# TRENDING TECHNOLOGIES: STACK OVERFLOW DEVELOPER SURVEY, 2019

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# OUTLINE

- Executive Summary

- Introduction

- Methodology

- Results
  - Visualization – Charts
  - Dashboard

- Discussion
  - Findings & Implications

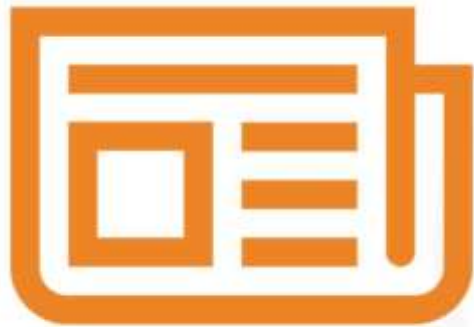- Conclusion

- Appendix

# EXECUTIVE SUMMARY

- Top programming languages in demand:
  - **JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python**
- Top database skills in demand:
  - **My SQL, Microsoft SQL Server, Postgre SQL, SQLite, MongoDB**
- Popular platforms:
  - **Windows, Linux, Docker, AWS, Slack**
- Popular Web Frames:
  - **jQuery, Angular/Angular.js, React.js, ASP.NET, Express**
- Future Technology Trend:
  - **Python** takes the third row, followed by **SQL** and **TypeScript**
  - **Redis** and **Elasticsearch** also place in Top 5
  - **Android** is in the Top 5 demanded platforms, the rest remains
  - **React.js** takes the first row and **Vue.js** is the latest addition as the last

# INTRODUCTION

- In recent years, notable trends have surfaced in the world of programming and technology.
- These trends highlight changes in programming languages, web development tools, and developer demographics.
- **Stack Overflow** conducts a global survey involving people who code.
- The 2019 survey, the 9th in a row, covers topics ranging from tech preferences to career goals.
- Around 90,000 developers completed the 20-minute survey in 2019.
- Let's dive into some of the interesting insights it uncovered.

# METHODOLOGY

- Data is based on the survey conducted by **Stack Overflow** from January 23 to February 14 and involved **88,883 software developers** from **179 countries**.

- Familiarization with this dataset was achieved through completing **IBM** labs on **Coursera**, which encompassed topics such as Web Scraping, Dataset Exploration, Data Wrangling, Exploratory Data Analysis, and Data Visualization.

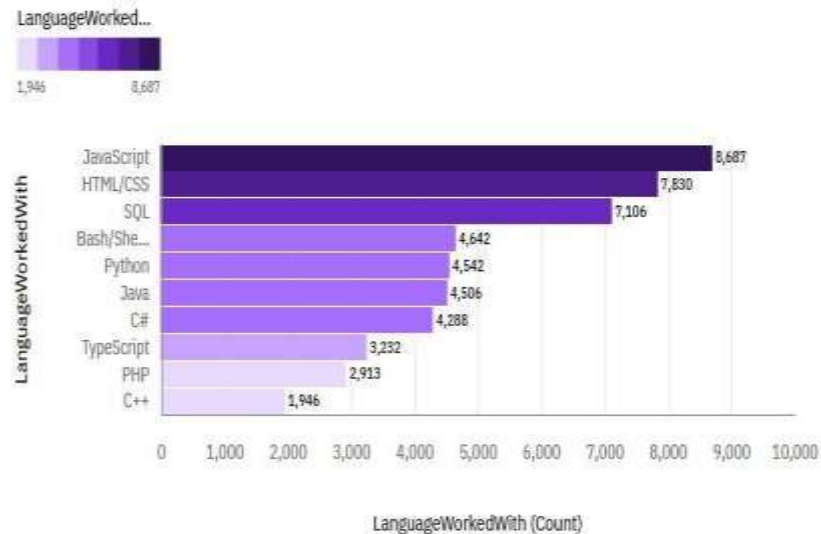- Data analysis and visualization was conducted via **IBM Cognos Analytics**.

# RESULTS

- **Python** overtakes **Java**, becoming the 5th most preferred language with significant growth. It stands as the fastest-growing major programming language.

- **JavaScript** remains the most used programming language.

- **jQuery** is the most widely used among web frameworks, with **React.js** surpassing **Angular** in developer usage this year.

- Globally, men represent approximately **90%** of respondents, with higher female representation among students than professional developers in regions like the US, India, and the UK.

- Around 3/4 of professional developers globally hold at least a **bachelor's degree**, aligning with past findings.

- 3/4 of survey respondents in professional developer roles are **under 35 years old**.
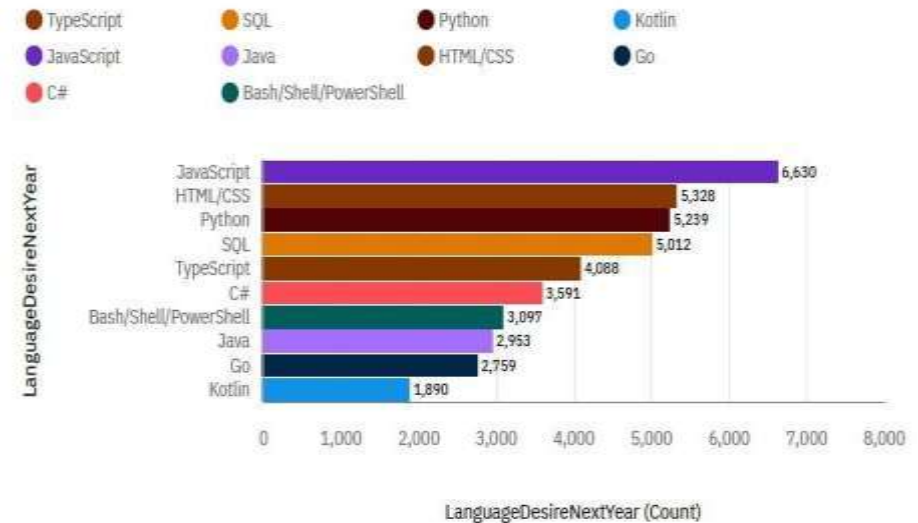
# PROGRAMMING LANGUAGE TRENDS

## Current Year

## Next Year

# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## • FINDINGS

- JavaScript and HTML/CSS emerge as the most used programming languages among all respondents

- SQL also maintains a significant presence.

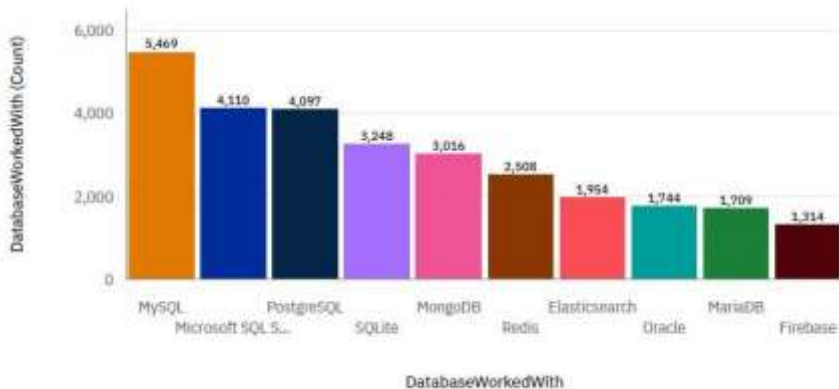- Python just edged out Java in overall ranking.

## • **IMPLICATIONS**

- The dominance of **JavaScript** and **HTML/CSS** underscores their indispensability in modern web development, highlighting the importance of mastering them for developers.

- The high usage of **SQL** emphasizes the critical role of data management and querying in modern software applications, across both web and non-web environments.

- The rise of **Python** might also reflect its versatility and ease of use, attracting developers across various domains from data science to software development.
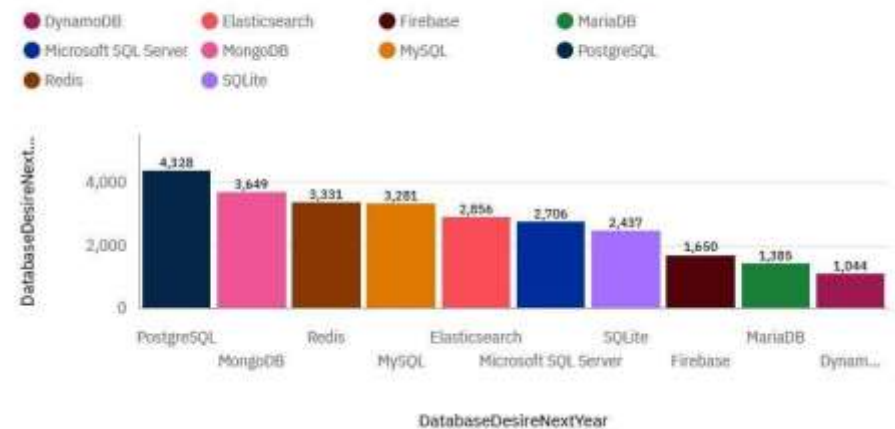
# DATABASE TRENDS

## Current Year

## Next Year



### Top 10 Database Worked With

DatabaseWorkedWith (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

### Top 10 Database Desire Next Year

- DynamoDB
- Elasticsearch
- Firebase
- MariaDB
- Microsoft SQL Server
- MongoDB
- MySQL
- PostgreSQL
- Redis
- SQLite

DatabaseDesireNext...

- 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
- Dynam...: 1,044

DatabaseDesireNextYear

# DATABASE TRENDS - FINDINGS & IMPLICATIONS
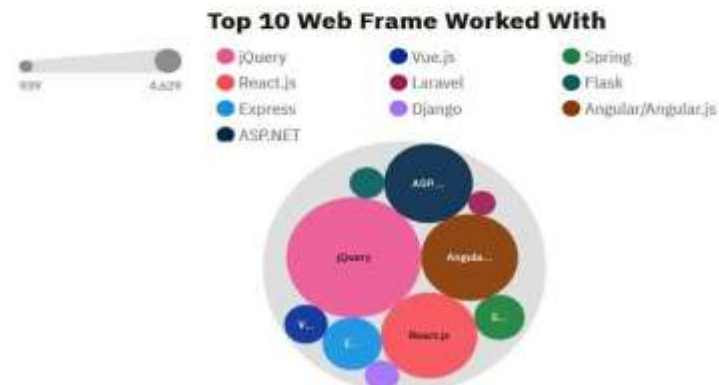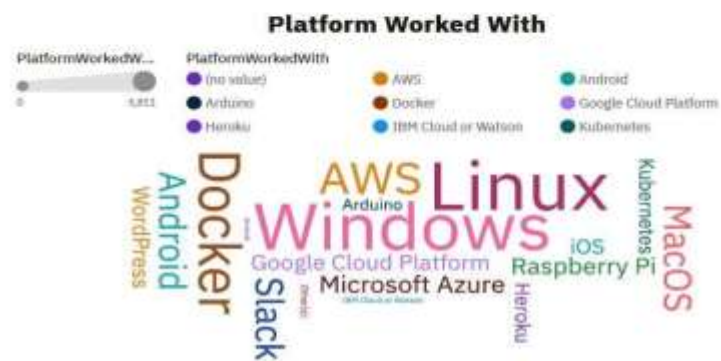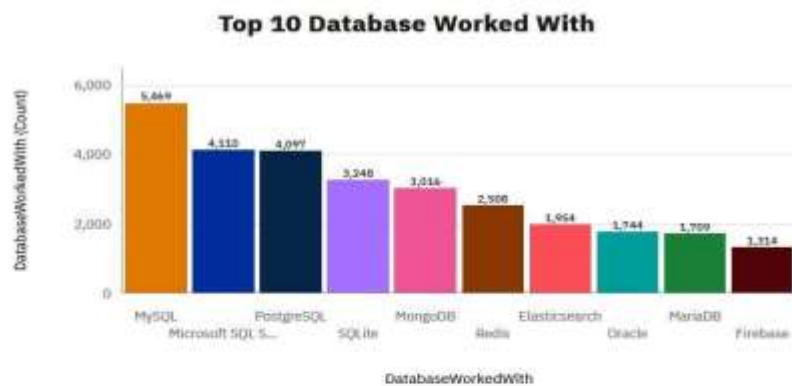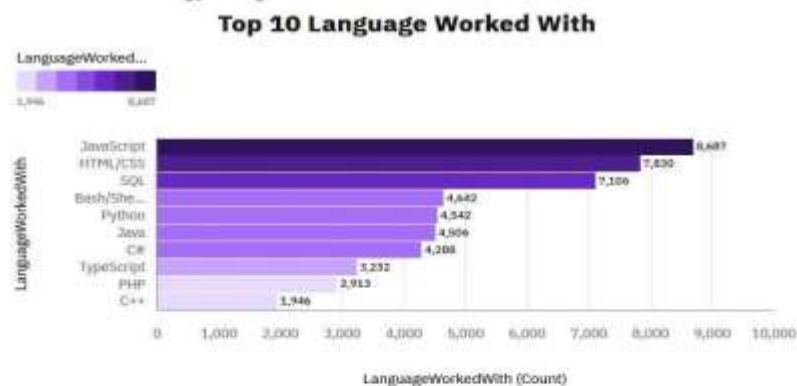
## FINDINGS

- **MySQL** leads as the most used DBMS among all respondents.

- **PostgreSQL** and **Microsoft SQL Server** follow closely behind **MySQL**.

- **MongoDB** ranks as the top **NoSQL** database.

## IMPLICATIONS

- The popularity of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** underscores the importance of relational databases in various applications.

- The high usage of **MongoDB** reflects the growing trend towards **NoSQL** databases, driven by the need for flexible data models and scalability, particularly in modern web and mobile applications.

- The diverse range of database systems utilized by developers indicates the importance of selecting the right tool for the job, considering factors such as data structure, scalability, and performance requirements.
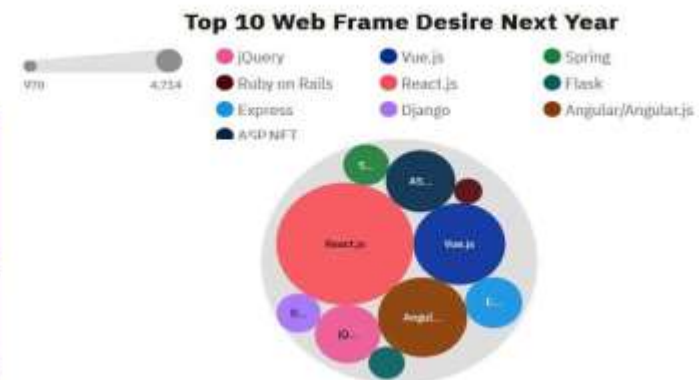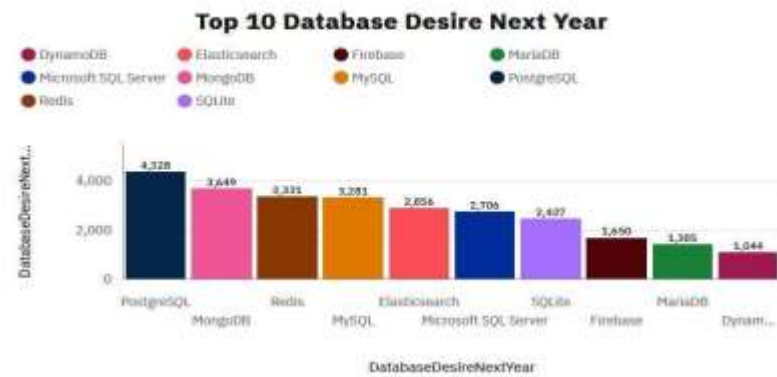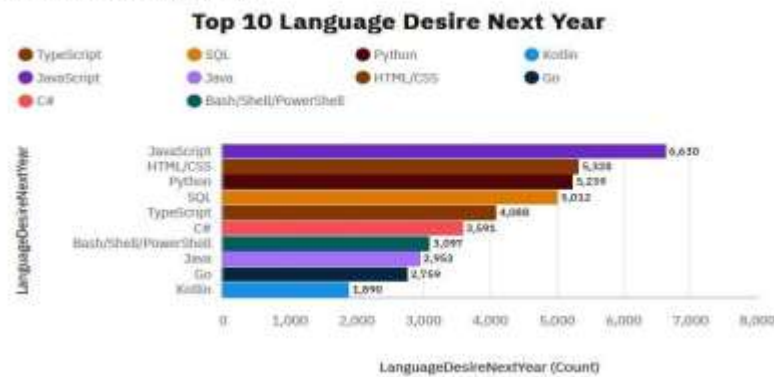
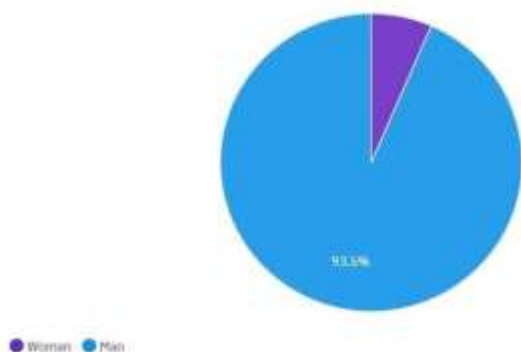# DASHBOARD: CURRENT TECHNOLOGY USAGE

# DASHBOARD: FUTURE TECHNOLOGY TREND
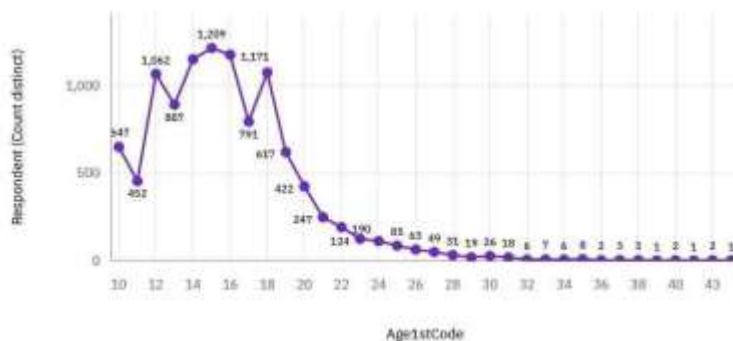
# DASHBOARD: DEMOGRAPHICS



Demographics

**Respondent classified by Gender**

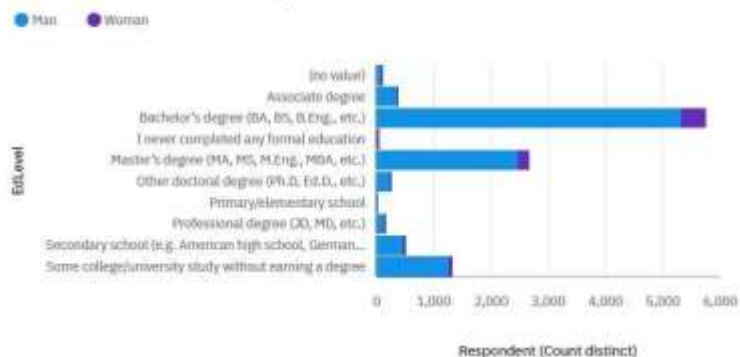**Respondent Count for Countries**

**Respondent Count by Age**

**Respondent Count by Gender and Formal Education Level**

Skills Network

IBM

# OVERALL FINDINGS & IMPLICATIONS

## FINDINGS

- **Technology Trends**: The dominance of **JavaScript** and **HTML/CSS** underscores the importance of staying updated with technology trends in web development.

- **Data Management**: The prevalence of **MySQL**, **PostgreSQL**, and **Microsoft SQL Server** highlights the critical role of effective data management in software development.

- **Diversity of Tools**: The diverse range of programming languages and database systems utilized by developers underscores the importance of understanding the strengths and weaknesses of different tools.

## • IMPLICATIONS

- Web Dominance: The widespread usage of JavaScript and HTML/CSS indicates the dominance of web development in the programming ecosystem, reflecting the growing importance of online platforms and digital experiences.

- Database Diversity: The variety of database management systems used highlights the importance of flexibility and adaptability in data storage solutions. Organizations must consider factors such as data structure, scalability, and performance when selecting a database system.

- Industry Standardization: The popularity of certain technologies like JavaScript and MySQL suggests a degree of industry standardization, where certain tools become widely adopted due to their proven reliability and effectiveness. This can simplify collaboration and interoperability within the developer community.
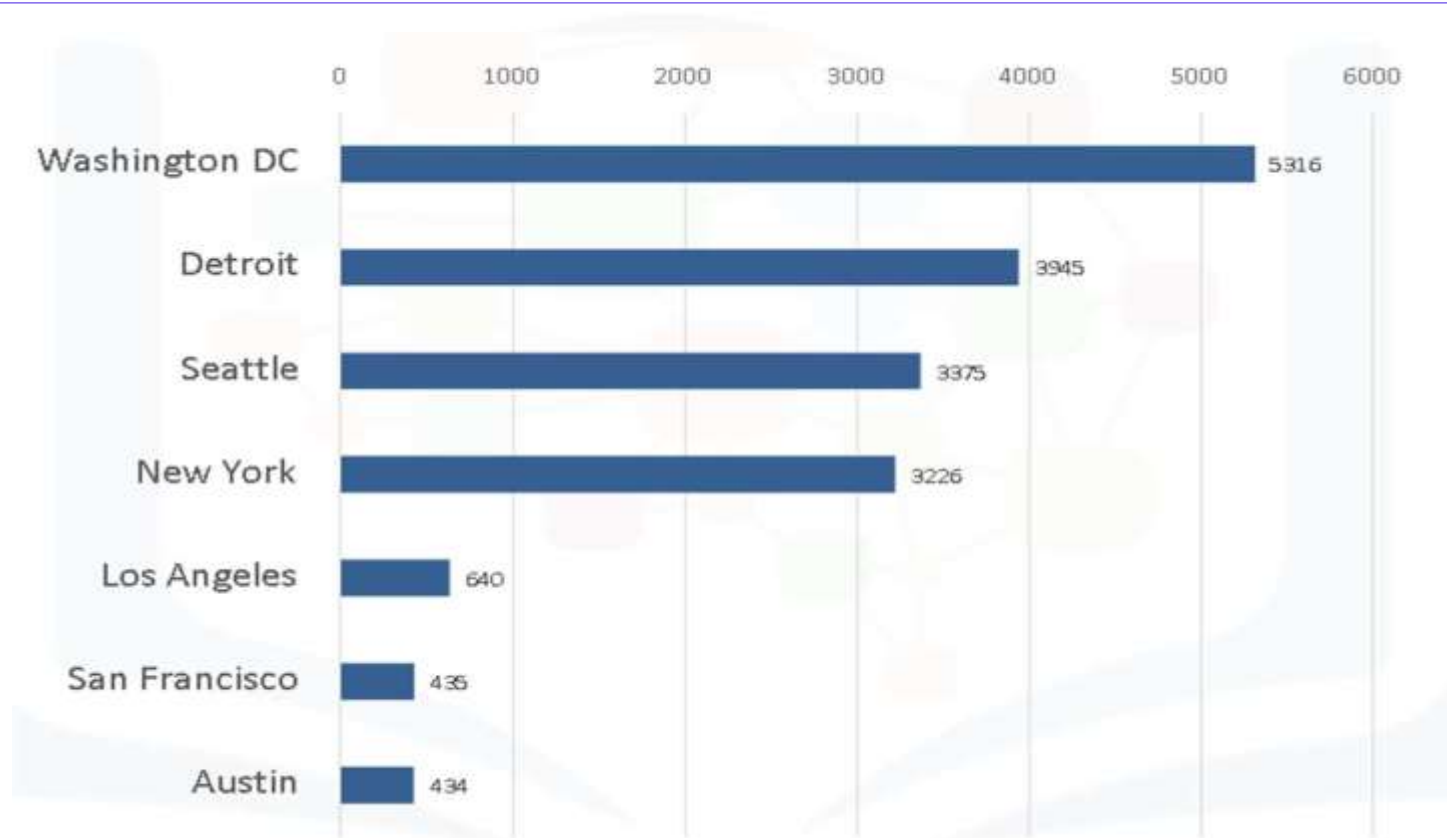
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# CONCLUSION

- **The results highlight how programming is constantly evolving and emphasize the importance of technology in driving innovation across different industries.**

- **As developers adapt to this shifting environment:**

-         It's crucial to have a strong grasp of various programming languages.

-         Understanding database systems is key to supporting modern applications.

-         These skills help ensure success in software development projects.

# APPENDIX

- A- Job Postings Chart
- B- Popular Languages Chart

# JOB POSTINGS

# POPULAR LANGUAGES

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