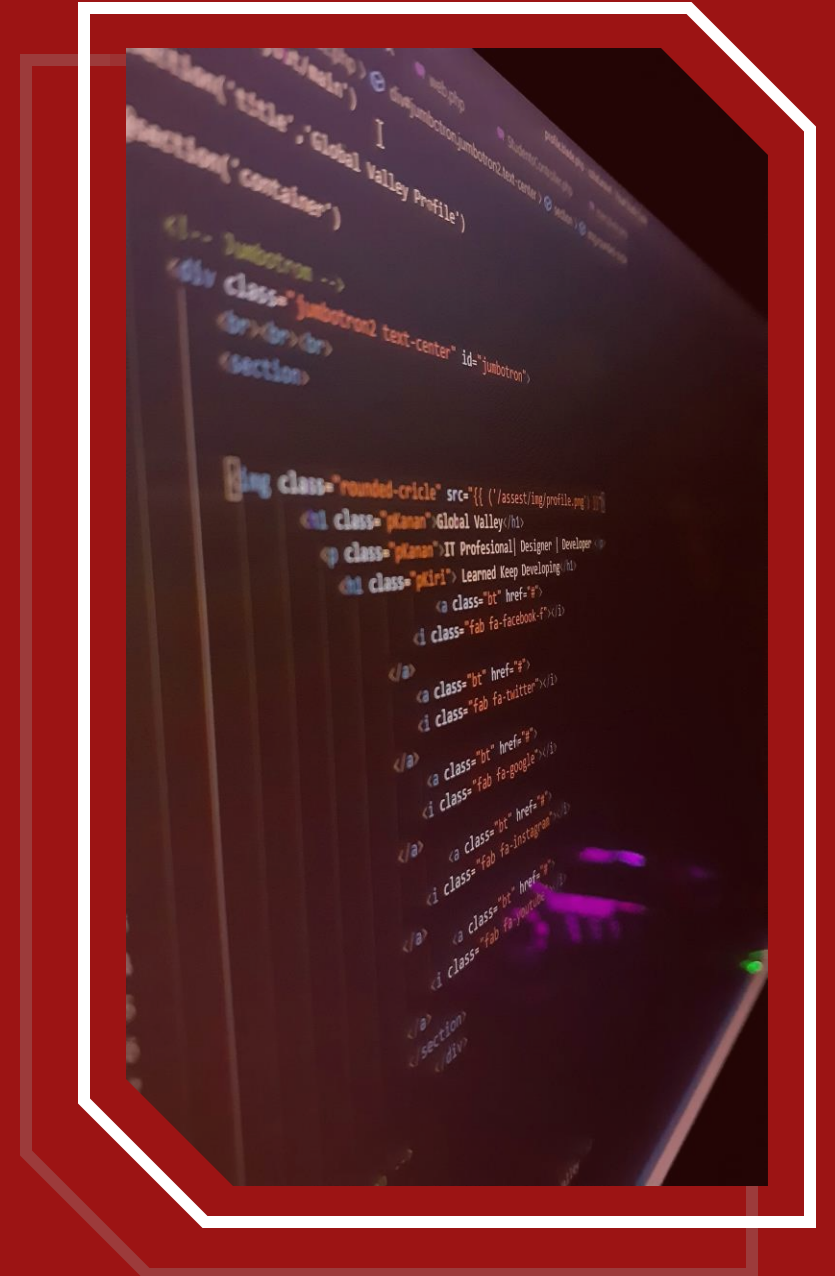




Stack Overflow Developer Survey 2024 Analysis

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Date: 19th September, 2025



OUTLINE

SL. No	TOPICS	PAGE	SL. No	TOPICS	PAGE
1.	Executive Summary	3	7.	Dashboards Overview	12
2.	Introduction	4	8.	Key Insights	16
3.	Methodology	5	9.	AI Use Cases	17
4.	Programming Languages Trends	7	10.	Professional Tools & Platforms	18
5.	Databases Trends	9	11.	Conclusion	20
6.	Job Postings Analysis	11	12.	Sources	21

EXECUTIVE SUMMARY

65,437

Coders from 185 countries around the world participated.

62.3%

Have used JavaScript in the past year.

- **JavaScript, SQL, and HTML/CSS** dominate current programming usage.
- **PostgreSQL** and **MySQL** are the leading databases today.
- Future demand emphasizes **TypeScript, Rust, Redis, and Supabase**.
- The shift toward modern **frameworks, cloud platforms, and AI-assisted** coding marks the next phase of innovation and opportunity in tech.
- Demographics show most respondents are **aged 25–34** with **bachelor's/master's degrees**, giving insight into workforce distribution.

INTRODUCTION

Purpose

To analyze current technology usage, forecast future trends, and highlight implications for learners and professionals.

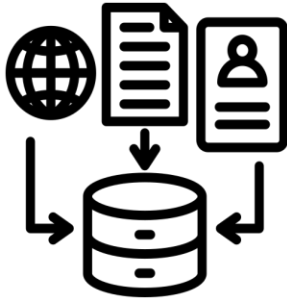
Target Audience

Aspiring developers, IT professionals, educators, and recruiters.

Value

Helps learners focus on in-demand skills, organizations to align hiring strategies, and educators to design relevant curricula.

METHODOLOGY



DATA COLLECTION & WRANGLING

- Modified GitHub Jobs API
- Programming language salaries from Web Scraping
- Modified Stack Overflow Survey Results

DATA ANALYSIS & VISUALIZATION

- Exploring the data through visualizations
- Doing analysis of the data to create meaningful visualizations
- Creating dashboards with visualizations of relevant data





”

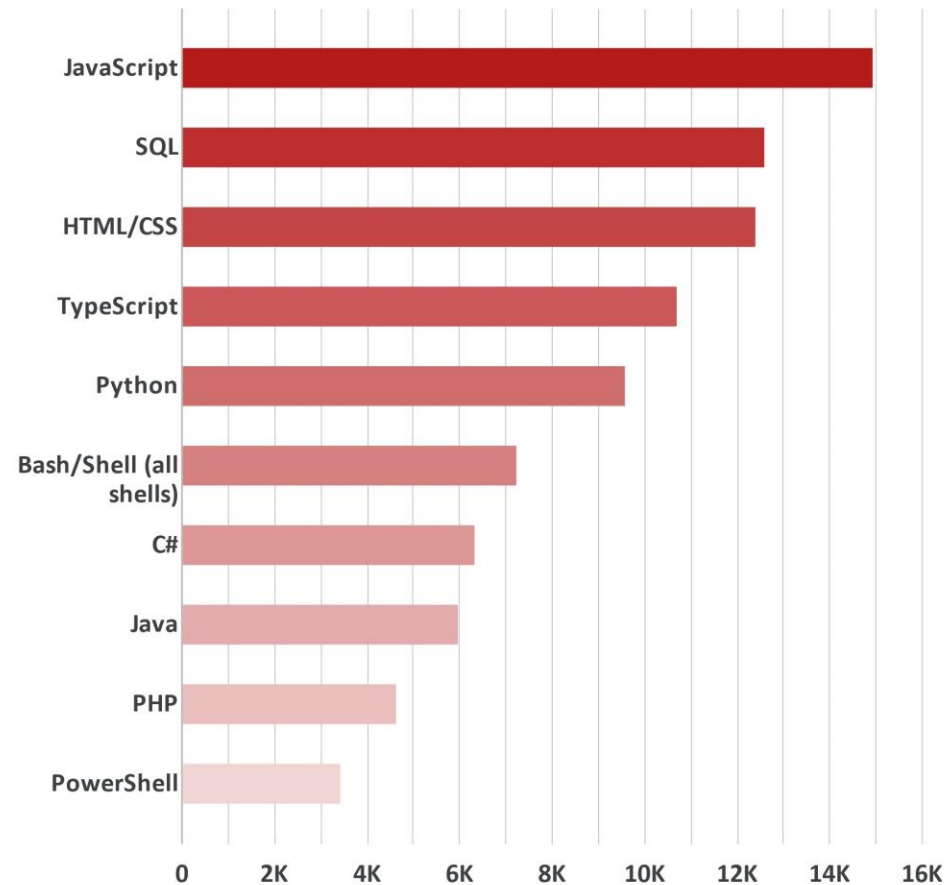
The goal is to turn data into information, and information into insight.

Carly Fiorina

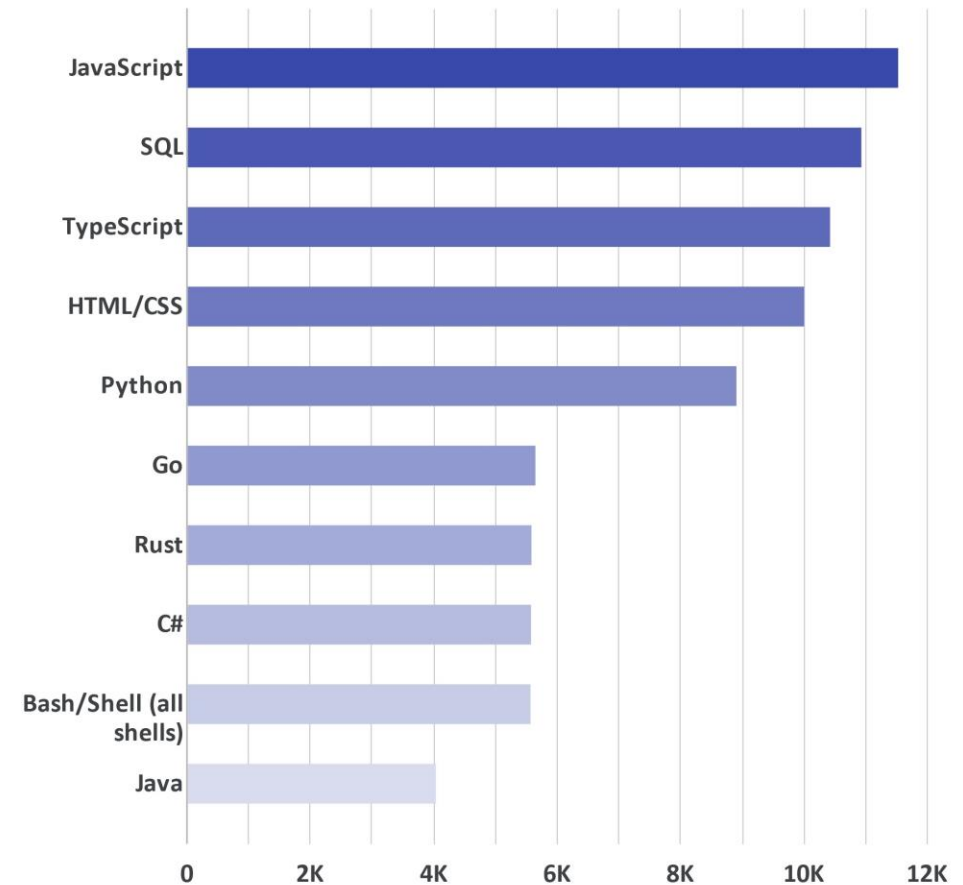
RESULT

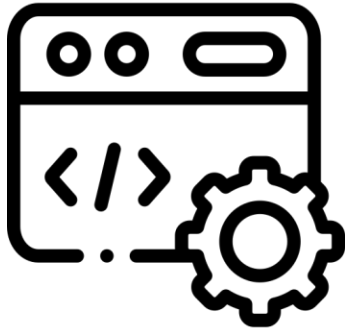
PROGRAMMING LANGUAGES TRENDS

Current Top 10



Future Top 10



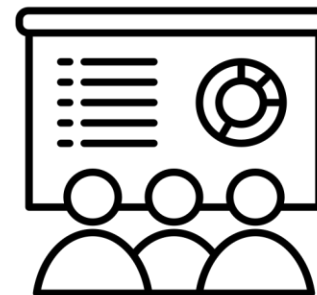


IMPLEMENTATIONS

- Focus on **JavaScript, SQL & TypeScript** for career stability.
- Upskill in **Go & Rust** for future opportunities.
- Maintain balanced web + data skills (**Python, SQL, HTML/CSS**).

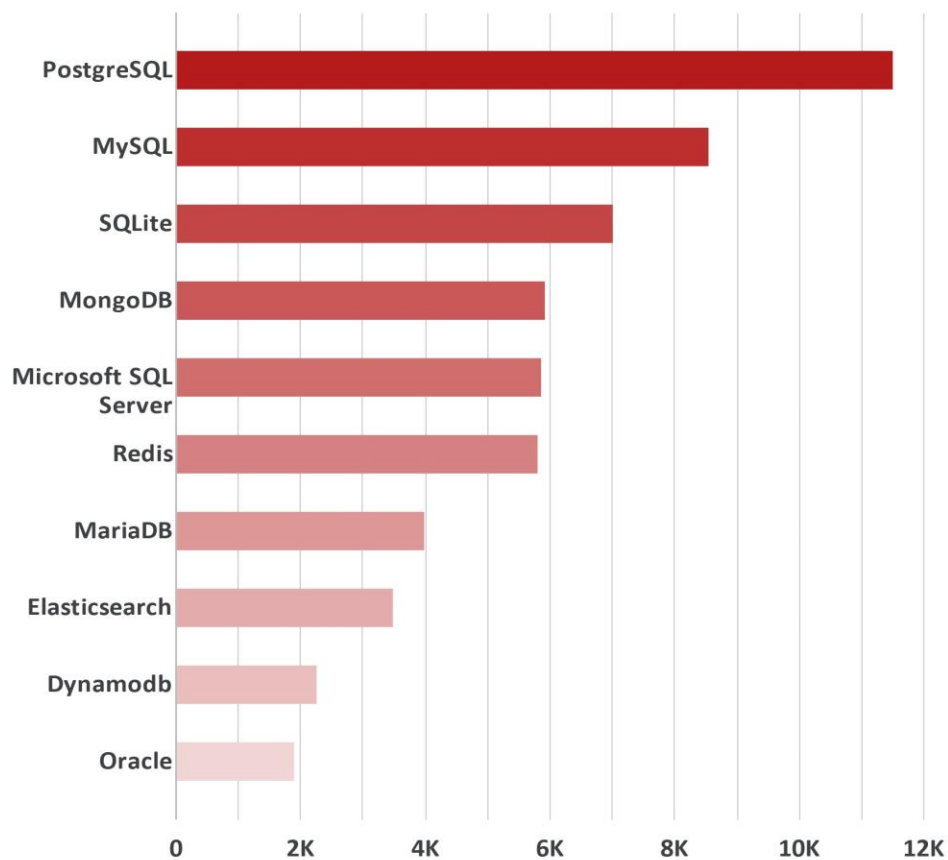
FINDINGS

- **JavaScript, SQL & TypeScript** dominate now and future.
- **Go & Rust** rising; **PHP, PowerShell & Java** declining.
- **Python, HTML/CSS & Shell** remain consistently strong.

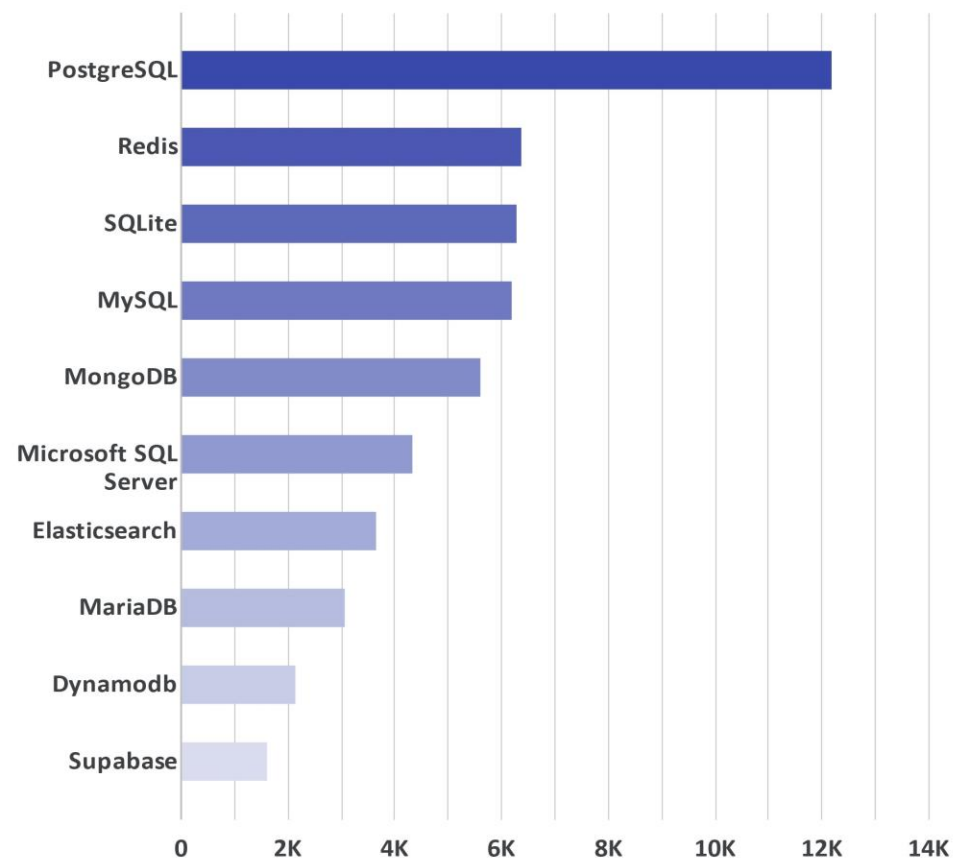


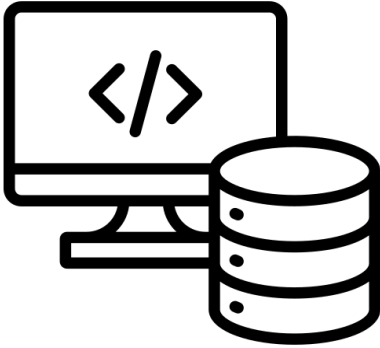
DATABASES TRENDS

Current Top 10



Future Top 10





IMPLEMENTATIONS

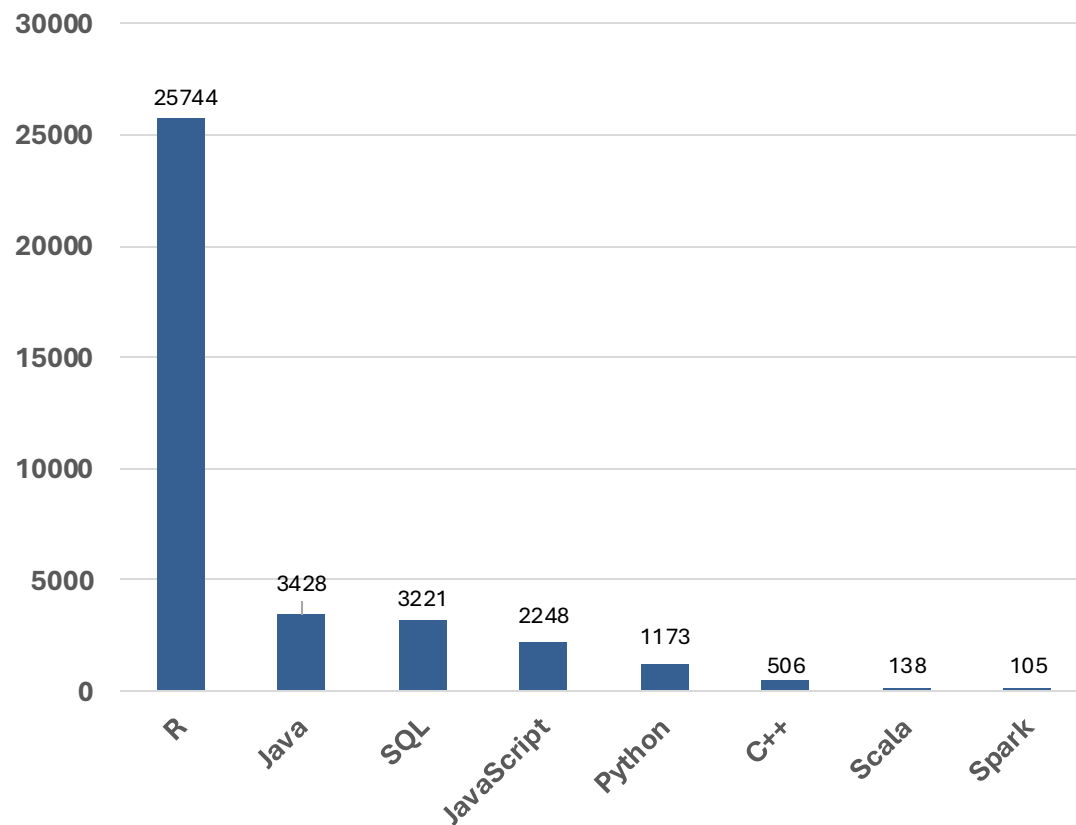
- Focus training and development on **PostgreSQL & Redis**.
- Gradually **deprioritize Oracle** and shift resources to modern DBs.
- Explore **Supabase adoption** for cloud-native, scalable solutions.

FINDINGS

- **PostgreSQL** dominates both now and in the future → strong, growing preference.
- **Redis** rises sharply in the future, overtaking MySQL and SQLite.
- **Supabase** appears as an emerging player, while **Oracle** declines.



NUMBERS OF JOBS POSTED



Summary

- **R leads overwhelmingly** with ~25,700 job postings, indicating very high industry demand.
- **Java, SQL, JavaScript, and Python** form the mid-demand group with 1K–3K postings.
- **C++, Scala, and Spark** show very limited postings, highlighting niche or declining demand.

DASHBOARD

Created Using Google Looker Studio



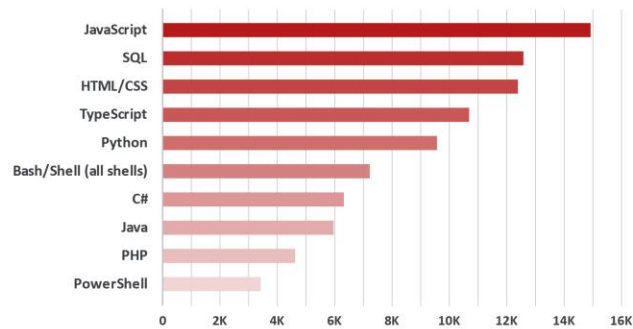
Link to Dashboard:

<https://lookerstudio.google.com/reporting/2c852b39-2d42-4c54-97fa-91f817839b3b>

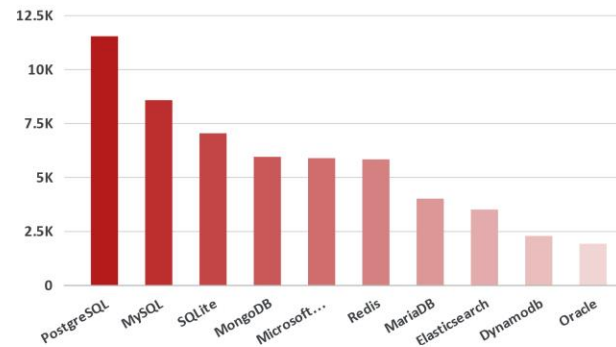
CURRENT TECHNOLOGY USAGE

Current Technology Usage

Top 10 Languages Used



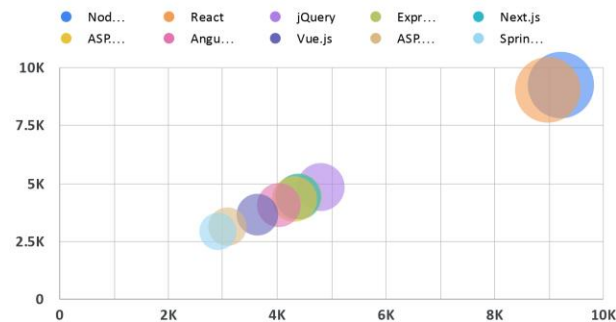
Top 10 Databases Used



Top 10 Platform Used



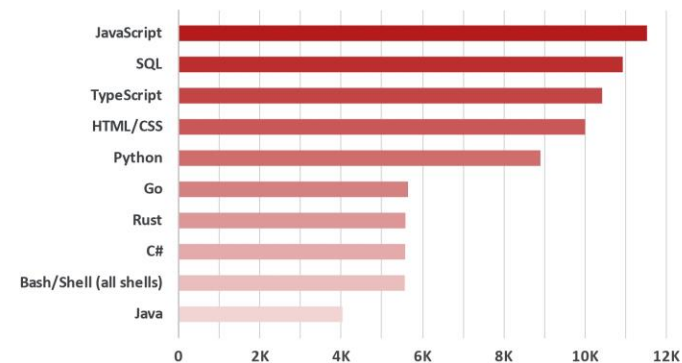
Top 10 Framework Used



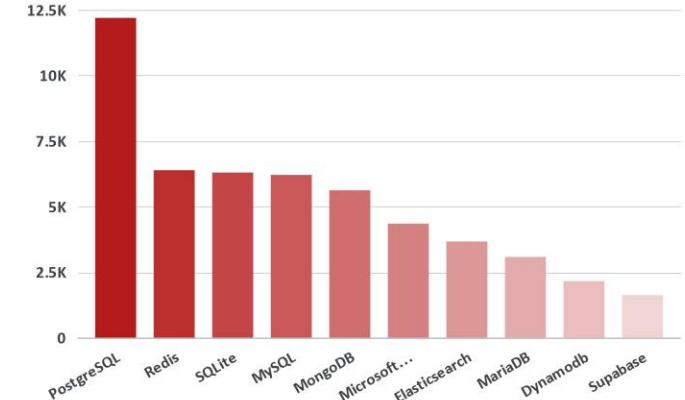
FUTURE TECHNOLOGY TRENDS

Future Technology Trends

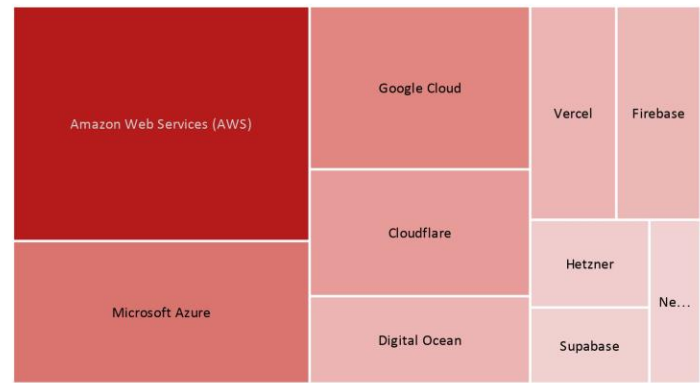
Top 10 Languages Desired Next Year



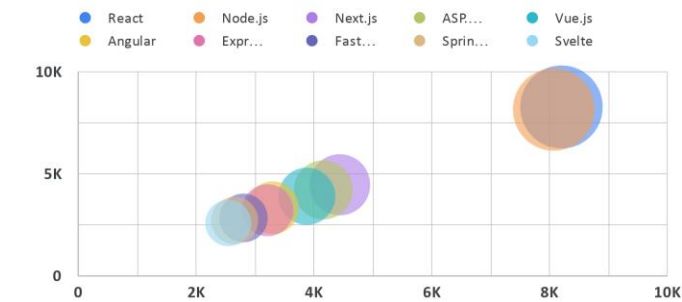
Top 10 Databases Desired Next Year



Top 10 Platforms Desired Next Year



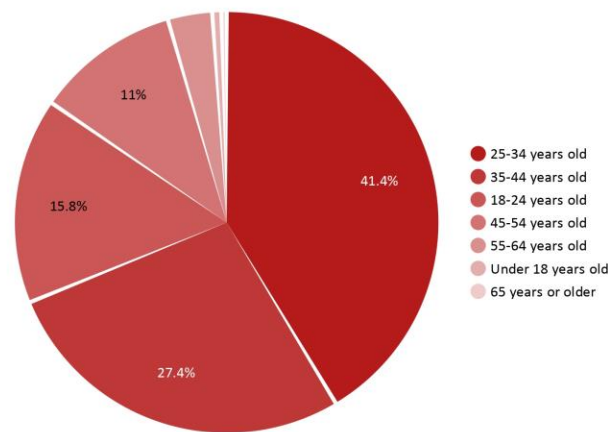
Top 10 Web Framework Desired Next Year



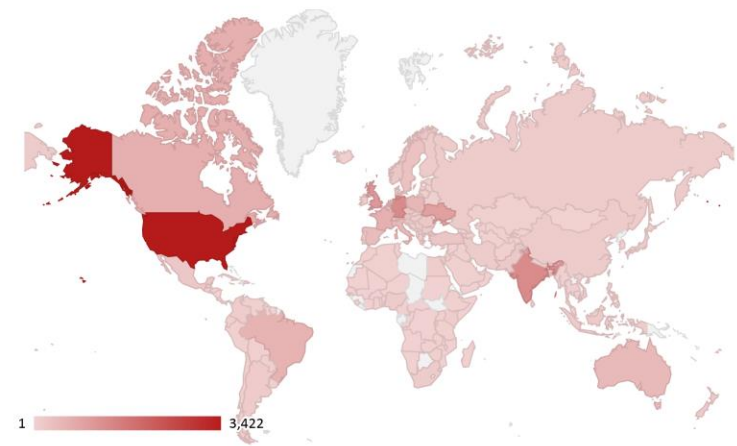
DEMOGRAPHICS

Demographics

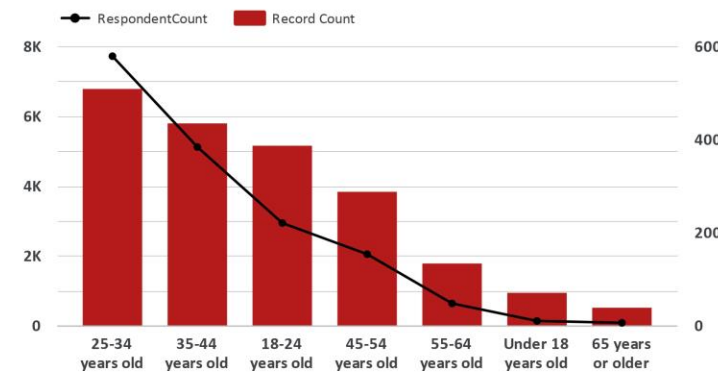
Respondents By Age



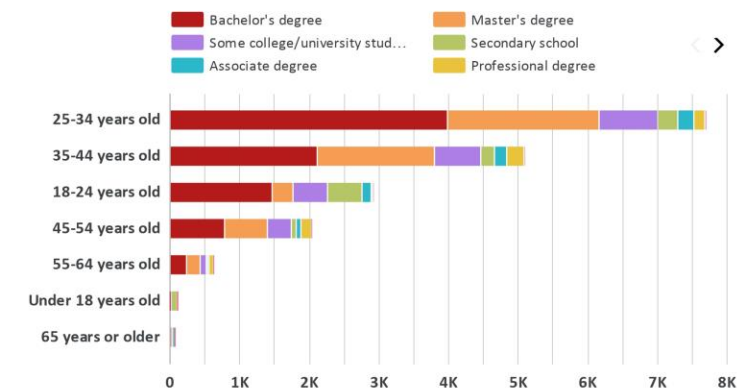
Respondent Count By Country



Respondent Distribution by Education Level



Respondent Count by Age, Classified by Education Level

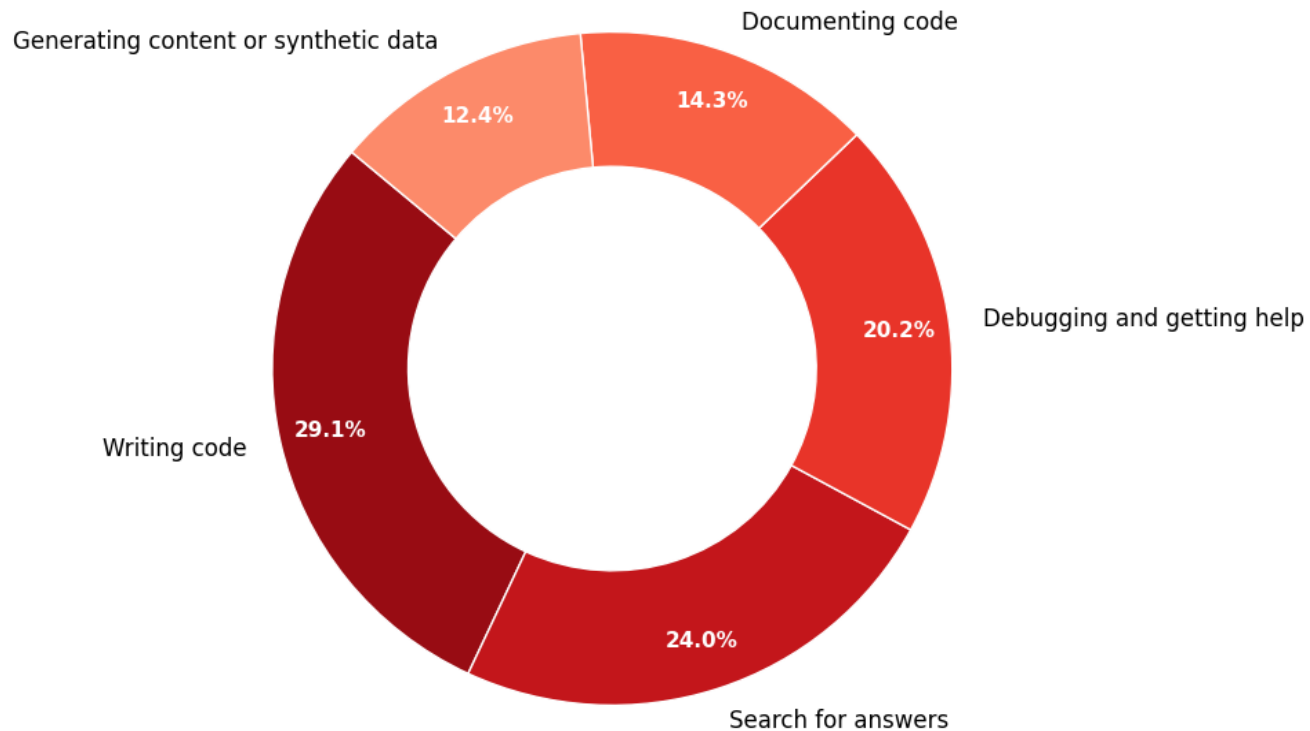


KEY INSIGHTS FROM DASHBOARDS

- The tech community is **dominated by young professionals (25–34 years)**, most with **Bachelor's and Master's degrees**, showing a well-educated developer base.
- **JavaScript, SQL, HTML/CSS, and Python** remain the most widely used languages, but **TypeScript, Go, and Rust** are emerging as strong future skills.
- **PostgreSQL has become the leading database** today and is also the **most desired for future use**, signaling long-term adoption.
- **React and Node.js** dominate the present, while **Next.js and cloud platforms (AWS, Azure, GCP)** are the clear future growth areas.
- The shift from traditional tools (like PHP, jQuery, Oracle) toward **modern frameworks, NoSQL/Redis, and serverless/cloud platforms** shows where innovation is headed.



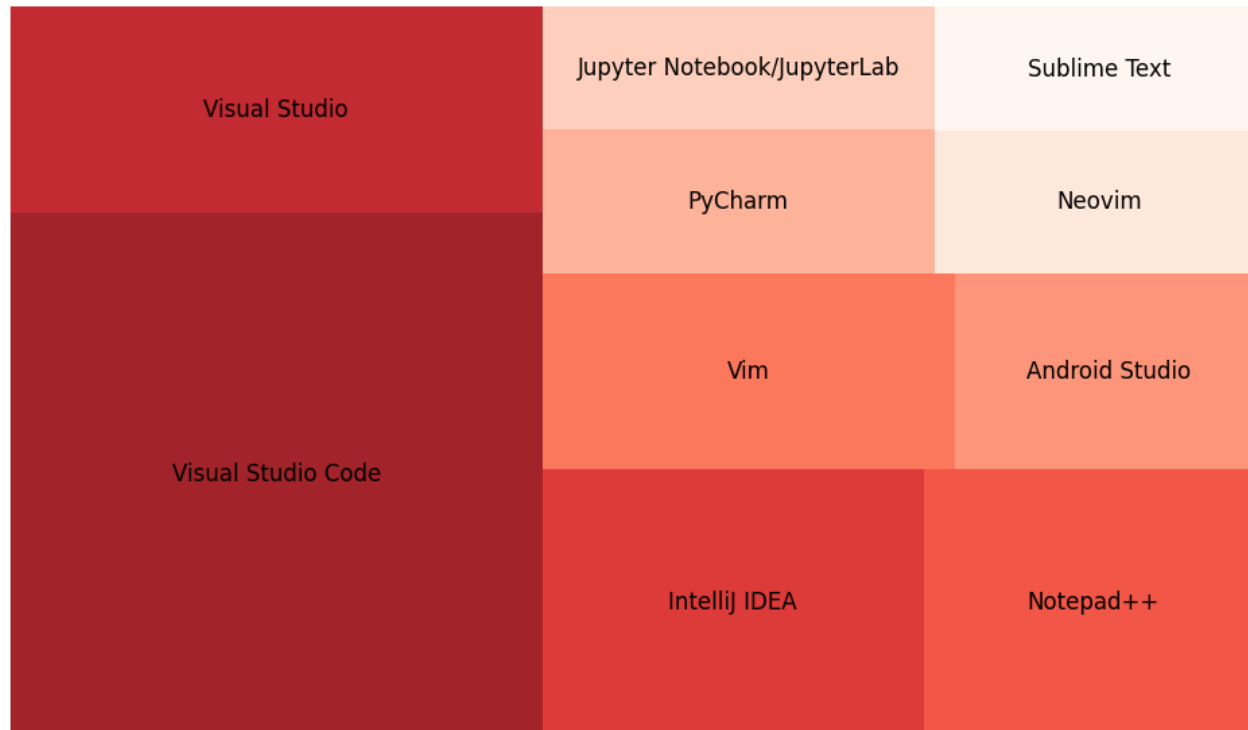
TOP AI USE CASES AMONG DEVELOPERS



Summary

- **Writing code (29.1%)** is the top AI use case among developers.
- **Search for answers (24%)** and **debugging help (20.2%)** show AI as a key support tool.
- **Content/data generation (12.4%)** and **code documentation (14.3%)** are emerging but less common uses.

TOP PROFESSIONAL CODE EDITORS & IDES IN USE

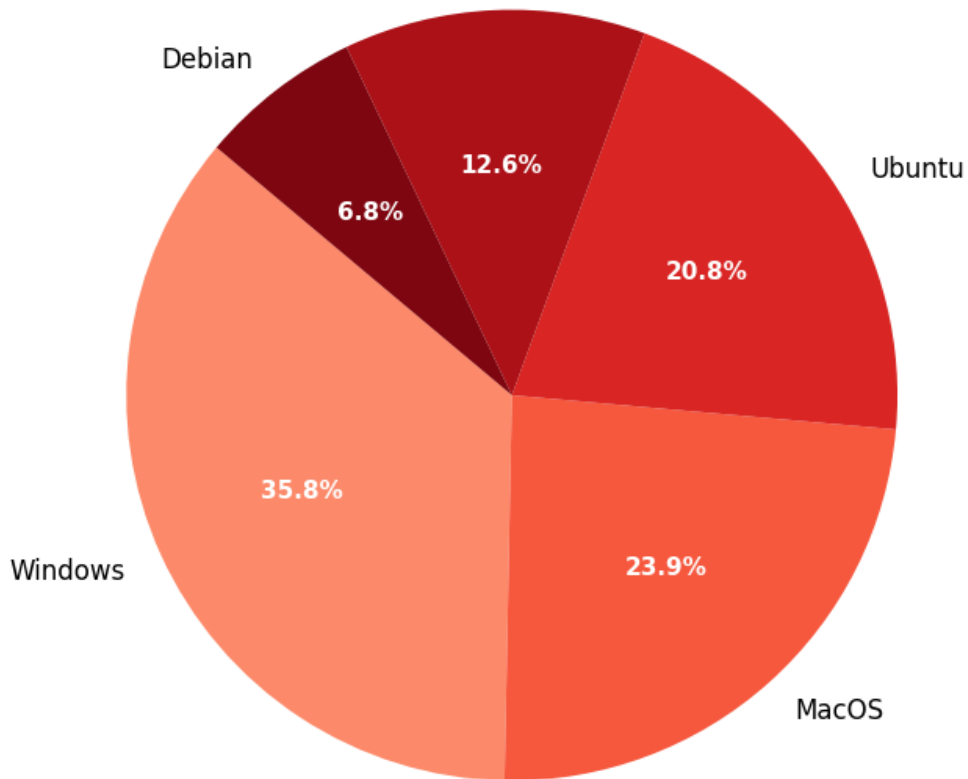


Summary

- **VS Code and Visual Studio** dominate due to flexibility and enterprise support.
- **PyCharm, IntelliJ, Android Studio** serve specialized dev needs.
- **Vim, Neovim, Notepad++, Jupyter** remain popular for speed and customization.

TOP PROFESSIONAL OPERATING SYSTEM USED

Windows Subsystem for Linux (WSL)



Summary

- **Windows dominates (35.8%)**, but Linux-based systems collectively exceed Windows usage (40.2%).
- **MacOS (23.9%)** holds a strong position, popular among professionals and developers.
- **WSL (12.6%) growth** shows rising demand for Linux tools within Windows environments.

KEY TAKEAWAYS

Technology Adoption

JavaScript, **SQL**, and **Python** dominate today, while **TypeScript**, **Rust**, and **Go** are the most promising future skills.

Database Shift

PostgreSQL and **Redis** emerge as long-term winners, while **Oracle** and older tools decline.

Career Outlook

Developers should focus on modern frameworks, cloud-native tools, and **AI-driven workflows** to stay competitive.

SOURCES

- **Stack Overflow Developer Survey 2024** – Global developer trends and technology usage data. Link: <https://www.kaggle.com/datasets/berkayalan/stack-overflow-annual-developer-survey-2024>
- **GitHub Jobs API (modified)** – Job postings and demand analysis.
- **Web Scraping (official job boards & salary reports)** – Programming language salary insights.
- **Google Looker Studio** – Dashboards and visualizations created for analysis.