



Analyzing Developers' Technology Trends

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OUTLINE



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EXECUTIVE SUMMARY



- Analyze key technology trends influencing the development community.
- Assess the impact of these trends on software development in terms of:
 - Programming Languages
 - Databases
 - Web Frames
 - Platforms
- Identify and predict the future trends.
- Demographics and it's influence.
- Gender gap

INTRODUCTION



- **About:**
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
- **Audience for this Presentation:**
 - Programmers
 - IT industry leaders
 - Computer science students

METHODOLOGY



- Data Collection (Sources)
 - Stack overflow developer 2019 survey
 - GitHub job postings
 - Programming languages annual salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
 - Python
 - IBM Cognos
- Presentation

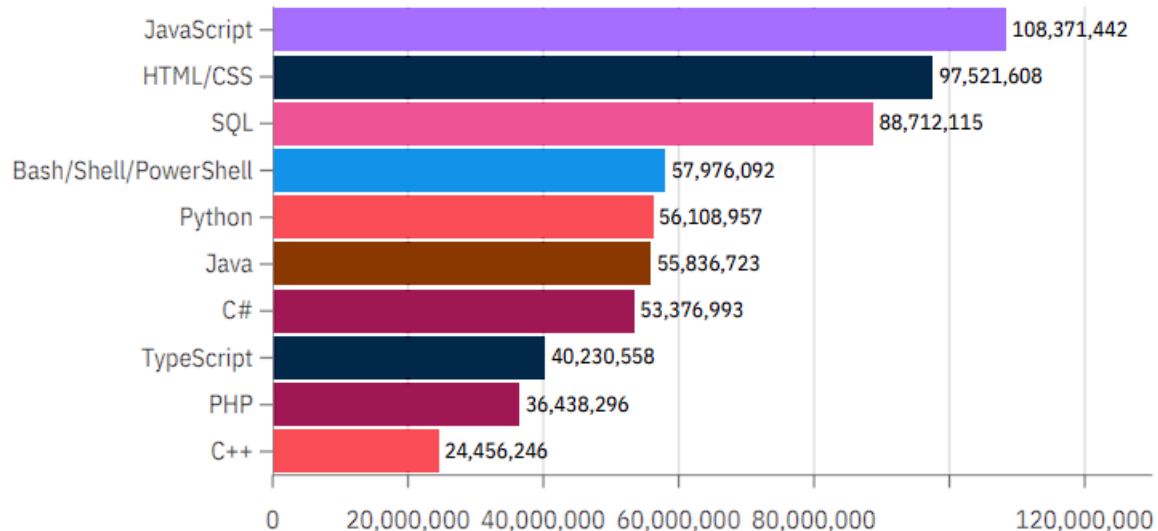
RESULTS

	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

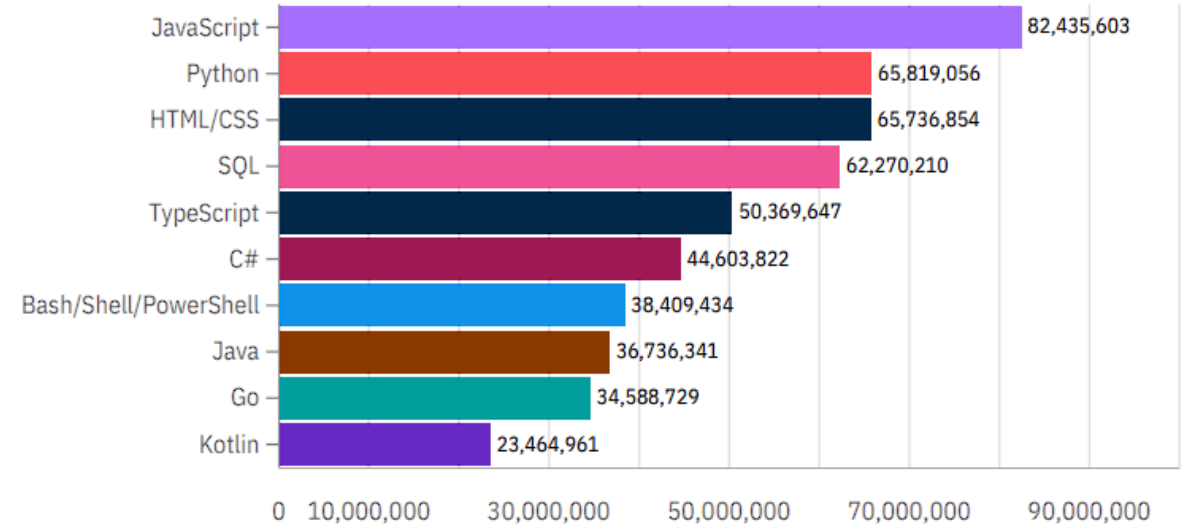
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Most Desired Languages for the Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is top trending language in the world
- Python and TypeScript are becoming more and more popular
- HTML/CSS and SQL still has great portion in language usage trend

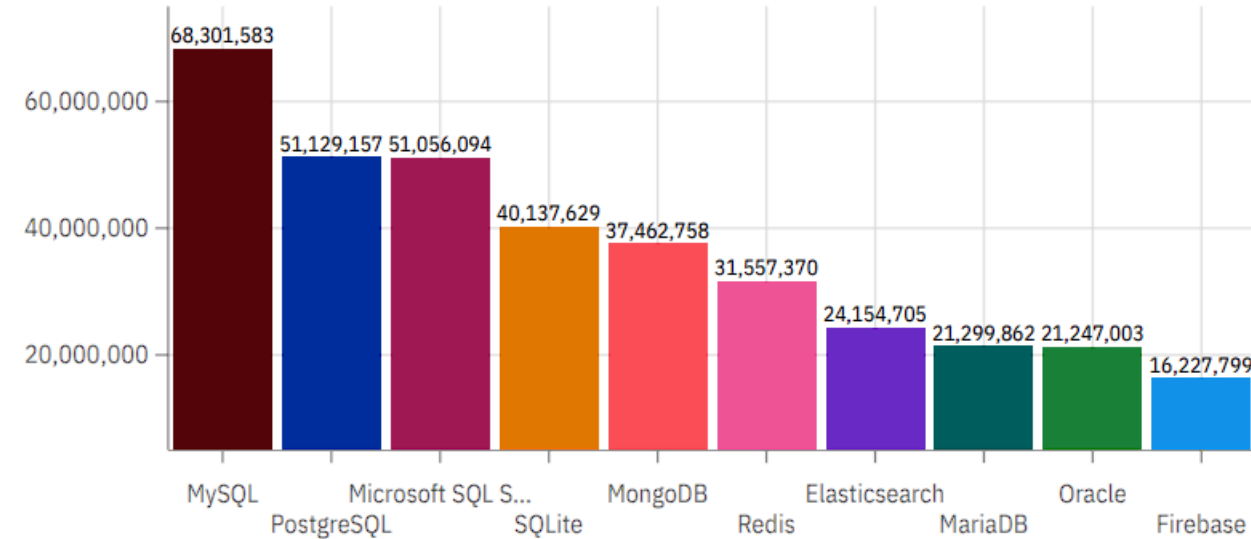
Implications

- 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

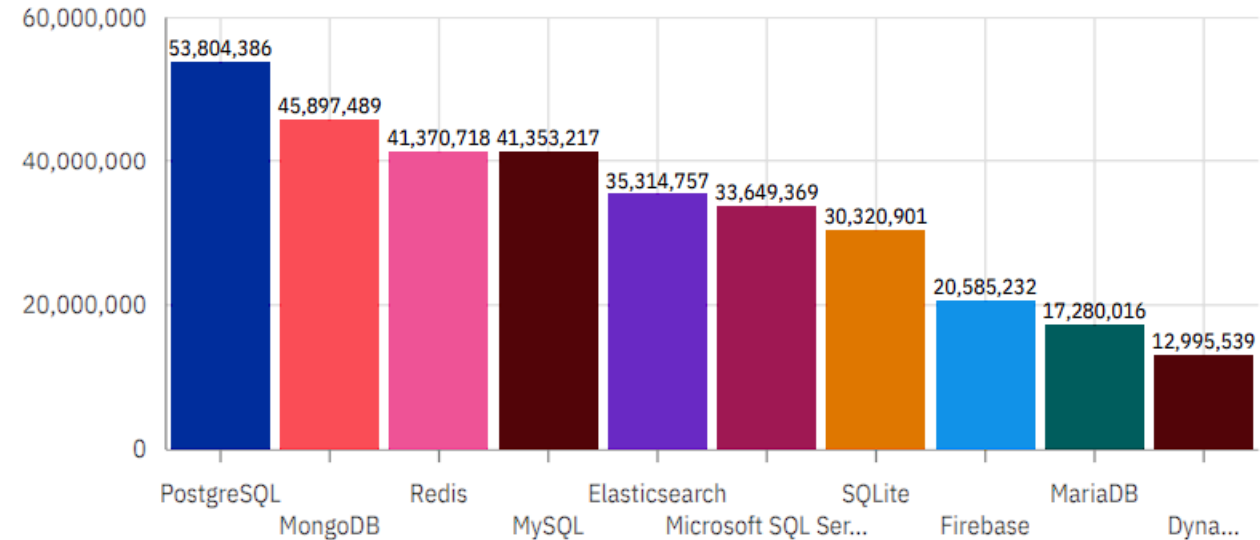
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Most Desired Database for the Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most Database worked with, followed by PostgreSQL and Microsoft SQLServer
- PostgreSQL is the most desired database to learn by people.

Implications

- Software development and Big Data technology still requires SQL
- PostgreSQL is an important database to learn.
- NoSQL databases will make an impact for relational databases

DASHBOARD



Dashboard GitHub Link:

<https://github.com/kal-aj/IBM-Data-Analyst-Capstone-Project/blob/e6a5aa312a18bf466167e64234891a944848e77e/Part%20A%20-%20Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf>

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1



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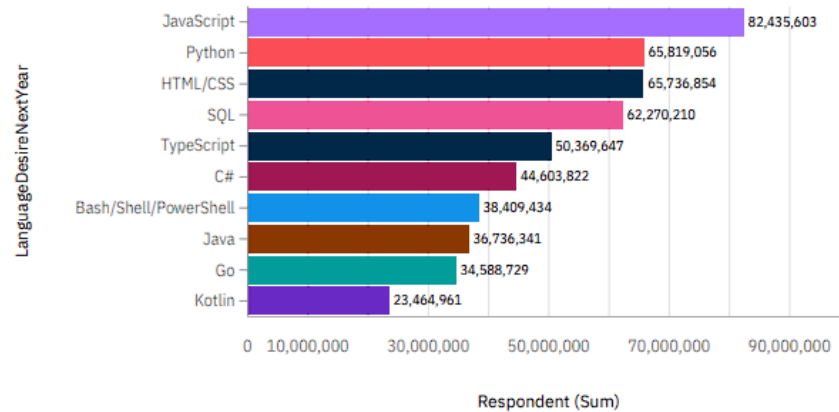


DASHBOARD TAB 2

Future Technology Trend

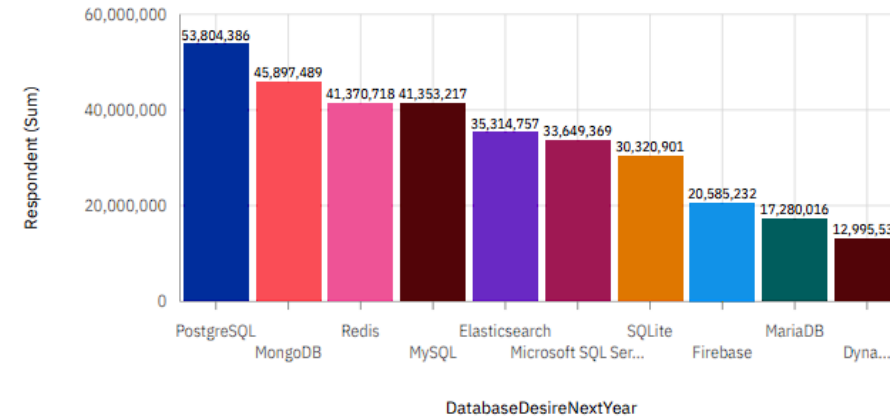
Top 10 Most Desired Languages for the Next Year

5



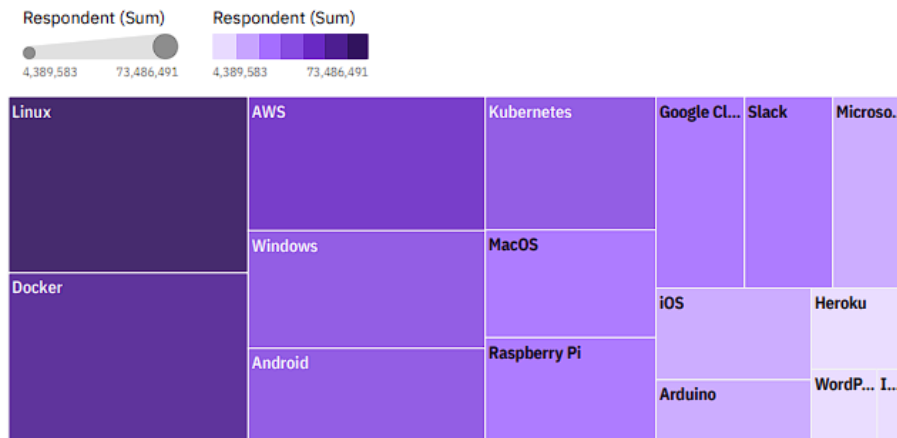
Top 10 Most Desired Database for the Next Year

6



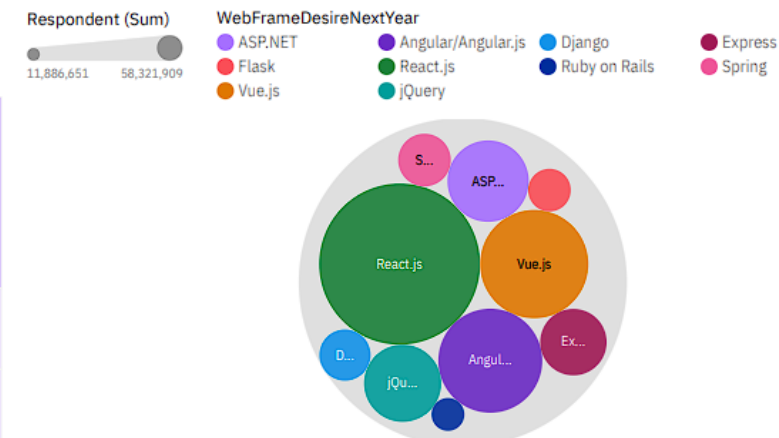
Most Desired Platforms for the Next Year

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Top 10 Most Desired WebFrames for the Next Year

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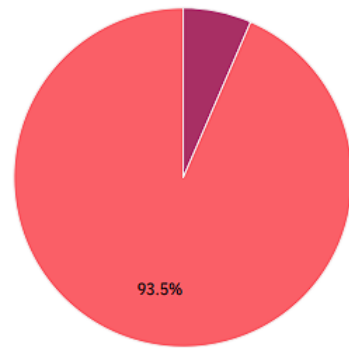


DASHBOARD TAB 3

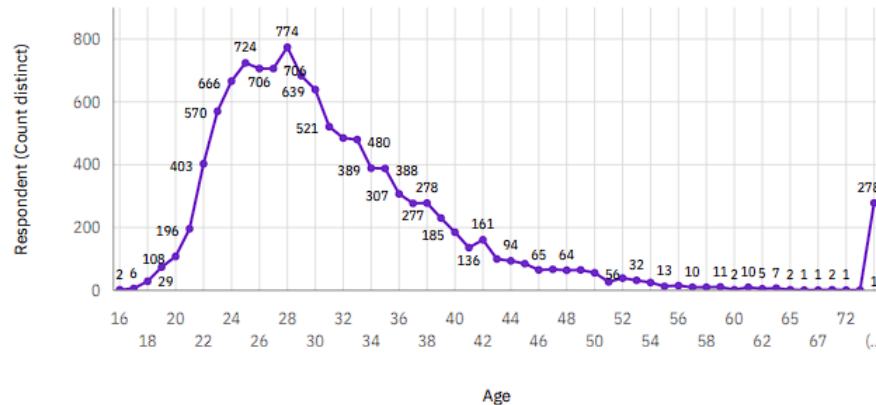
Demographics

Respondent classified by Gender

Gender
● Woman ● Man



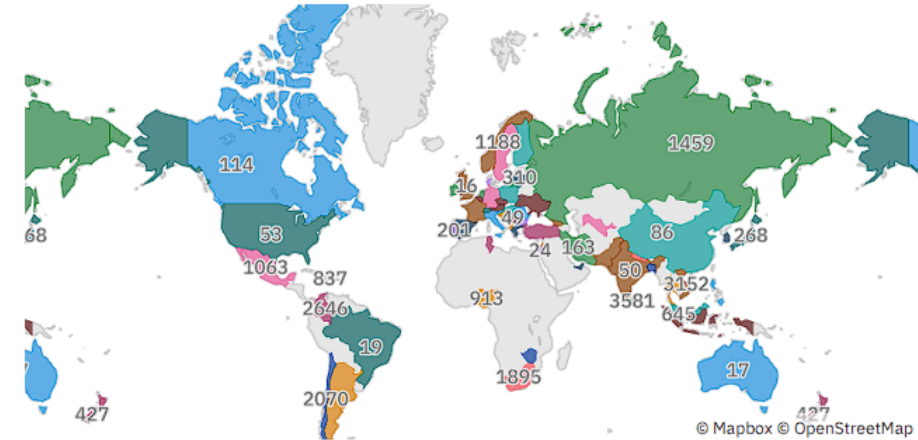
Respondent Count by Age



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Respondent Count for Countries

10



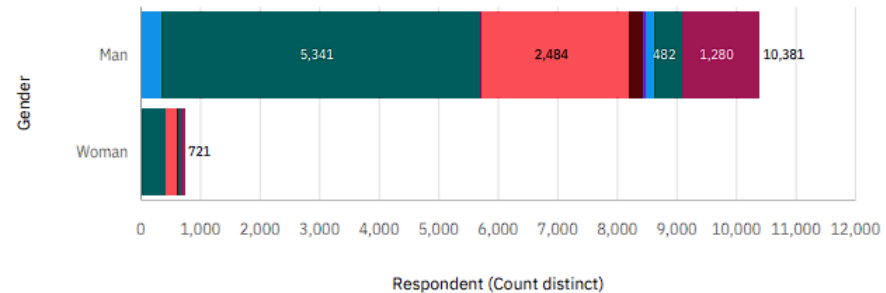
11

Respondent Count by Gender, classified by Formal Education Level

12

EdLevel

● Associate degree ● Bachelor's degree (BA, BS, B.Eng.... ● I never completed any formal edu...
● Master's degree (MA, MS, M.Eng.... ● Other doctoral degree (Ph.D, Ed.D.... ● Primary/elementary school
● Professional degree (JD, MD, etc.) ● Secondary school (e.g. American ... ● Some college/university study wit...



DISCUSSION



- Technology Trends now and future
- Training and Reskilling workers
- Females participation in Technology field
- Bridge divide of technology gaps in developing countries
- Age and education discrimination

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology trends changes every year
- USA, India and China are the countries with most developers
- There are extreme gender gap
- Docker and AWS are the most popular platform

Implications

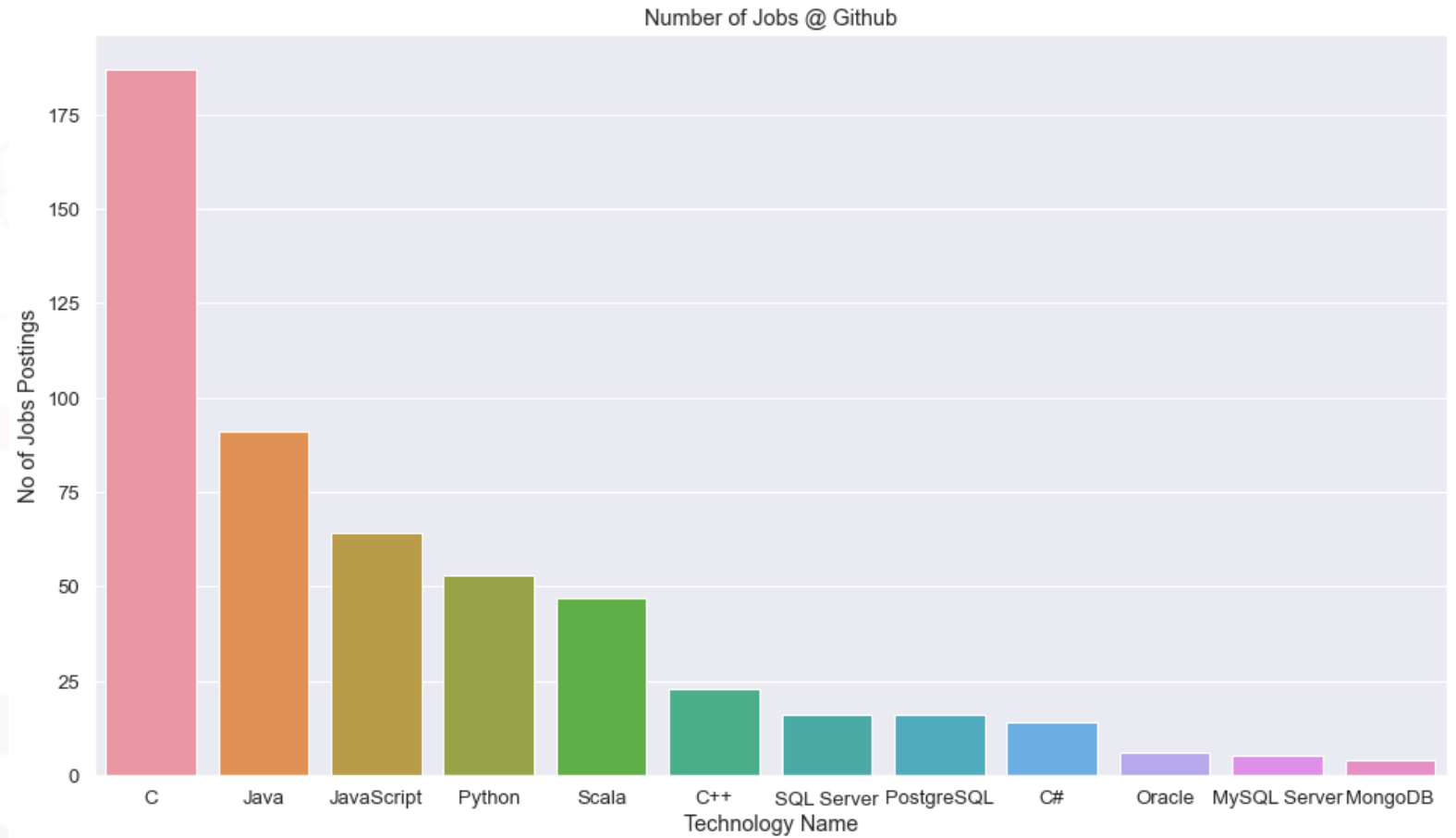
- Programmers should always follow the latest technology trends
- More countries should have the equal chance to be exposed to new technology
- Gender and Age should not be one of the concerns or benefits of Employment

CONCLUSION

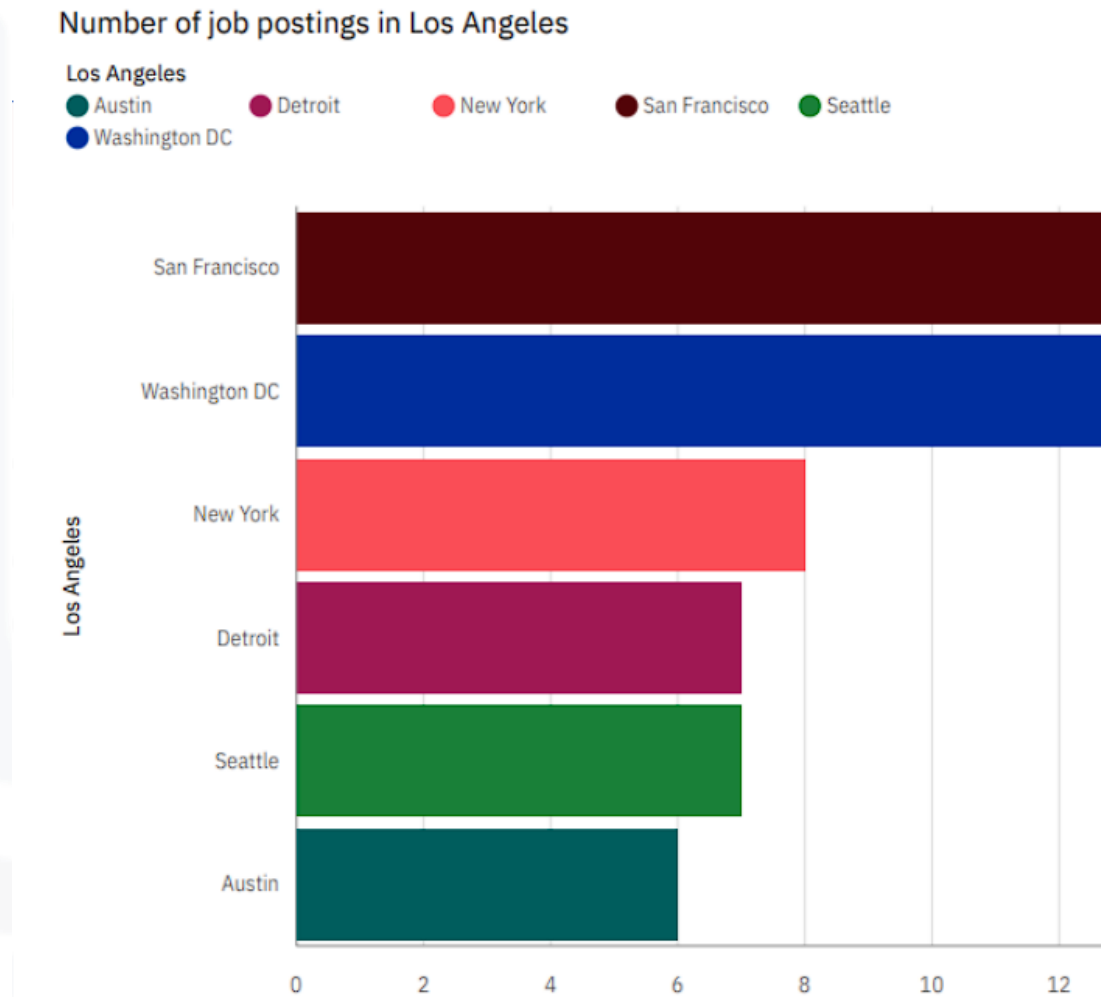


- Javascript, HTML/CSS,SQL always have a constant demand
- Demand for Python is very high and is greatly increasing
- PostGRE SQL is seems to be highly liked and useful than the rest, while MySQL is dropping in demand
- Expertise in Linux would be very beneficial
- There is a huge gender gap in the industry
- There needs to be a corrective measure

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

