Technology Trends

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EXECUTIVE SUMMARY

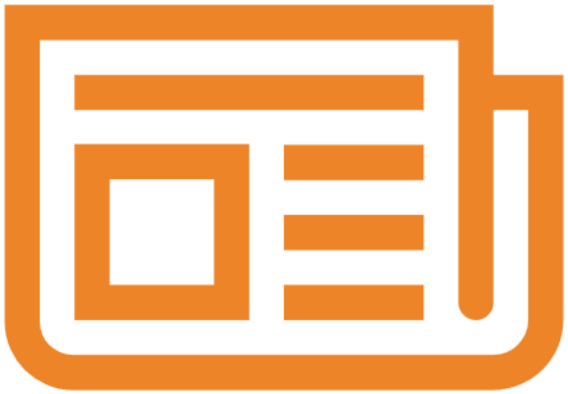
- **Technology Trends Analysis**
  - provides a data-driven perspective on current and future trends in programming languages and database technologies.
- **Dominant Programming Languages and Database Technologies**
  - Javascript, Python and SQL
- **Industry Trends and Insights**
  - Emphasis on cloud computing, automation, and AI tech
- **Data-Driven Guidance**
  - Helps decision-makers on skill investments and tech adoptioin strategies

INTRODUCTION

Technology Trends Analysis is to give individuals and companies useful **information** about **database and programming technology** trends so they may **keep ahead** of the always **changing tech scene.**

- **Purpose**
  - Examine the most popular and cutting-edge databases and programming languages while providing industry implications and projections.
- **Audience**
  - Managers, company executives, engineers, and IT strategists looking to make well-informed decisions
- **Value Proposition**
  - assists companies in matching technology investments to changes in the sector.
  - helps developers determine which talents are most in-demand.
  - offers a viewpoint on changing patterns in software development that is supported by statistics.

METHODOLOGY

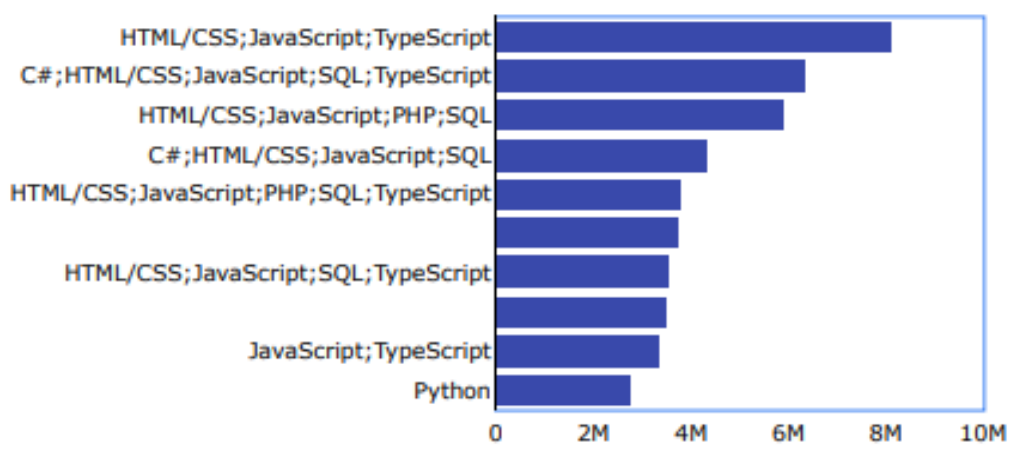


Data Analysis Conducted and Guided by IBM Labs and AI

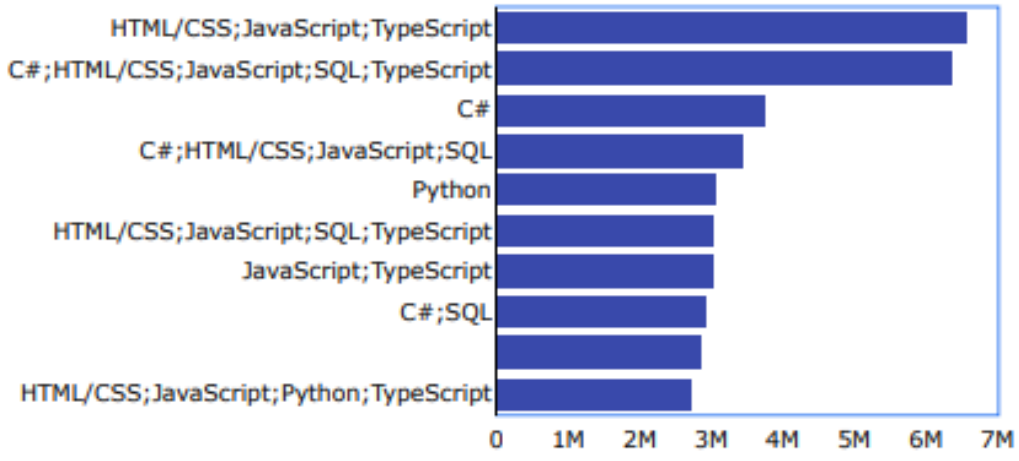
- **Data Sources**: Stack Overflow Developer Survey, DB-Engines Ranking, Industry Reports.
- **Collection Methods**: Data scraping, API extraction, survey aggregation.
- **Data Wrangling**: Cleaning, normalization, trend analysis, and visualization.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

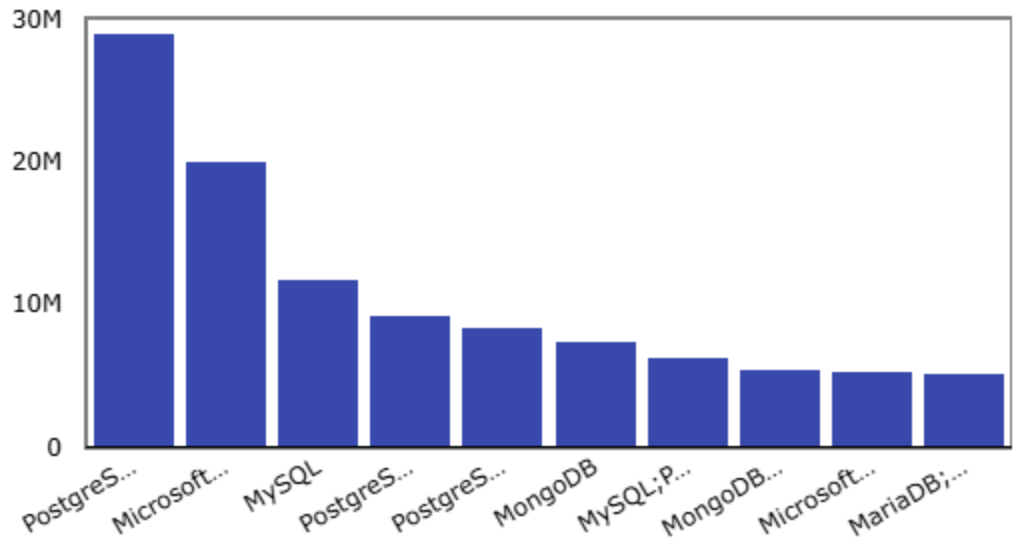
- HTML/CSS, JavaScript, and TypeScript is currently at the top for current programming languages
- C# and SQL closely behind the top programming languages
- Python slowly increases in popularity

Implications

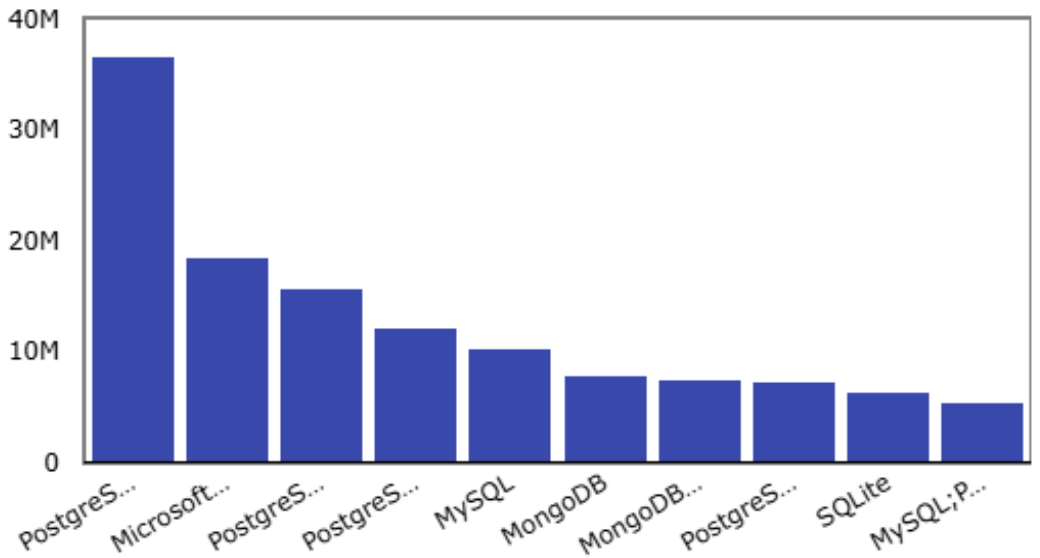
- Developers and analysts should have a strong foundation in HTML/CSS, Javascript, and TypeScript as it is still consistently used
- Python and SQL should be used by aspiring developers who want to pursue a career in data science or development

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

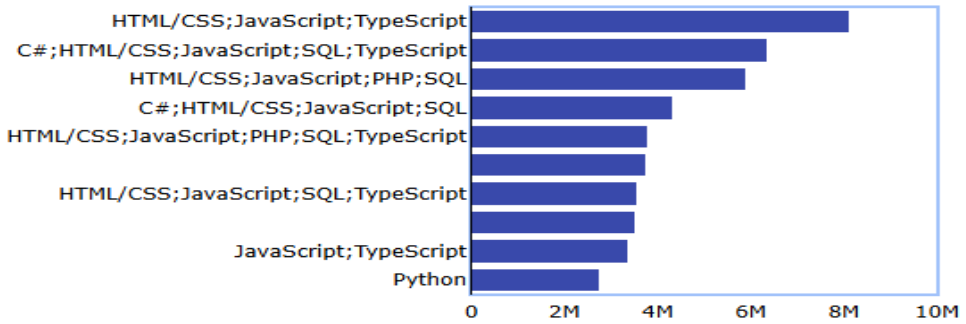
Findings

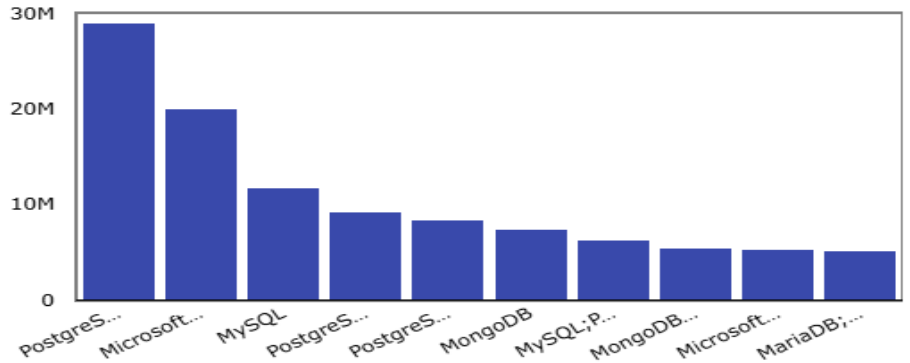
- PostgreSQL is currently one of the most used database by a huge margin
- This is followed by MicrosoftSQL server and MySQL
- PostgreSQL further increases in popularity and demand

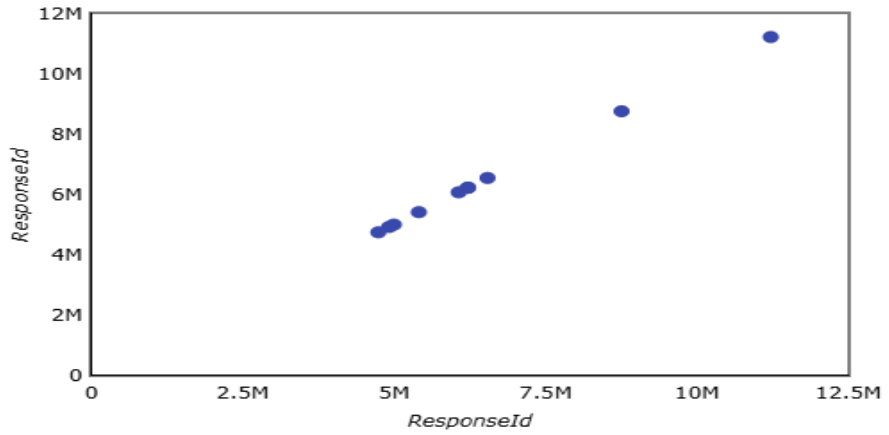
Implications

- Developers should focus on learning PostgreSQL
- Developers should have a strong foundation and understanding on PostgreSQL

DASHBOARD TAB 1







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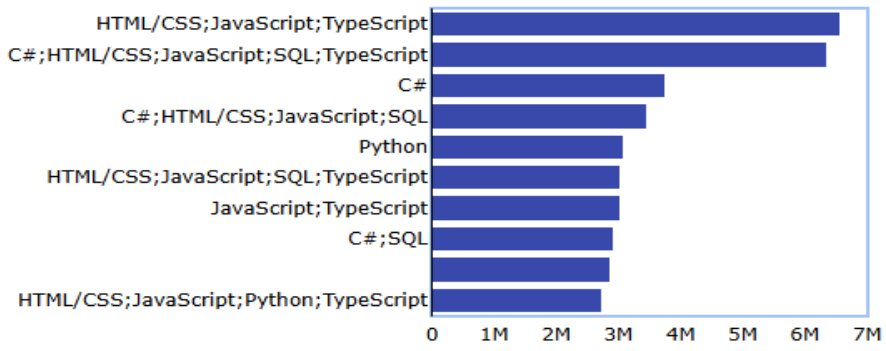

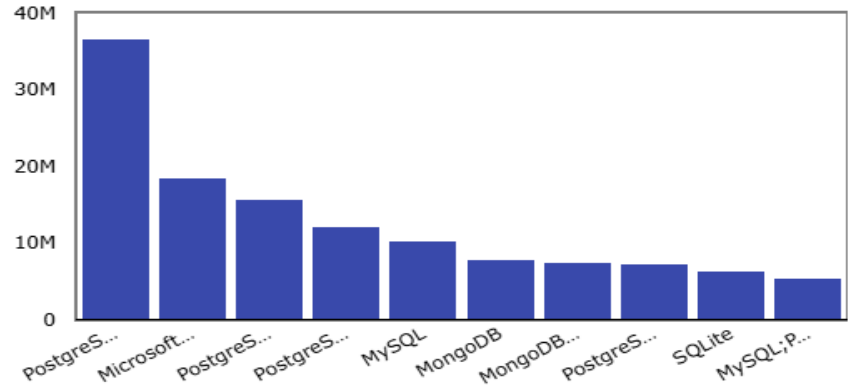

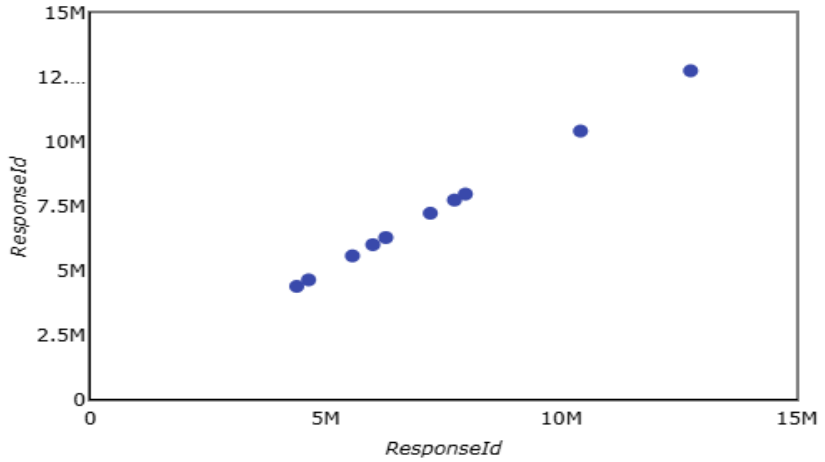

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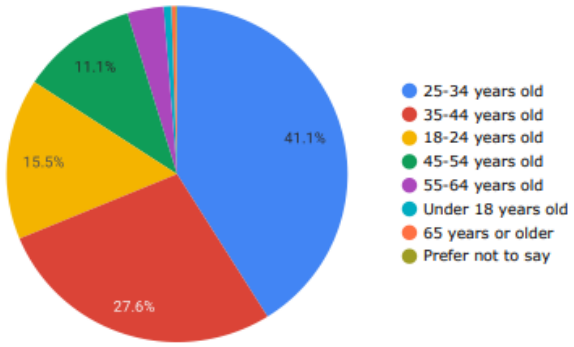
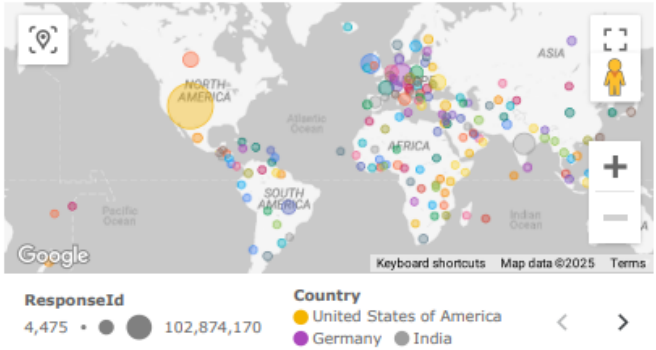
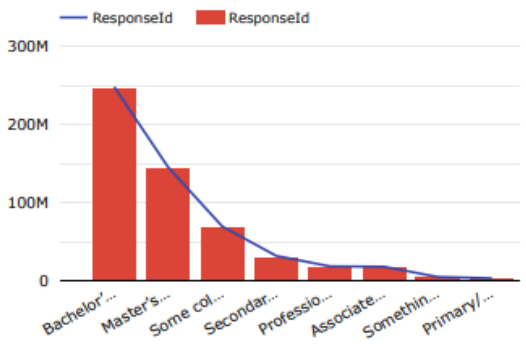
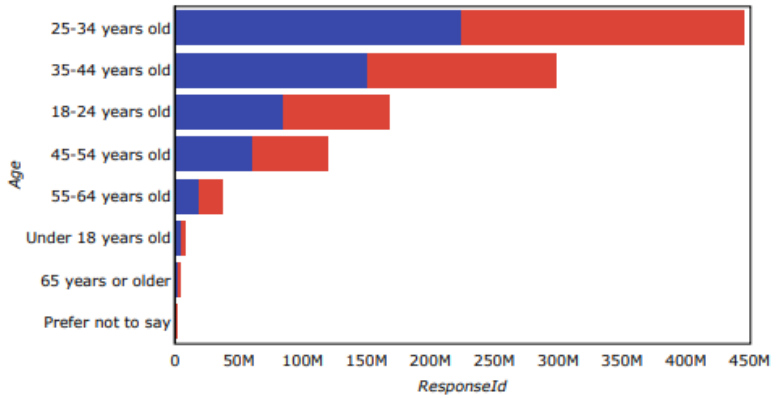








DISCUSSION

- HTML/CSS, JavaScript, and TypeScript programming languages are dominating the scene with Python closely increasing in popularity
- PostgreSQL continues to dominate the other database languages
- Current and future analysts should continue to focus on these languages to gain an advantage in today's scene

OVERALL FINDINGS & IMPLICATIONS

Findings

- Programming Languages
  - Most Used: JavaScript, SQL, HTML/CSS, TypeScript, Python.
  - Most Wanted: JavaScript, SQL, TypeScript, Python, Go, Rust.
- Database Technologies
  - Most Used: PostgreSQL, MySQL, SQLite, MongoDB, Microsoft SQL Server.
  - Most Wanted: PostgreSQL, Redis, SQLite, MySQL, Supabase.
- Web Frameworks & Web Technologies
  - Most Used: Node.js, React, jQuery, Express, Next.js, Angular, Vue.js.
  - Most Wanted: React, Node.js, Next.js, FastAPI, Vue.js, Svelte.

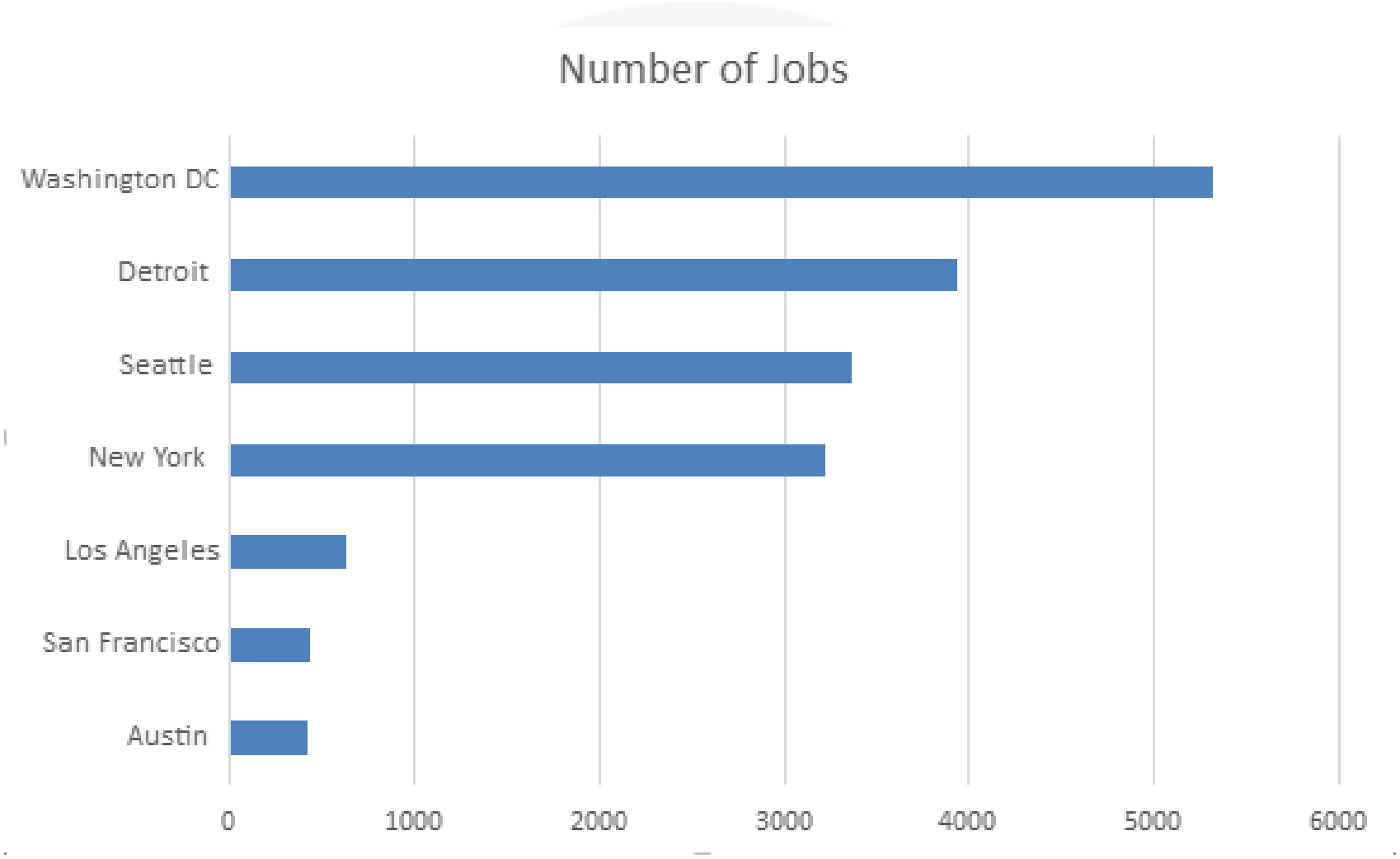
Implications

- JavaScript, SQL, and TypeScript are foundational, with continued demand across industries.
- PostgreSQL is becoming the most preferred database, likely due to its scalability and features
- FastAPI’s growth suggests that Python is not just for data science but also backend development.

CONCLUSION

- JavaScript, SQL, and Python remain foundational, with TypeScript gaining traction for large-scale applications.
- PostgreSQL is the preferred database, reflecting a shift toward scalable, open-source solutions over traditional MySQL and SQL Server.
- Web development is evolving rapidly, with Next.js and FastAPI leading the push toward more efficient full-stack and API-driven architectures.

JOB POSTINGS



POPULAR LANGUAGES