



# Trends in Programming Languages and Databases

SAMUEL MUTUNGA

1st August, 2024

# OUTLINE

---



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

# EXECUTIVE SUMMARY

---



- Overview of programming language trends for the current and next year
- Analysis of top database trends
- Implications for developers and businesses
- Visual representation of job posting data
- Conclusions drawn from the data analysis

# INTRODUCTION

---



- **Report Objective:** This report analyzes current and future trends in programming languages and databases.
- **Target Audience:** The report is intended for software developers, data scientists, and business analysts.
- **Reader Benefits:** Readers will gain insights into the most popular technologies in the industry, aiding in decision-making and career planning.

# METHODOLOGY

---



- **Data Sources:** Data was based on a Stack Overflow survey conducted between January 23 and February 14, 2019 involving 88,883 Software Developers from 179 countries.
- **Data Collection:** The data includes programming languages and database popularity, job posting numbers, and salaries.
- Data analysis and visualization were done using **IBM Cognos Analysis**.

# RESULTS

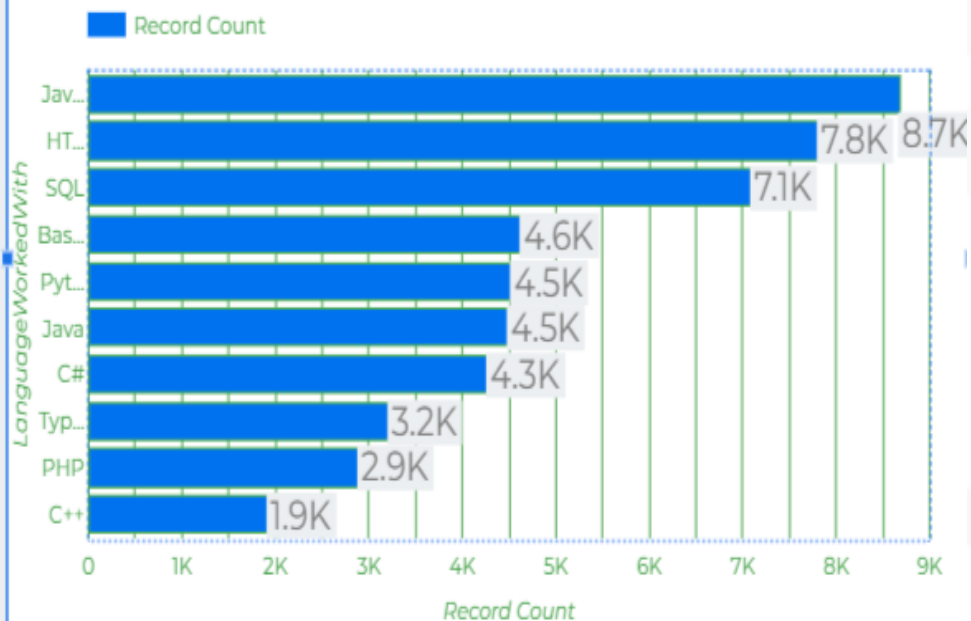
---

- JavaScript stands out as the most widely used programming language with 8,687 users, solidifying its dominance in web development.
- HTML/CSS follows closely with 7,830 users, essential for web design and front-end development.
- SQL is utilized by 7,106 users, underscoring its importance in database management.
- Python, favored by 4,542 users, is popular for its simplicity and versatility across various domains.
- MySQL leads as the most used database with 5,469 users, appreciated for its reliability and ease of use.
- Microsoft SQL Server is used by 4,110 users, preferred for enterprise-level applications.
- PostgreSQL, with 4,097 users, is valued for its advanced features.
- SQLite is favored by 3,248 users, ideal for small applications due to its lightweight, file-based nature.

# PROGRAMMING LANGUAGE TRENDS

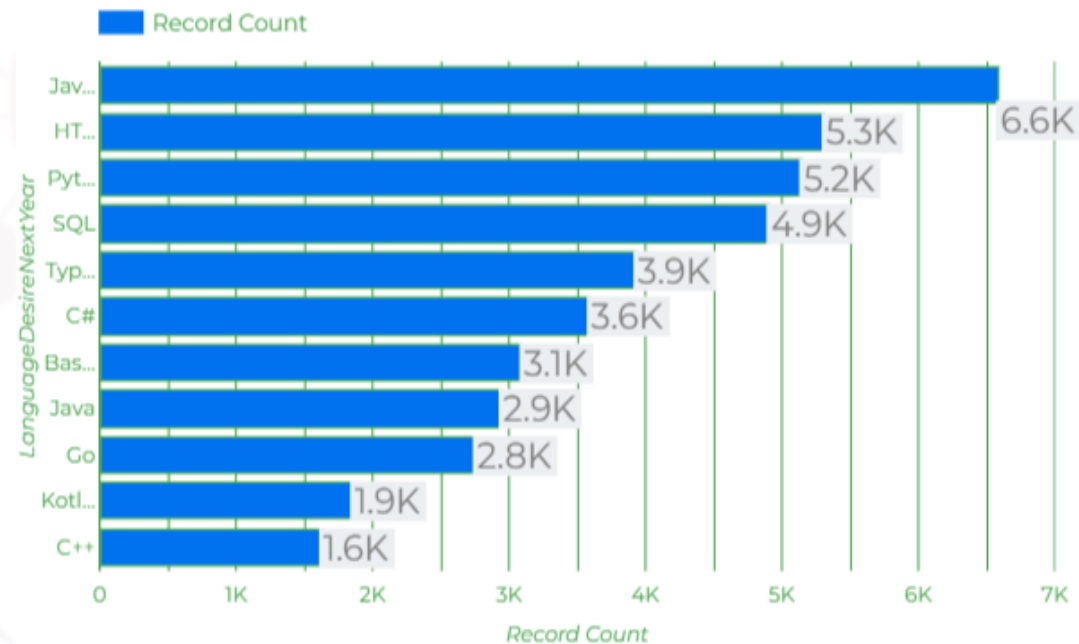
## Current Year

Top 10 Language Worked With



## Next Year

Top 10 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

---

## Findings

- JavaScript continues to be the most widely used language, indicating its importance in web development.
- HTML/CSS is a close second, showing the need for front-end development skills.
- Python maintains its popularity due to its versatility and use in data science.
- SQL remains crucial for database management.
- TypeScript shows growth potential, reflecting the industry's shift towards type-safe languages.

## Implications

- For Developers: Prioritize learning JavaScript and Python for versatile career opportunities.
- For Businesses: Invest in training and development for these languages to stay competitive.
- For Educators: Emphasize teaching these languages to meet industry demands.
- Emerging Trends: Monitor the rise of TypeScript and other modern languages.



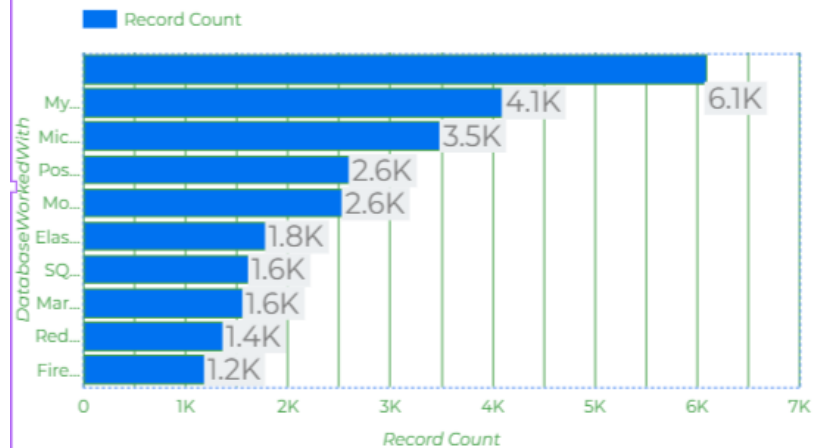
# DATABASE TRENDS

Current Year

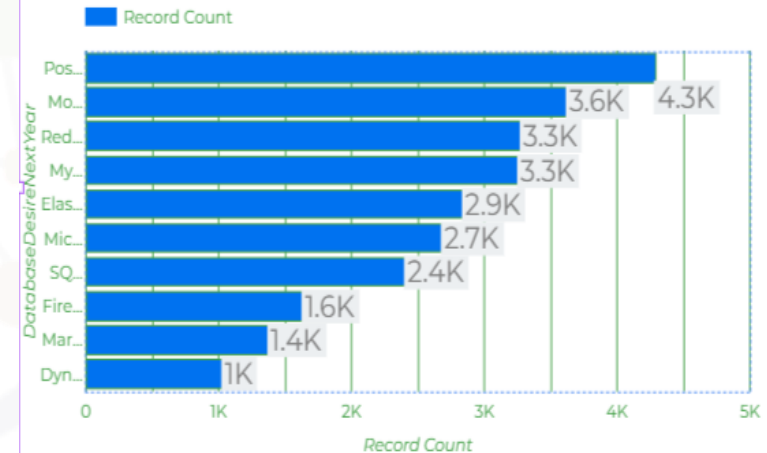
Current Year

Next Year

Top 10 Database Worked With



Top 10 Database Desired Next Year



# DATABASE TRENDS – FINDINGS & IMPLICATIONS

---

## Findings

- MySQL is the most commonly used database, reflecting its reliability and wide adoption.
- PostgreSQL is gaining traction due to its advanced features.
- MongoDB shows strong presence in the NoSQL category, suitable for unstructured data.
- Redis is popular for in-memory data storage.
- Elasticsearch is widely used for search and analytics.

## Implications

- For Developers: Gain proficiency in both SQL and NoSQL databases to enhance versatility.
- For Businesses: Consider adopting PostgreSQL for complex applications requiring advanced features.
- For Data Scientists: Use MongoDB for handling large volumes of unstructured data.
- Emerging Trends: Emphasize the growing need for search and analytics capabilities with Elasticsearch.

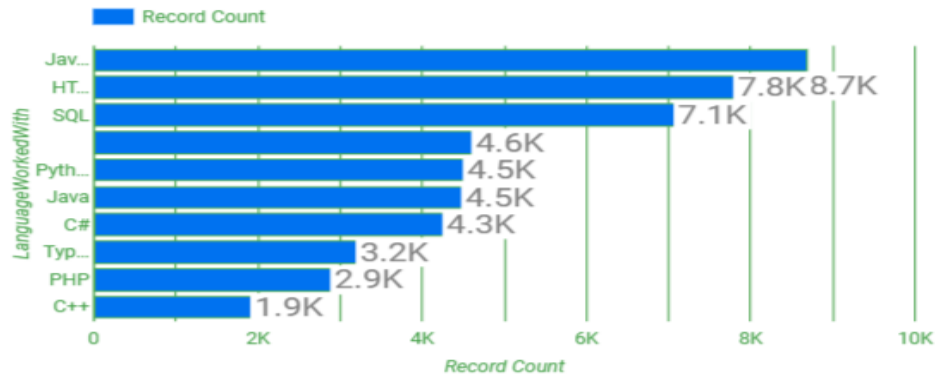
# DASHBOARD

---

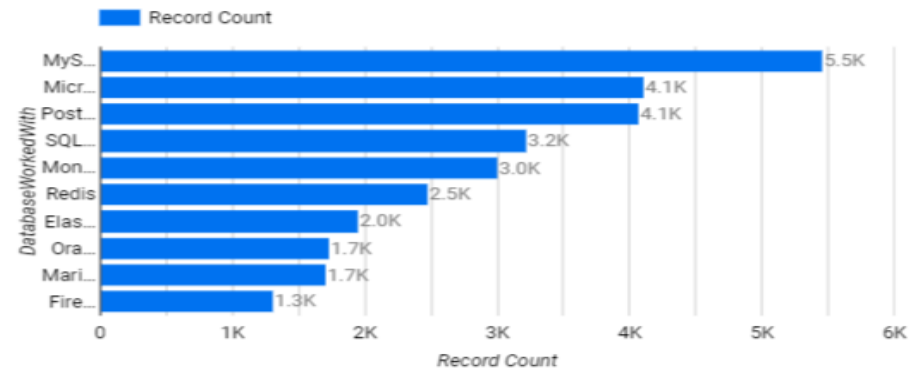
You can find the dashboard link below:  
<https://lookerstudio.google.com/embed/reporting/ed7b7c8c-0510-4b89-ab13-15d31fadcb09/page/Msj7D>

# CURRENT TECHNOLOGY USAGE

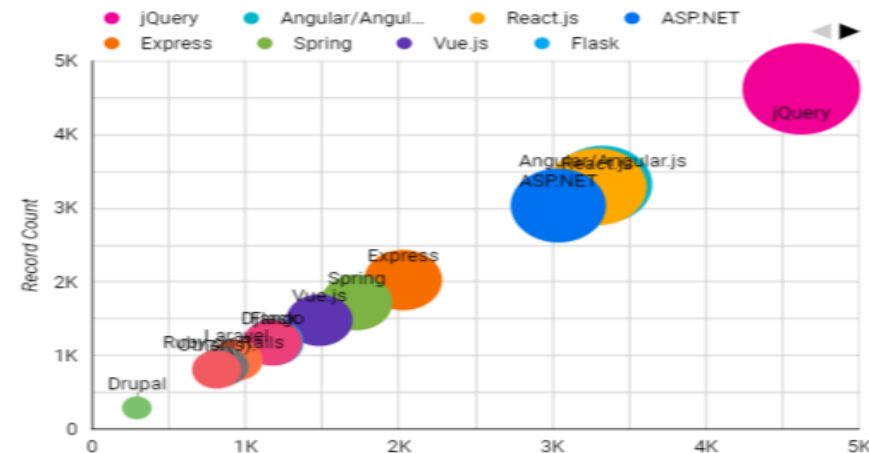
## Top 10 Language Worked With



## Top 10 Database Worked With

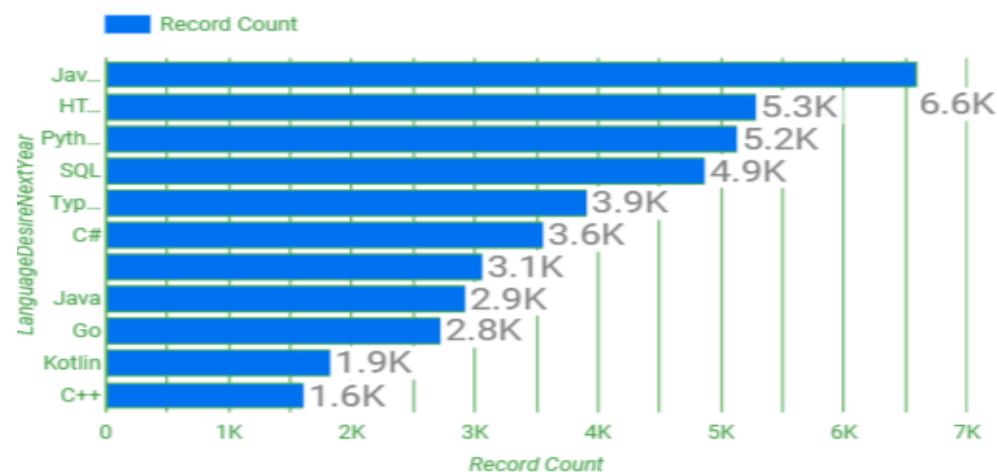


## Top 10 Web Frameworks Worked With

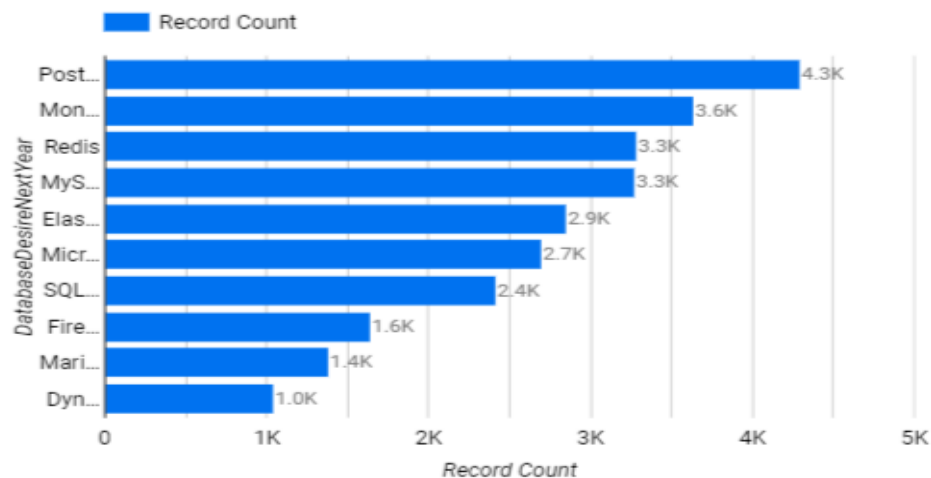


# FUTURE TECHNOLOGY TREND

## Top 10 Language Desire Next Year



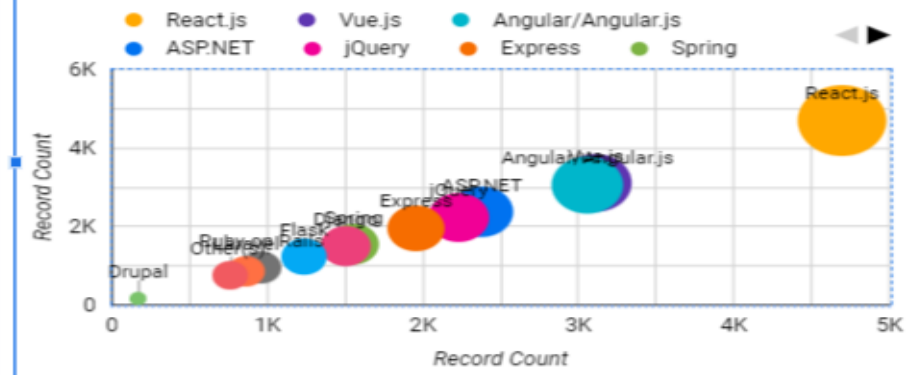
## Top 10 Database Desire Next Year



## Platform Desire Next Year



## Top 10 Web Frameworks Desired Next Year





# DISCUSSION

---



- JavaScript and Python continue to be critical in various domains, including web development, data science, and automation.
- HTML/CSS and SQL remain essential for front-end development and database management, respectively.
- Emerging languages like TypeScript are gaining traction, reflecting a trend towards more structured and efficient coding practices.
- Tools like Bash/Shell/PowerShell are also becoming more popular, indicating a move towards efficient coding practices.
- Traditional SQL databases maintain their dominance due to their reliability.
- The growth of NoSQL databases highlights the need for flexible and scalable solutions.
- Increasing adoption of cloud-based databases like Firebase points to a shift towards cloud integration for enhanced scalability and performance.

# OVERALL FINDINGS & IMPLICATIONS

---

## Findings

- The dominance of JavaScript and Python in the programming languages indicates their widespread use and versatility.
- MySQL and PostgreSQL are popular choices for relational database management, showing a preference for SQL databases in various applications.
- The growing interest in NoSQL databases like MongoDB highlights the need for flexible data storage solutions.

## Implications

- Businesses should invest in training their workforce in these technologies to stay competitive.
- Developers should focus on acquiring skills in these trending technologies to enhance their career prospects.
- Educators should update their curriculum to include these popular and emerging technologies.



# CONCLUSION

---



- JavaScript and Python are essential skills for developers due to their wide application and versatility.
- SQL databases like MySQL and PostgreSQL remain crucial for managing structured data.
- NoSQL databases such as MongoDB are gaining popularity for their flexibility in handling unstructured data.
- Staying updated with industry trends and acquiring relevant skills is vital for career growth and business success.

