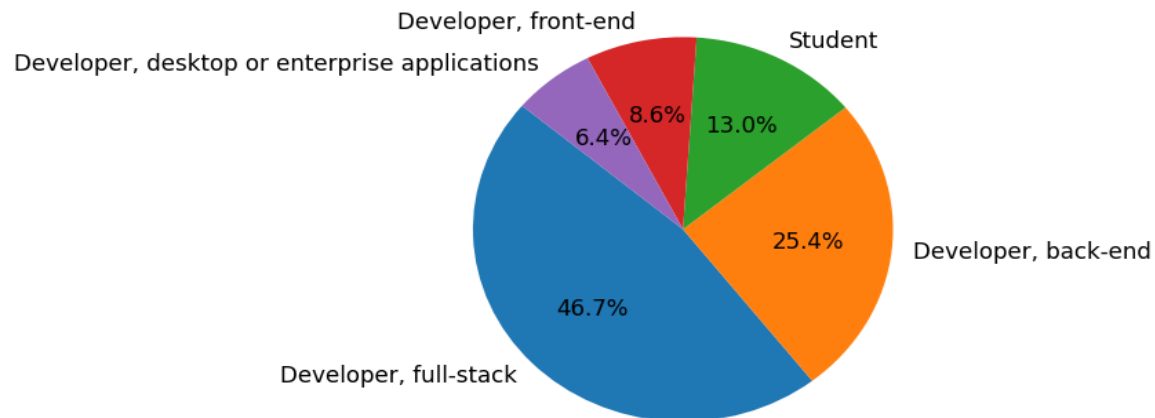
Insight

Job satisfaction depends more on **culture, growth, and balance** than on pay or experience.

APPENDIX

Developer Role Distribution

Top 5 Developer Roles



 Top 5 Roles by Share

- **Full-Stack** – 46.7%
- **Back-End** – 25.4%
- **Student** – 13.0%
- **Front-End** – 8.6%
- **Desktop/Enterprise** – 6.4%

Insights

- Full-stack leads, reflecting demand for **versatile skills**.
- High student share signals a **strong future talent pool**

POPULAR LANGUAGES



💡 Insight

Languages like Python, JavaScript, and Go offer competitive salaries, making them attractive choices for developers focused on both versatility and earning potential.