Technology Trends and Analysis Presentation

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31 July 2021

OUTLINE

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EXECUTIVE SUMMARY

- Trends in programming languages and databases
- Demographics survey
- Technological gap in countries
- Gender gap

INTRODUCTION

- About: Analyzing the trends in software development

- Purpose:
    - Identify skill requirements for future
    - What are the top programming languages in demand?
    - What are the top database skills in demand?
    - What are the popular IDEs?

- Audience: Human Resource and IT Head

METHODOLOGY

- **Data Collection Sources**
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Postings
  - Programming Languages Annual Salary
- **Data Exploration**
- **Data Cleaning**
- **Data Visualization**
- **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
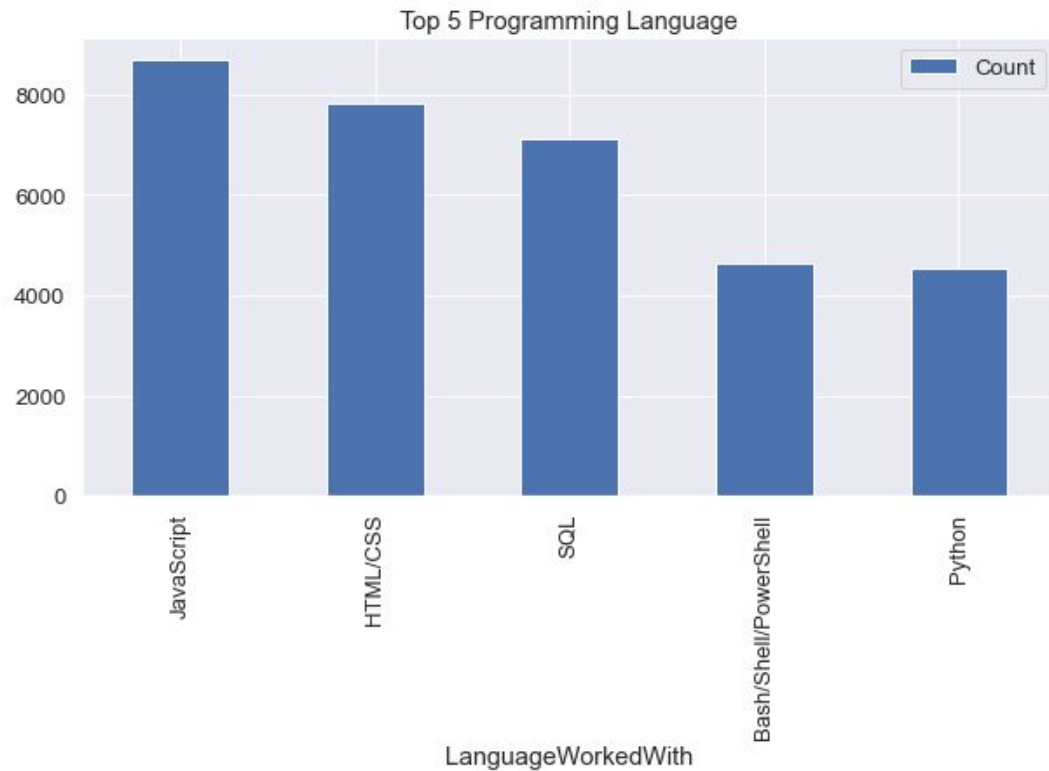
Next Year
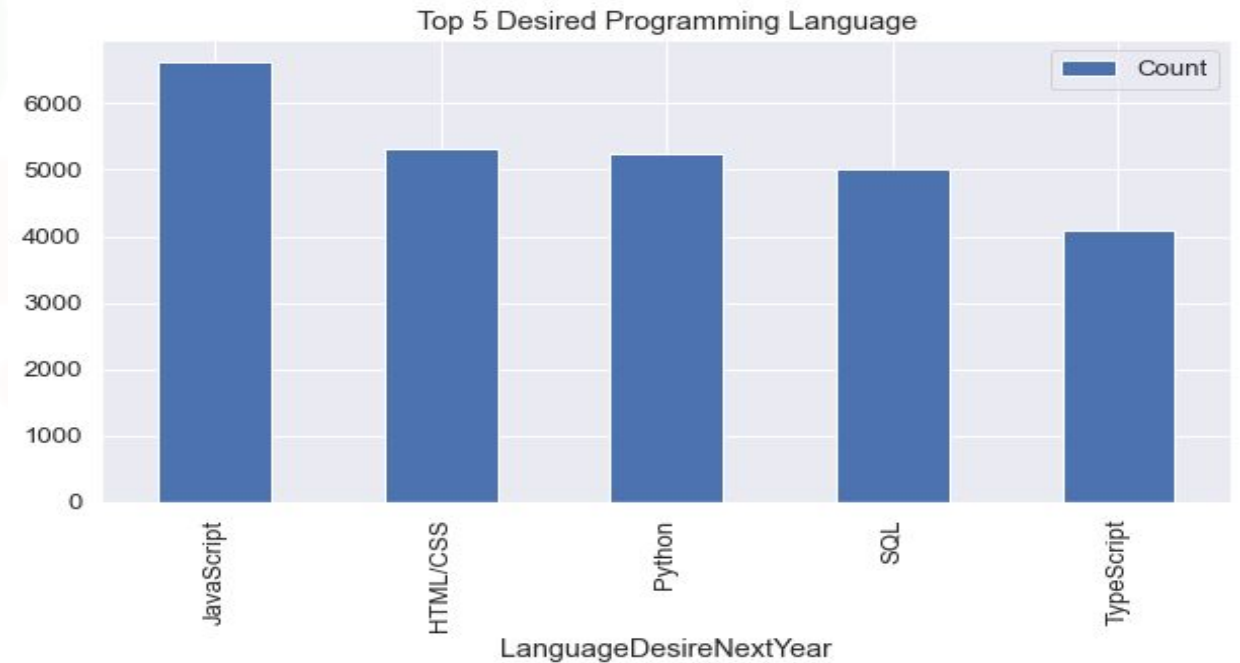
PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript, HTML/CSS, SQL are top 3 this year
- Python and Typescript becoming popular next year
- PowerShell edged out in next year

Implications

- Web development are still in high demand
- Big Data technology in companies still requires SQL
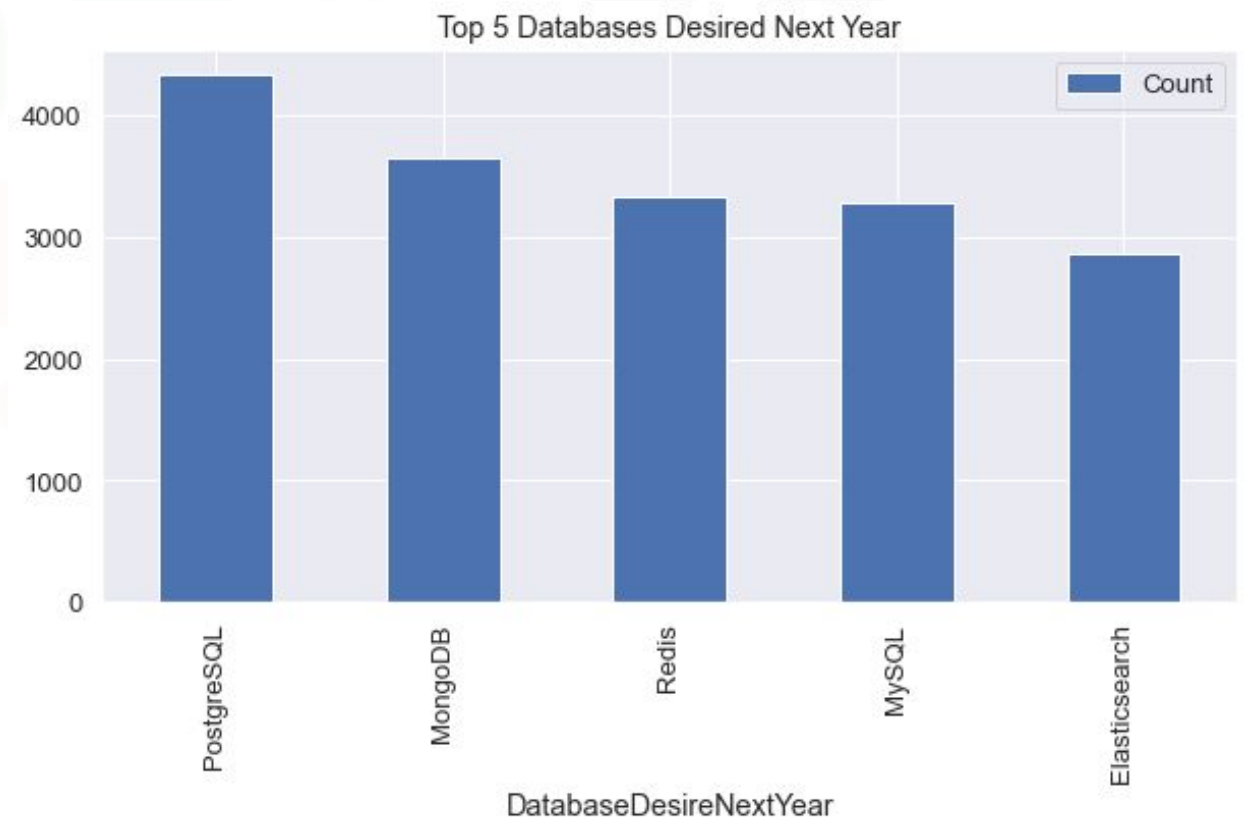- With AI and ML in rising demand, Python is best choice

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DATABASE TRENDS

Current Year

Top 5 Databases

Next Year

Top 5 Databases Desired Next Year

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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Most popular: MySQL
- MySQL is followed by Microsoft SQL
- MangoDB and Redis are gaining popularity

Implications

- Companies prefer open-source databases
- NoSQL is used for storing non-relational data
- Abstract data types are supported by Redis

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DASHBOARD

https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FIBM%2BData%2BAnalyst%2BCapstone%2BProject%253ADashboards&action=view&mode=dashboard&subView=model0000017afb1cf21c_00000000

Current Technology Usage Dashboard
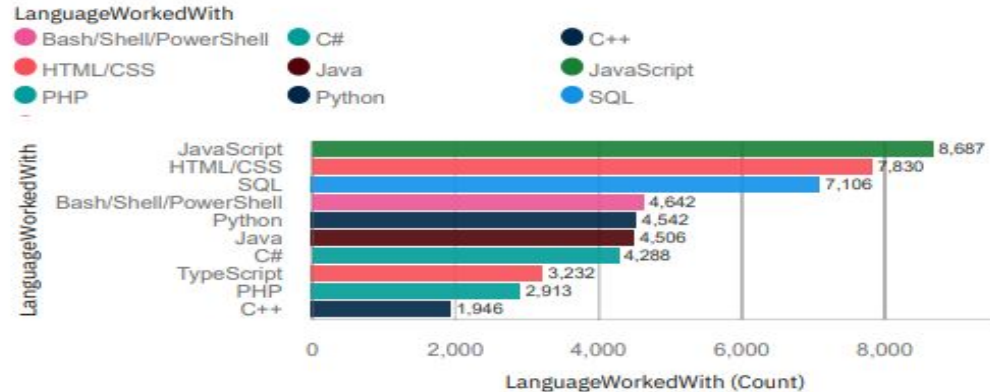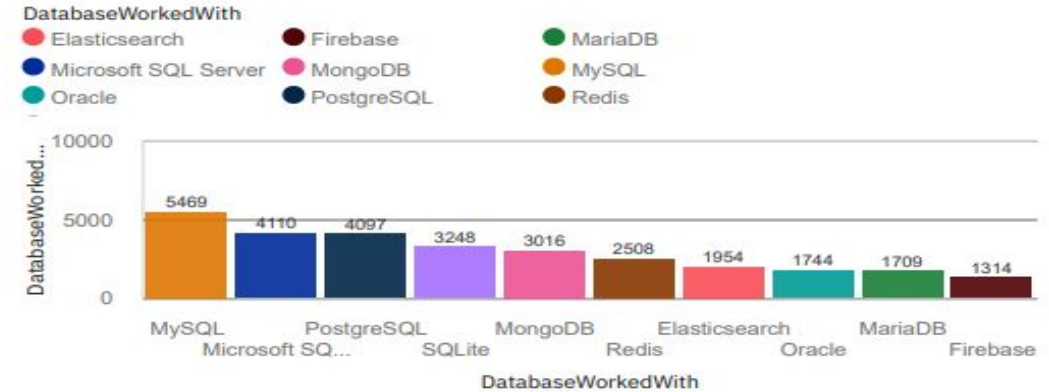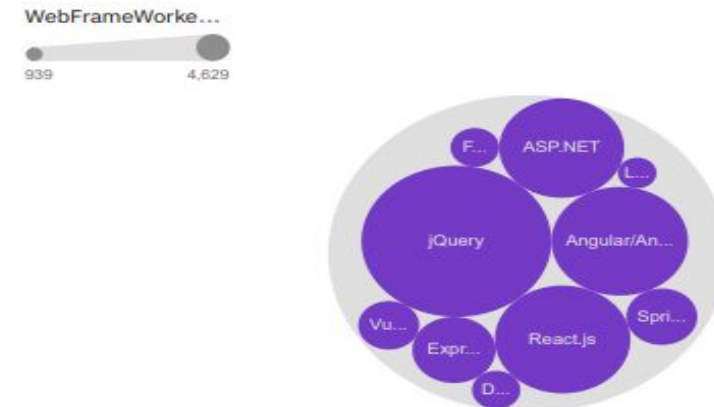
Future Technology Trend Dashboard
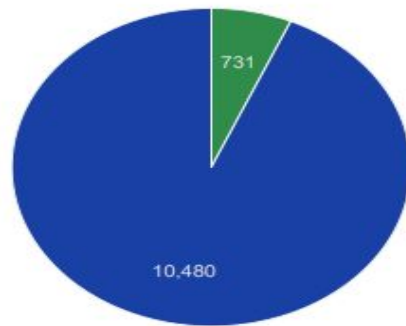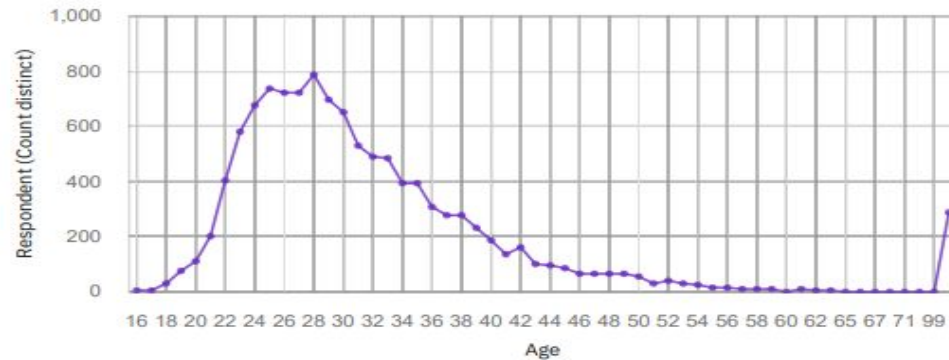
Demographics Dashboard
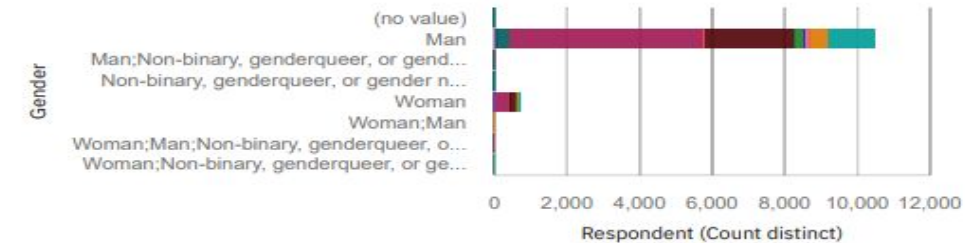
DISCUSSION

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

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OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technology every year
- Technology is concentrated in countries like USA and India
- Platforms like AWS and Docker are growing in popularity

Implications

- Companies need to be flexible and adapt to change
- Technologies need to be spread to lagging countries
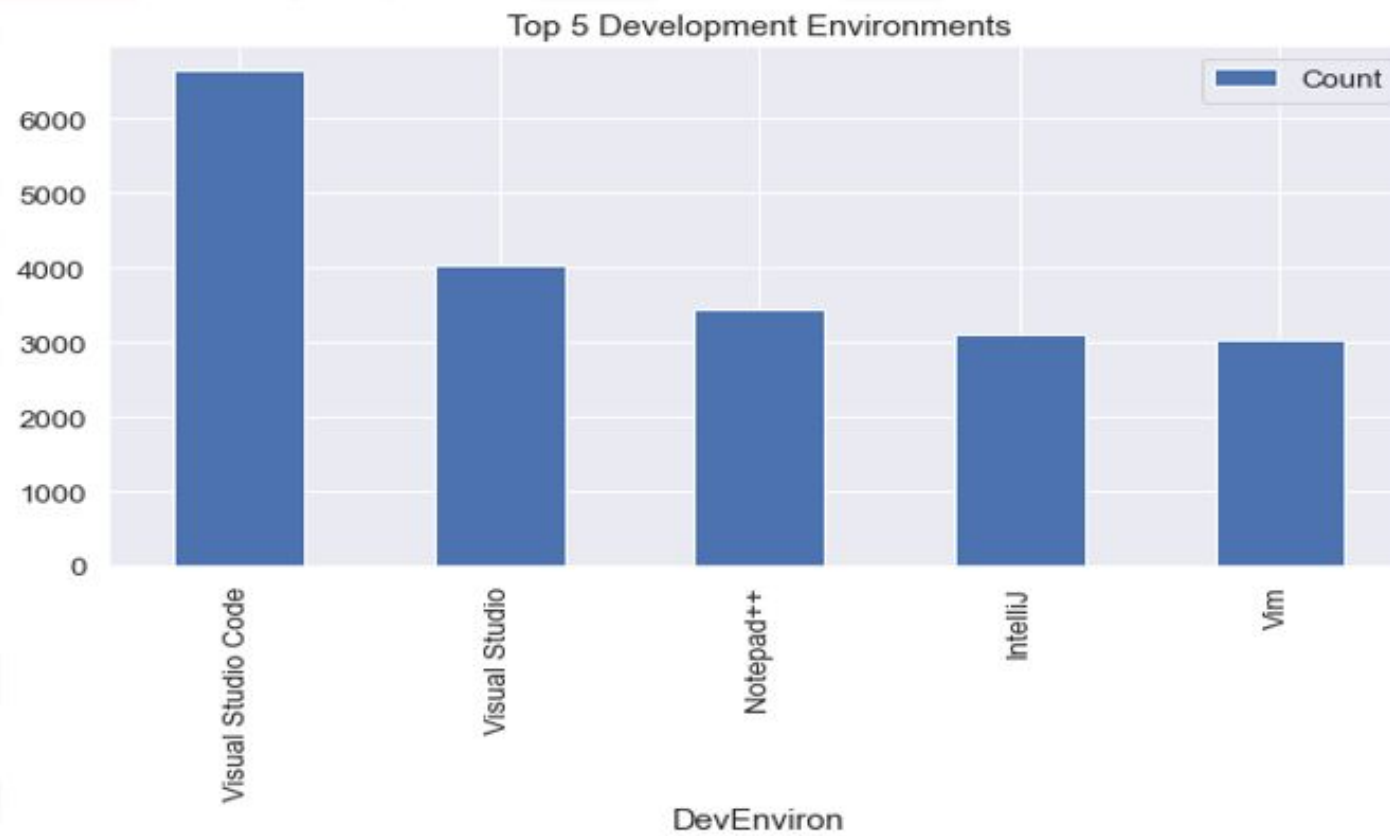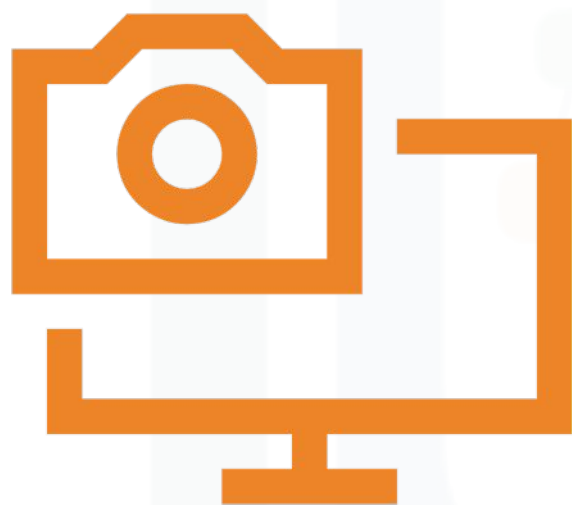- Deployments should be shifted to the cloud
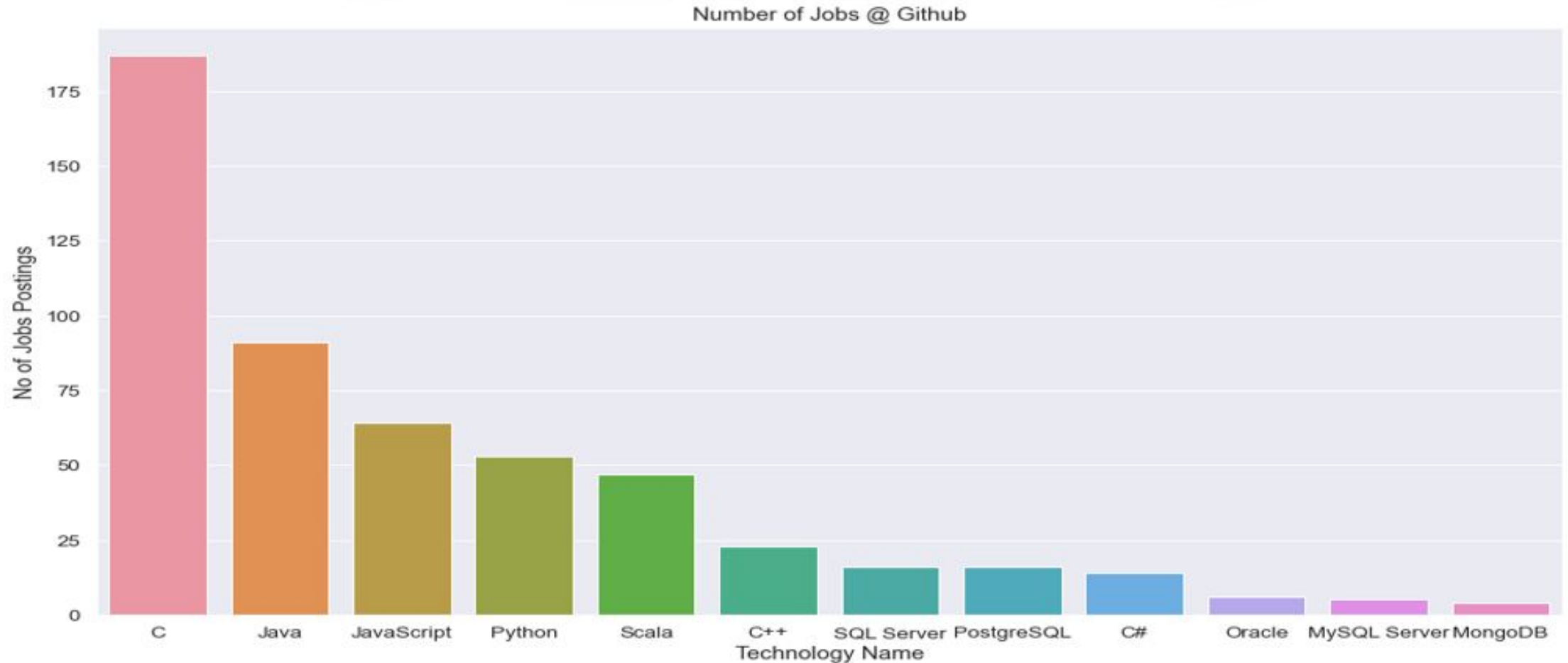
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CONCLUSION

- Javascript is the most desired programming language,both for the current year and next year.

- MySQL is the top database desired this year but PostgreSQL is the top database desired next year.

- There is a significant gender gap in technology.

- Machine Learning could be used to predict future trends.

APPENDIX

Top 5 Development Environments

GITHUB JOB POSTINGS

Number of Jobs @ Github

POPULAR LANGUAGES

Job Salaries

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