



Analysis of Stack Overflow Developer Survey Data

Bipin Chaudhary
March 2024

OUTLINE



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

EXECUTIVE SUMMARY



- This report provides an analysis of technology usage trends and demographics derived from survey data.
- The analysis encompasses three main aspects:
 - Current technology usage.
 - Future technology trends.
 - Demographic characteristics of respondents.
- Visualizations are employed to present key findings and insights, facilitating a comprehensive understanding of the data.
- The report serves as a stand-alone document, offering a succinct overview of the project's objectives, methodologies, and outcomes.
- No new information is introduced in the executive summary, ensuring its coherence with the main points of the report.

INTRODUCTION



- The analysis aims to explore current technology usage patterns, anticipate future trends, and understand the demographic composition of survey respondents.
- This involves examining popular programming languages, databases, platforms, and frameworks, as well as investigating demographic distributions based on gender, country, age, and education level.
- The primary problem addressed is the need to gain insights into prevalent technology choices, predict emerging trends, and understand the diversity of survey respondents in terms of demographics.
- Key questions include:
 - Most common tech usage: Programming languages, databases, platforms, and frameworks.
 - Demographic influences: Gender, country, age, education on tech preferences.

METHODOLOGY



- Data Gathering
- Data Preparation
- Data Cleaning and Transformation
- Data Visualizations and Analysis
 - Visualization Techniques
 - Chat Configurations Details

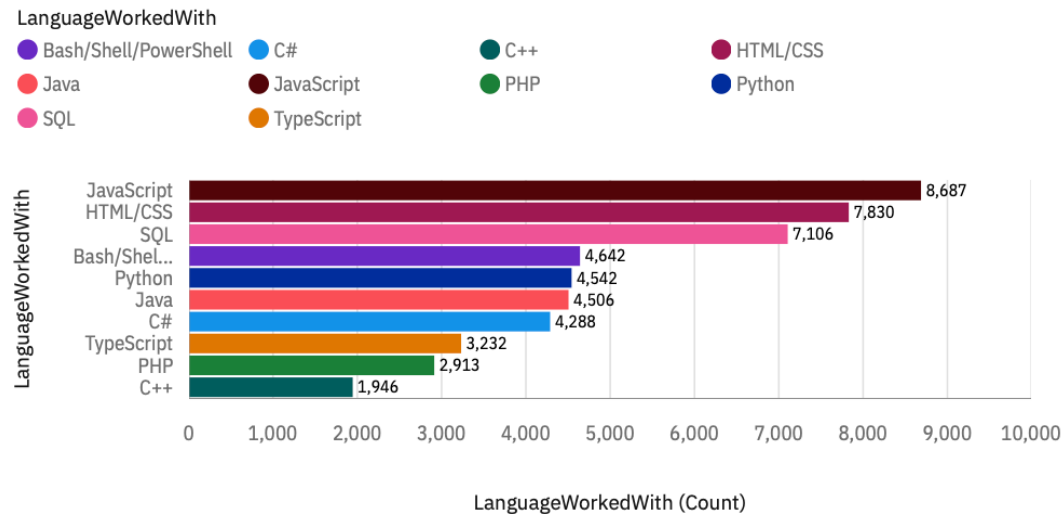
RESULTS

- **Programming Languages:** JavaScript, HTML/CSS, and SQL are most commonly used, comprising 47.5% of total usage.
- **Databases:** MySQL is the dominant database, with a usage rate of 18.7%.
- **Platforms:** Linux and Windows are the primary platforms, constituting 29% of total usage.
- **Web Frameworks:** Angular/Angular.js is the top web framework, with a usage rate of 23.8%.
- **Future Trends:** JavaScript remains the most desired language, while PostgreSQL is the top desired database.
- **Demographics:** Gender distribution skews heavily towards men (92.3%), with a significant portion having Bachelor's degrees.

PROGRAMMING LANGUAGE TRENDS

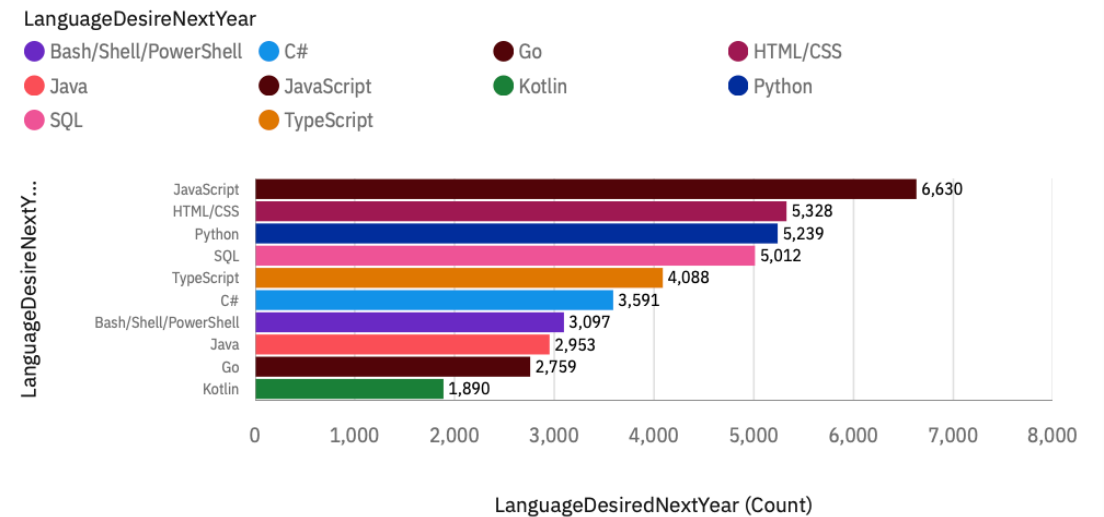
Current Year

Top 10 Language Worked With



Next Year

Top 10 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

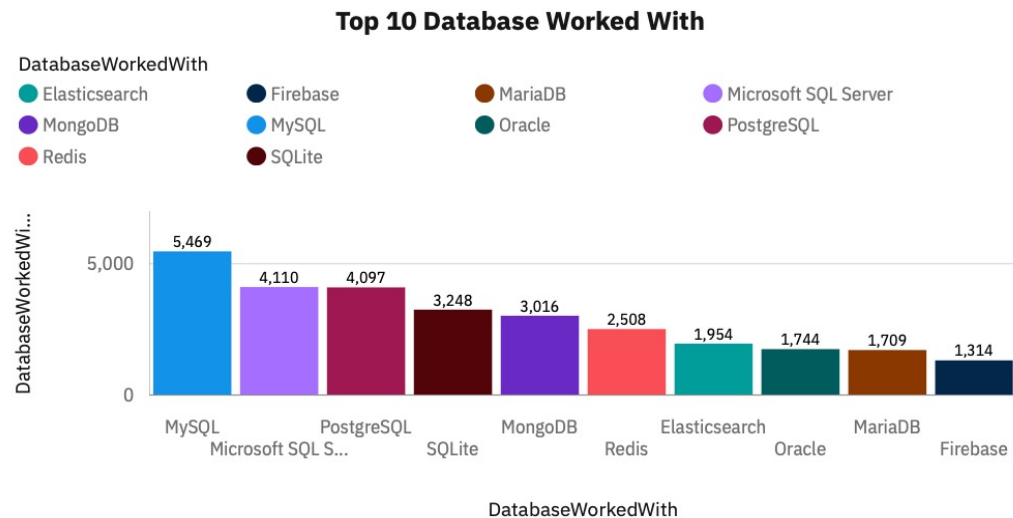
- **JavaScript Dominance**
- **Rising Demand for Python**
- **Shift in Language Trends**

Implications

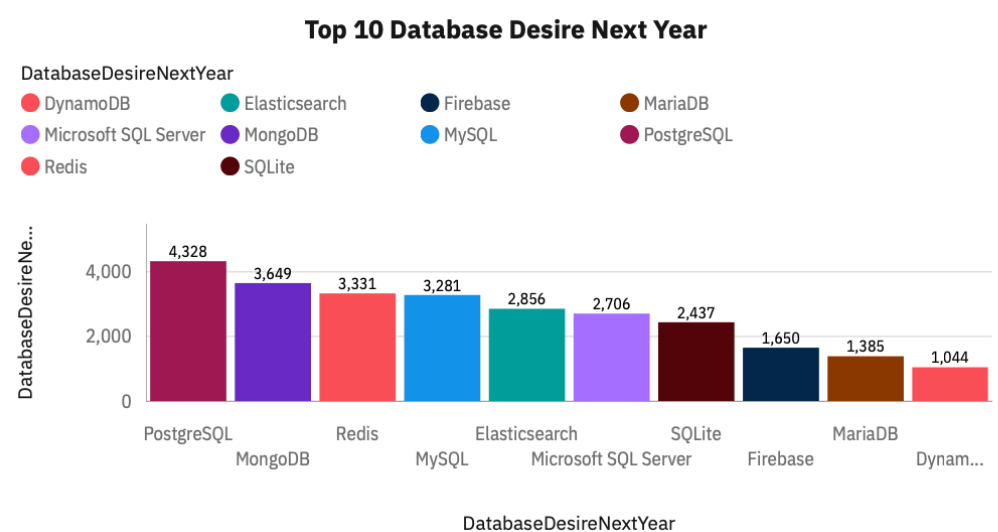
- **Emergence of Python**
- **Adaptation and Learning**
- **Industry Alignment and Career Development**

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **Shifting Database Preferences**
- **Growing Popularity of MongoDB, Redis, and Elasticsearch**
- **Decline in Oracle Database Usage**

Implications

- **Preferred Database Solutions**
- **Functional Advantages of MongoDB, Redis, Elasticsearch**
- **Caution Regarding Oracle Database**

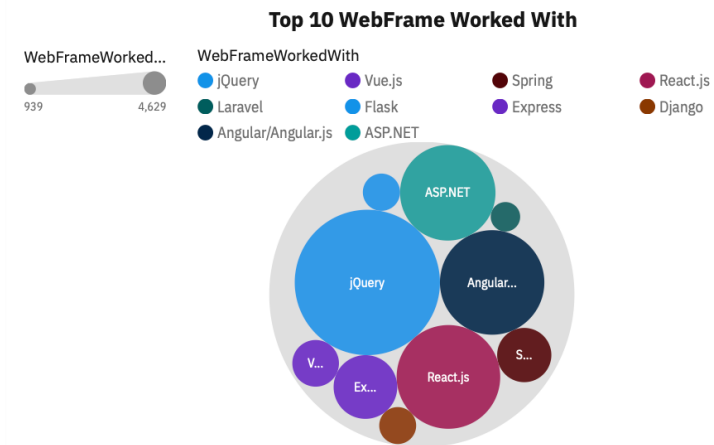
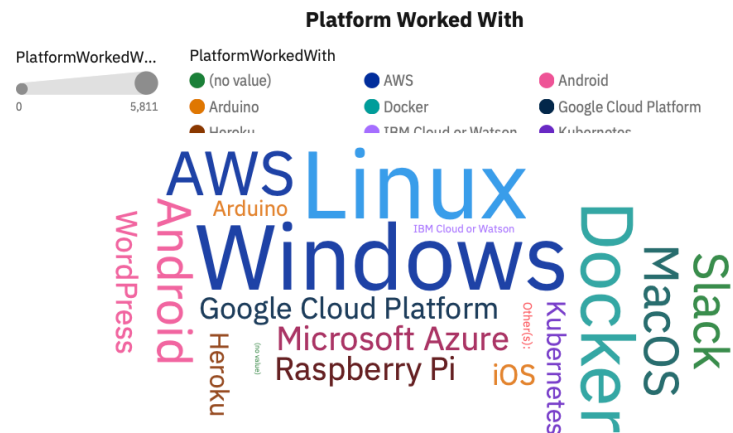
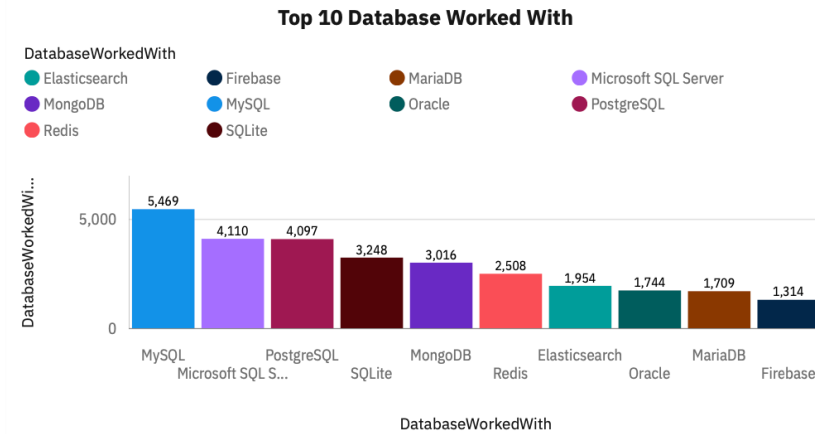
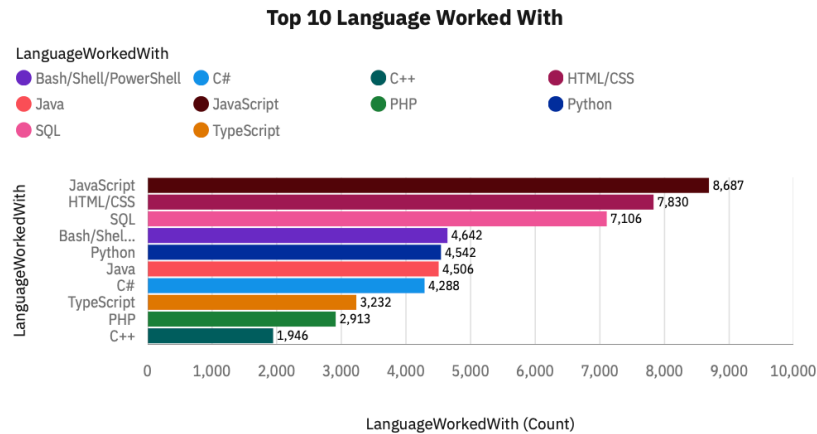
DASHBOARD



<https://github.com/Bipin-11/Capstone-Project-Dashboard/blob/main/Dashboard.pdf>

DASHBOARD TAB 1

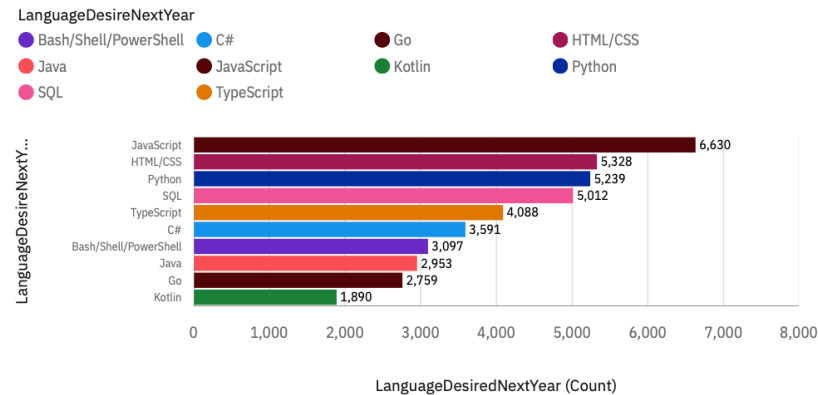
Current Technology Usage



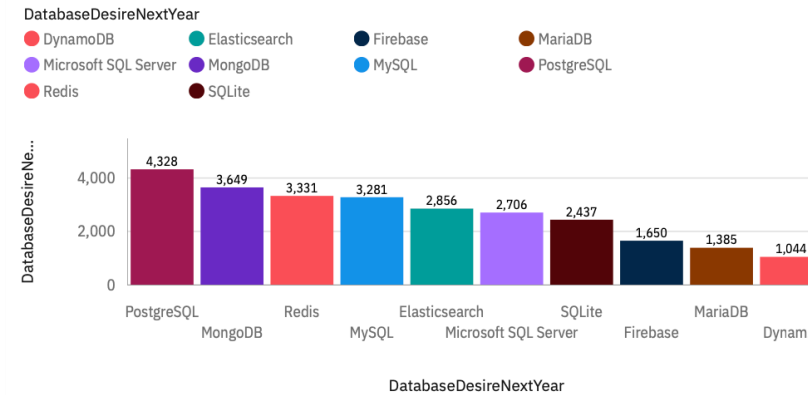
DASHBOARD TAB 2

Future Technology Trend

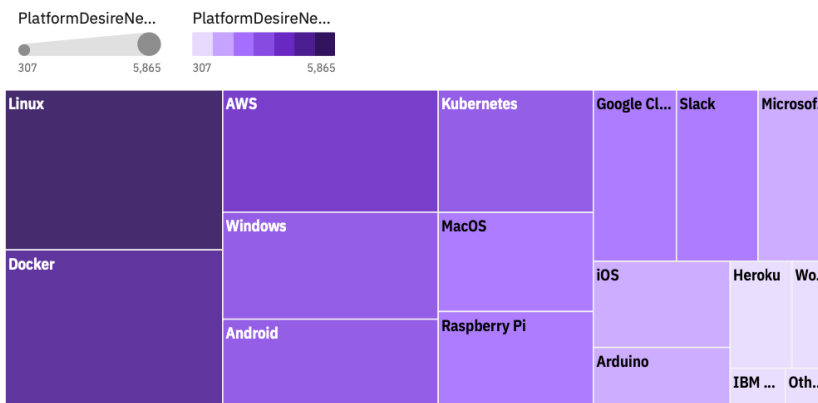
Top 10 Language Desire Next Year



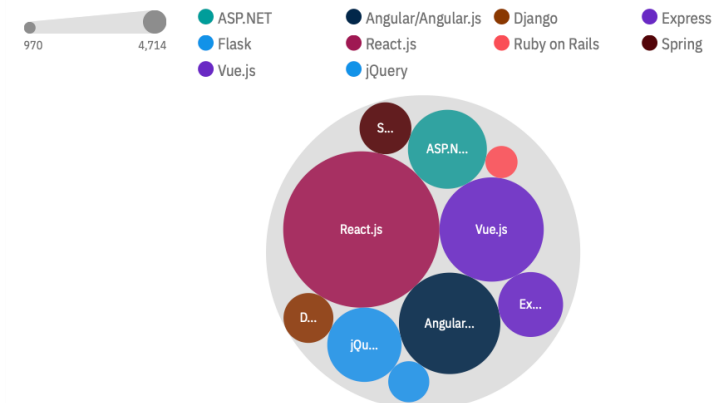
Top 10 Database Desire Next Year



Platform Desire Next Year

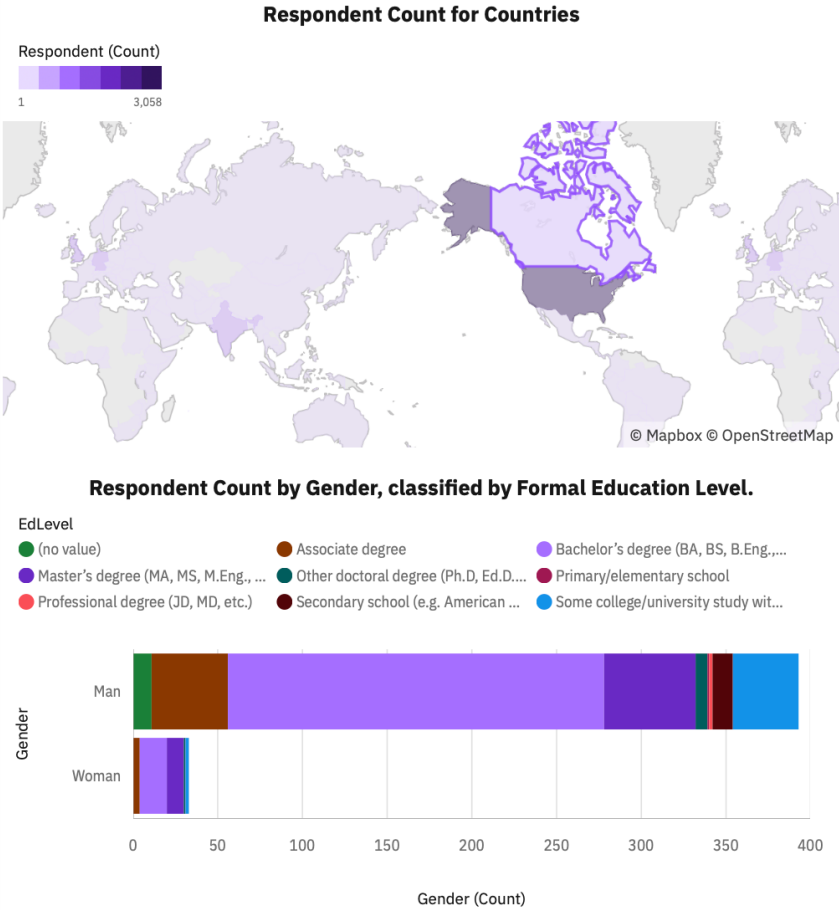
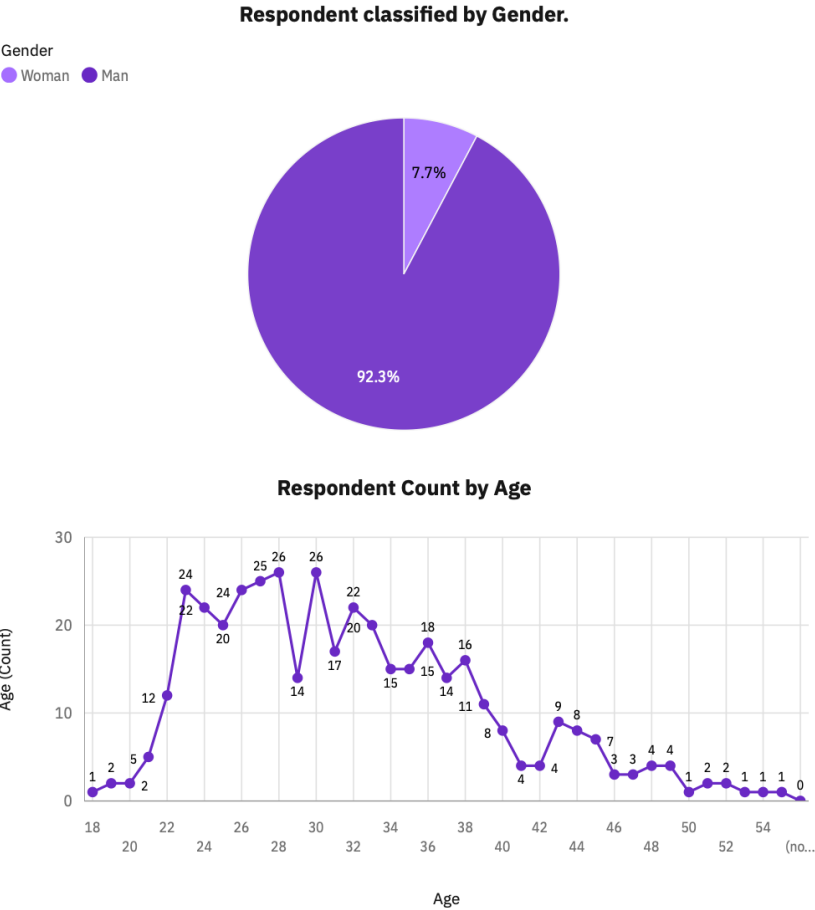


Top 10 WebFrame Desire Next Year



DASHBOARD TAB 3

Demographics



DISCUSSION



- JavaScript, HTML/CSS, and SQL are widely used programming languages, with JavaScript being the most prevalent.
- MySQL and PostgreSQL are the top choices for databases, while Linux and Windows dominate as platforms.
- React.js emerges as the most desired web framework for future use, followed by Angular/Angular.js and Vue.js.
- Male respondents outnumber female respondents, indicating a gender disparity in the developer community.
- The United States serves as a significant location for developer talent, although regional differences exist in tech demographics.

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, and SQL dominate programming language usage.
- MySQL leads in databases, with Linux and Windows as primary platforms
- Angular/Angular.js is the top web framework, followed closely by React.js.

Implications

- Prioritize JavaScript, HTML/CSS, SQL, and React.js skills.
- Adopt MySQL, Linux, and PostgreSQL for efficient tech stacks.
- Foster community collaboration for skill enhancement.

CONCLUSION



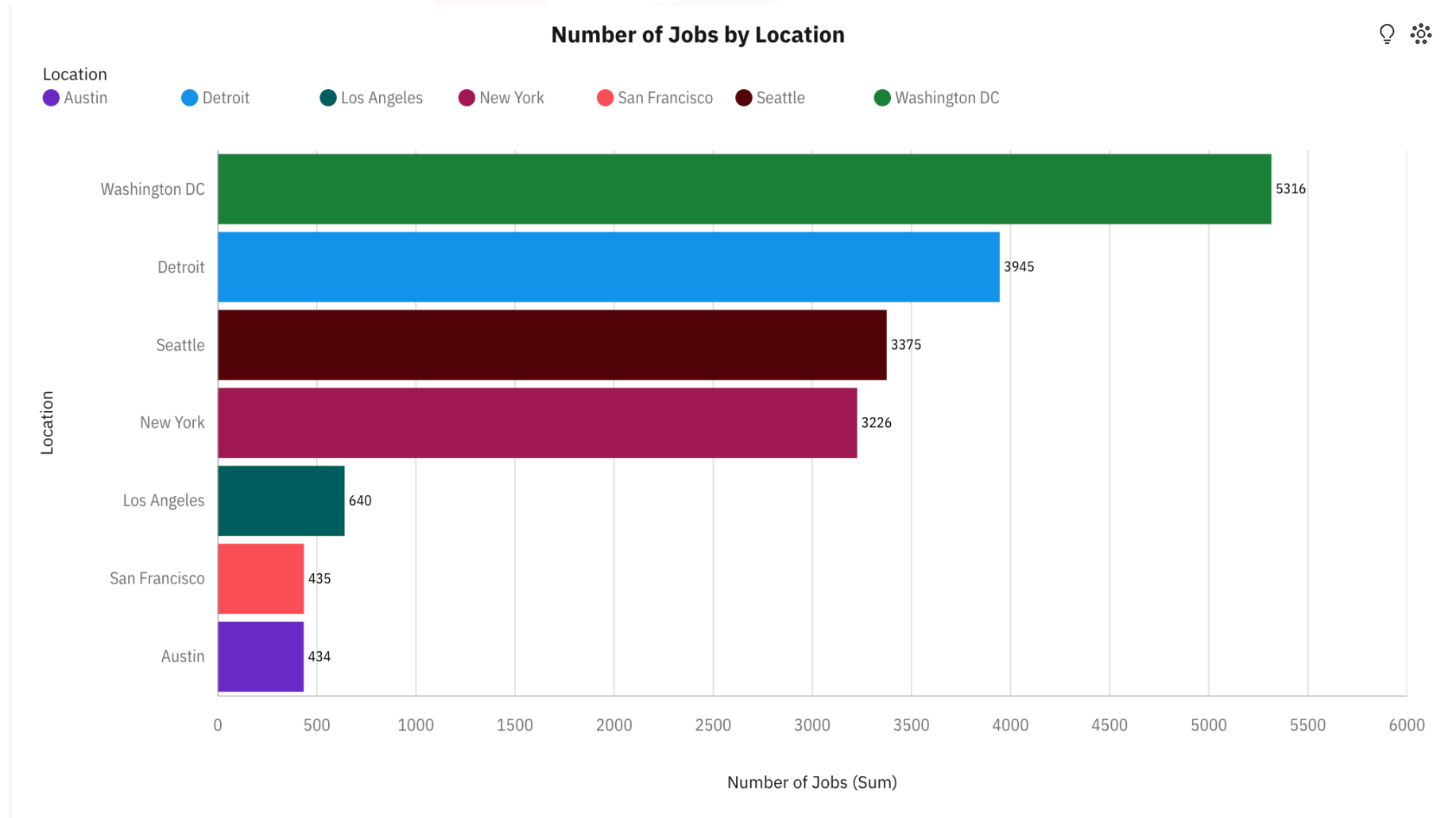
- JavaScript, HTML/CSS, SQL, MySQL, Linux, and Angular/Angular.js emerge as dominant technologies in programming, databases, and platforms.
- Gender disparities persist, with a concentration of talent in the United States, highlighting the need for diversity initiatives.
- Organizations should align with industry trends and prioritize diversity to drive innovation.
- Future efforts should focus on fostering inclusivity and addressing disparities to sustain industry growth and innovation.

APPENDIX



- A- Job Posting Chart
- B- Popular Language

A- JOB POSTINGS CHART



B-POPULAR LANGUAGES CHART

