



# CAPSTONE PROJECT

PRATIK PAUL

01/21/2024

# OUTLINE

---



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

# EXECUTIVE SUMMARY

---



- This project describes the role and tasks of a Data Analyst in a global IT and business consulting services firm.
- The main objective is to collect and analyze data on the top programming skills that are most in demand for this year's report on emerging skills
- The data sources include job postings, training portals, and surveys
- The data analysis involves scraping web sites, accessing APIs, data wrangling, statistical techniques, and IBM Cognos Analytics

# INTRODUCTION

---



- As a Data Analyst, I'm tasked with collecting data from various sources and identifying trends for this year's report on emerging skills
- The first task is to collect the top programming skills that are most in demand from various sources including:
  - Job postings
  - Training portals
  - Surveys
- Analyze the data and identify insights and trends that may include the following:
  - What are the top programming languages in demand?
  - What are the top database skills in demand?
  - What are the popular IDEs?

# METHODOLOGY

---



- Data Collection
  - Job postings
  - Training portals
  - Surveys
- Data Wrangling
  - Handling Missing Values
  - Handling Duplicates
- Exploratory Data Analysis
  - Distribution
  - Outliers
  - Correlation
- Data Visualization
- Dashboard Creation

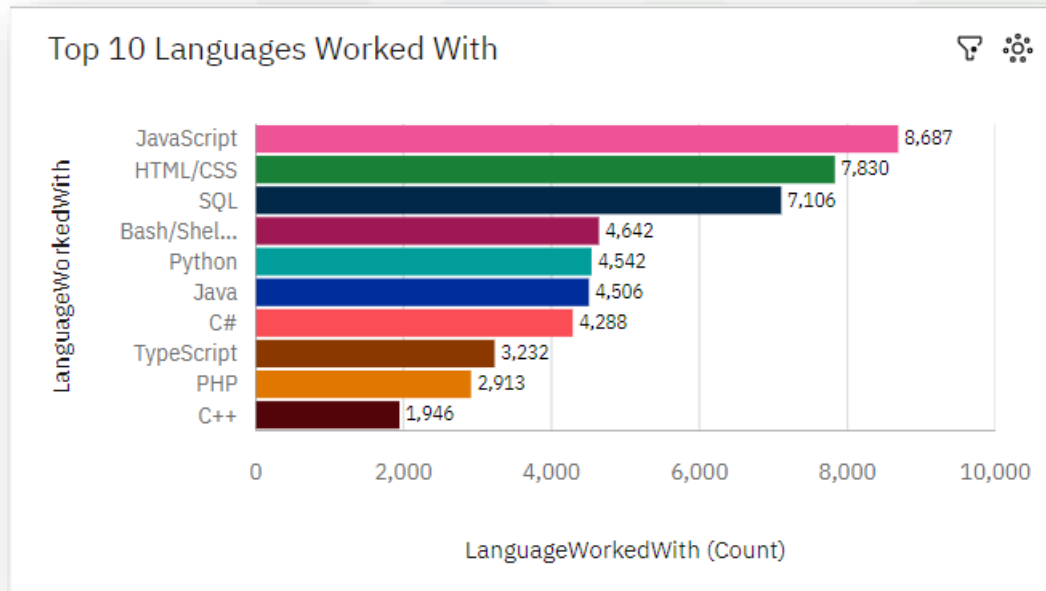
# RESULTS

---

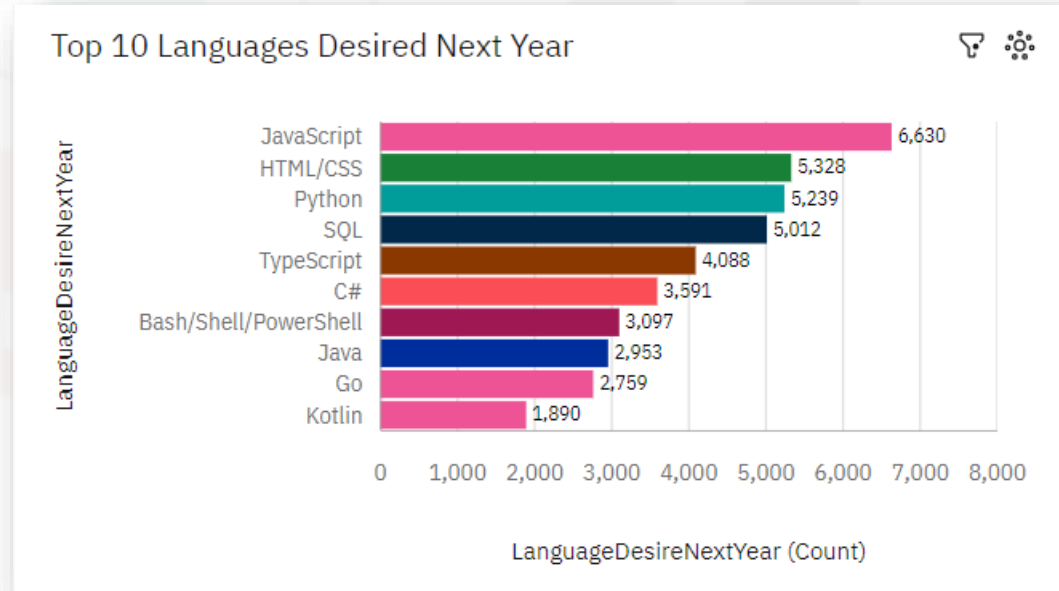
**VISUALIZATION - CHARTS**

# PROGRAMMING LANGUAGE TRENDS

## Current Year



## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

---

## Findings

- JavaScript and HTML/CSS are the top programming languages
- There has been a decline in Bash/Shell/Powershell
- Python has overtaken SQL in terms of popularity

## Implications

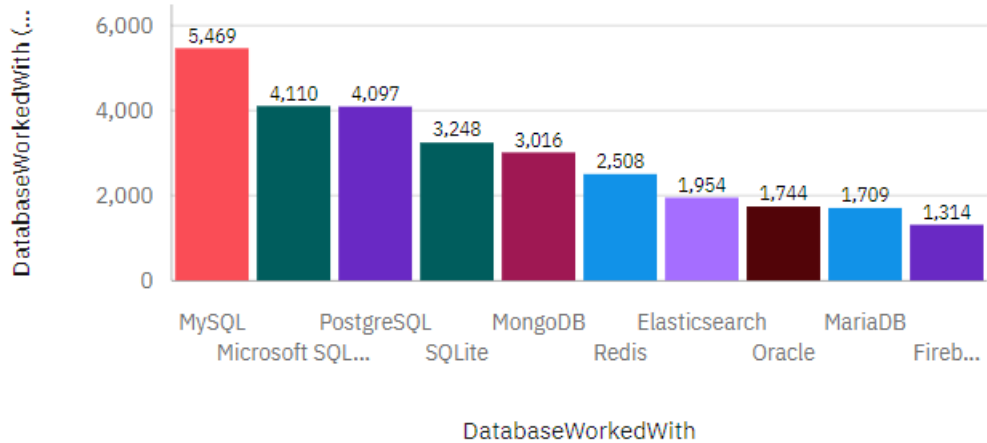
- The desire for programming languages is still substantial
- The popularity of Python is increasing
- People seem to be more open towards TypeScript



# DATABASE TRENDS

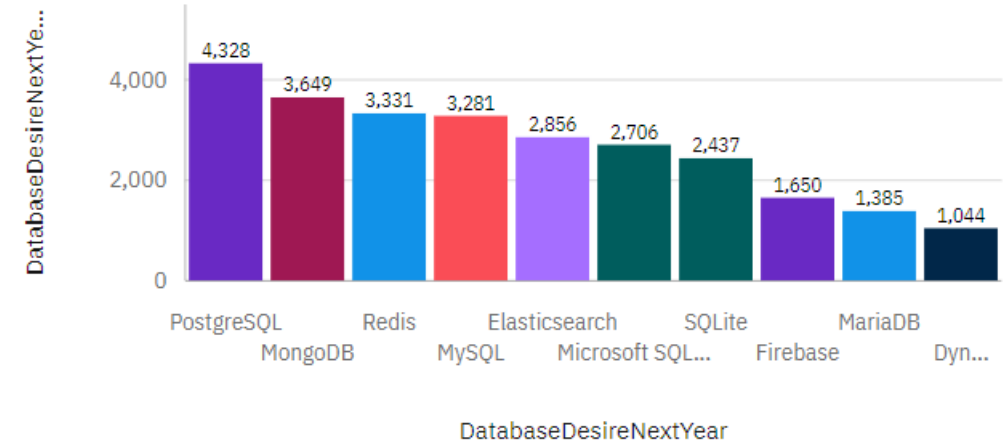
## Current Year

Top 10 Databases Worked With



## Next Year

Top 10 Databases Desired Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

---

## Findings

- MySQL is the most popular database
- PostgreSQL has topped the charts for next year
- Microsoft SQL Server has taken a decline

## Implications

- The need for databases is on the rise
- The popularity of PostgreSQL and MongoDB is increasing
- There are huge differences between the popularity for current year and next year

# DASHBOARD

---



<https://github.com/PratikRules/courserarepo/blob/8c123f020a910900fa62df5f3a85977c9cbe8bdc/Dashboard.pdf>

### Top 10 Languages Worked With

| Language   | Count |
|------------|-------|
| JavaScript | 8,687 |
| HTML/CSS   | 7,830 |
| SQL        | 7,106 |
| Bash/Shell | 4,642 |
| Python     | 4,542 |
| Java       | 4,506 |
| C#         | 4,288 |
| TypeScript | 3,232 |
| PHP        | 2,913 |
| C++        | 1,946 |

### Top 10 Databases Worked With

| Database             | Count |
|----------------------|-------|
| MySQL                | 5,469 |
| PostgreSQL           | 4,110 |
| MongoDB              | 4,097 |
| Elasticsearch        | 3,248 |
| Redis                | 3,016 |
| MariaDB              | 2,508 |
| Oracle               | 1,954 |
| Firebird             | 1,744 |
| Microsoft SQL Server | 1,709 |
| SQLite               | 1,314 |

### Platforms Worked With

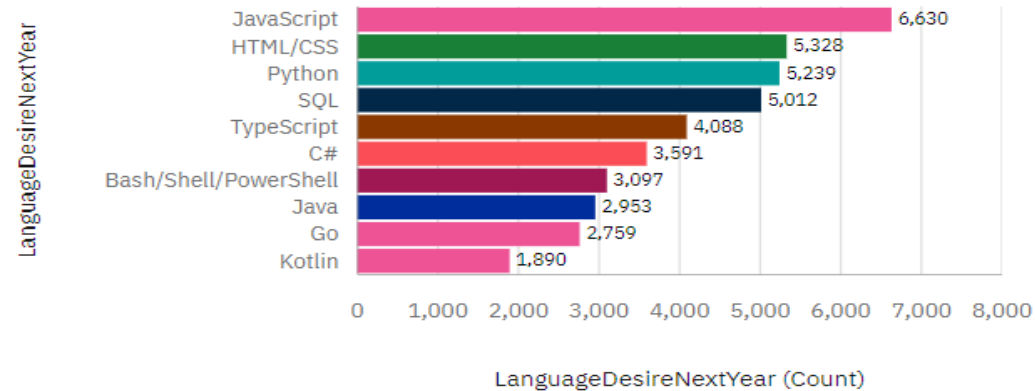
Platforms shown include: AWS, Linux, Windows, Docker, macOS, iOS, Arduino, Google Cloud Platform, Microsoft Azure, Raspberry Pi, Heroku, Kubernetes, WordPress, Slack, Android, and IBM Cloud or Watson.

### Top 10 WebFrames Worked With

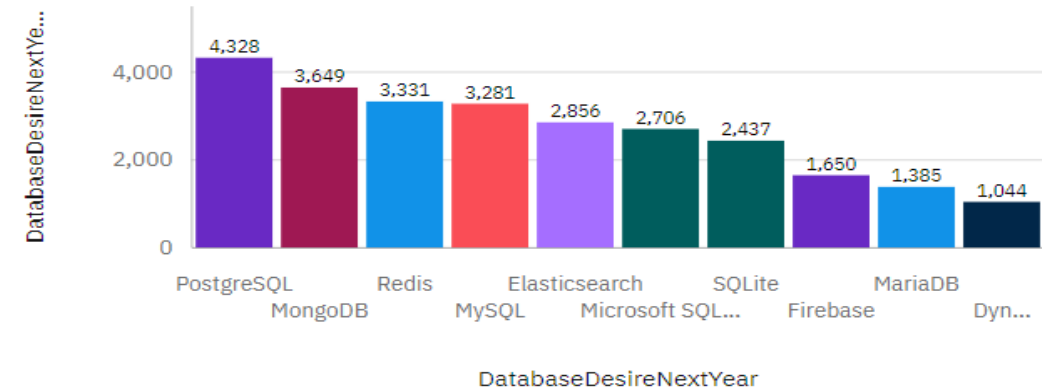
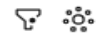
| WebFramework      | Count |
|-------------------|-------|
| jQuery            | 5,469 |
| React.js          | 4,110 |
| Angular/AngularJS | 4,097 |
| ASP.NET           | 3,248 |
| Spring            | 3,016 |
| Express           | 2,508 |
| Vue.js            | 1,954 |
| Django            | 1,744 |
| Flask             | 1,709 |
| Laravel           | 1,314 |

# FUTURE TECHNOLOGY TREND

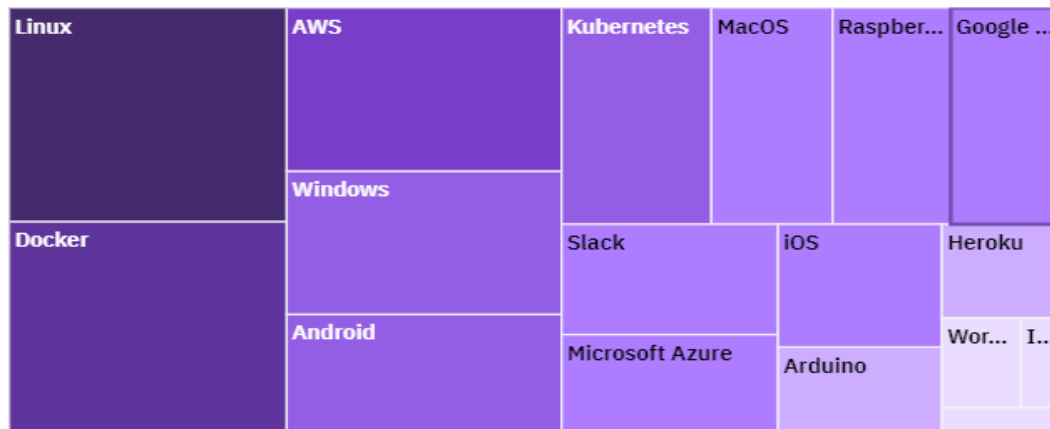
Top 10 Languages Desired Next Year



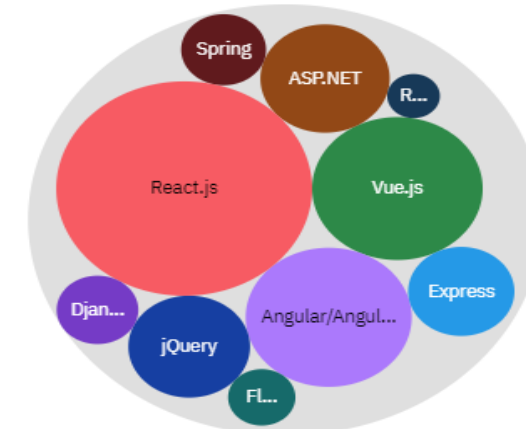
Top 10 Databases Desired Next Year



Platforms Desired Next Year

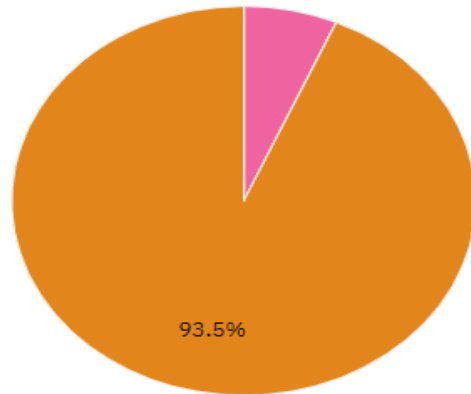


Top 10 WebFrames Desired Next Year



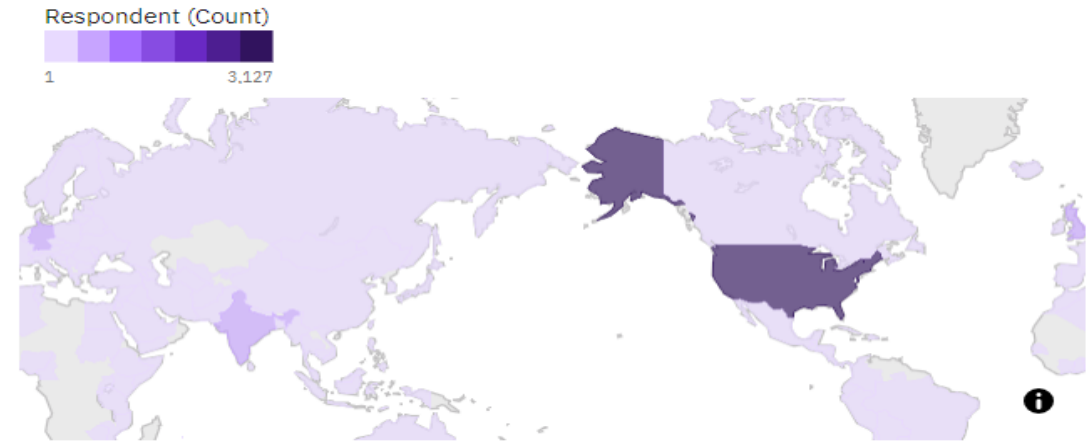
# DEMOGRAPHICS

Respondent classified by Gender

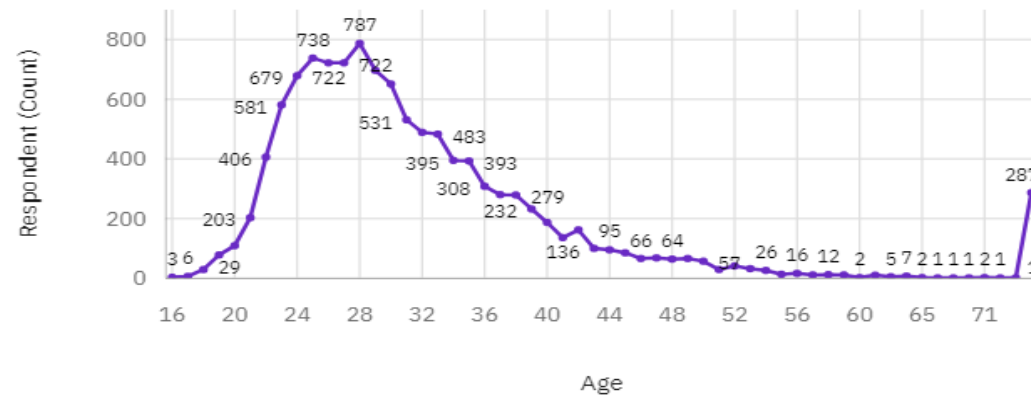


Gender  
● Woman  
● Man

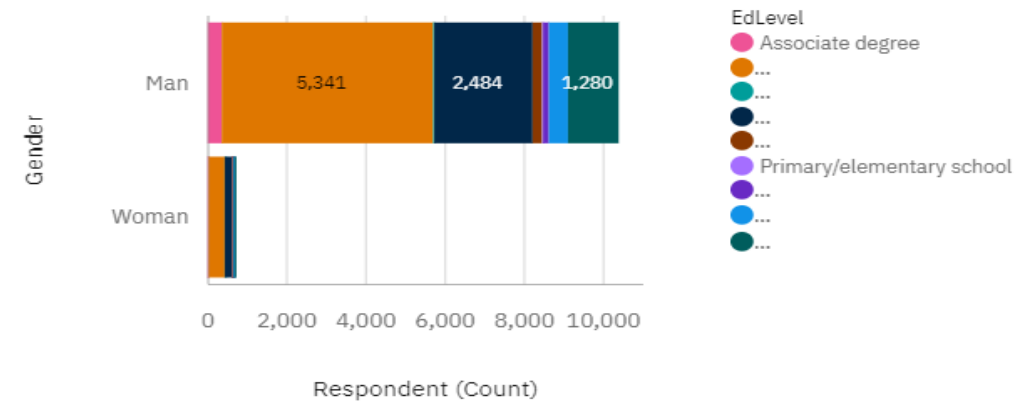
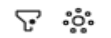
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender and Formal Education Level



# DISCUSSION

---



- What are the top programming languages in demand?
- What are the top database skills in demand?
- What are the popular IDEs?

# OVERALL FINDINGS & IMPLICATIONS

---

## Findings

- Linux is the most popular platform people use
- United States has the highest number of respondents
- The popularity of React.js is increasing

## Implications

- Developers want to stick to Linux as their main platform
- United States has become the hub for all technologies
- The trend for JavaScript is on the rise



# CONCLUSION

---



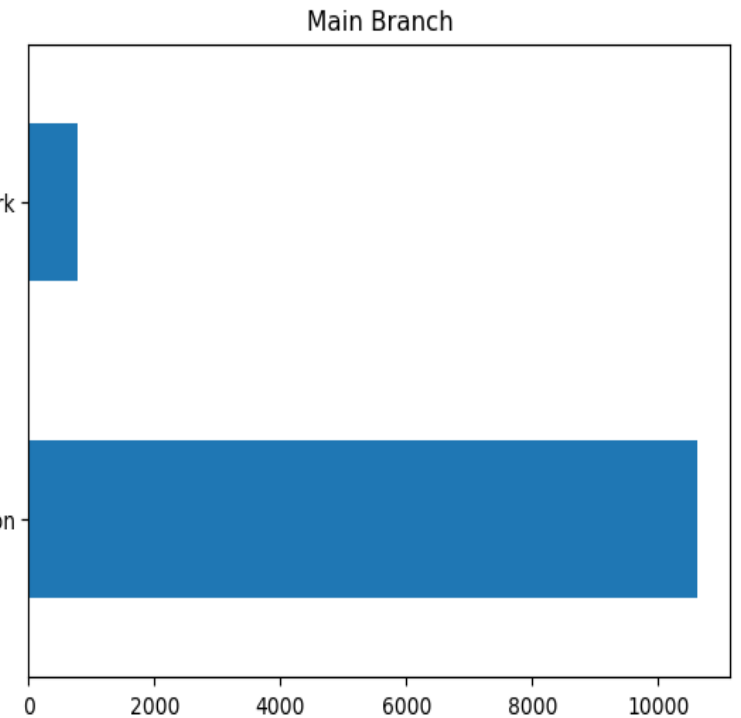
- The top programming languages are JavaScript, followed by HTML/CSS
- The in-demand database is PostgreSQL
- Linux and Windows are at neck-to-neck as the most used platform
- Web Frames like React.js are on the rise

# APPENDIX

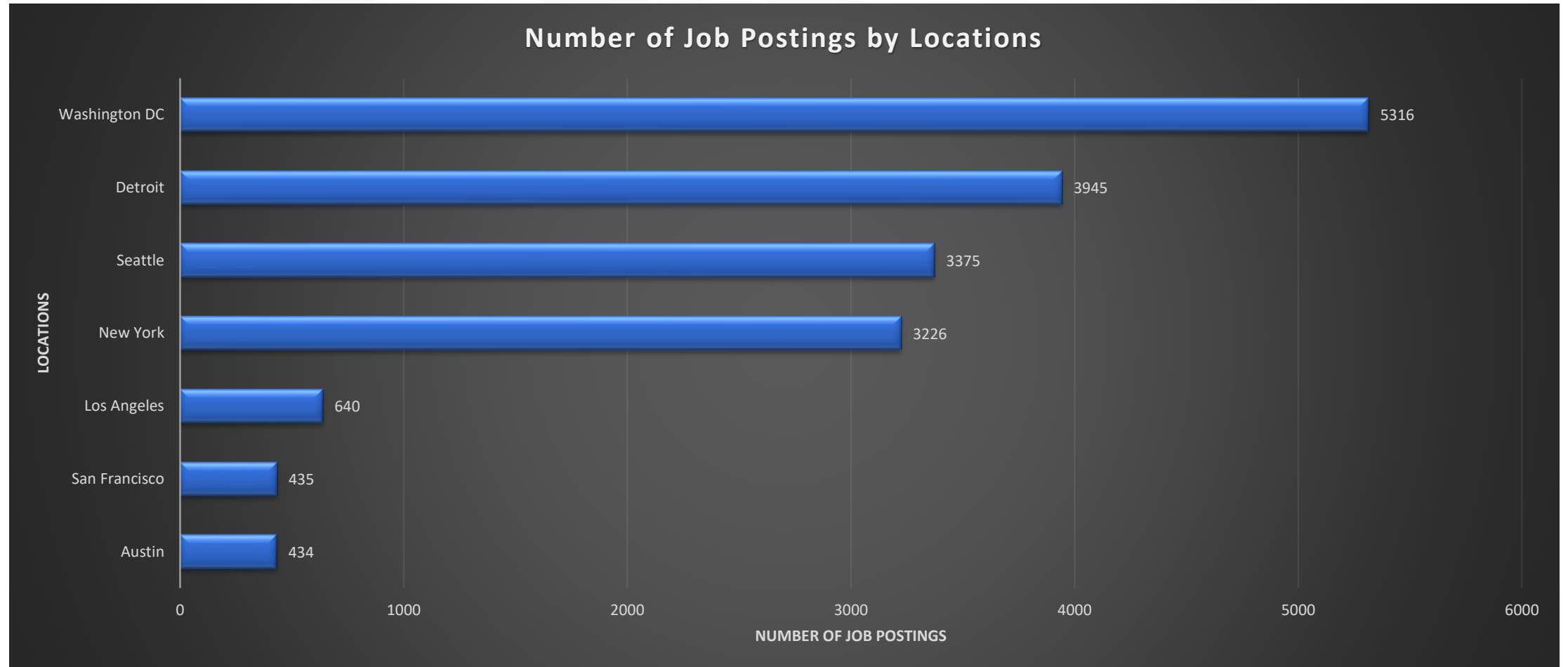


I am not primarily a developer, but I write code sometimes as part of my work

I am a developer by profession



# JOB POSTINGS



# POPULAR LANGUAGES

