



STACK OVERFLOW DEVELOPER SURVEY 2019

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OUTLINE



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



- Contextualizing the data and defining analysis objective
- Methodology
 - Data Collection
 - Data Analysis
 - Data Visualization
- Result Presentation with Charts and Trend Analysis
- Key Findings and their implications
- Conclusion

INTRODUCTION



- Stack Overflow Developer Survey 2019 is one of the largest annual surveys in the developer community, capturing insights from a diverse range of professionals and enthusiasts worldwide.
- The survey aims to understand developers' trends, tools technologies, and work environments.
- With over 900,000 responses from developer across the globe, covering topics like programming, developers' demographics and career satisfaction.
- Survey data will provide valuable data for developers, employers, and industry analysts – offering insights into the evolving technology landscape and guides decision-making for businesses and developers.

METHODOLOGY



- Data Collection & Analysis Objective
 - APIs & Web scraping
- Data Exploration
- Data Wrangling
- Exploratory Data Analysis
 - Handling missing and duplicate values
 - Data Distribution Analysis
 - Handling Data outliers
 - Correlations
- Data Visualization
- Dashboard

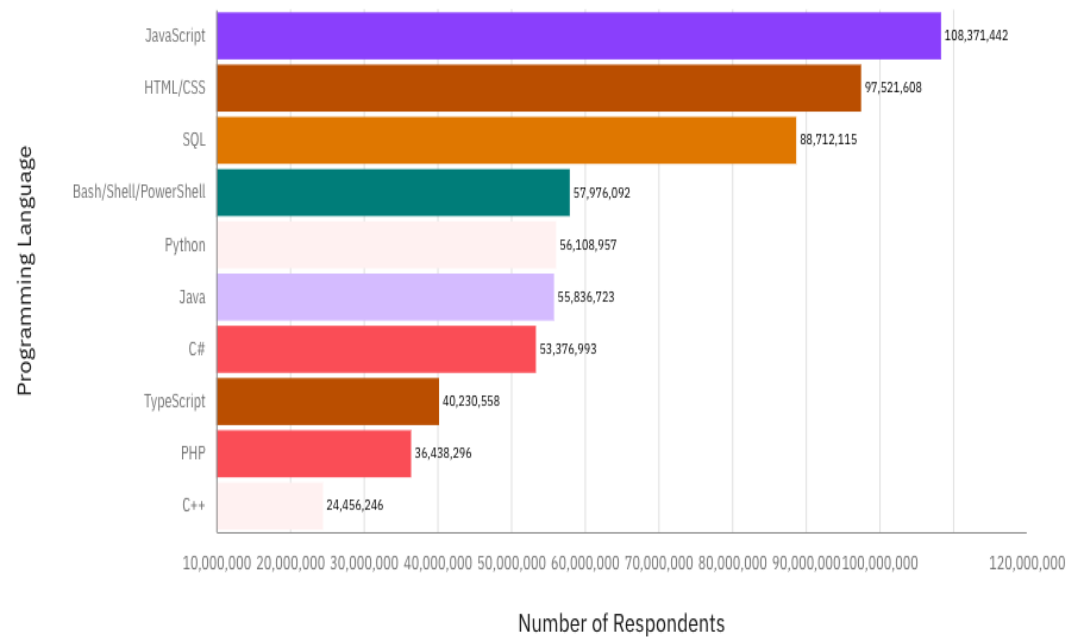
RESULTS



PROGRAMMING LANGUAGE TRENDS

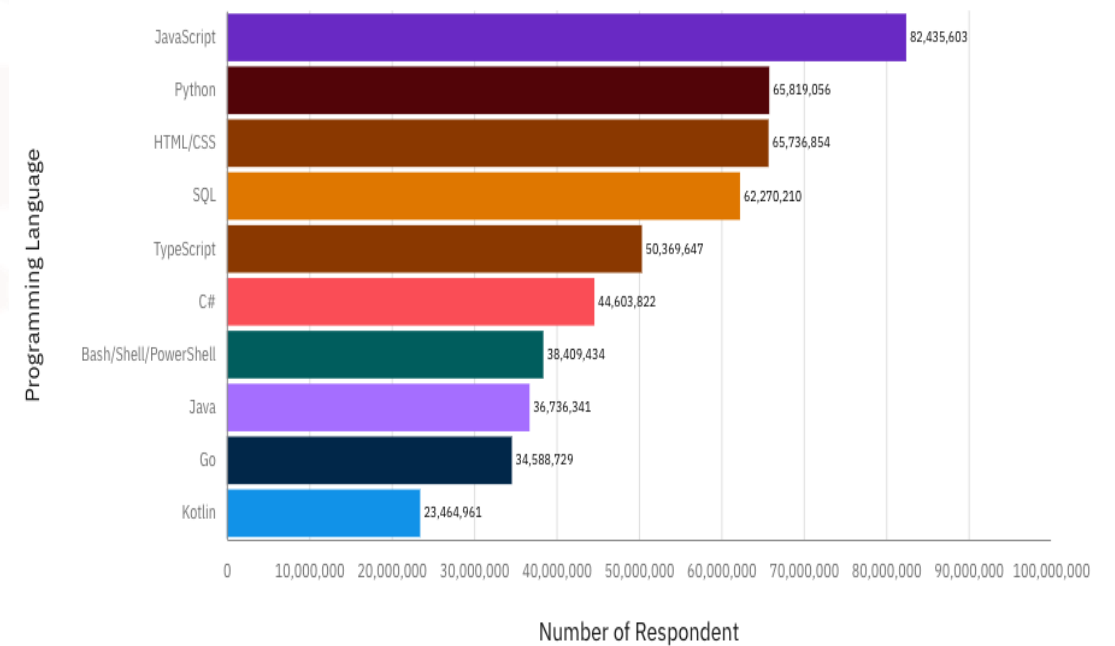
Current Year

Top 10 Language Worked With



Next Year

Top 10 Language To Learn Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- With over 108 million respondents working with it, JavaScript continues to be the most widely used language, indicating its crucial role in web development and its versatility in various frameworks like React, Node.js, and Angular.
- Ranking second and third, HTML/CSS (97 million) and SQL (88 million) highlight the importance of front-end development skills and database management knowledge in the developer community.
- Python appears in the top five, showing that it remains a go-to language for data science, machine learning, web development, and general-purpose programming.
- Other languages like Bash/Shell, Java, and C# also have significant usage demonstrating a varied and specialized programming landscape.

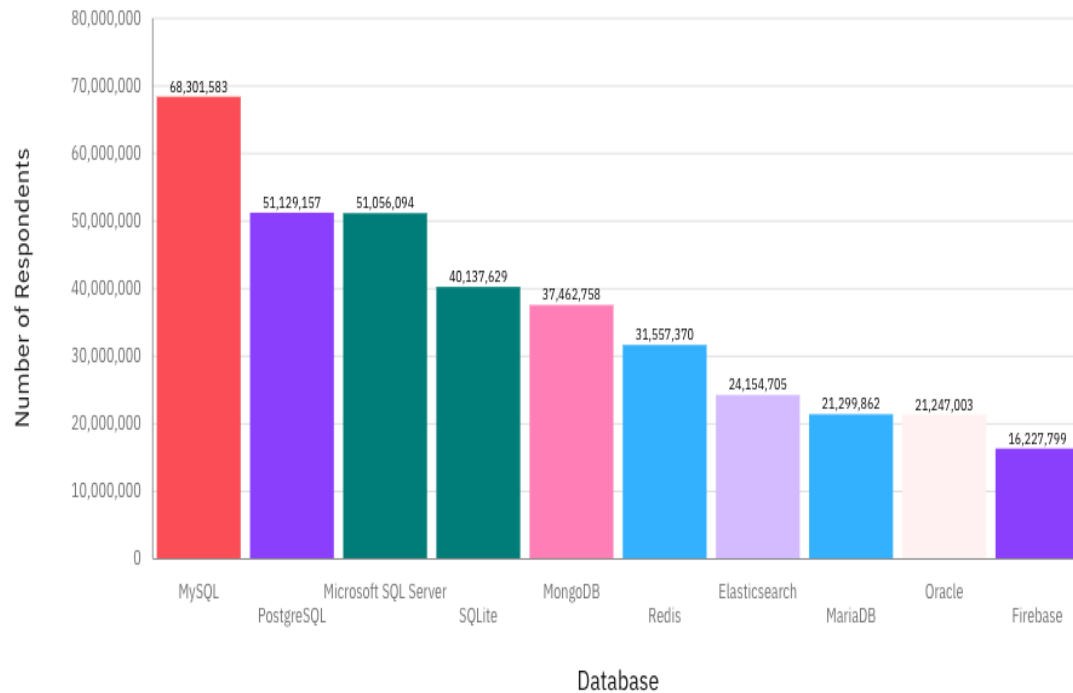
Implications

- JavaScript continues to lead with over 82 million respondents indicating an interest in learning it. Python follows closely, showing its sustained relevance across multiple domains.
- The inclusion of TypeScript (50 million) and Go (34 million) as top languages to learn suggests developers are looking to enhance their JavaScript skills (with TypeScript for type safety) and explore more efficient, scalable solutions (like Go).
- Shifting Focus: With languages like Kotlin and Go making the list for learning, there's a shift towards modern languages that offer better performance, concise syntax, and compatibility with new-age technologies.

DATABASE TRENDS

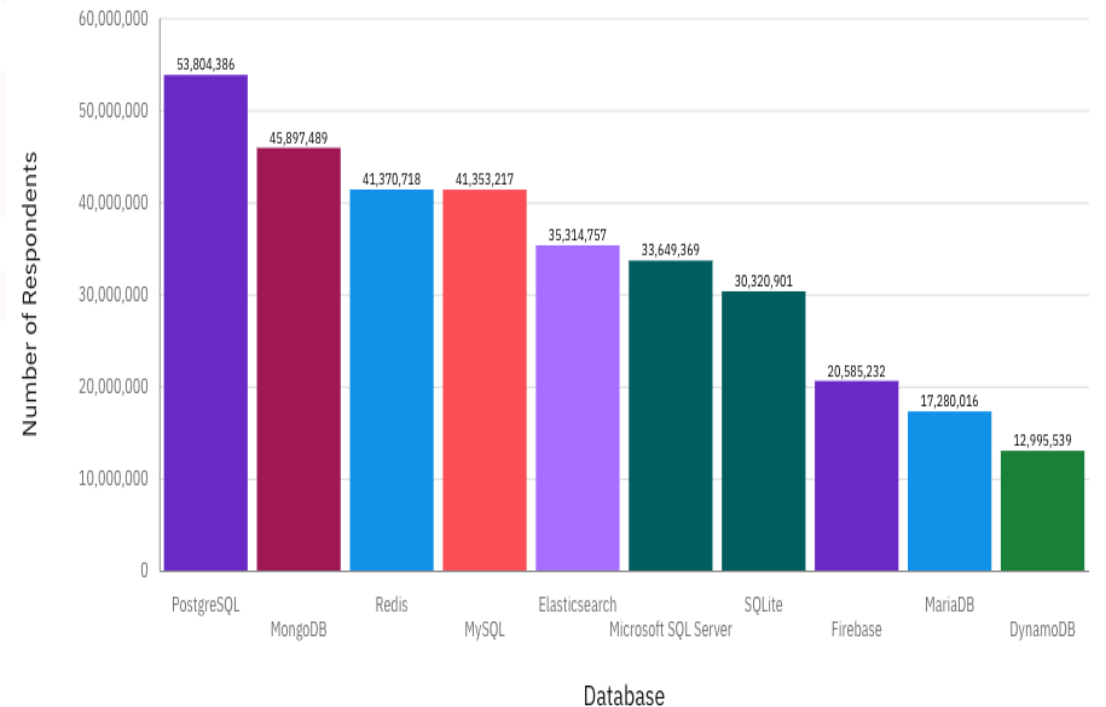
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Database to Learn Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most widely used database, with approximately 68 million respondents. Its popularity is likely due to its open-source nature, flexibility, and robust community support, making it a preferred choice for many web applications.
- PostgreSQL (51 million) and Microsoft SQL Server (51 million) are also widely used, indicating a balanced interest in both open-source (PostgreSQL) and proprietary (Microsoft SQL Server) database solutions.
- Databases like MongoDB (37 million) and Redis (31 million) show significant usage, highlighting a growing need for flexible data models (NoSQL) and high-performance, in-memory data storage.

Implications

- PostgreSQL ranks highest for databases developers want to learn, with around 53 million respondents. This indicates a strong interest in mastering advanced features and the flexibility provided by this open-source database.
- MongoDB (46 million) and Redis (41 million) are among the top databases to learn, reflecting the increasing need for skills in handling unstructured data and high-performance applications.
- While MySQL still appears in the list, there's noticeable interest in databases like Elasticsearch and DynamoDB, indicating a shift towards full-text search engines and cloud-based database solutions.

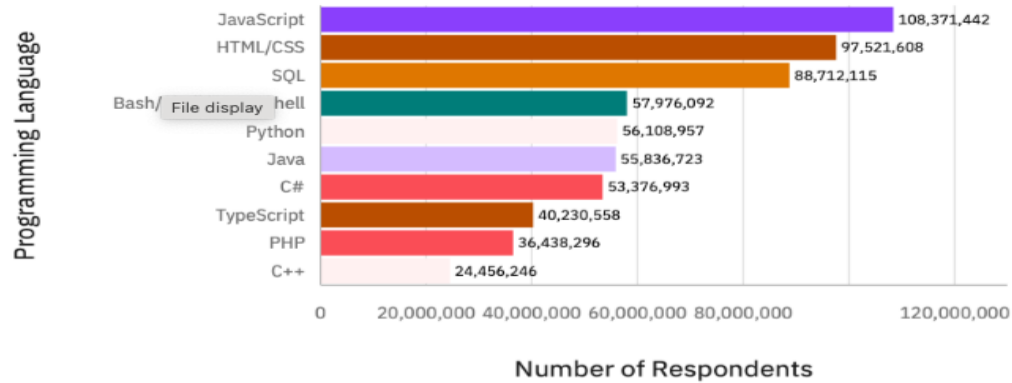
DASHBOARD



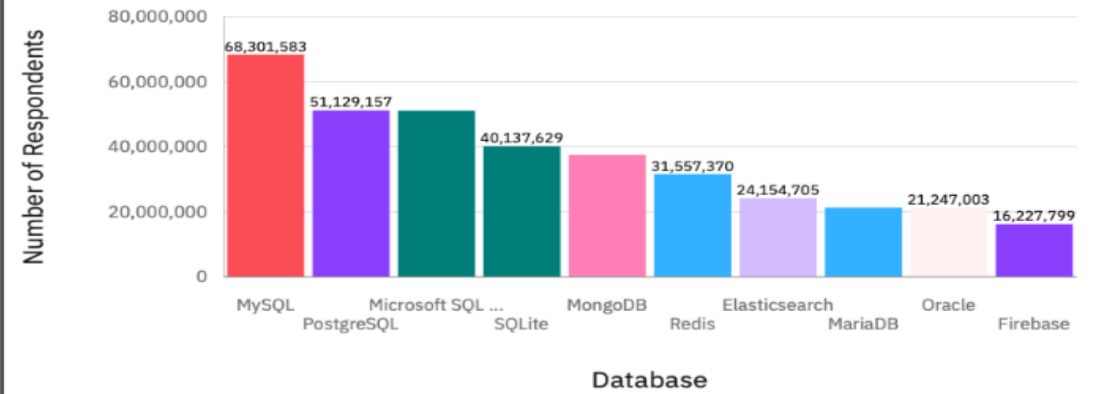
Cognos dashboard

DASHBOARD TAB 1

Top 10 Language Worked With



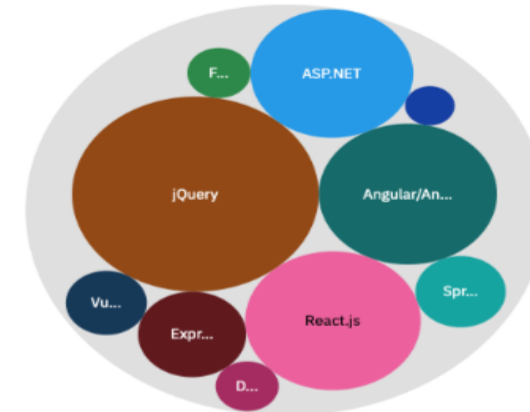
Top 10 Databases Worked With



Top 10 Platform Worked With

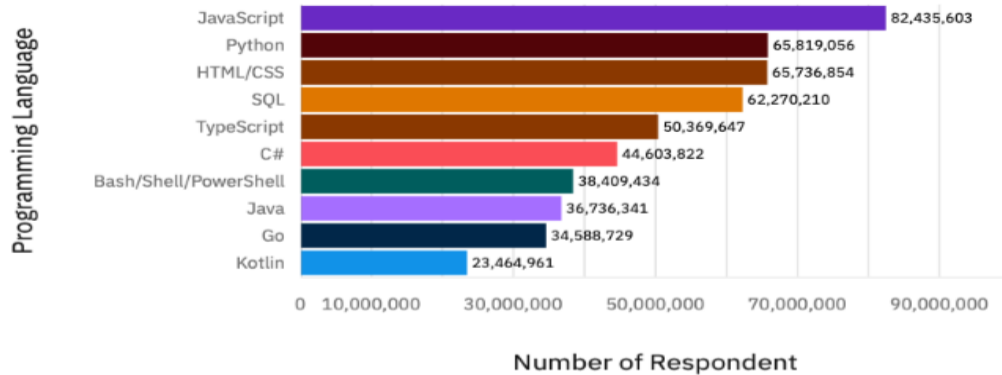


Top 10 Web Frame Worked With

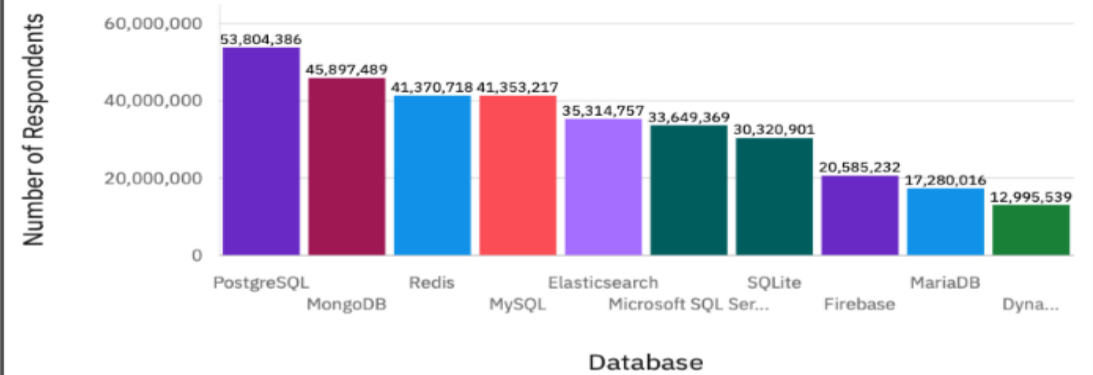


DASHBOARD TAB 2

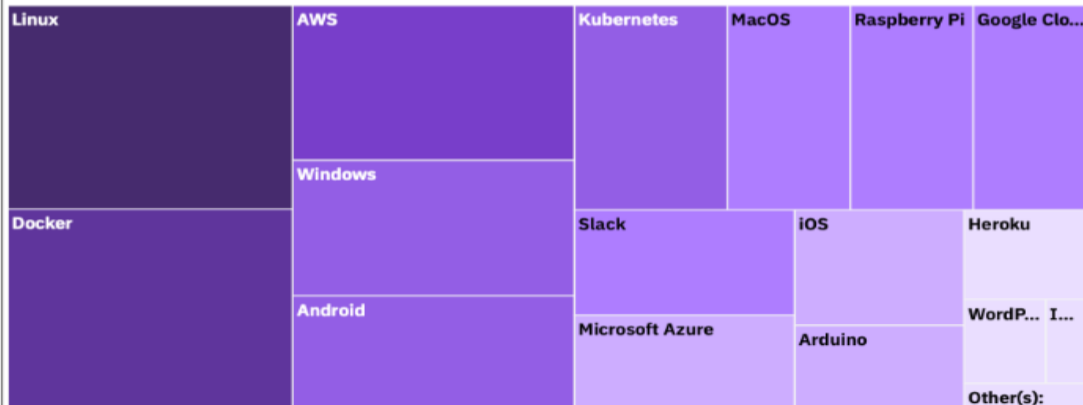
Top 10 Language To Learn Next Year



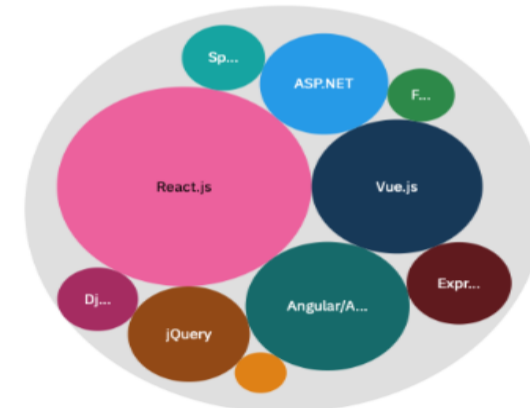
Top 10 Database to Learn Next Year



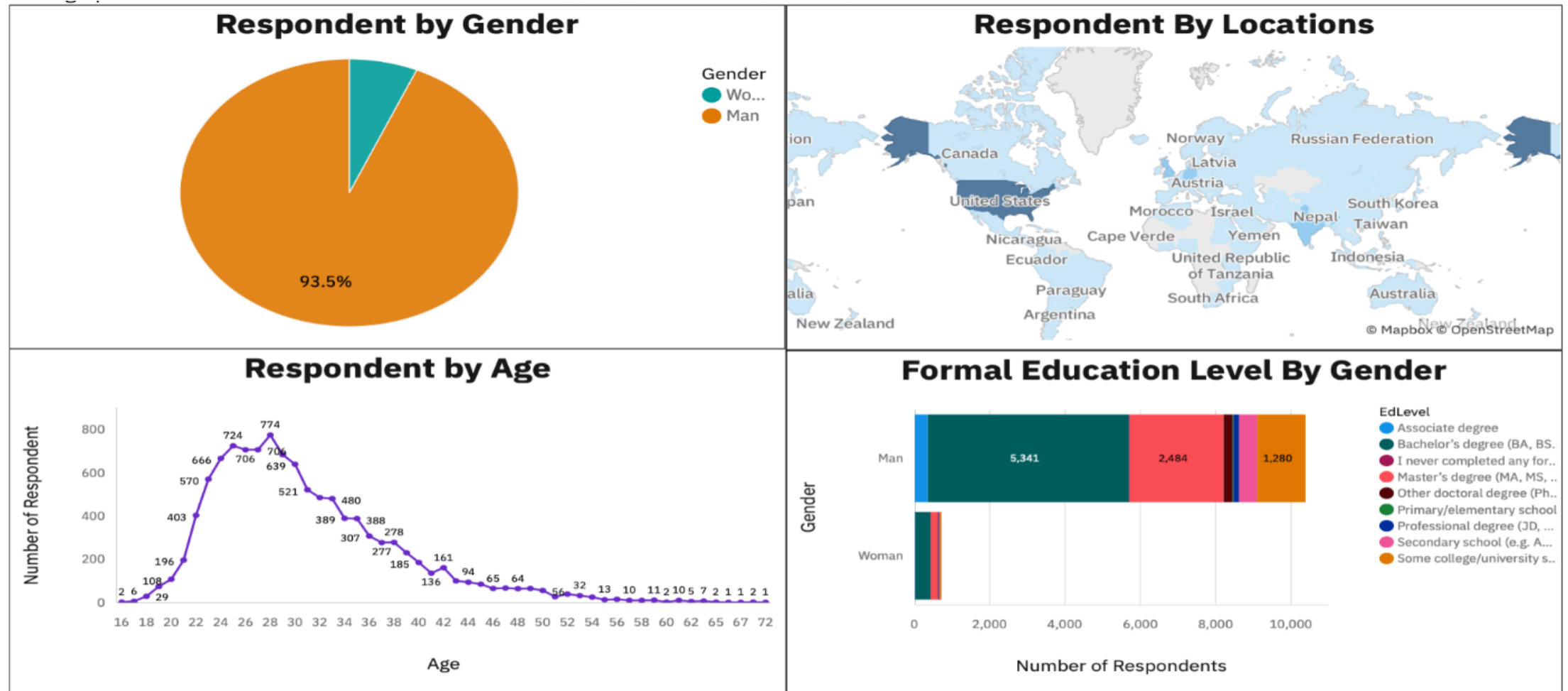
Platform to Explore Next Year



Top 10 Web Frame To Learn Next Year



DASHBOARD TAB 3



OVERALL FINDINGS & IMPLICATIONS

Findings

- **Programming and Database Preferences:** JavaScript remains the most commonly used language, with MySQL leading among databases. This reflects a developer environment heavily centered around web development and relational databases for data management.
- **Learning Trends:** Developers are prioritizing learning JavaScript, Python, and PostgreSQL for the next year, indicating a focus on versatile, high-demand skills that cover front-end, back-end, and data management applications.
- **Demographics:** The developer community exhibits a gender imbalance, with 93.5% of respondents identifying as men. Most developers are in their 20s to 30s, and a large proportion have formal education in computer science or related fields.

Implications

- **Skill Demand:** The emphasis on learning JavaScript, Python, and databases like PostgreSQL suggests a demand for developers skilled in versatile languages and database management, especially for web and data-centric projects.
- **Technology Adoption:** Interest in platforms like Docker, AWS, and Linux, as well as frameworks like React and ASP.NET, implies an industry shift toward cloud-based, containerized, and cross-platform development environments.
- **Need for Diversity:** The gender imbalance highlights the ongoing challenge of diversity in the tech industry, suggesting that efforts to attract and support underrepresented groups in tech must continue to promote inclusivity.

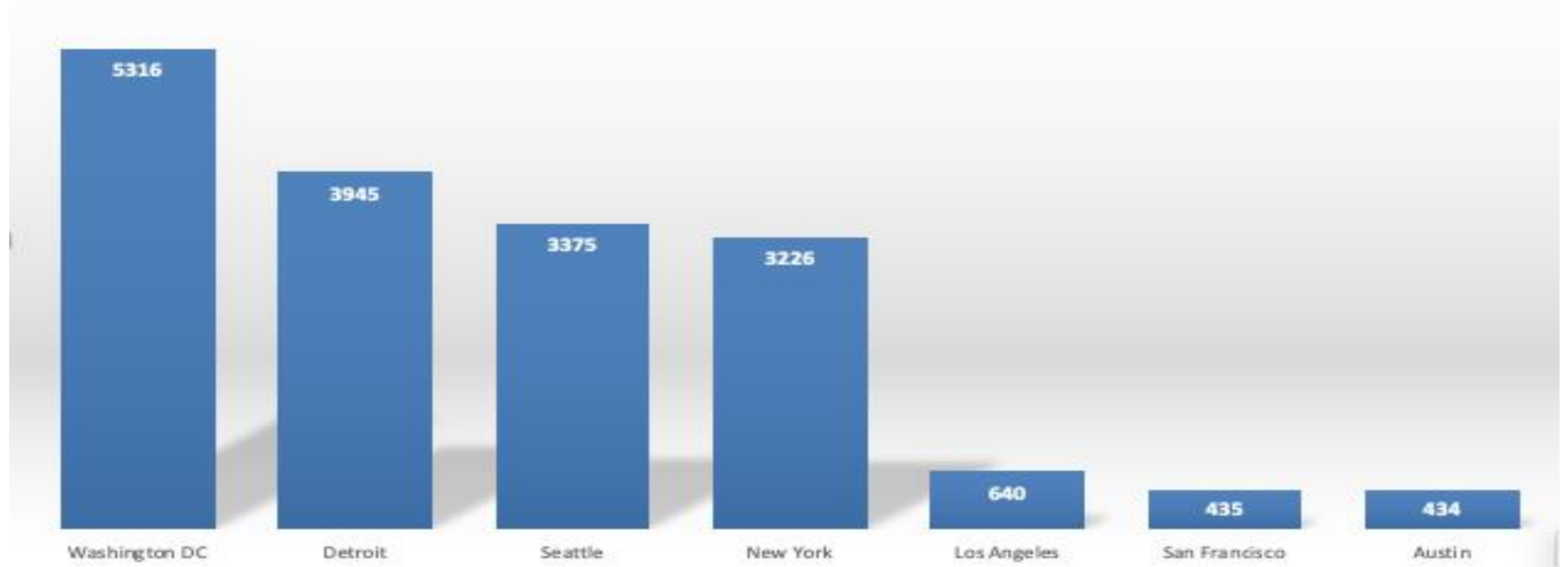
CONCLUSION



- **Web Development Dominance:** JavaScript, along with web technologies like HTML/CSS and SQL, continues to dominate the developer landscape, indicating that web development remains a central focus in the tech industry.
- **Growing Demand for Versatile Skills:** The interest in learning languages like Python and databases such as PostgreSQL and MongoDB highlights a trend toward more versatile and flexible data management skills, particularly in data science, automation, and scalable back-end development.
- **Shift Toward Cloud and Containerization:** The increased focus on platforms such as Docker, AWS, and Linux suggests that developers are preparing for a future that prioritizes cloud-based services, containerization, and cross-platform development for more robust software solutions.
- **Need for Improved Diversity:** The significant gender disparity within the developer community emphasizes the ongoing need for diversity and inclusion initiatives to create a more balanced and representative tech industry.

JOB POSTINGS

Number of Jobs



POPULAR LANGUAGES

