

TECHNOLOGY TREND ANALYSIS



IBM DATA ANALYST COURSE

Sravani Kallempudi

03/03/2024

OUTLINE



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

EXECUTIVE SUMMARY



- **Current Technology Usage Trends**
 - Language
 - Database
 - Platform
 - Web frame
- **Future Technology Trends**
 - Language
 - Database
 - Platform
 - Web frame
- **Demographics Survey**
- **Country & Gender Difference**

INTRODUCTION



- **Analyze technology trends in software and web development among developers worldwide.**
- **Purpose of this Analysis**
 - **Identify the top programming languages, databases, platforms, and web frame skills in demand**
 - **Identify skill requirements for future**
 - **Identify the 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 matplotlib
 - IBM Cognos
- **Presentation**

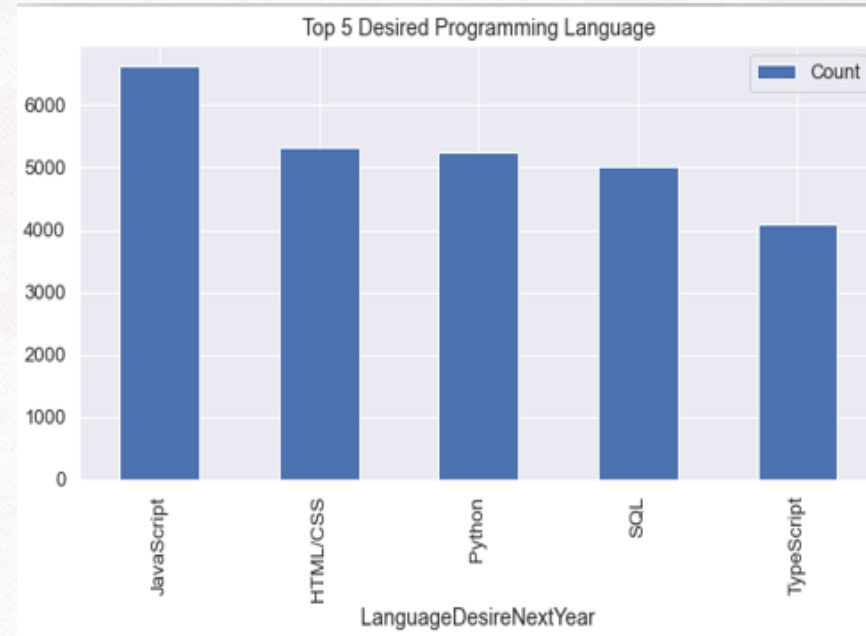
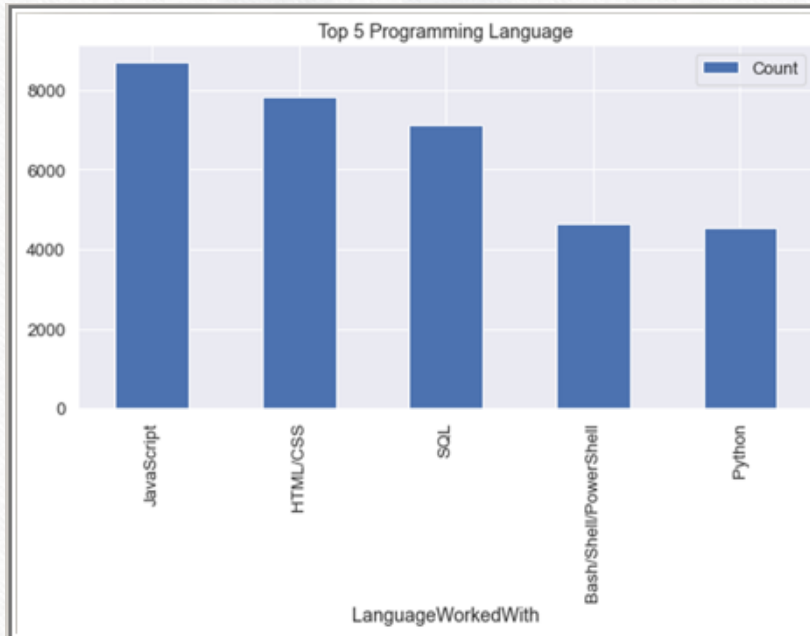
RESULTS

	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

Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

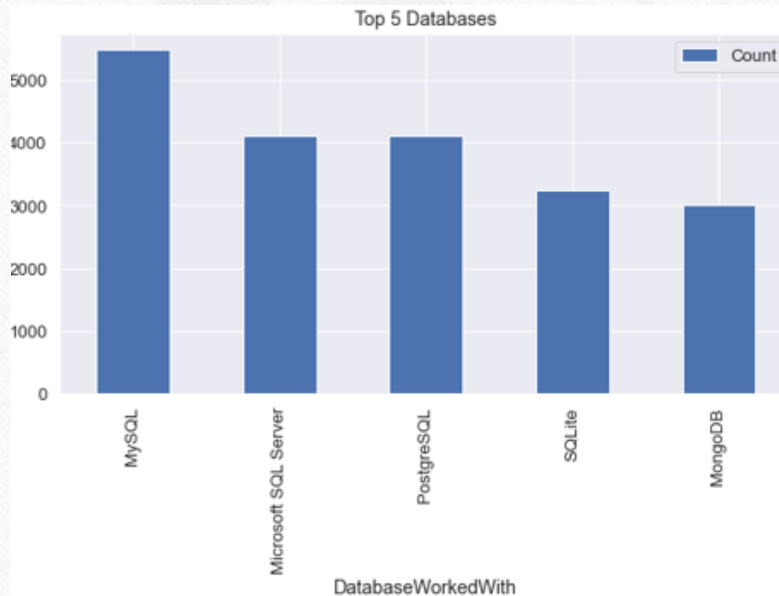
- JavaScript is the top trending language in the world
- Python and TypeScript are becoming more and more popular
- HTML/CSS and SQL still has significant portion in language usage trend

Implications

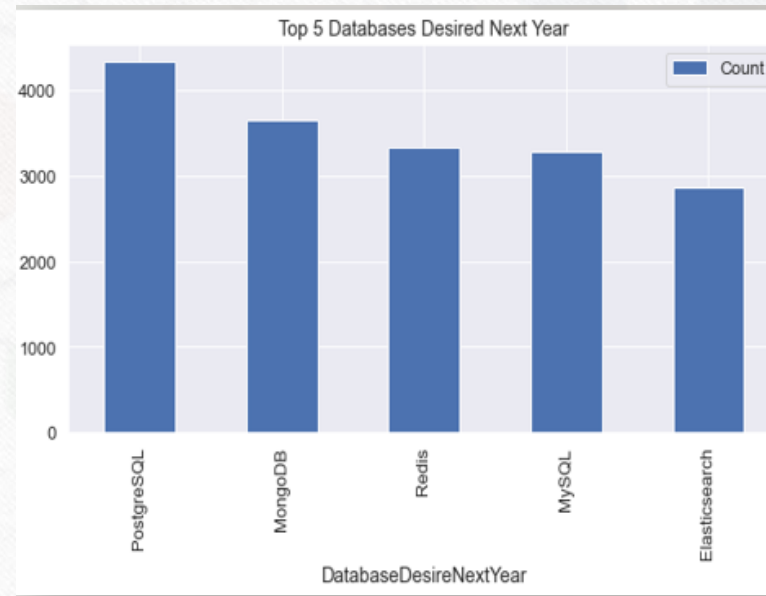
- Web developments and Web developers are still in high demands
- JavaScript and TypeScript are crucial to learn for developers
- Python is the new trending language, especially popular in AI fields

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database
- There are still a lot of companies using Microsoft SQL Server
- MongoDB and Redis are the most favorable NoSQL database

Implications

- Open-source databases like MySQL are still preferable
- Software development and Big Data technology still require SQL
- NoSQL databases will make an impact on relational databases

DASHBOARD



<https://github.com/Sravani-Kallmepudi/IBM-Data-Analyst-Professional-Certificate>

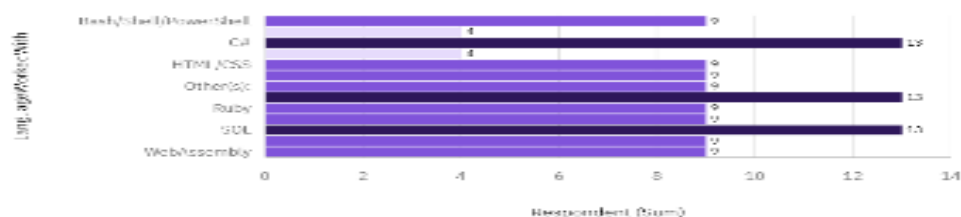
DASHBOARD TAB 1

3/3/24, 1:13 AM

Tab 1

Top 10 LanguageWorkedWith colored by Respondent

Respondent (Sum)
4 13

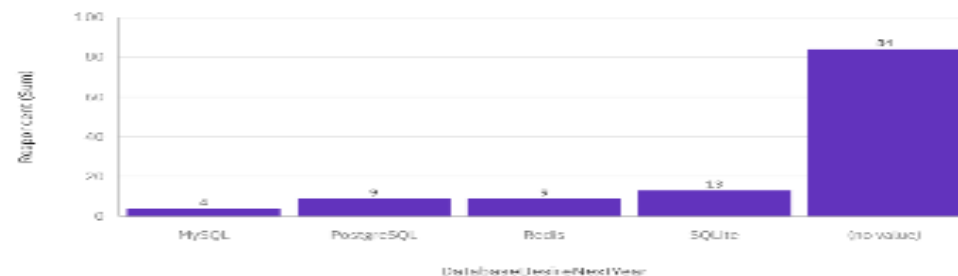


PlatformWorkedWith

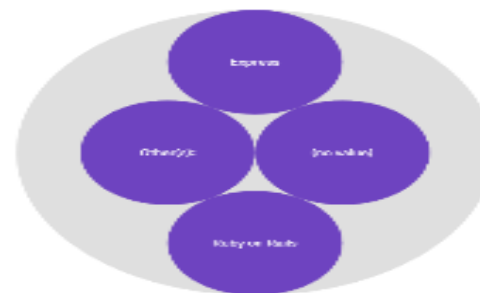


Current Technology Trend

DatabaseDesireNextYear



WebFrameWorkedWith

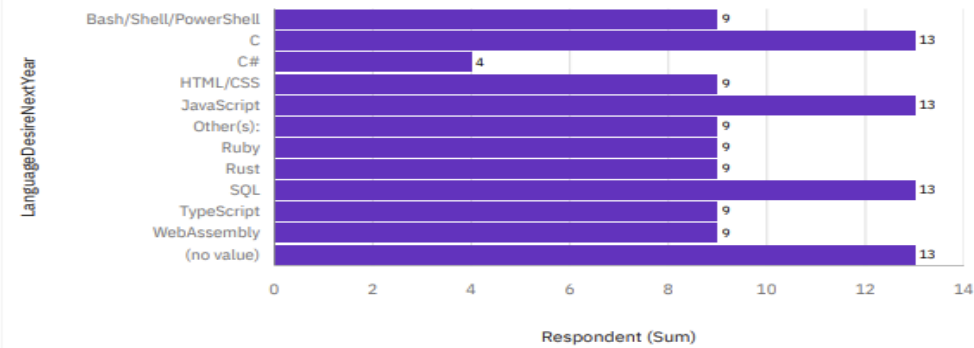


DASHBOARD TAB 2

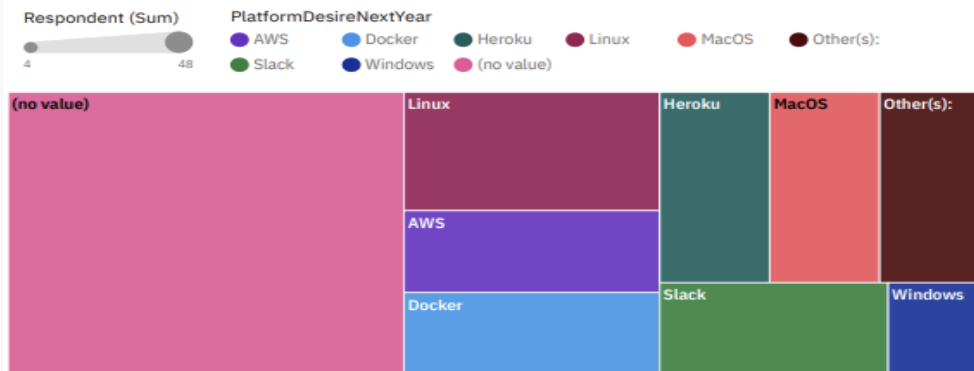
3/3/24, 1:13 AM

Tab 1

Top 10 Language Desire Next year

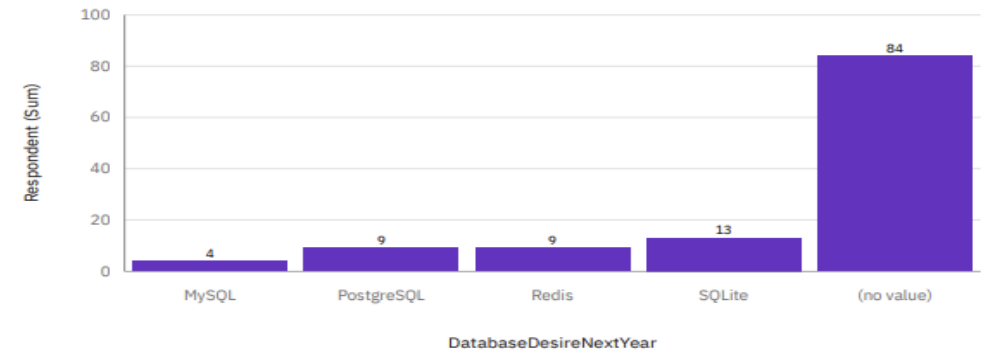


PlatformDesireNextYear hierarchy

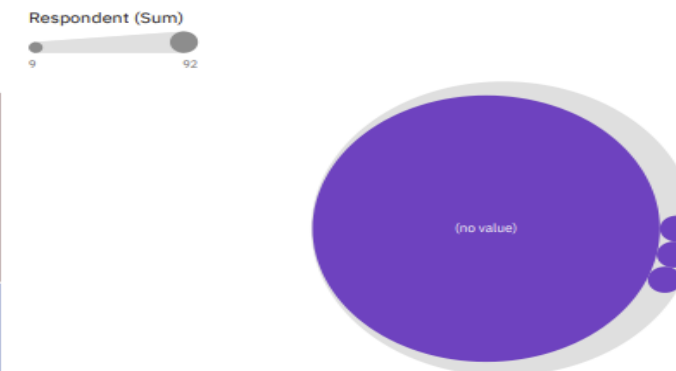


Future Technology Trend

Top 10 DatabaseDesireNextYear



Top10WebFrameDesireNextYear



DASHBOARD TAB 3

3/3/24, 1:14 AM

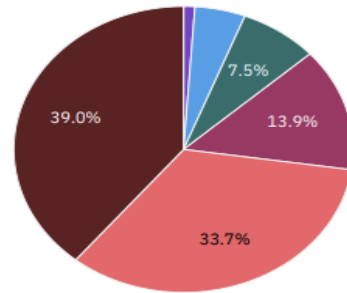
Demographics

Tab 1

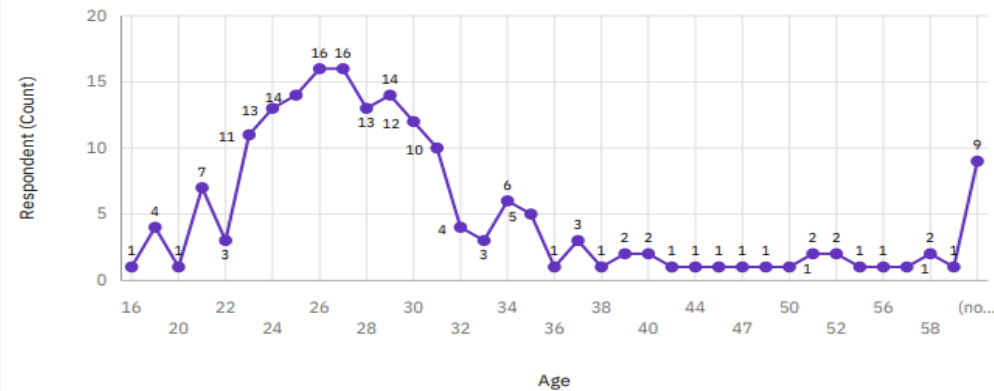
Respondent by Gender

Gender

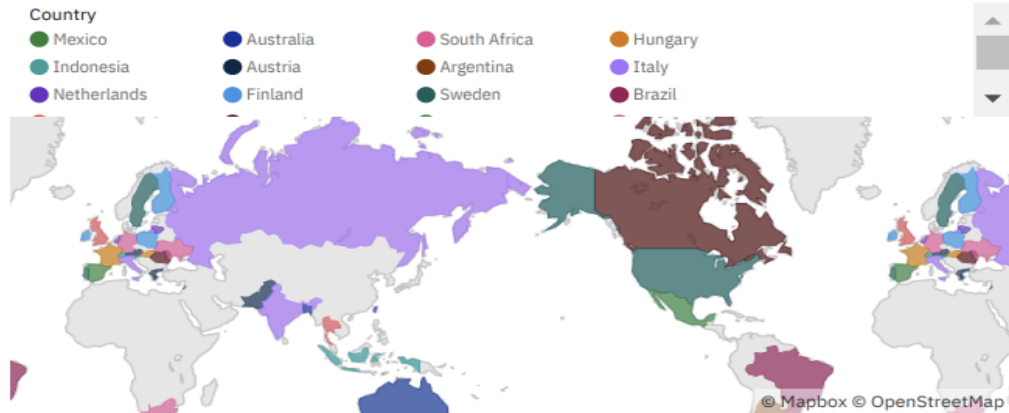
- Woman;Man;Non-binary, genderqueer, or gender non-conforming
- Woman;Man
- Woman;Non-binary, genderqueer, or gender non-conforming
- Man;Non-binary, genderqueer, or gender non-conforming
- Non-binary, genderqueer, or gender non-conforming
- (no value)



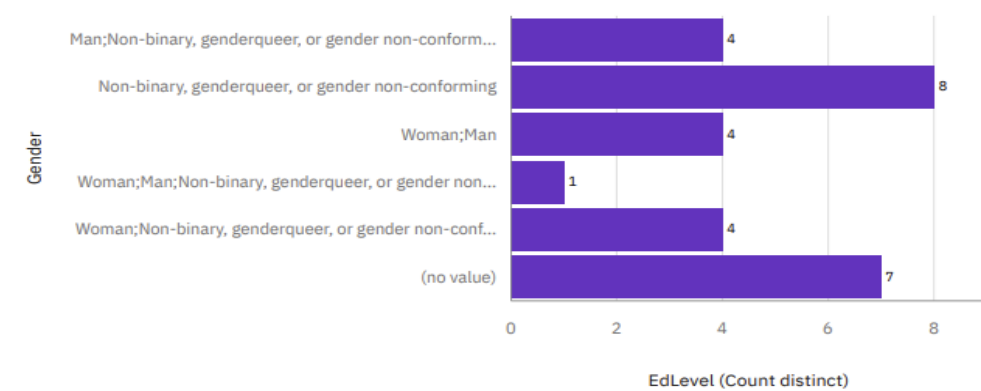
Respondent by Age



Country for Country regions



EdLevel by Gender



DISCUSSION



- **Technology Usage Trend Now and Future**
- **Gender, Age, and Education Discrimination in IT Industry**

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology trends change every year
- USA is the top technology country
- There are extreme gender and age discrimination
- 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



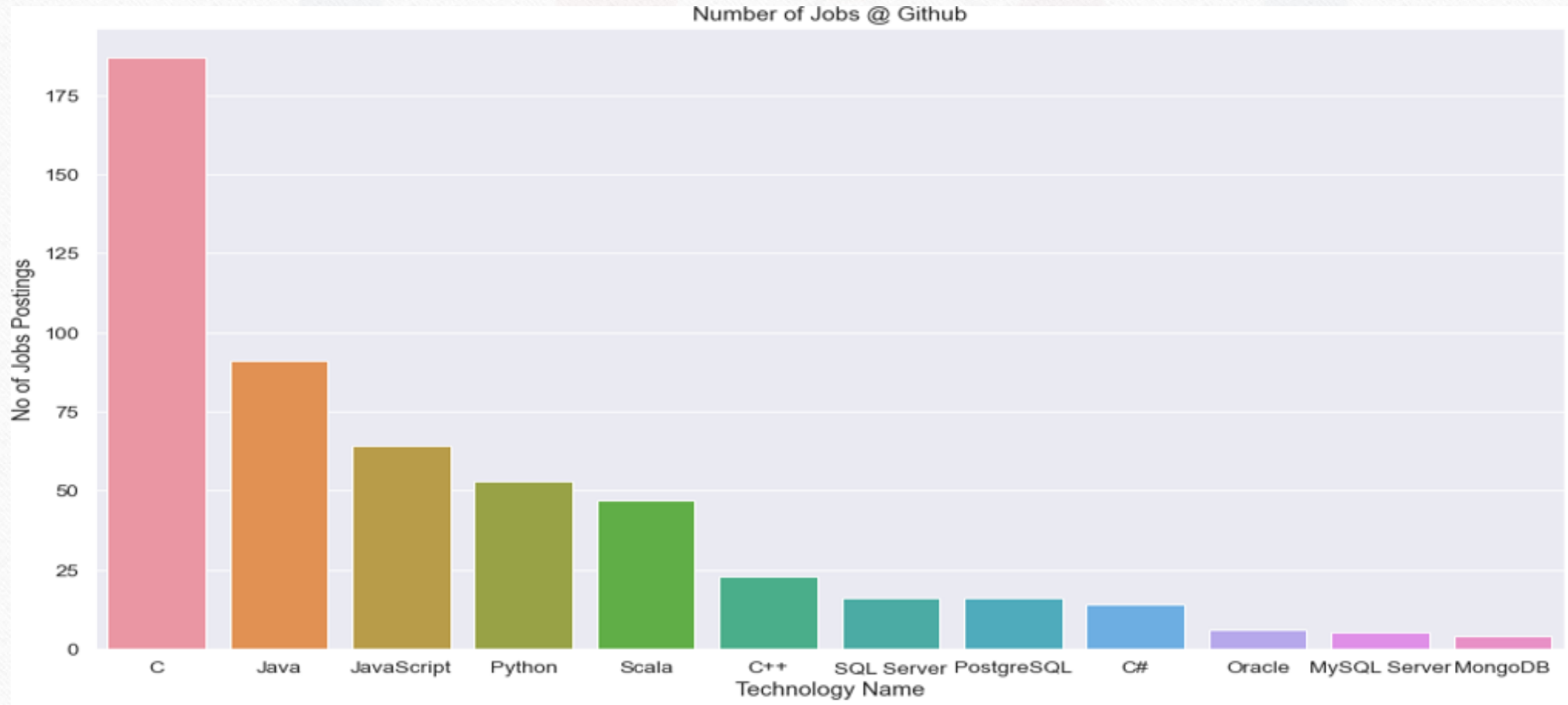
- **Technology Trends**
- **Programming Languages, Database, Platform and Web frame Trends**
- **Demographics Trends**
- **Gender and Education**
- **Programming Languages Trends and Salary Trends**

APPENDIX



- An AI-powered business intelligence solution that helps with the whole data analytics cycle, from discovery to operationalization, is IBM Cognos Dashboard Embedded.
- With the help of its data discovery tools, users can visually examine and engage with their data to find the most important insights for making better data-driven decisions. Without prior training, users can undertake
- data discovery and swiftly integrate that information into visually appealing, interactive dashboards.

JOB POSTINGS



POPULAR LANGUAGES

