Trends and Predictions: The Future Skill Set for IT Professionals

PEERANAT THAMSONGKRAH

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EXECUTIVE SUMMARY

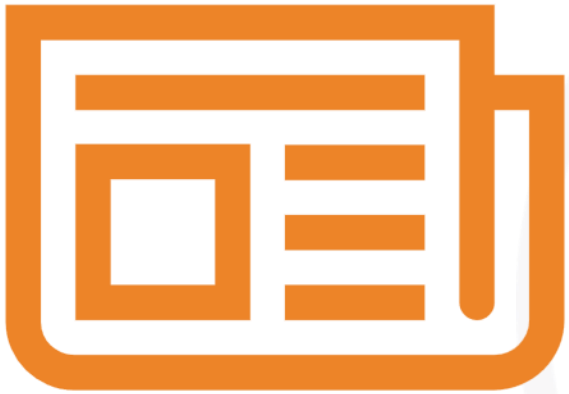
- To identify in-demand programming skills through data from job postings, training platforms, and surveys.
- Top Programming Languages: Python, JavaScript, HTML/CSS
- Top Database Skills: SQL, NoSQL (MongoDB, Cassandra), PostgreSQL
- Trends
  Python is the leader in data analysis and AI, while JavaScript is essential for web development. SQL remains vital for database management.
- Recommendations
  Develop training programs focused on Python, JavaScript, and SQL.
- Presentation
  Findings will be displayed in an IBM Cognos Analytics dashboard for easy access.

INTRODUCTION

- In today’s fast-changing tech landscape, IT Professionals need future-ready skills to stay relevant. Emerging fields like AI, cloud computing, and cybersecurity are transforming industries and demanding continuous adaptation. Understanding these evolving skill requirements is crucial for career growth and business competitiveness.

- This report uses Stack Overflow survey data to highlight key trends and predict in-demand IT skills. By analyzing this data, we aim to identify essential competencies for the future, providing insights to help professionals and organizations prepare for upcoming challenges and opportunities.

METHODOLOGY

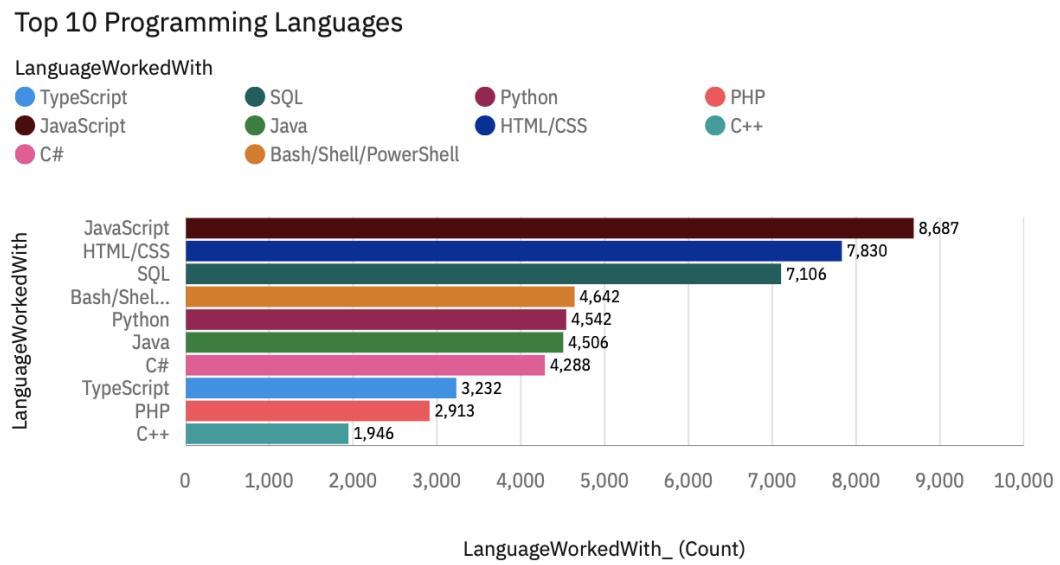


- **Datasets**
  - GitHub Jobs API
  - 2019 Stack Overflow Developer Survey
- **Data Collection**
  - The process involves collecting data using APIs, collecting data through web scraping, and exploring the data.
- **Data Wrangling**
- **Exploratory Data Analysis**
  - Distribution
  - Outliers
  - Correlation
- **Data Visualization**
  - visualizing the distribution of data, relationships, composition, and comparisons.
- **Dashboard Creation**

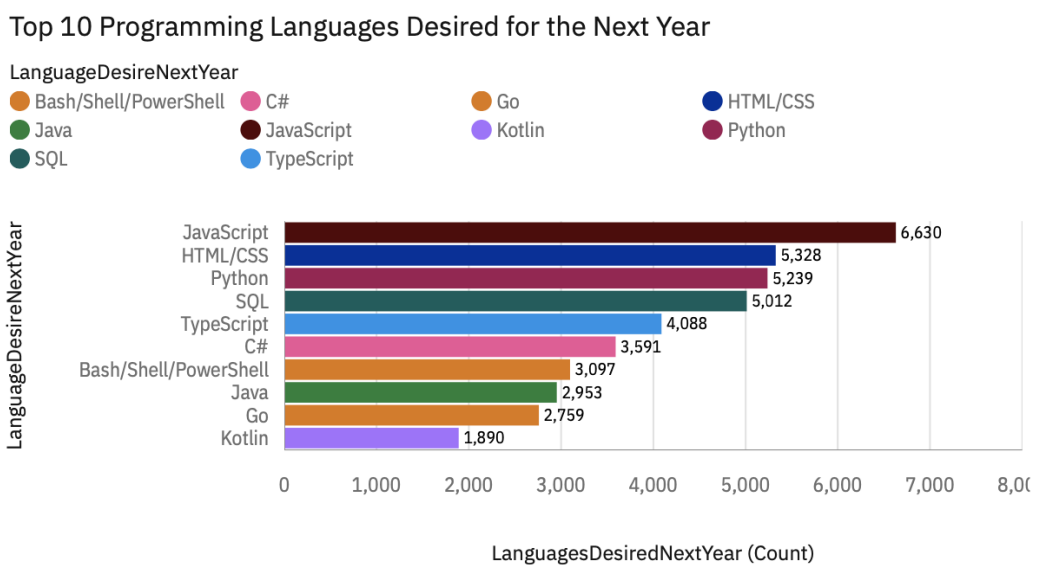
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

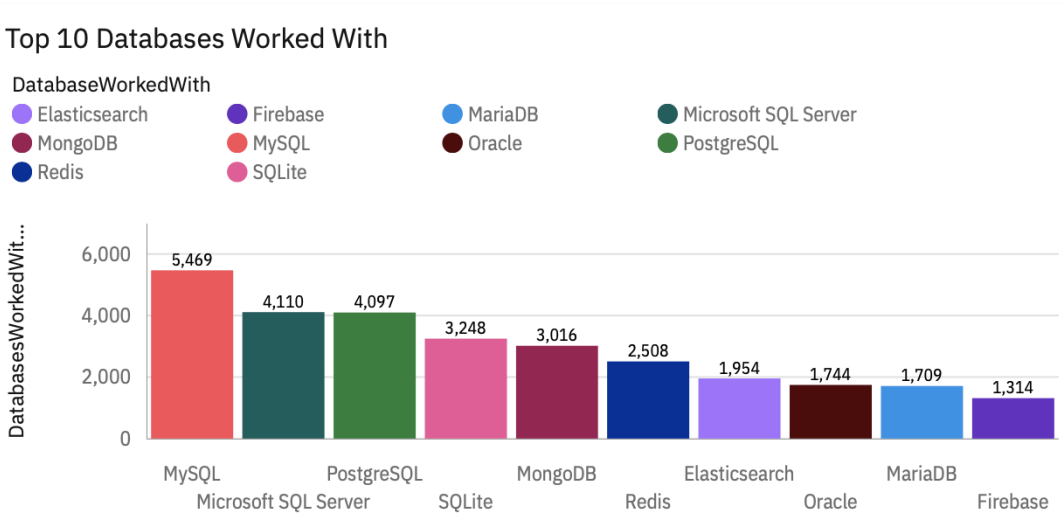
- JavaScript and HTML/CSS remain the most widely used programming languages.
- Python has seen the highest growth trend in recent years.
- Go is a programming language worth watching.

Implications

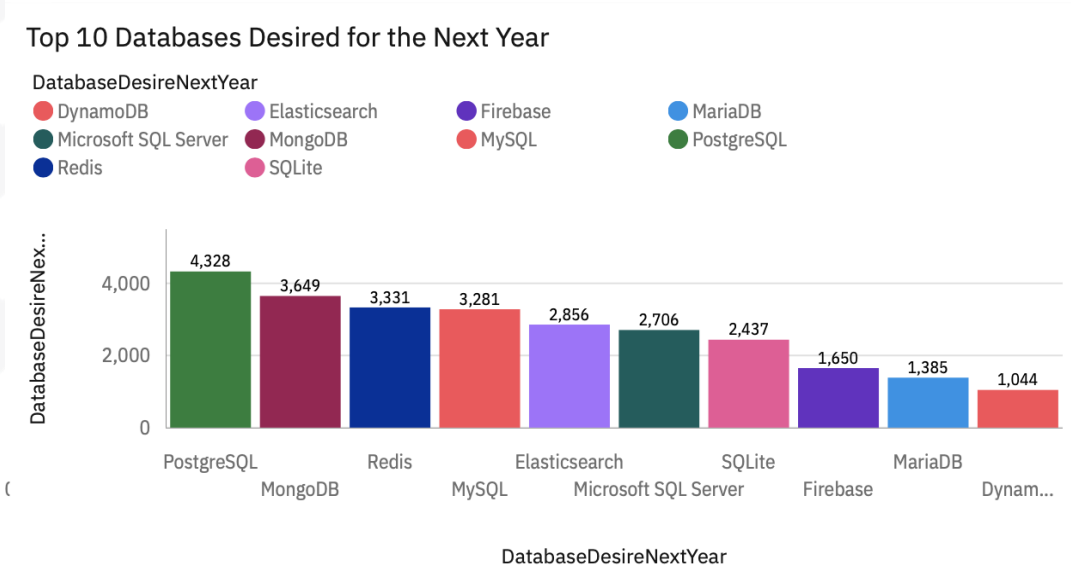
- JavaScript and HTML/CSS remain essential skills for web development, indicating stable demand in the job market.
- The rising popularity of Python indicates increased demand for skills in data science, machine learning, and automation, highlighting industry shifts and opportunities for developers to learn Python for career advancement.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL remains popular
- MySQL and SQL Server popularity has declined
- MongoDB usage is increasing

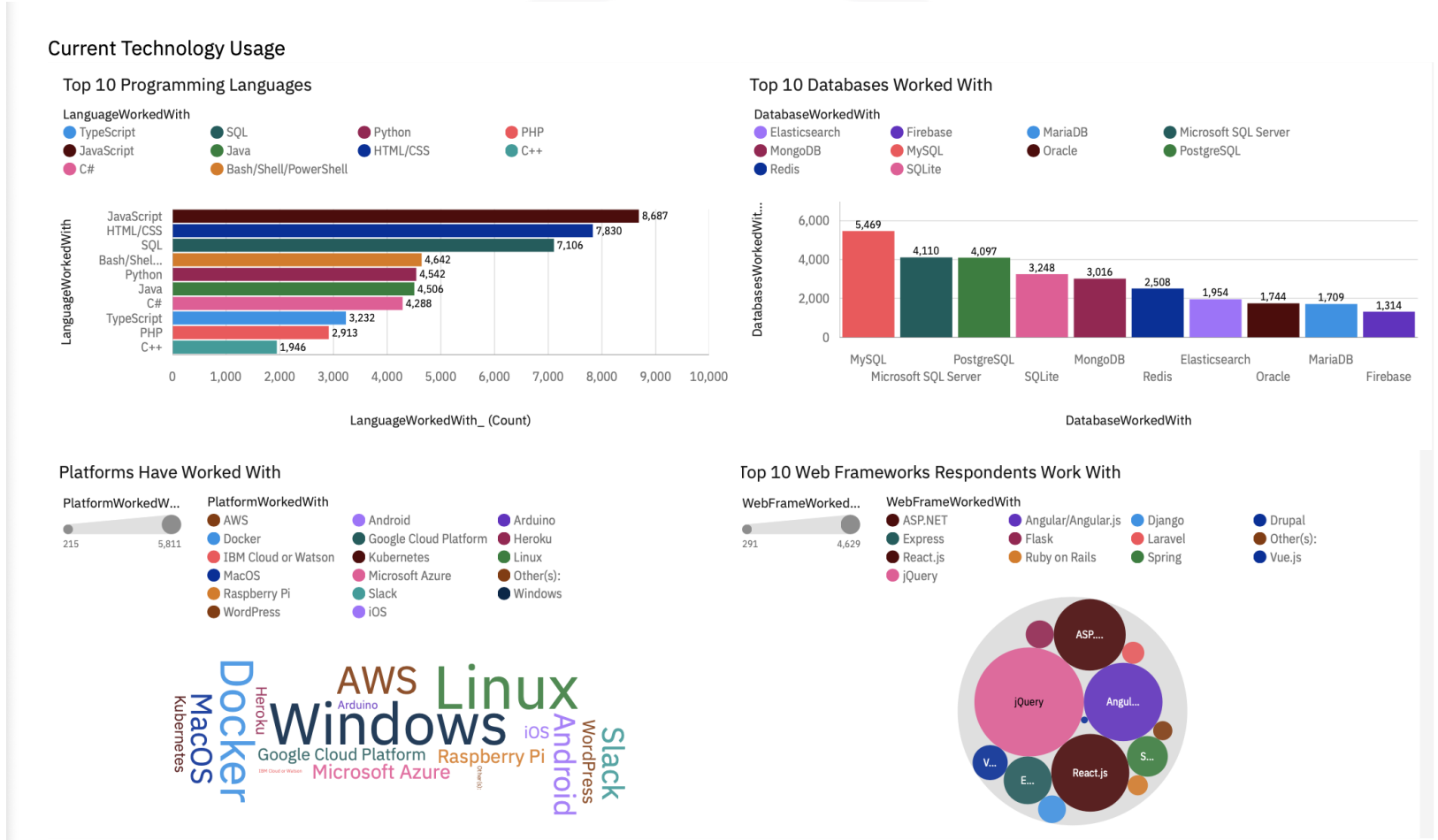
Implications

- Maintain or enhance their PostgreSQL skills to stay competitive.
- Companies may consider migrating to more popular databases. Professionals should focus on learning in-demand alternatives like PostgreSQL or MongoDB.
- Organizations can adopt MongoDB for scalable solutions. Gaining NoSQL expertise is essential for professionals.

DASHBOARD

https://github.com/peeranat86/IBM-Data-Analyst-Capstone-Project/blob/main/5_Capstone_Project_Dashboard.pdf

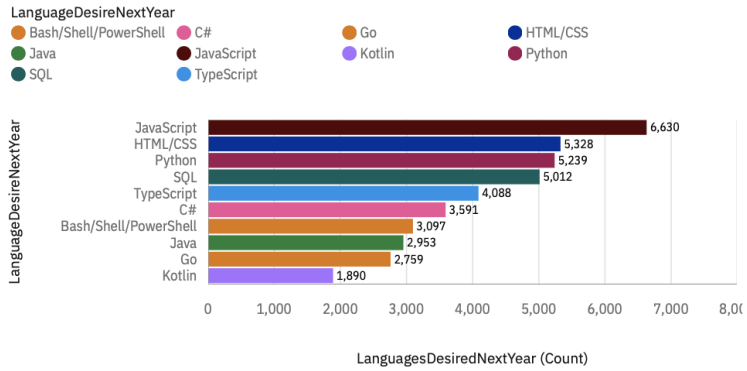
DASHBOARD TAB 1



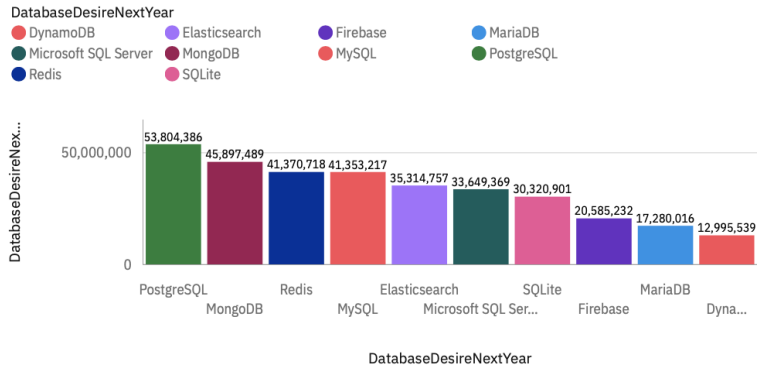
DASHBOARD TAB 2

Future Technology Trend

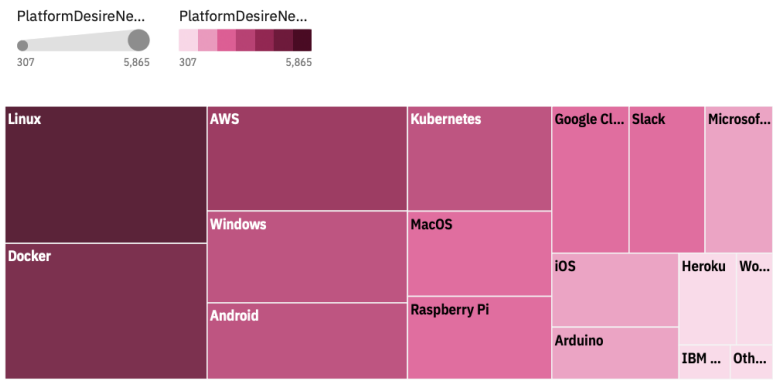
Top 10 Programming Languages Desired for the Next Year



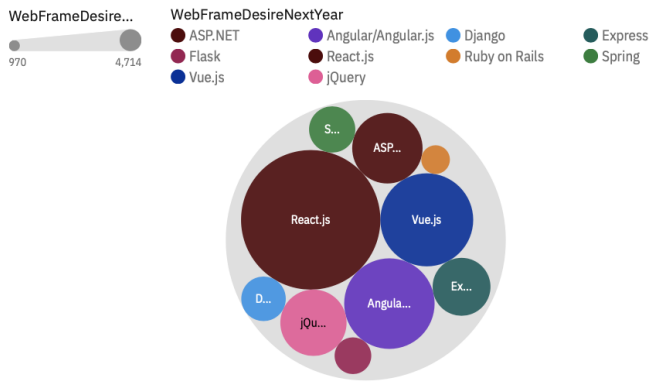
Top 10 Databases Desired for the Next Year



Desired Platforms for the Next Year



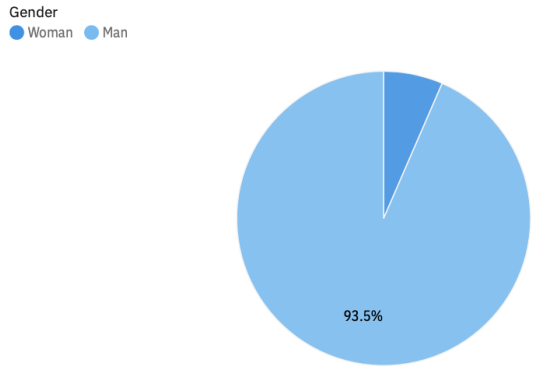
Top 10 Web Frameworks Desired for the Next Year



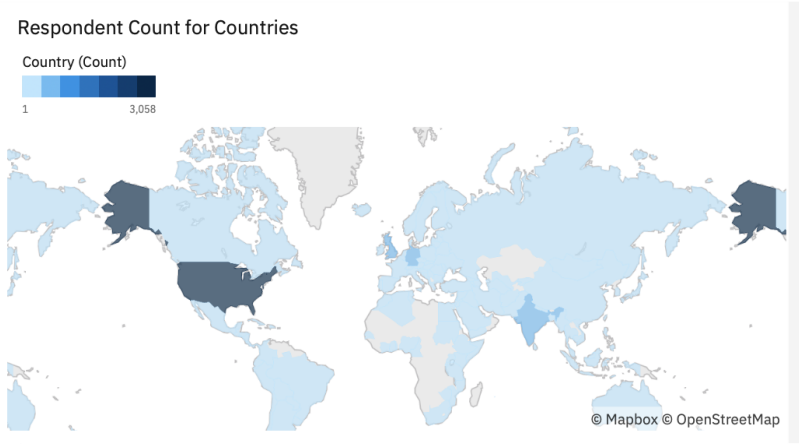
DASHBOARD TAB 3

Demographics

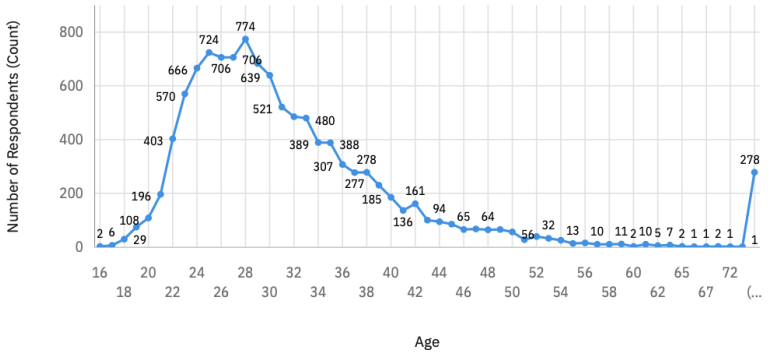
Respondent Classified by Gender



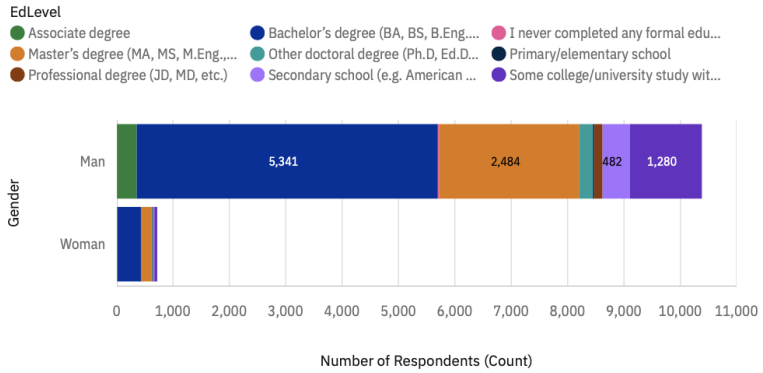
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Classified by Education Level



DISCUSSION

Findings & Implications

OVERALL FINDINGS & IMPLICATIONS

Findings

- The majority of IT Professionals are men
- The majority of IT Professionals are located in the United States and India.
- Most IT Professionals hold a bachelor's degree.

Implications

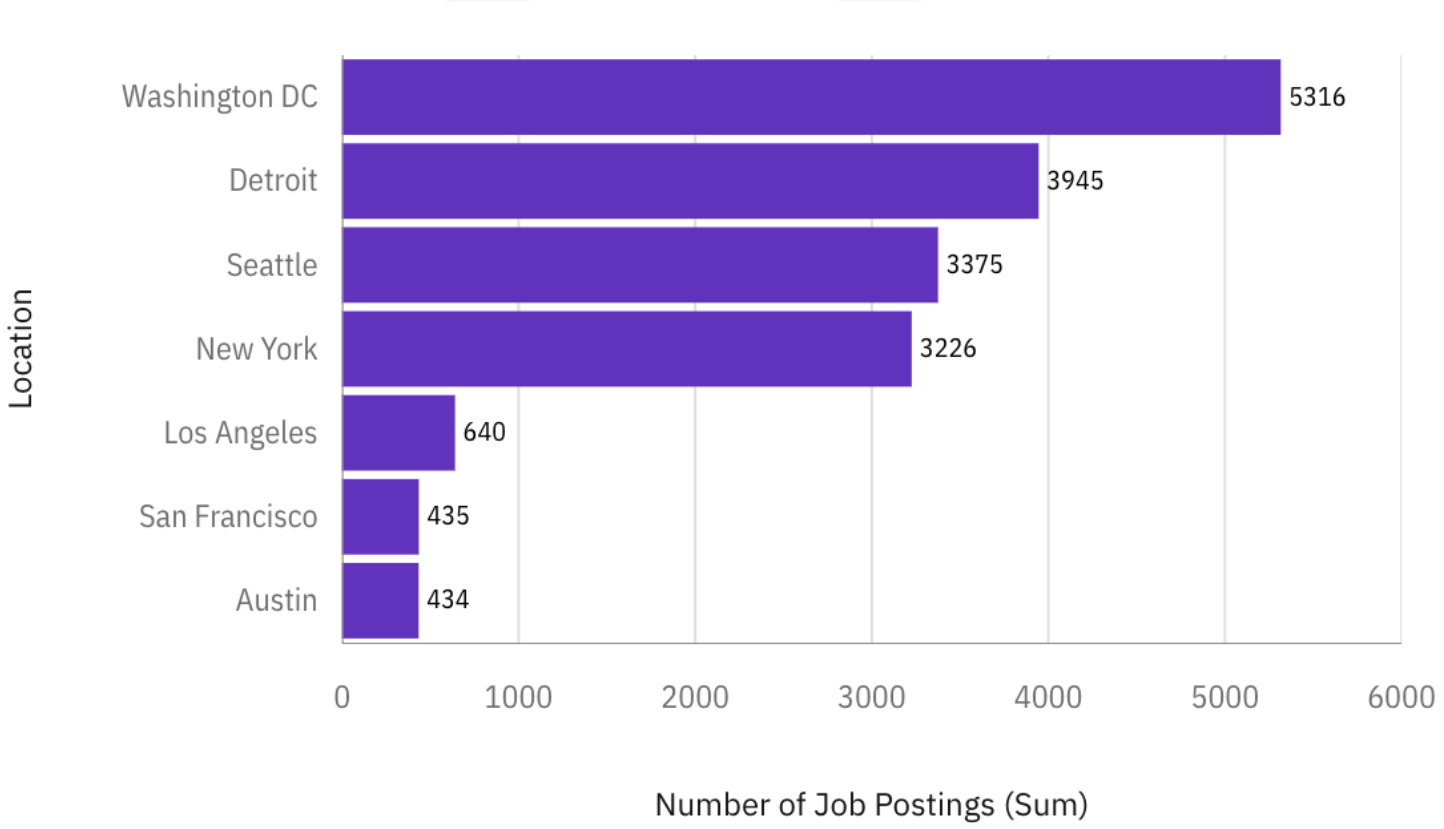
- Gender Diversity Issues: A male-dominated workforce can lead to a lack of diverse perspectives, which may reduce creativity and innovation.
- Focusing on two countries may lead companies to miss opportunities for innovation in other regions.
- Job Opportunities: Many companies require IT Professionals to have a bachelor's degree, limiting opportunities for those without it.

CONCLUSION

- The top programming languages are Python, JavaScript, and Java, especially for web development and data analysis.
- Database skills, including SQL and NoSQL (e.g. MongoDB), are essential for big data management and analysis.
- The developer workforce is mainly male and concentrated in the U.S. and India, emphasizing the need for greater diversity in the tech industry.

APPENDIX

JOB POSTINGS



POPULAR LANGUAGES