



# IBM Final Project: Technology Trend Analysis

Lijun

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# OUTLINE



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

# EXECUTIVE SUMMARY



- Data contextualization and analysis goal.
- Current Technology Usage Trend
- Future Technology Trend
- Demographics Survey
- Country & Gender Difference
- Draw final conclusions

# INTRODUCTION



- Analyze technology trend in software and web development among developers around the world
- Purpose of this Analysis
  - Identify the top programming languages, database, platform and web frame skills in demand
  - Identify skill requirements for future
  - Identify human resource gap in the industry
- Results presentation supported with graphs and trends
- Discussion of overall findings and implications regarding the results previously exposed
- Draw final conclusions



# METHODOLOGY



- Collect survey data & explore its content
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
- Dashboard

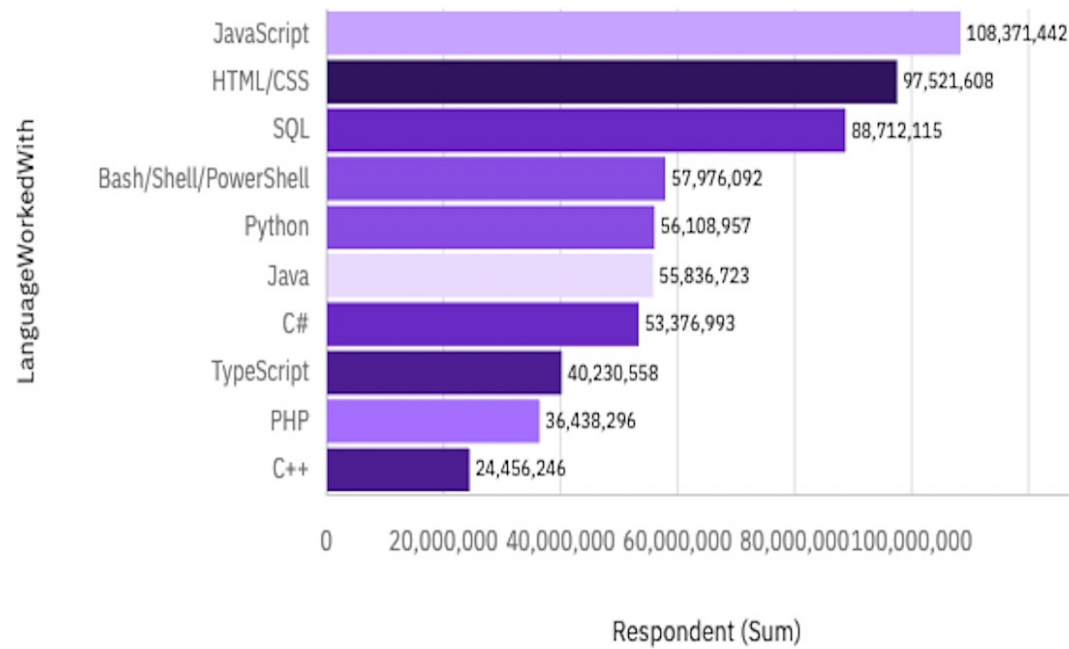
# RESULTS

	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python	NaN	NaN	NaN
74585	25142	HTML/CSS	R	NaN	NaN	NaN
74586	25142	PHP	NaN	NaN	NaN	NaN
74587	25142	Python	NaN	NaN	NaN	NaN
74588	25142	R	NaN	NaN	NaN	NaN

# PROGRAMMING LANGUAGE TRENDS

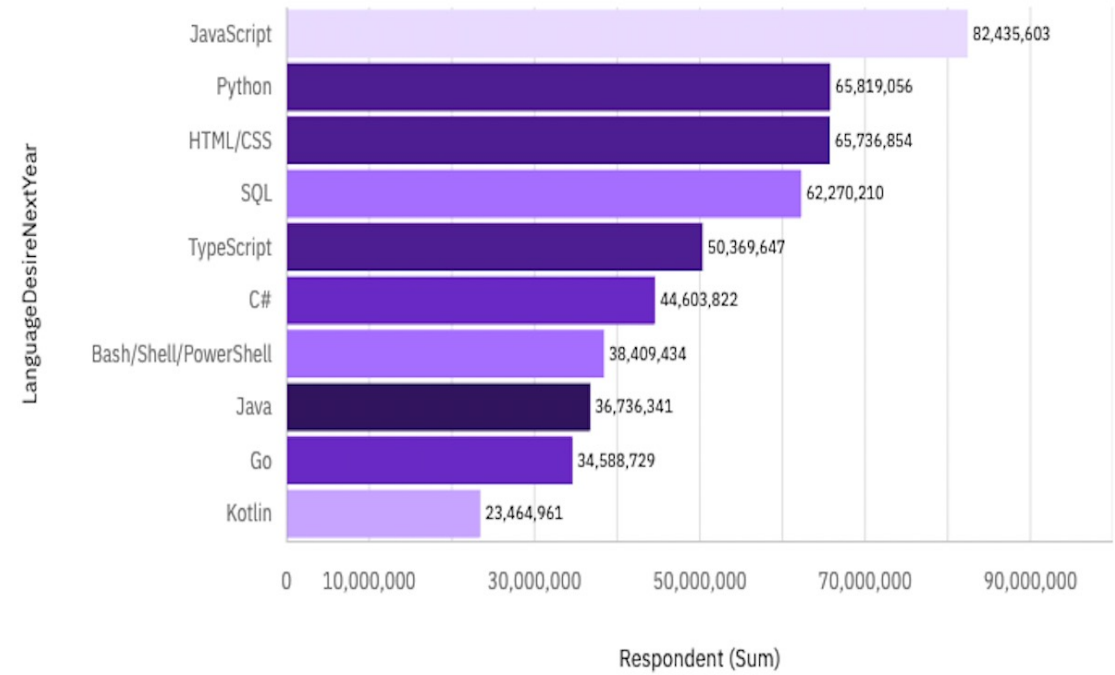
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desired Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- JavaScript seems to maintain its lead.
- Python is gaining popularity and growing fast
- HTML/CSS and SQL still have a large share of language usage trends

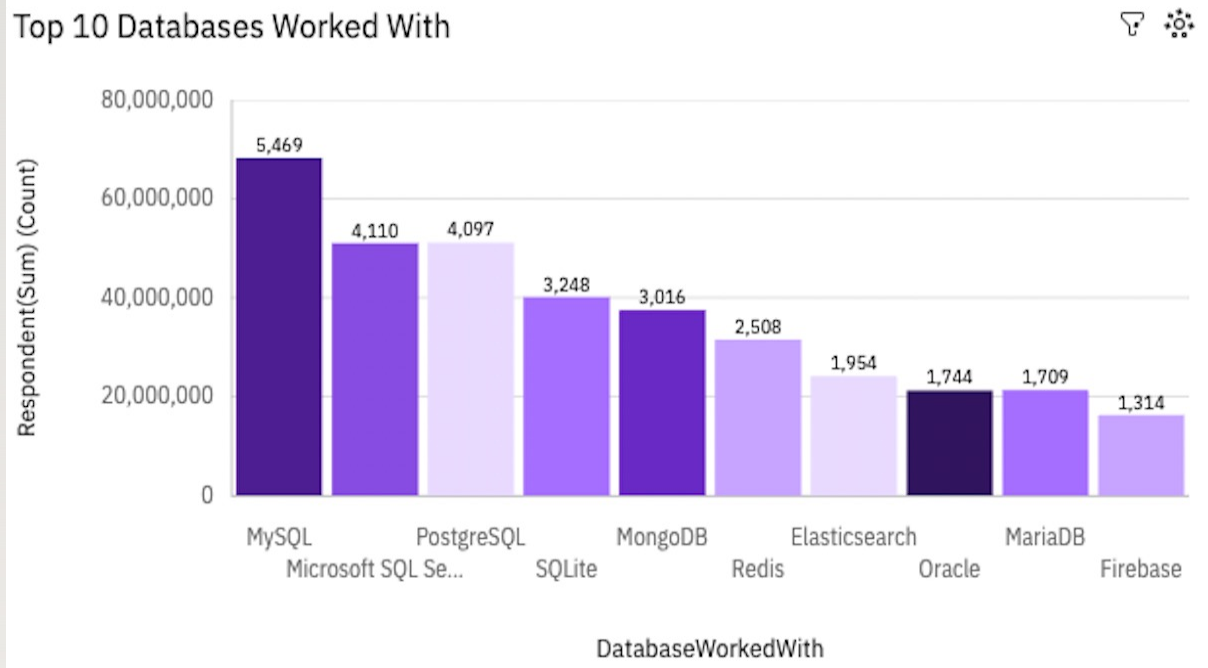
## Implications

- Web developments and Web developers are still in high demands
- JavaScript and TypeScript are crucial to learn for developers
- Python is the new trending language, especially popular in AI fields

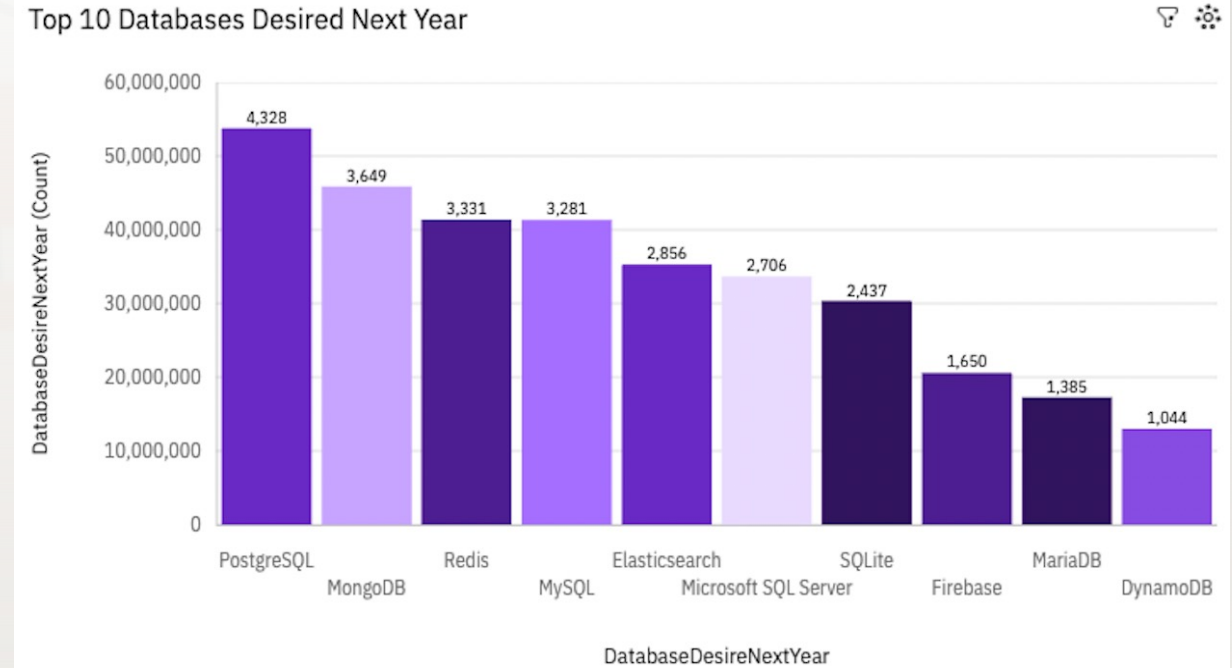


# DATABASE TRENDS

Current Year



Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- MySQL is the most popular database
- There are still a lot of companies using Microsoft SQL Server
- Increasing interest in PostgreSQL and SQLite

## Implications

- Open-source databases are still an impact for storing non relational data
- PostgreSQL and MongoDB establishment in the market.
- Open-source databases like MySQL are still preferable
- Redis supports abstract data types

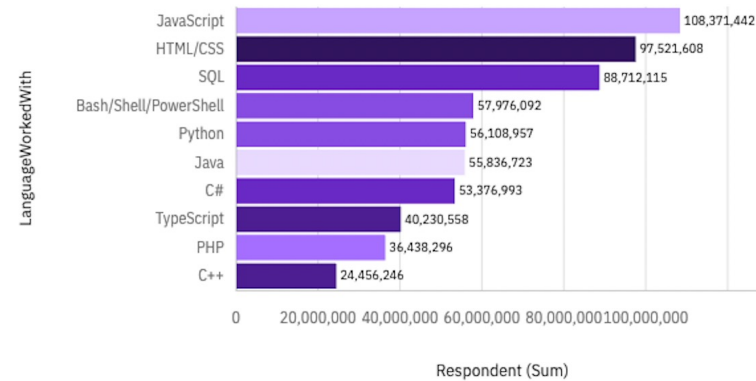
# DASHBOARD



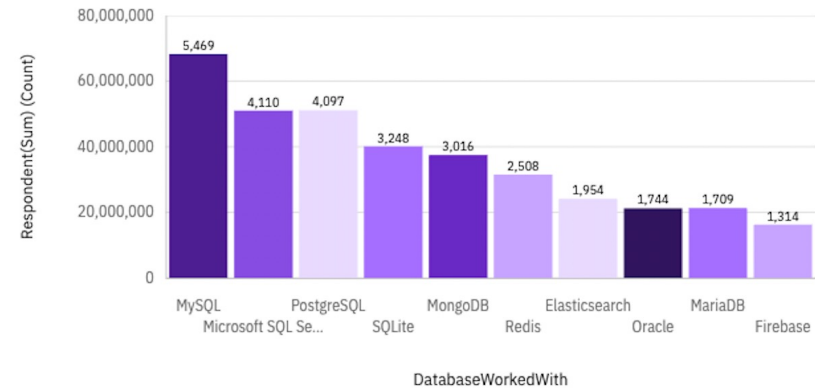
<https://github.com/Lizzie-29/IBM-Data-Analyst-Capstone-Project>

# DASHBOARD TAB 1

Top 10 Languages Worked With



Top 10 Databases Worked With

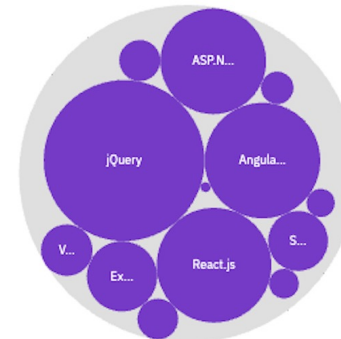


Platforms Worked With



Top 10 Web Frameworks Worked With

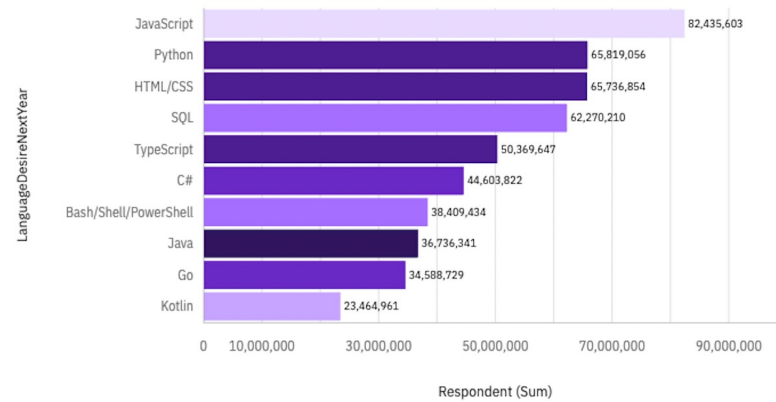
WebFrameWorkedW  
0 4,629



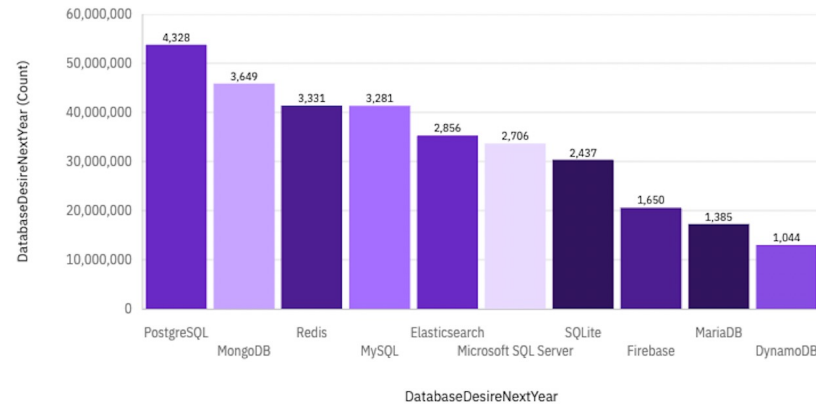


# DASHBOARD TAB 2

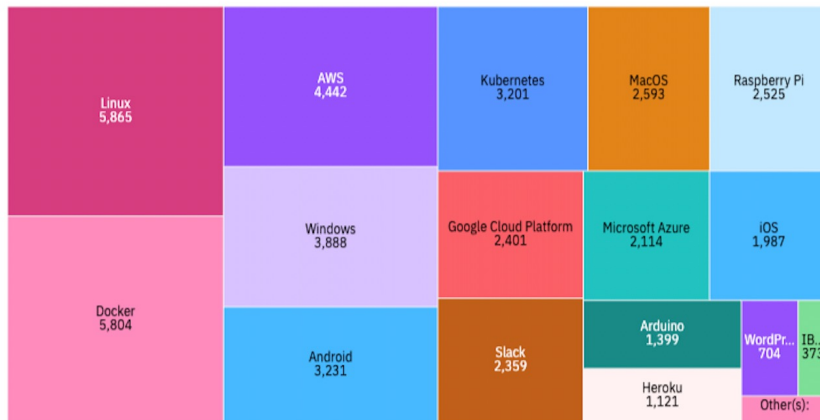
Top 10 Languages Desired Next Year



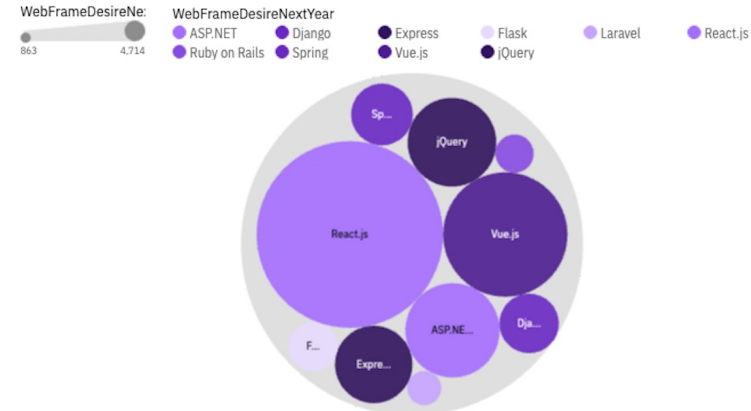
Top 10 Databases Desired Next Year



Platforms Desired Next Year



Top 10 Web Frameworks Desired Next Year

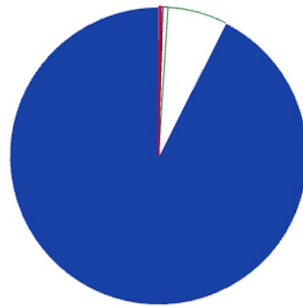


# DASHBOARD TAB 3

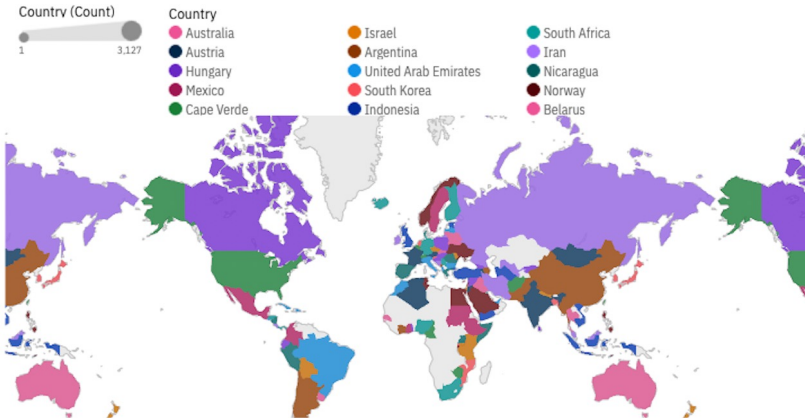
Respondent Distribution by Gender

Gender

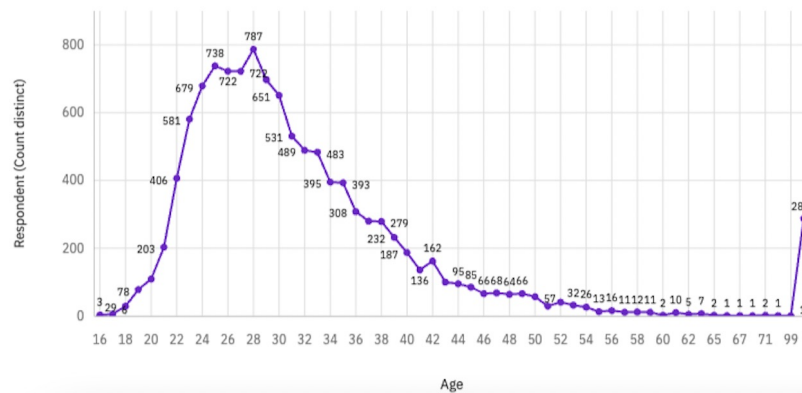
- (no value)
- Woman;Man;Non-binary, genderqueer
- Woman;Man
- Woman;Non-binary, genderqueer, or
- Man;Non-binary, genderqueer, or ge
- Non-binary, genderqueer, or gender
- Woman
- Man



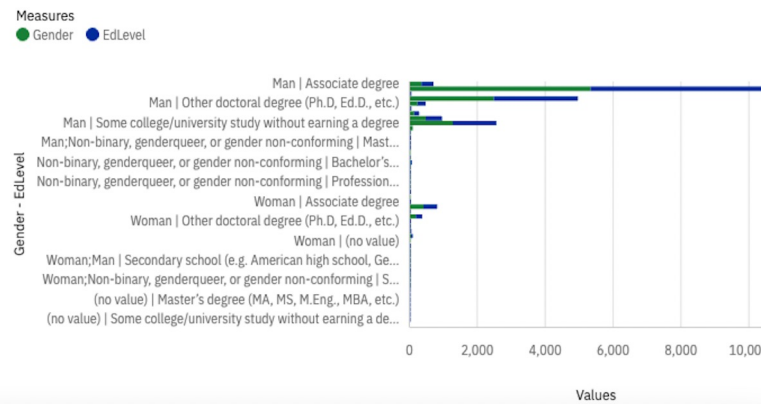
Respondent Count by Country



Respondent by Age



Respondent Count by Gender and Education Level



# DISCUSSION



- Technology Usage Trend Now and Future
- Female participation in Technology field
- Bridge divide of technology gaps in developing countries
- Gender, Age and Education Discrimination in IT Industry

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Technology trends changes every year
- JavaScript widely used and TypeScript getting popular
- There are extreme gender and age discrimination
- Developers mostly located in developed countries

## Implications

- Programmers should always follow the latest technology trends
- More countries should have the equal chance to be exposed to new technology
- Gender and Age should not be one of the concerns or benefits of Employment



# CONCLUSION

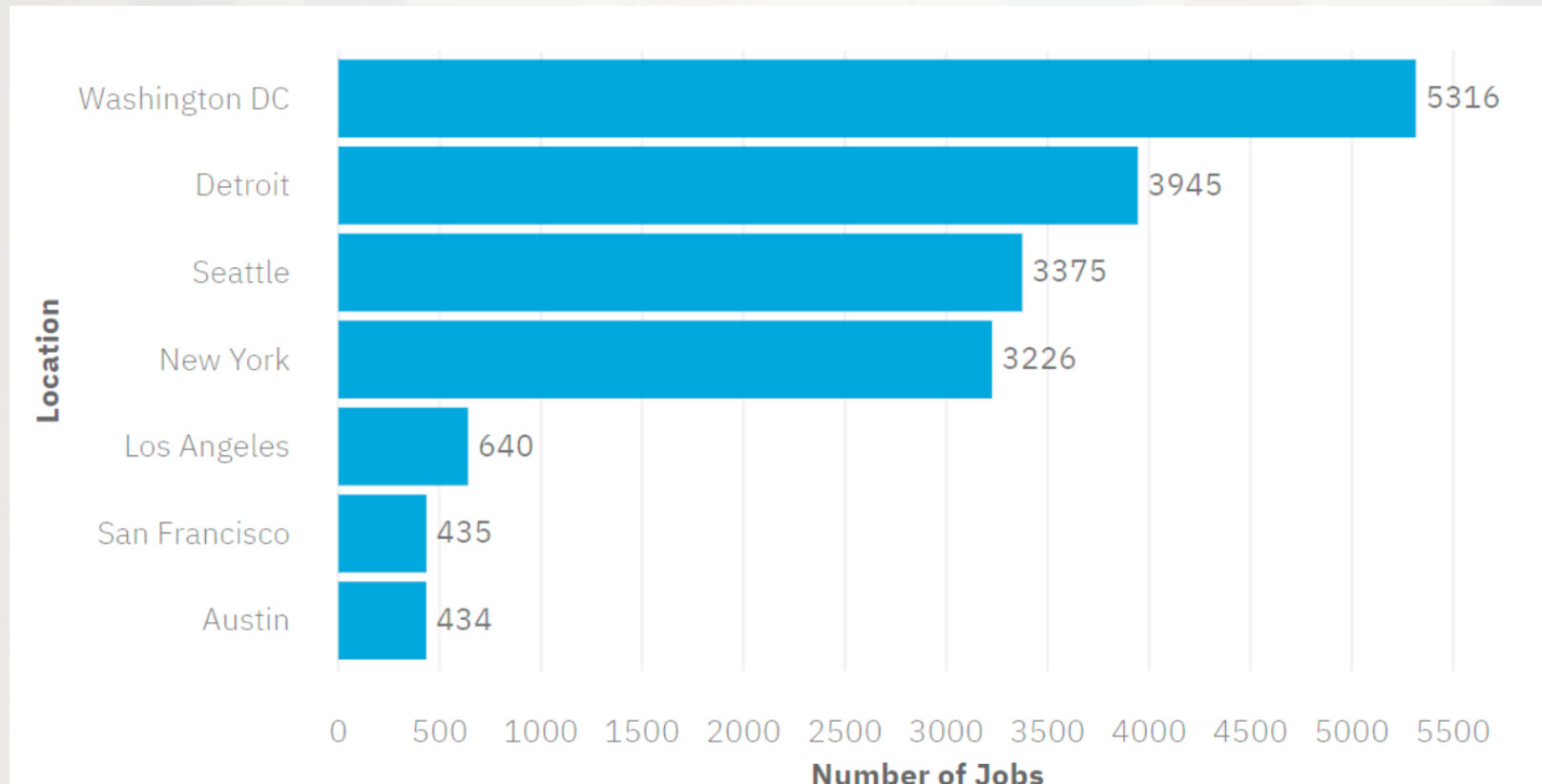


- Technology trends for current and next year
- Programming Languages, Database, Platform and Web frame Trends
- Demographics Trends
- Gender and Education
- Programming Languages Trends and Salary Trends
- Developers can get a good idea of the popularity of different tools, platforms, and languages.
- Expanding accessibility to the labor market to developing countries.

# APPENDIX



# JOB POSTINGS



# POPULAR LANGUAGES

