

In-Demand Technology Skills: 2024/2025 Developer Trends



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Date: 2025

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- Executive Summary
- Introduction
- Methodology
- Programming Languages Trends
- Database Trends
- Dashboards
- Insights from Dashboards
- Overall Findings & Implications
- Conclusion



Executive Summary



- **Key Findings:**
 - - Python, JavaScript, and SQL remain the top programming skills.
 - - Cloud and database expertise (PostgreSQL, MySQL, MongoDB) are increasingly in demand.
 - - AI/ML tools and collaboration platforms are gaining rapid adoption.
 - - Dashboards highlight tech usage, future trends, and developer demographics.



Introduction



- **Purpose:** Identify the most in-demand skills for 2025.
- **Target Audience:** Tech leaders, hiring managers, developers.
- **Value:** Helps organizations align hiring and training strategies with emerging trends.



Methodology

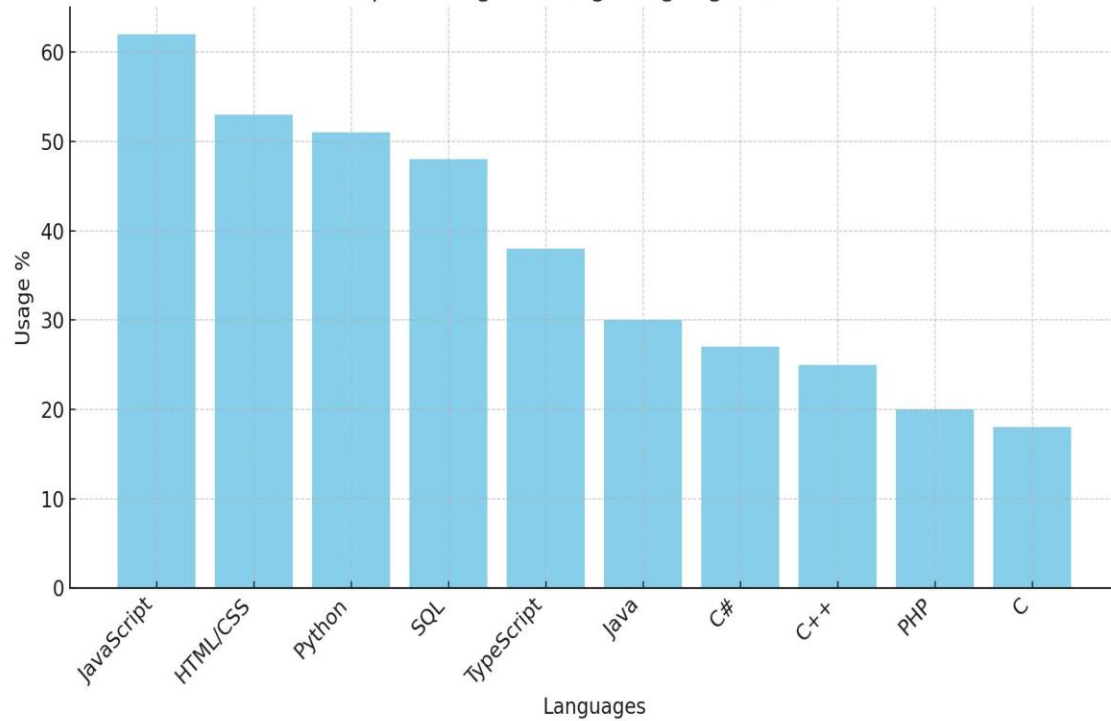


- Data Sources:
 - - Job postings (APIs, scraped data)
 - - Training portals (course enrollment data)
 - - Developer surveys (Stack Overflow, etc.)
- Collection Methods:
 - - Web scraping, APIs, CSV/Excel imports, RDBMS queries
- Data Wrangling:
 - - Removed duplicates & missing values.
 - - Normalized and cleaned categorical columns.
 - - Converted experience and age ranges to numeric.

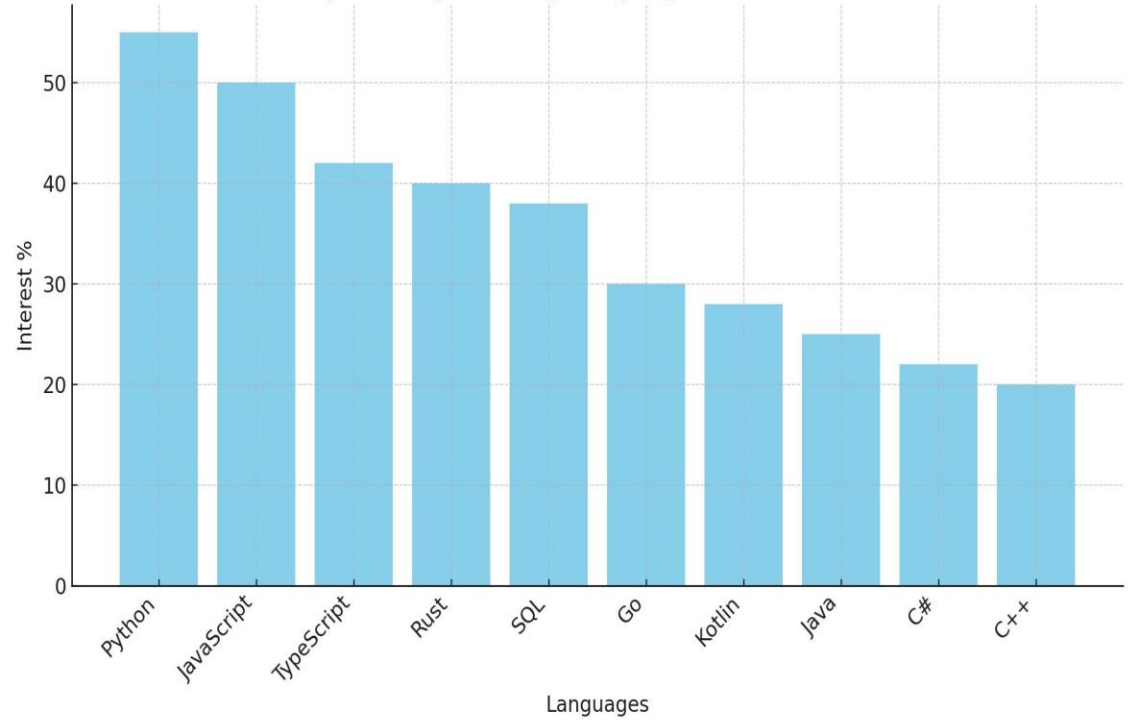


PROGRAMMING LANGUAGE TRENDS

Top 10 Programming Languages (2024)



Top 10 Programming Languages (Future Trend)



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Python, JavaScript, and SQL** remain the top 3 most widely used languages in 2024, consistent with prior years.
- **TypeScript and Go** show strong growth in adoption, particularly in enterprise and cloud-native projects.
- **Rust** continues to gain momentum, especially among system programmers and developers prioritizing performance and safety.
- **Future trends** suggest increased demand for **AI/ML-focused languages** (Python, R) and **secure, efficient languages** (Rust, Go).

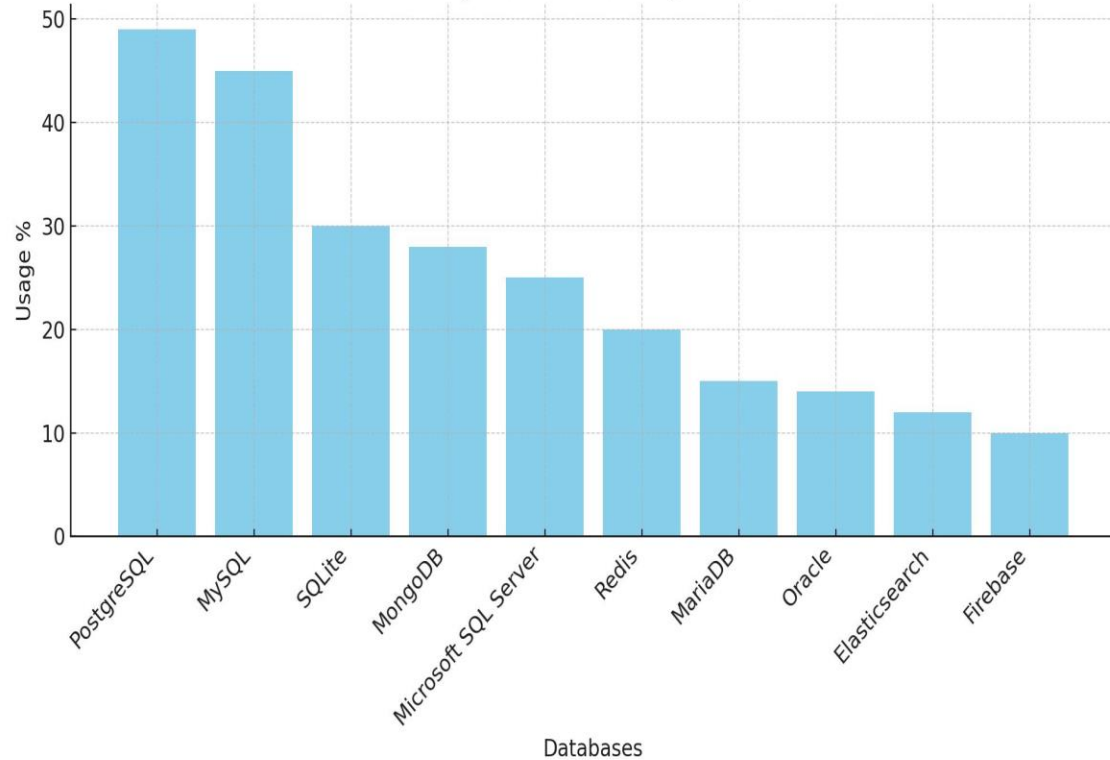
Implications

- **Upskilling priority:** Developers should prioritize **Python, JavaScript, and SQL** for broad employability.
- **Emerging skills:** Rust and Go expertise will offer a competitive advantage in specialized domains.
- **Organizations:** Training and hiring should anticipate **TypeScript and Rust** as rising core technologies.
- **Industry direction:** Languages aligning with **AI, data science, and cloud-native development** are driving demand.

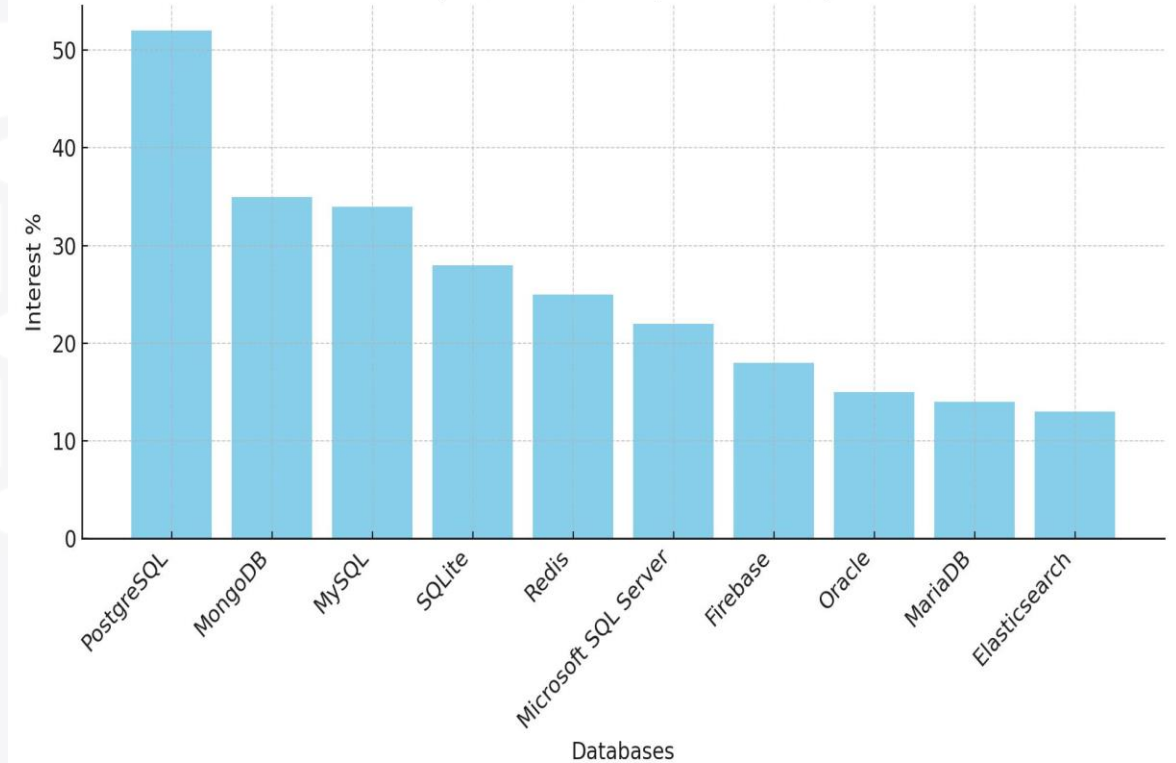


DATABASE TRENDS

Top 10 Databases (2024)



Top 10 Databases (Future Trend)



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **MySQL, PostgreSQL, and SQLite** remain the most widely used databases in 2024, showing dominance across industries.
- **PostgreSQL** shows the **fastest growth** due to strong community support, scalability, and cloud adoption.
- **Future demand** indicates a shift toward **cloud-native, distributed databases** such as **PostgreSQL, MongoDB, and serverless DBs** offered by cloud providers.

Implications

- **Skill priorities:** Developers should strengthen SQL fundamentals (MySQL, PostgreSQL, SQLite) while gaining exposure to NoSQL (MongoDB).
- **Enterprise adoption:** PostgreSQL is becoming a default choice for modern applications, signaling demand for deep expertise.
- **Organizations:** Should prepare for **hybrid environments** (SQL + NoSQL) and invest in cloud-managed DB services to stay competitive.



DASHBOARD



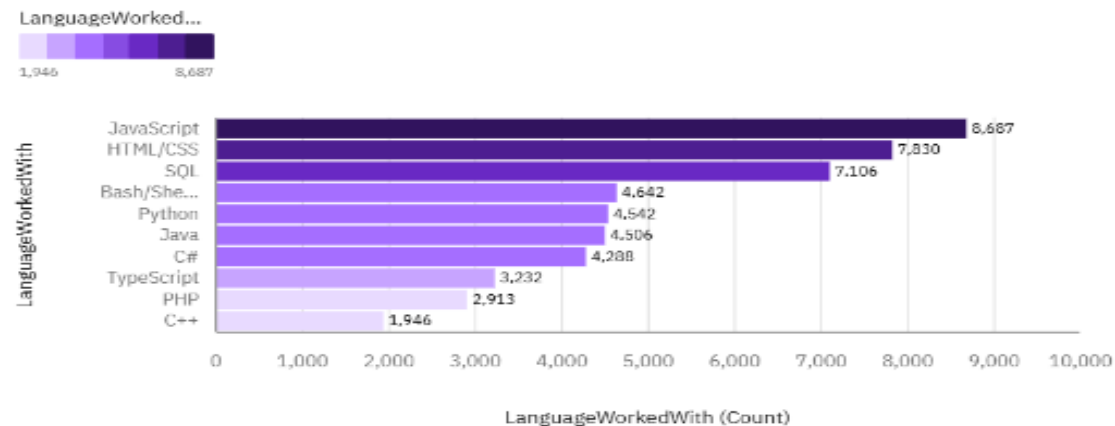
https://github.com/diegoalexssander/IBM-Data-Analyst-Capstone-Project-2025/blob/main/Dashboard/Dashboards_on_Cognos.pdf



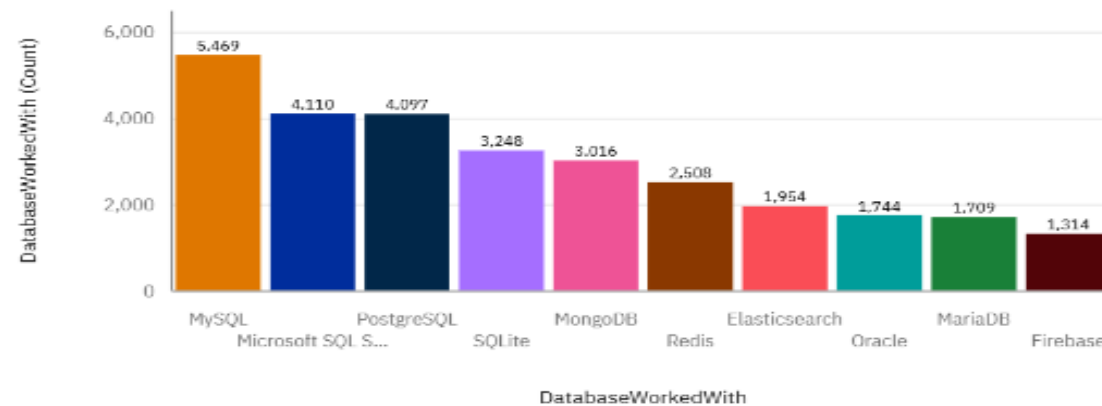
DASHBOARD TAB 1

Current Technology Usage

Top 10 Language Worked With



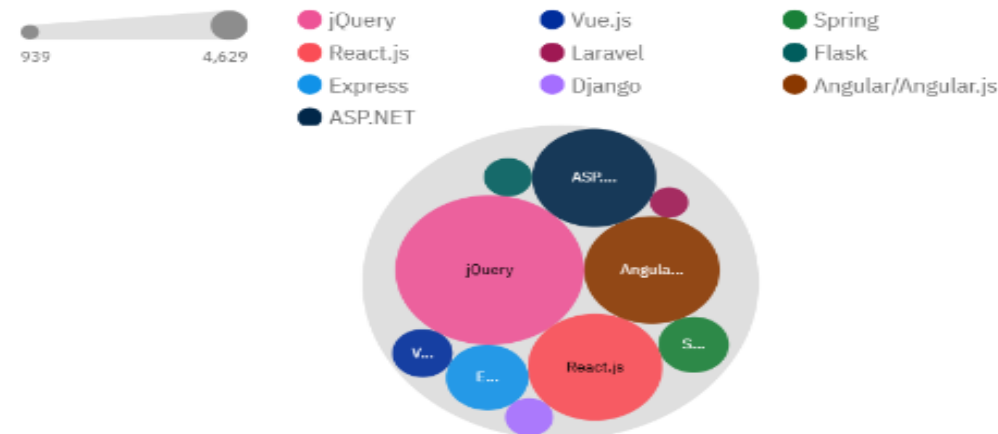
Top 10 Database Worked With



Platform Worked With



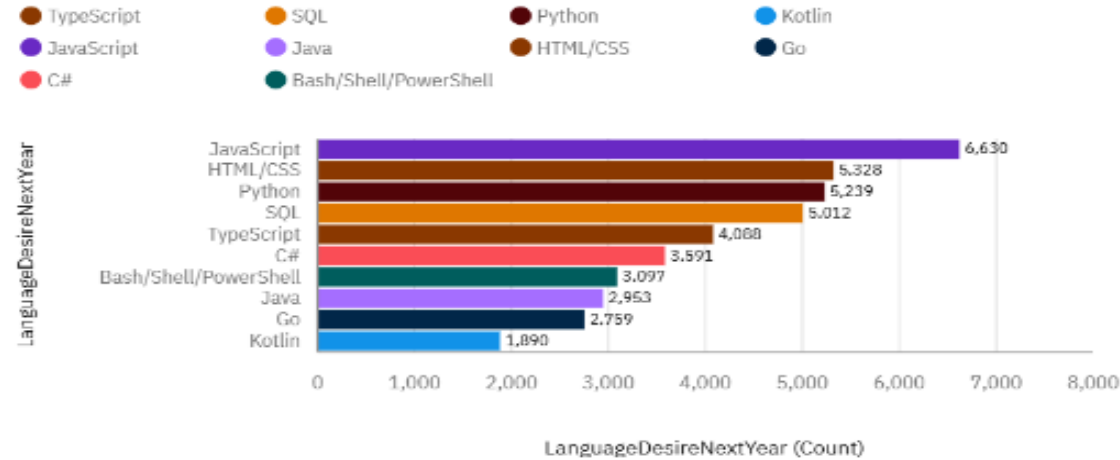
Top 10 Web Frame Worked With



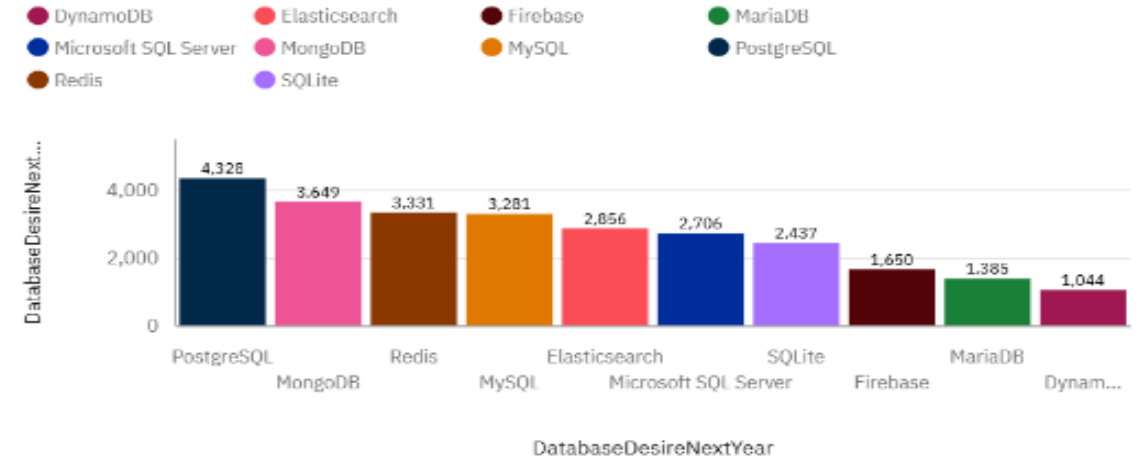
DASHBOARD TAB 2

Future Technology Trend

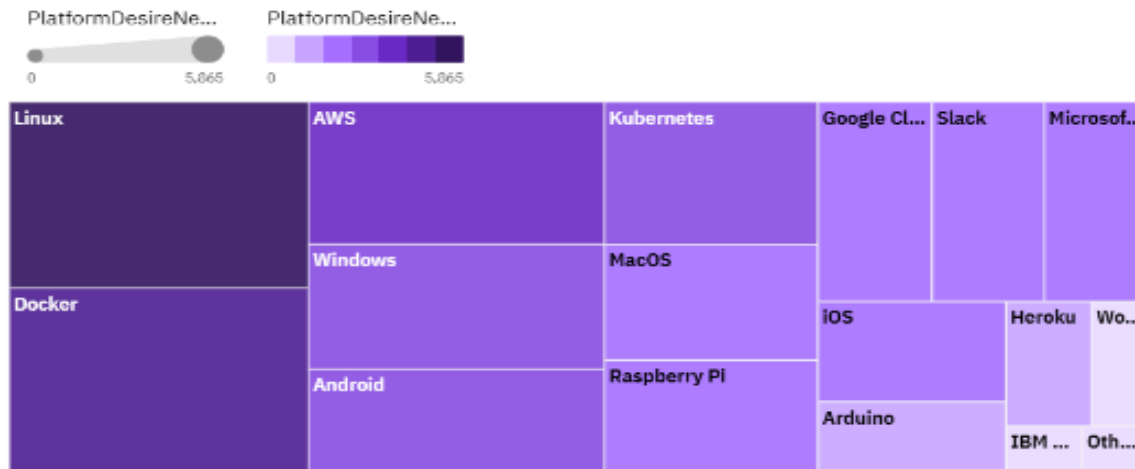
Top 10 Language Desire Next Year



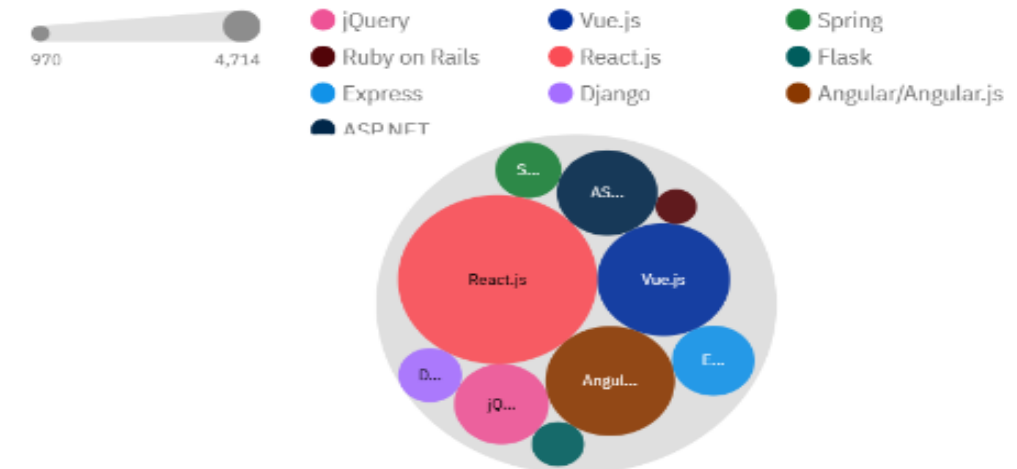
Top 10 Database Desire Next Year



Platform Desire Next Year



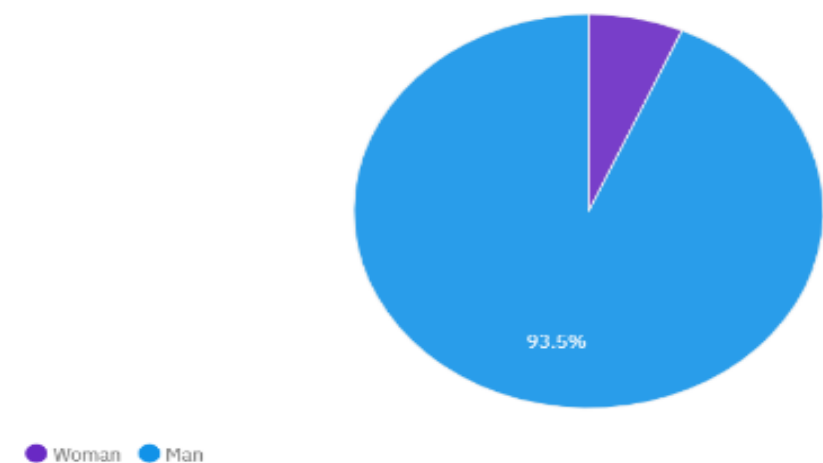
Top 10 Web Frame Desire Next Year



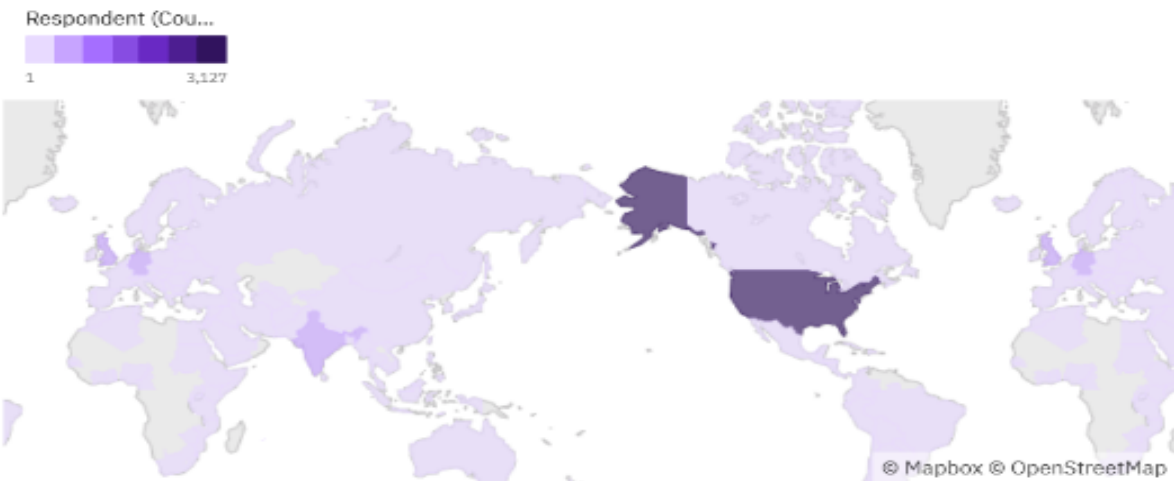
DASHBOARD TAB 3

Demographics

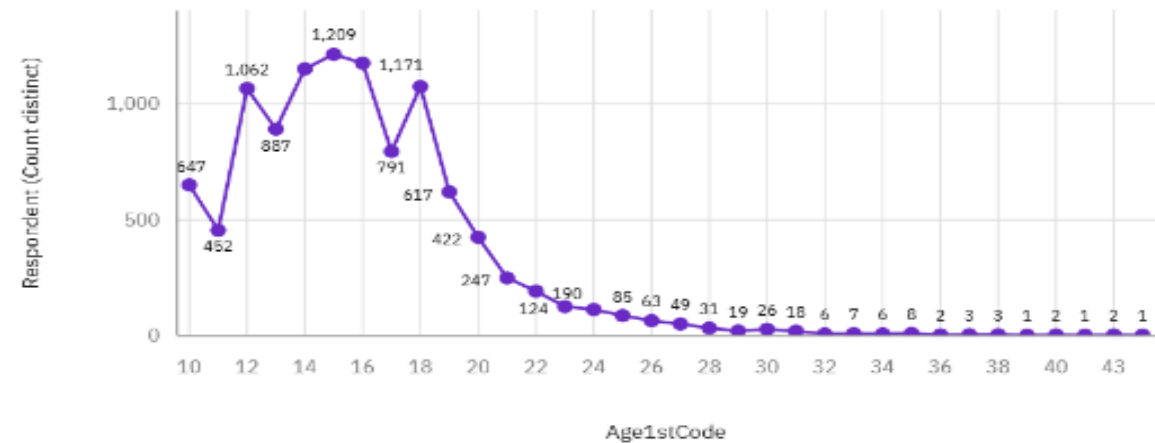
Respondent classified by Gender



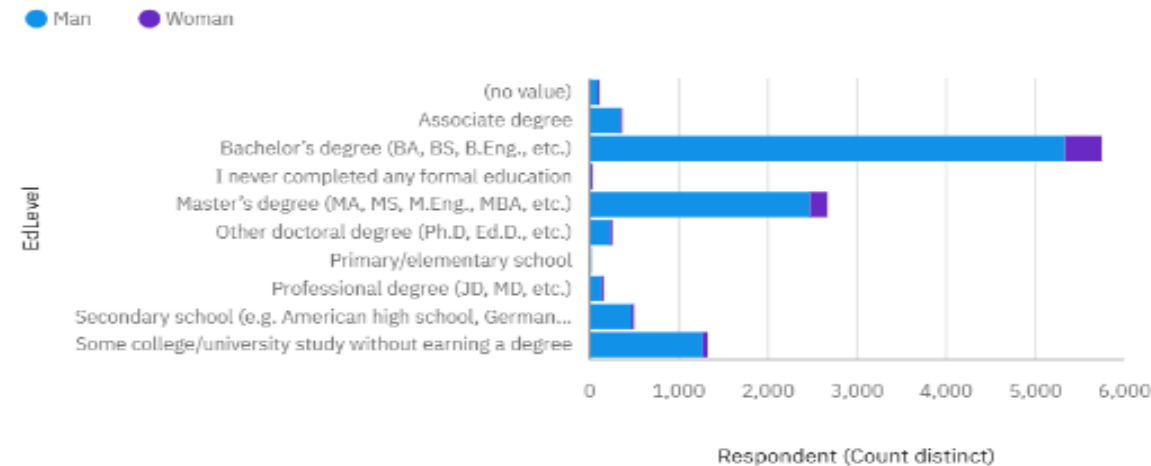
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Formal Education Level





Insights from Dashboard

• Current Technology Usage:

- **Languages:** JavaScript, HTML/CSS, and SQL are the top three, reflecting their dominance in web and backend development.
- **Databases:** MySQL, Microsoft SQL Server, and PostgreSQL are most used, showing a mix of open-source and enterprise solutions.
- **Platforms:** AWS, Docker, and Google Cloud lead, highlighting the importance of cloud and containerization.
- **Web Frameworks:** React.js, jQuery, and Angular remain strong, underlining the demand for modern front-end frameworks.

• Future Technology Trends:

- **Languages:** Python and TypeScript show rising demand, with JavaScript staying strong, pointing to both versatility and scalability.
- **Databases:** PostgreSQL, MongoDB, and Redis are most desired, suggesting a shift toward scalable, high-performance, and flexible databases.
- **Platforms:** Docker, Linux, and Kubernetes dominate, reinforcing the trend toward containerization, open-source platforms, and DevOps.
- **Web Frameworks:** React.js, Vue.js, and Django emerge as key, signaling future growth in dynamic and scalable web development.

Demographics:

- **Gender:** The majority of respondents are male (93.5%), showing a gender imbalance in tech.
- **Age:** Most developers are between 20–34 years old, indicating a relatively young workforce.
- **Education:** The majority hold a bachelor's degree, with notable representation at the master's level, showing the value placed on formal higher education.
- **Country Distribution:** High respondent counts from the US, India, and European countries, reflecting global developer participation but also concentration in tech hubs.



OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript, Python, and SQL are consistently among the most popular and desired programming languages.
- PostgreSQL and MongoDB are gaining popularity, while MySQL and SQL Server remain widely used.
- Respondents are heavily concentrated in the US, India, and Europe, reflecting global but uneven participation.

Implications

- Organizations should prioritize Python, JavaScript, and SQL skills when hiring or upskilling to remain competitive.
- Database strategies should include PostgreSQL and MongoDB adoption to align with future developer preferences.
- Education & training providers should tailor programs toward in-demand skills and cloud-native technologies.



CONCLUSION



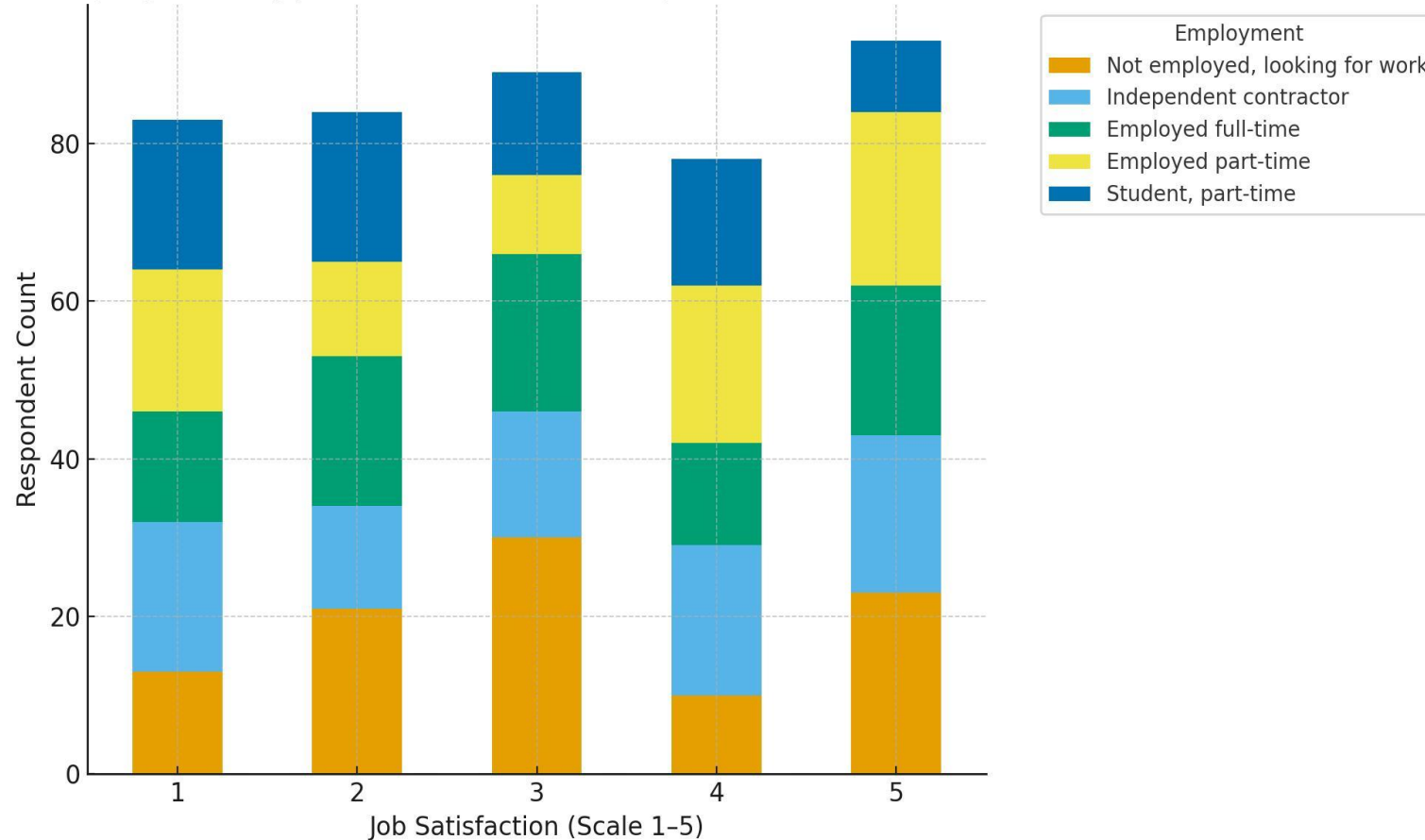
- Programming and database trends show a shift toward open-source and AI-friendly tools.
- Future hiring will prioritize cloud, AI, and modern development skills.
- Continuous learning is essential to remain competitive in the tech workforce.



APPENDIX



Employment Type Distribution Across Job Satisfaction Levels



Finding:

- Full-time dominates but with mixed satisfaction.
- Freelancers/part-timers report higher satisfaction, linked to flexibility.

Implications:

- Companies should adopt flexible work models.
- Ignoring autonomy risks talent loss to gig economy.
- Focus on work-life balance, not just pay.