

# Stack Overflow Developers Survey

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# OUTLINE

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- Executive Summary
- Introduction
- Methodology
- Results
  - Visualization – Charts
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
- Appendix



# EXECUTIVE SUMMARY

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- **JavaScript, Python, and SQL** dominate current usage, while Rust and Go are rising in interest.
- **PostgreSQL** and **AWS** lead in adoption and future demand.
- Developers are **optimistic** about AI, with most not viewing it as a job threat.
- Job satisfaction is **moderate**, with most ratings between 6–8.
- **Top Countries:** USA, India, UK, Germany (highest participation).
- **Age Distribution:** Majority (43.6%) are 25–34 years old, followed by 35–44 (27.5%).

# INTRODUCTION

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- **Role:**  
Hired as a Data Analyst at a leading global IT and business consulting.
- **Objective:**  
Support the organization in tracking rapidly evolving technology trends to maintain a competitive edge in the industry.
- **Key Responsibilities:**
  - Gather data from various sources including job listings, developer surveys (e.g., Stack Overflow), and online learning platforms.
  - Conduct in-depth analysis to uncover trends in:
    - High-demand programming languages
    - Frequently used database systems
  - Synthesize findings to identify the most relevant and emerging tech skills.
- **Outcome:**  
Delivered strategic insights to shape the firm's 2024 Technology Skills Report, enabling proactive talent and training strategies.



# METHODOLOGY

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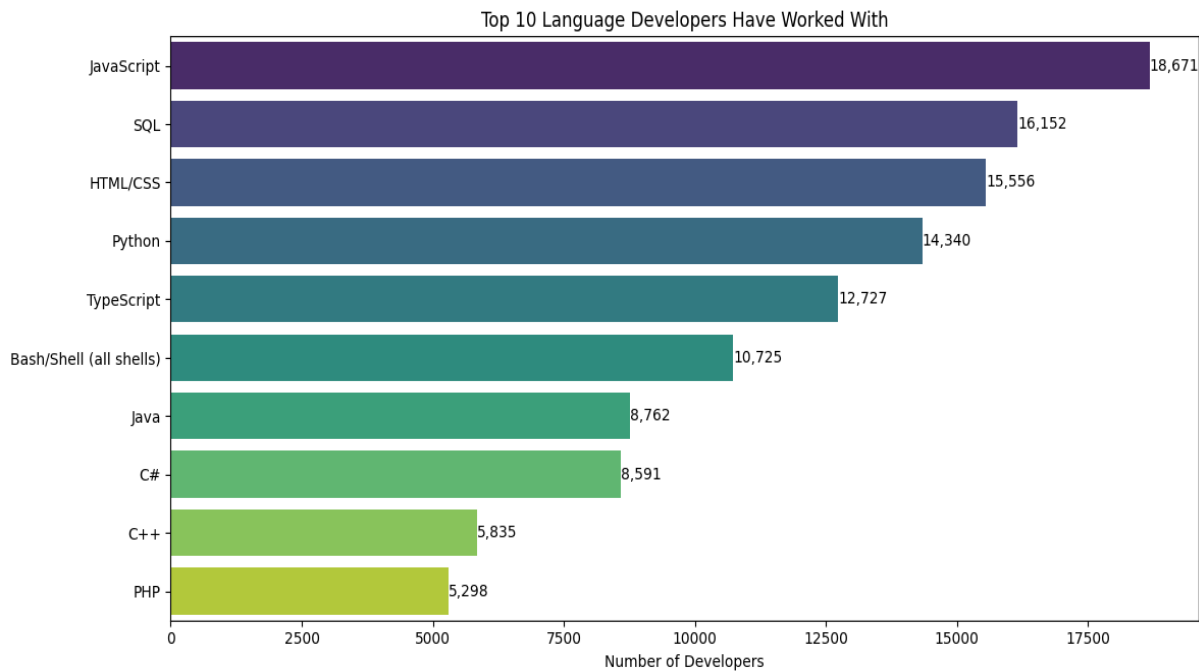


- **Data Collection** : Retrieved Stack Overflow developer survey data.
- **Data Wrangling** : Cleaned and transformed data by handling missing values, splitting multi-select fields.
- **Exploratory Data Analysis (EDA)** : Explored distributions, found correlations.
- **Visualization** : bar plot, pie chart.
- **Dashboard** : made dashboard containing tabs like current technology and future technology.

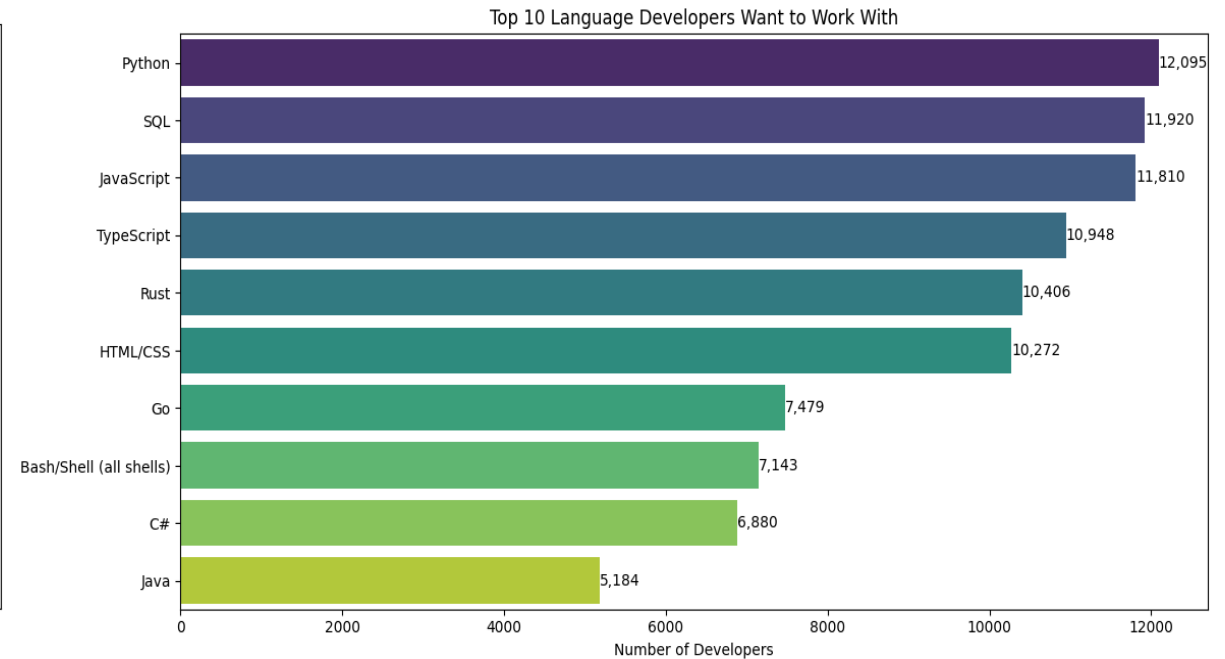


# PROGRAMMING LANGUAGE TRENDS

## Current Year



## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## **For Developers:**

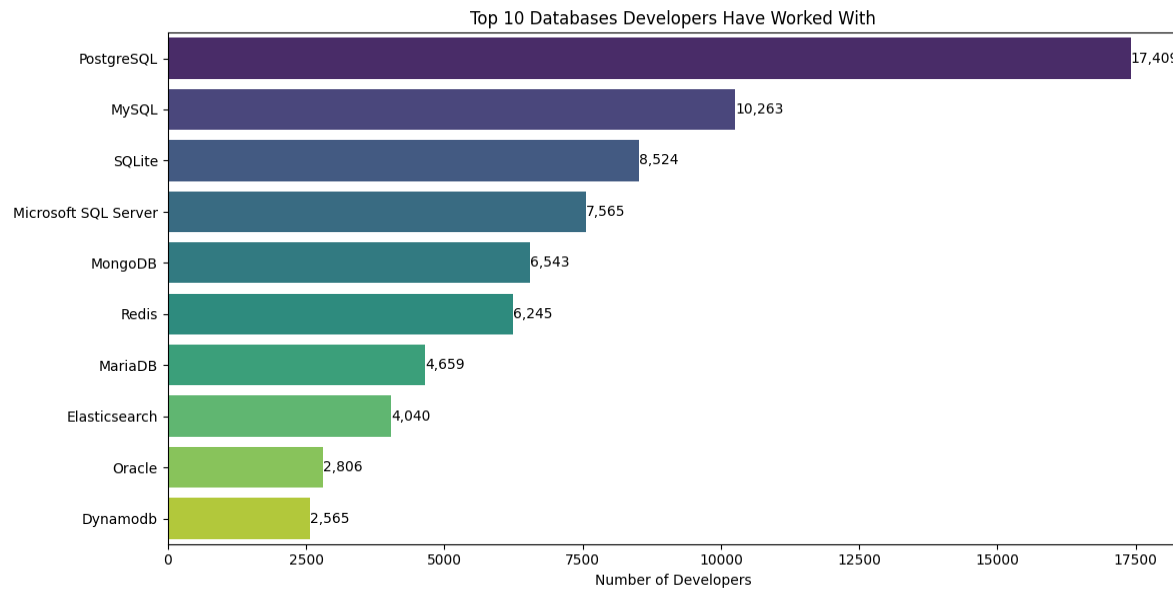
- Upskill in Python and Rust to align with future demand.
- Learn TypeScript for modern web development.
- SQL remains non-negotiable for data-heavy roles.

## **For Employers:**

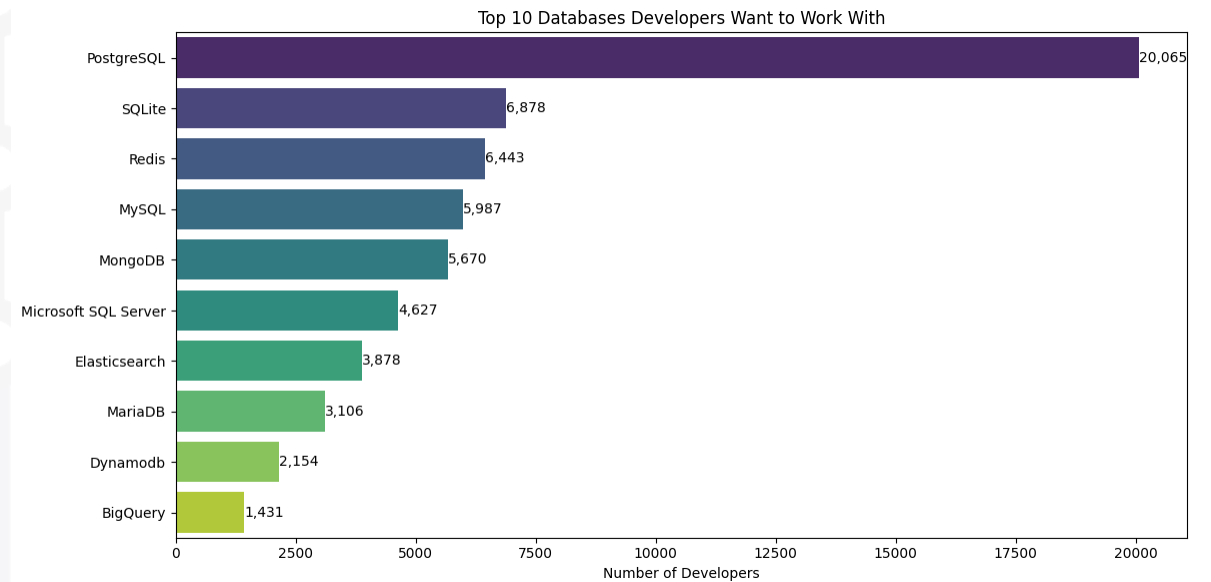
- Prioritize Python, JavaScript, and TypeScript in hiring/training.
- Monitor Rust adoption for high-performance systems roles.
- Legacy systems (Java/C#) may need gradual modernization.

# DATABASE TRENDS

## Current Year



## Next Year





# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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- **For Developers:**

- Master PostgreSQL – It's the #1 choice for relational and advanced use cases.
- Learn Redis – Essential for caching, real-time apps, and performance optimization.
- Explore NoSQL (MongoDB, DynamoDB) – Critical for flexible, scalable applications.

- **For Employers:**

- Prioritize PostgreSQL and Redis in tech stacks for scalability and performance.
- Consider NoSQL solutions for projects requiring flexible schemas (e.g., startups, IoT).
- Legacy systems (Oracle, MS SQL) may require migration strategies to modern alternatives.



# DASHBOARD

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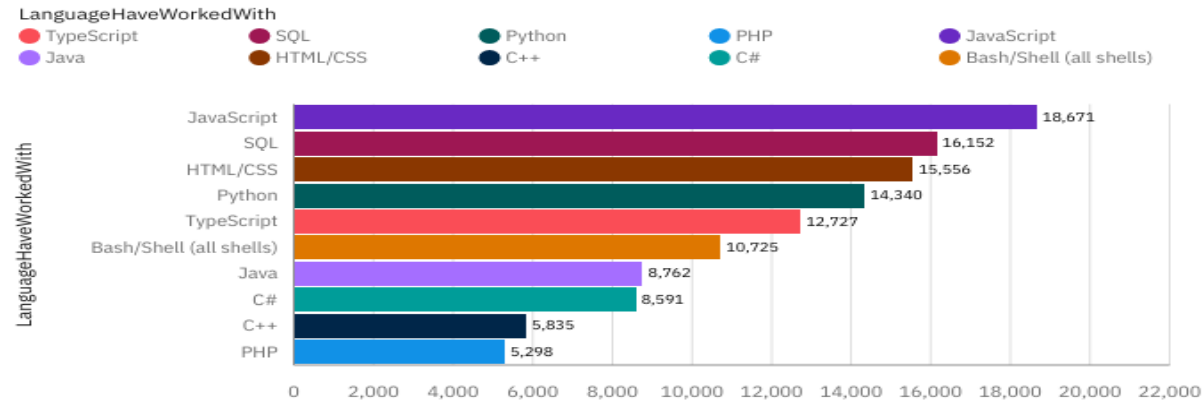
<Please present your dashboard in the following slides.>



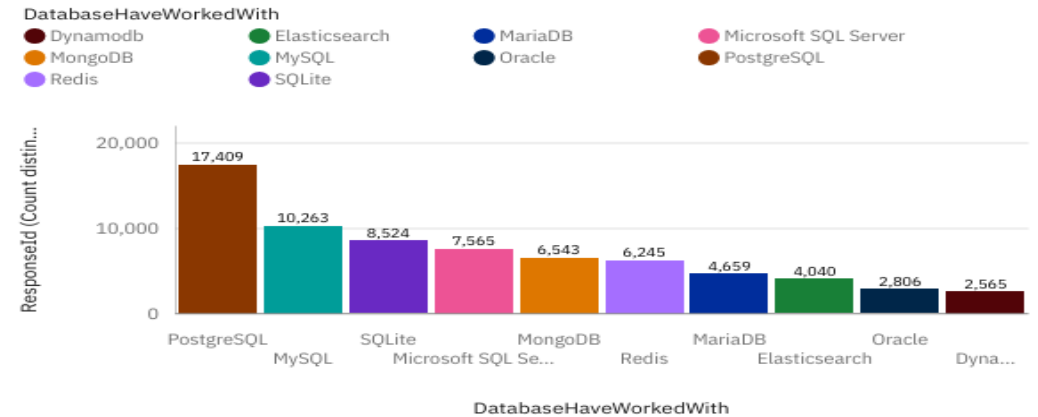
# DASHBOARD TAB 1

## Current Technology's Dashboard

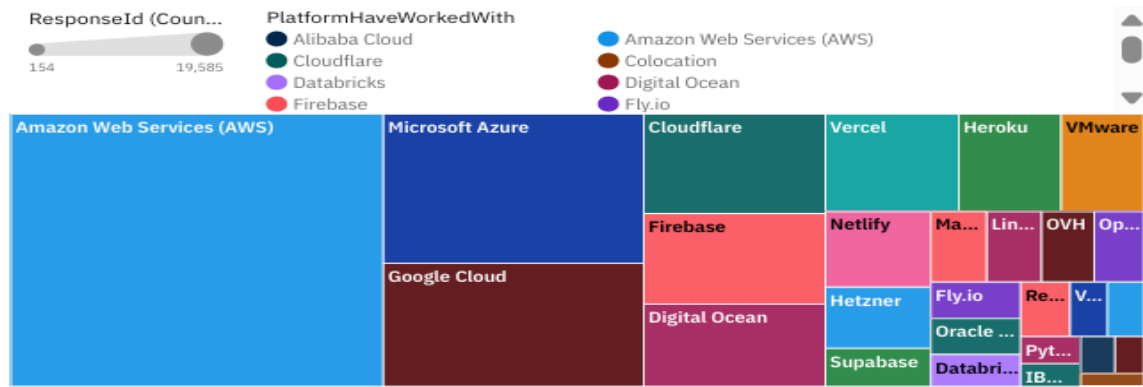
### Top 10 Languages Respondents have worked with



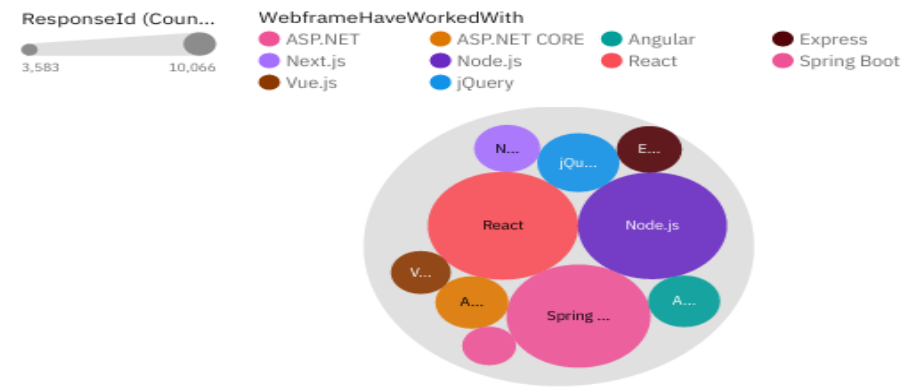
### Top 10 Databases Respondents have worked with



### Top 10 Platform Respondent have worked with



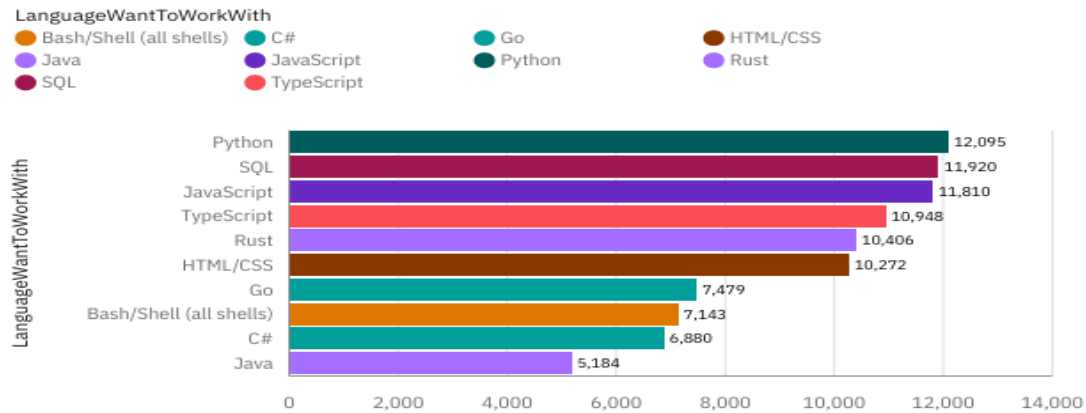
### Top 10 Webframes Respondent have worked with



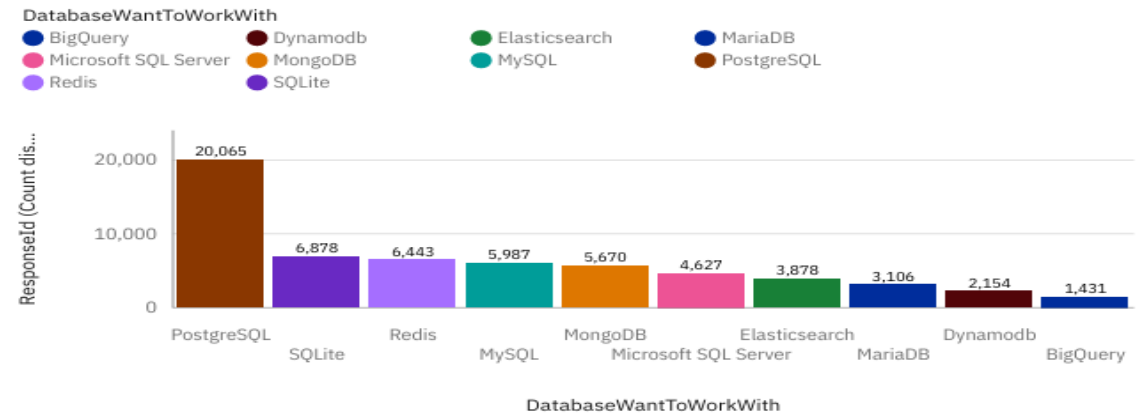
# DASHBOARD TAB 2

## Future Technology's Dashboard

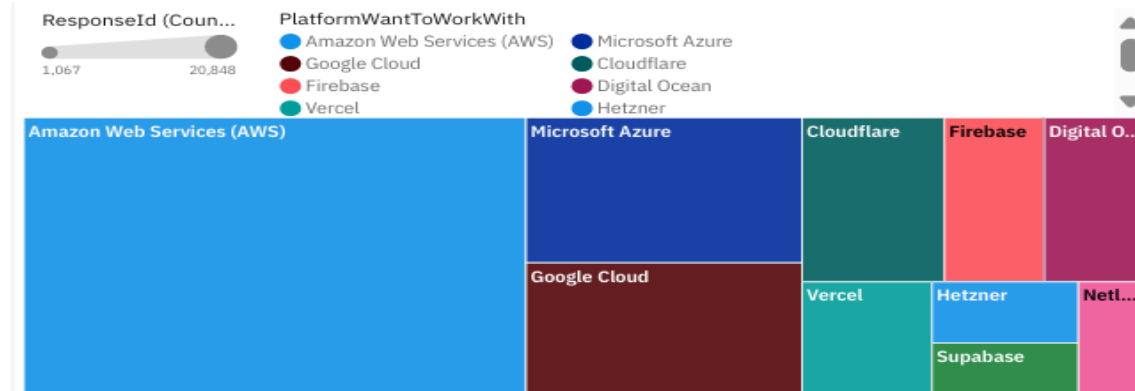
### Top 10 Languages Respondents want to work with



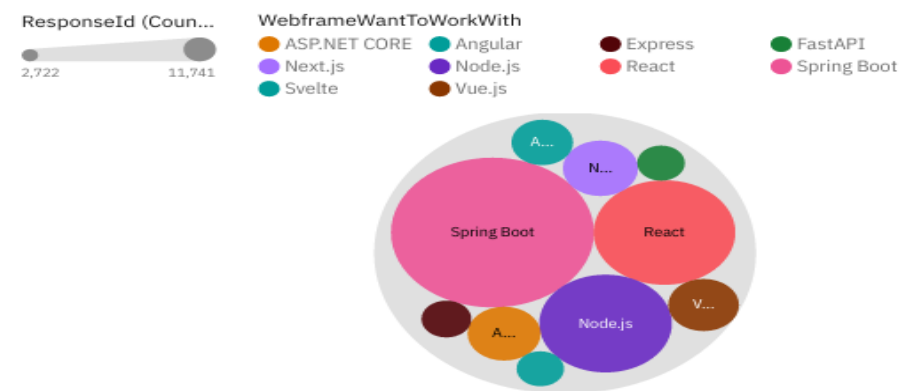
### Top 10 Databases Respondents want to work with



### Top 10 Platforms Respondents want to work with



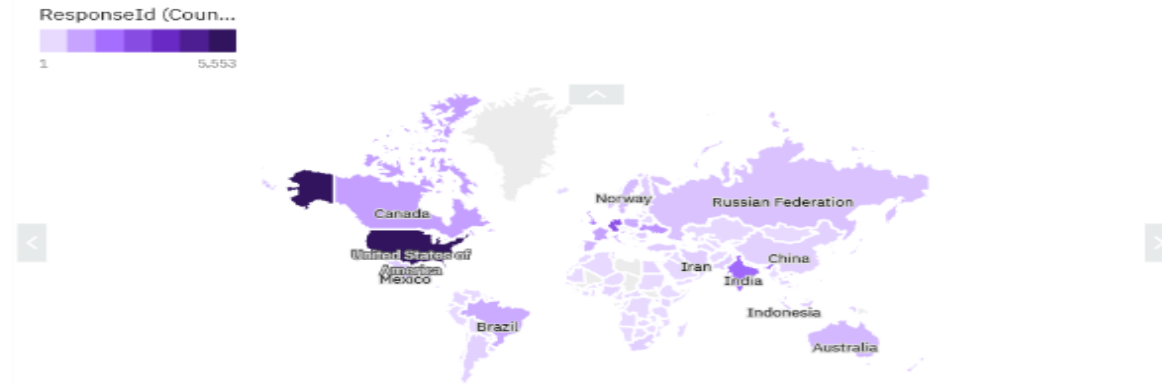
### Top 10 Webframes Respondents want to work with



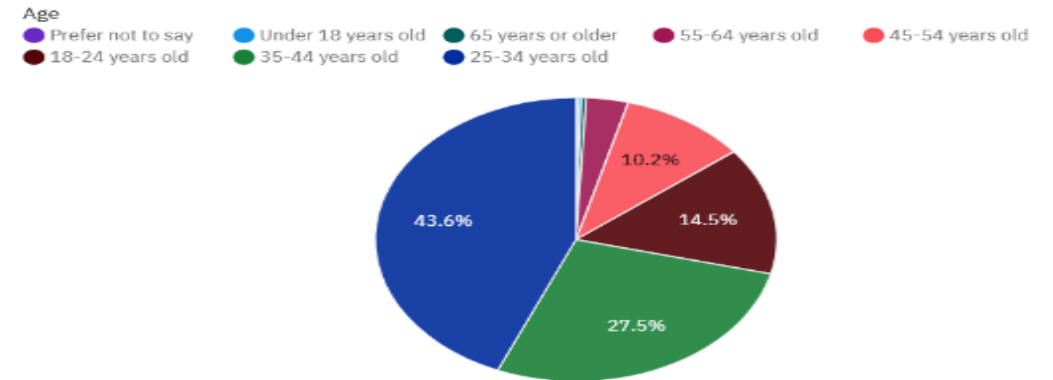
# DASHBOARD TAB 3

## Respondent's Dashboard

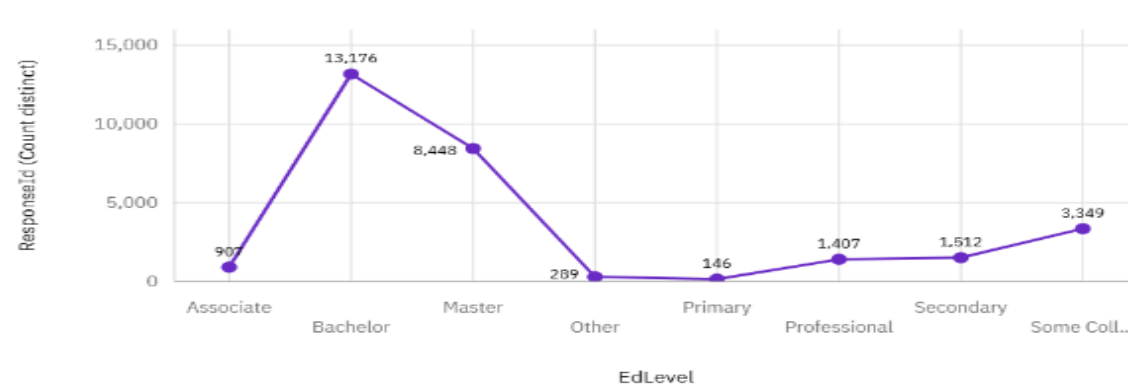
Respondents Count by Country



Number of Respondents by Age



Number of Respondents by Education Level



Top 10 Countries of Respondents



# OVERALL FINDINGS & IMPLICATIONS

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## 1. Technology Adoption Trends

### Current Leaders:

- Languages: JavaScript ,SQL ,HTML
- Databases: PostgreSQL , MySQL , SQLite
- Platforms: AWS , Microsoft Azure, Google Cloud
- Frameworks: React ,Node.js, Spring Boot

### Future Aspirations:

- Languages: Python , Rust , SQL.
- Databases: PostgreSQL , Redis , SQLite
- Platforms: AWS , Google Cloud, Firebase
- Frameworks: Spring Boot , React, Node.js

# OVERALL FINDINGS & IMPLICATIONS

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## 2. Developer Demographics

- Top Countries: USA, India, UK, Germany
- Age Group: 25–34 years (43.6%) dominate, followed by 35-44(27.5 %)
- Education: Bachelor's degree is most common

## 3. Job Market Insights

- Industries: Software Development ,FinTech , IT/Telecom
- Job Satisfaction: Peaks at 7–8/10 (6,379–7,617 respondents)
- AI Perception: 78.1% do not see AI as a job threat

# CONCLUSION

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## 1. Technology is Shifting Toward Open-Source & Cloud

- PostgreSQL dominates databases, while AWS leads platforms—signaling a strong preference for scalable, cost-effective solutions over legacy systems (Oracle, MS SQL).
- JavaScript, Python, and SQL remain foundational, but Rust, Go, and TypeScript are rising as future-proof skills.

## 2. Developers Are Optimistic About AI

- 78% don't see AI as a job threat, suggesting they view it as a productivity tool rather than a replacement. Companies should invest in AI-augmented development (e.g., GitHub Copilot).





# CONCLUSION

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## 3. Full-Stack & Cloud Skills Are Non-Negotiable

- React, Node.js, and Spring Boot lead frameworks, while AWS/Azure are must-know platforms. Developers need T-shaped skills: deep in one area (e.g., Python) + broad in cloud/DevOps.

## 4. Demographics Highlight Opportunities

- 25–34-year-olds in the USA, India, and UK are the largest developer cohorts—target them for training, tools, and community building.

