PASULA VAMSHI KRISHNA REDDY

Analyzing Developer Technology Trends

Vamshi Krishna Reddy Pasula

June 29, 2025

Outline

Executive Summary

- - JavaScript, HTML/CSS, and SQL lead current usage.

- - Python and TypeScript expected to grow next year.

- - PostgreSQL is most desired and widely used database.

- - Linux and Docker dominate platform usage.

- - React.js leads in web framework preference.

Introduction

- - Purpose: Analyze Stack Overflow Developer Survey to uncover technology trends.

- - Target Audience: Aspiring data analysts, educators, and tech industry recruiters.

- - Value: Helps guide technology learning paths and recruitment strategies.

Methodology

- - Dataset: Stack Overflow Developer Survey (CSV format).

- - Data Cleaning: Removed nulls, split multiple selections into lists.

- - Visualization Tools: IBM Cognos Analytics and Python (for initial processing).

Programming Language Trends

- - Current Usage: JavaScript, HTML/CSS, SQL, Python, Bash/Shell are most used.

- - Future Trend: JavaScript and Python continue to dominate, with TypeScript growing.

- - Implication: Demand for web dev and scripting remains high.
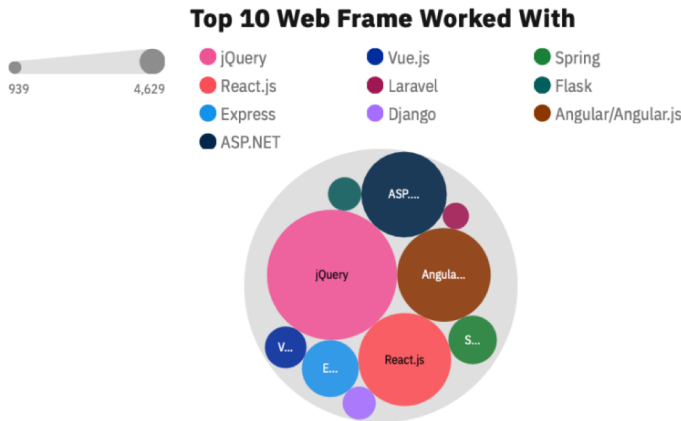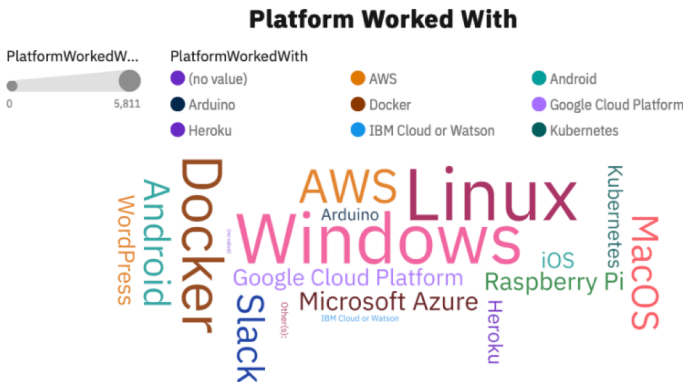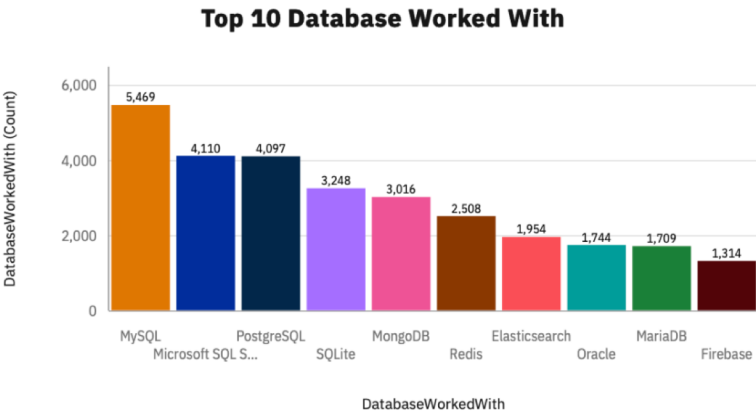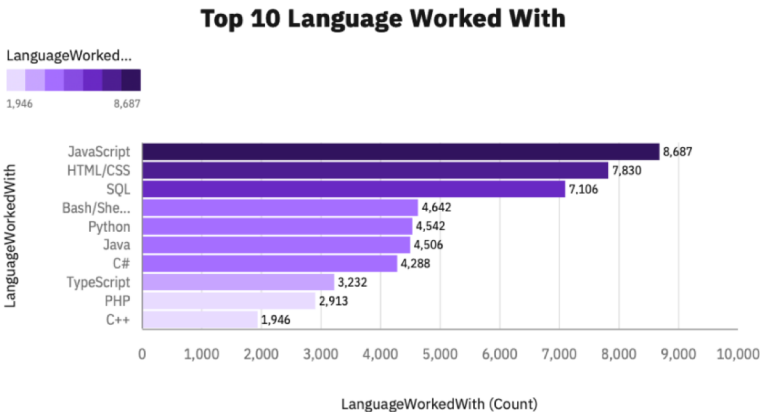
Database Trends

- - Current Usage: MySQL, MS SQL Server, PostgreSQL are top databases.

- - Future Trend: PostgreSQL has highest desire to work with.

- - Implication: Open-source and cloud-compatible databases are on rise.

Job Postings Analysis

- - Placeholder: Scatter plot from `job-postings.xlsx` (not available).
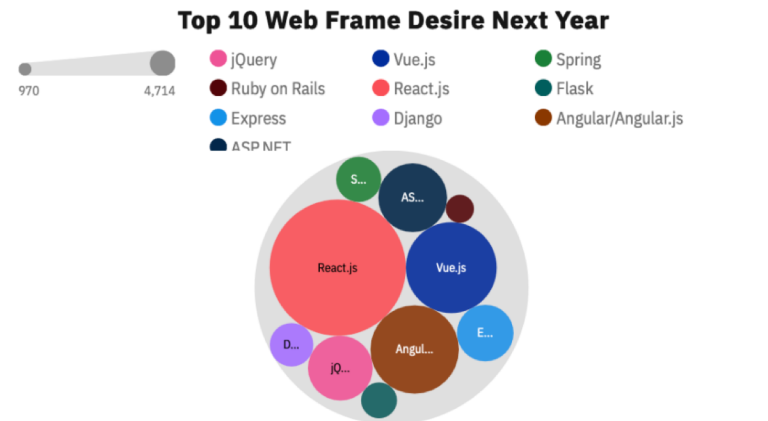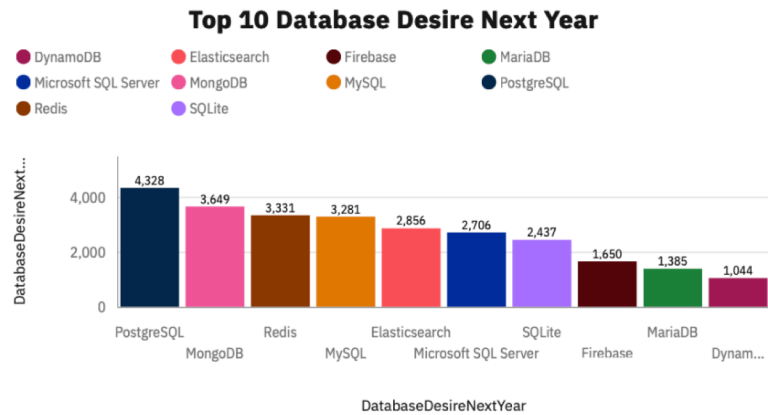- - Would include job titles vs. number of postings.

Dashboard: Current Technology Usage

Current Technology Usage

Top 10 Language Worked With

LanguageWorked...
1,946 — 8,687

Language	Count
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/She...	4,642
Python	4,542
Java	4,506
C#	4,288
TypeScript	3,232
PHP	2,913
C++	1,946

LanguageWorkedWith (Count)

Top 10 Database Worked With

DatabaseWorkedWith (Count)

Database	Count
MySQL	5,469
Microsoft SQL S...	4,110
PostgreSQL	4,097
SQLite	3,248
MongoDB	3,016
Redis	2,508
Elasticsearch	1,954
Oracle	1,744
MariaDB	1,709
Firebase	1,314

DatabaseWorkedWith

Platform Worked With

PlatformWorkedW...
0 — 5,811

PlatformWorkedWith
- (no value)
- AWS
- Android
- Arduino
- Docker
- Google Cloud Platform
- Heroku
- IBM Cloud or Watson
- Kubernetes

Top 10 Web Frame Worked With

939 — 4,629

- jQuery
- Vue.js
- Spring
- React.js
- Laravel
- Flask
- Express
- Django
- Angular/Angular.js
- ASP.NET

Dashboard: Future Technology Trends

Future Technology Trend

Top 10 Language Desire Next Year

Legend: TypeScript, SQL, Python, Kotlin, JavaScript, Java, HTML/CSS, Go, C#, Bash/Shell/PowerShell

- JavaScript — 6,630
- HTML/CSS — 5,328
- Python — 5,239
- SQL — 5,012
- TypeScript — 4,088
- C# — 3,591
- Bash/Shell/PowerShell — 3,097
- Java — 2,953
- Go — 2,759
- Kotlin — 1,890

LanguageDesireNextYear (Count)

Top 10 Database Desire Next Year

Legend: DynamoDB, Elasticsearch, Firebase, MariaDB, Microsoft SQL Server, MongoDB, MySQL, PostgreSQL, Redis, SQLite

- PostgreSQL — 4,328
- MongoDB — 3,649
- Redis — 3,331
- MySQL — 3,281
- Elasticsearch — 2,856
- Microsoft SQL Server — 2,706
- SQLite — 2,437
- Firebase — 1,650
- MariaDB — 1,385
- DynamoDB — 1,044

DatabaseDesireNextYear

Platform Desire Next Year

PlatformDesireNe... 0 — 5,865
PlatformDesireNe... 0 — 5,865

Linux, AWS, Kubernetes, Google Cl..., Slack, Microsof..., Docker, Windows, MacOS, iOS, Heroku, Wo..., Android, Raspberry Pi, Arduino, IBM ..., Oth...

Top 10 Web Frame Desire Next Year

970 — 4,714

Legend: jQuery, Vue.js, Spring, Ruby on Rails, React.js, Flask, Express, Django, Angular/Angular.js, ASP.NET

React.js, Vue.js, Angul..., E..., D..., jQ..., AS..., S...

Dashboard: Demographics
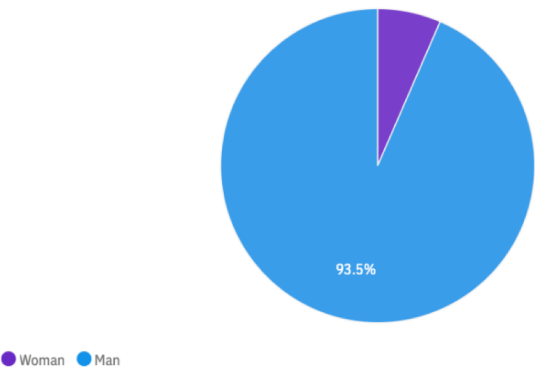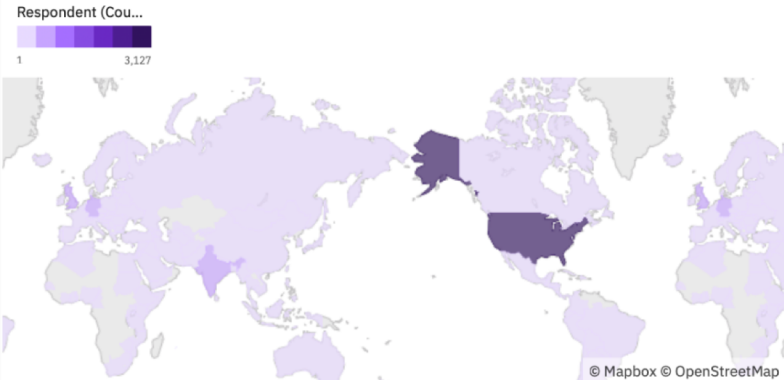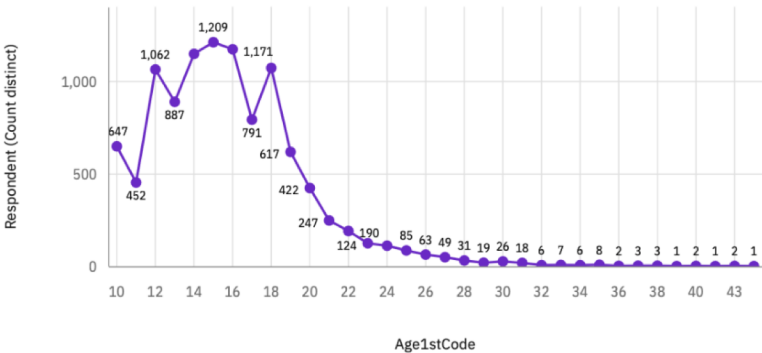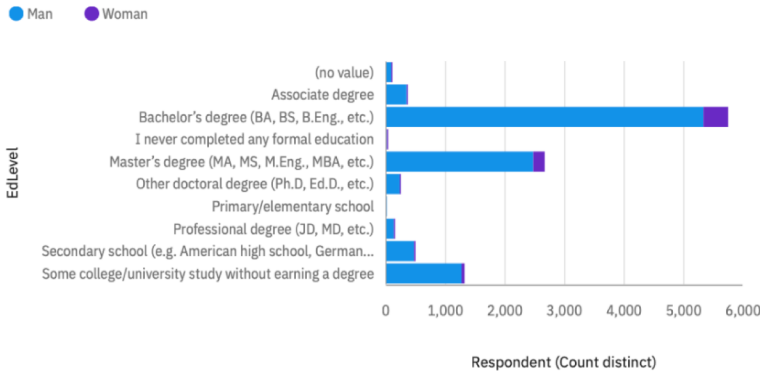
Dashboard Insights

- - Majority respondents are men aged 15–19.

- - Bachelor's degree is the most common education level.

- - JavaScript, HTML/CSS, and SQL lead usage and future interest.

- - PostgreSQL leads database preference for next year.

- - Linux is dominant for platform preferences.

Overall Findings & Implications

- - Web and cloud technologies continue to lead development landscape.

- - Developers seek open-source, flexible tools like PostgreSQL and Docker.

- - JavaScript ecosystem (React.js, Node, Vue) dominates frameworks.

- - Age and education indicate early entry into tech careers.

Conclusion

- - JavaScript, SQL, and PostgreSQL are crucial skills to learn.

- - Linux, Docker, and cloud platforms are key for future tech jobs.

- - Developers favor flexible, modern tools for web and data-driven development.

Innovative Contributions

- - Used IBM Cognos for dashboard creation and formatting.

- - Interactive visual storytelling using tree maps and bubble charts.

- - Integrated survey results with actionable insights.

Appendix

- - Additional visuals and raw data charts included in Cognos dashboard.
- - Data wrangling steps and code available upon request.