IBM Data Analyst Capstone Project

Final Presentation

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OUTLINE

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

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EXECUTIVE SUMMARY

- In order to keep pace with changing technologies, it is important to keep track of current and future trends

- This document attempts to outline trends in the following areas of IT and Consulting;
  - Programming languages
  - Databases
  - Platforms
  - Web frameworks

- This analysis should enable more informed data driven decisions for hiring in these areas.

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INTRODUCTION

- This document is a presentation on the results of analysis conducted in order to identify trends for this year's report on emerging IT skills.

- Data has been collected from various sources including
  - Job postings
  - Training portals
  - Surveys

- This data has been analysed the insights and trends have been identified. We aim to answer the following questions:
  - What are the top programming languages in demand?
  - What are the top database skills in demand?

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METHODOLOGY

- Data Collection
  - Scraped internet web sites
  - Accessed APIs to collect data in various formats like .csv files, excel sheets, and databases.
  - Stack Overflow Developer 2019 survey
  - GitHub job postings
- Data Wrangling
  - Once collection was complete, we made the data ready for analysis using data wrangling techniques.
- Data Exploration
  - Application of statistical techniques to analyse the data.
- Data Visualisation
  - Python Matplotlib
  - IBM Cognos Analytics for dashboards.

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
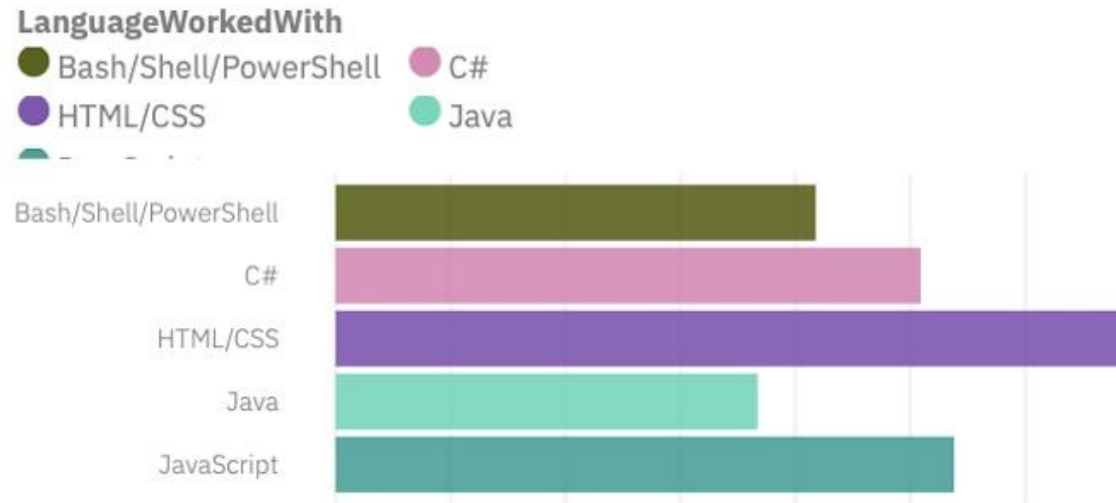
Next Year
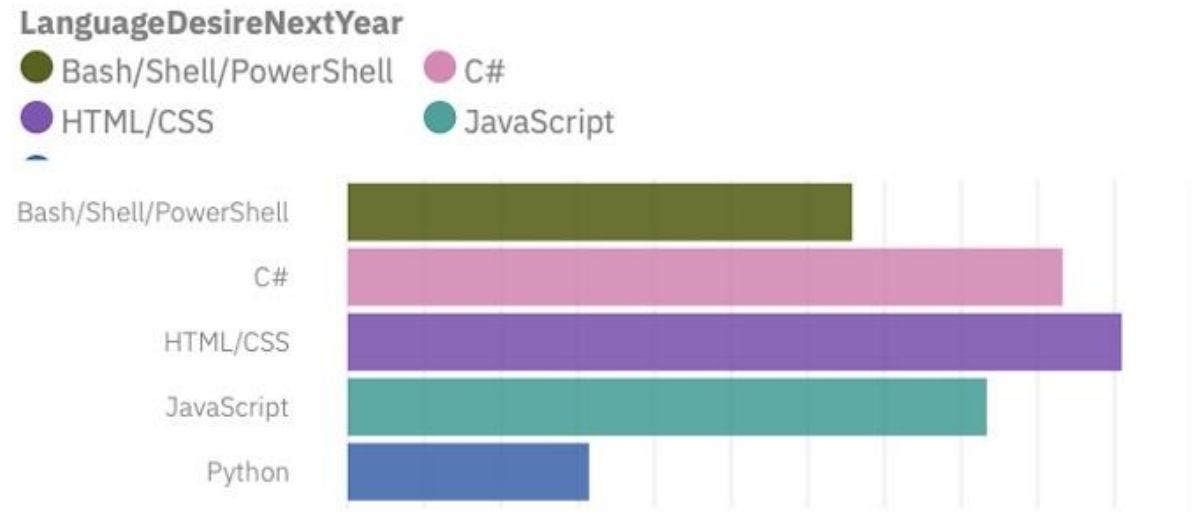
PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- HTML/CSS is the most popular language for both years.

- Bash and JavaScript remain strong but C# has increased in popularity

- Python is has replaced Java in the top 5 from current to next year.
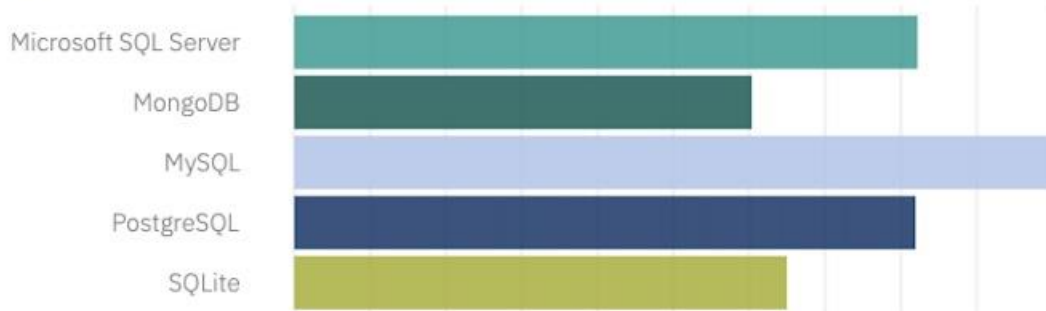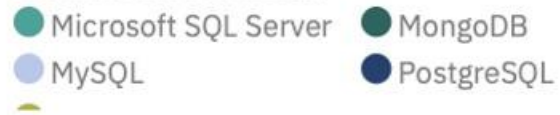
Implications

- Web Developer are still in high demand

- AI and Data Analysis could be part of the reason Python has become more popular.

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DATABASE TRENDS

Current Year

Next Year

Top 5 Databases worked with this year

DatabaseWorkedWith
- Microsoft SQL Server
- MongoDB
- MySQL
- PostgreSQL

- Microsoft SQL Server
- MongoDB
- MySQL
- PostgreSQL
- SQLite

Top 5 Database desired next year

DatabaseDesireNextYear
- Elasticsearch
- MongoDB
- MySQL
- PostgreSQL
- Redis

- Elasticsearch
- MongoDB
- MySQL
- PostgreSQL
- Redis

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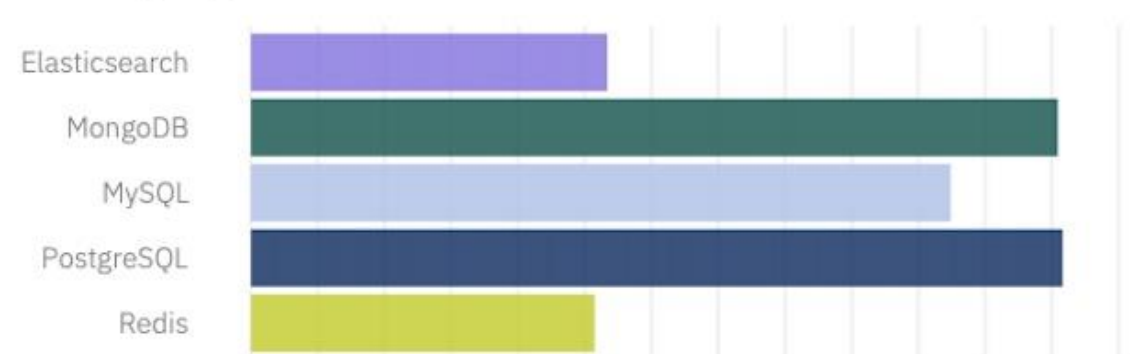
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database

- Microsoft SQL Server is still very popular and widely used.

- MongoDB and Redis are the most popular NoSQL databases

Implications

- Opensource databases are preferable

- SQL databases account for the most this year and next.

- NoSQL databases have a good foothold

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DASHBOARD

Please find the permanent link of the read-only view of the Cognos dashboard below.

https://eu-gb.dataplatform.cloud.ibm.com/dashboards/99447518-a523-4a25-bc1b-961128a39842/view/5534a13607b91ee116f3c8e4079b285728362309e0bb805686d17b4909652097f33f4295c87a4d0bdb130330a2ea465dca

CURRENT TECHNOLOGY USAGE
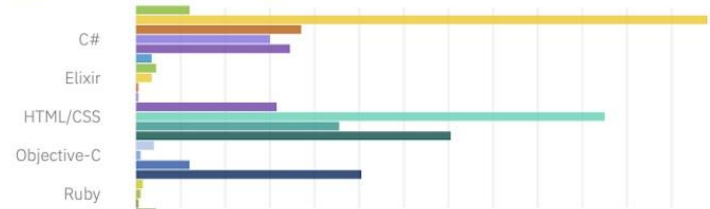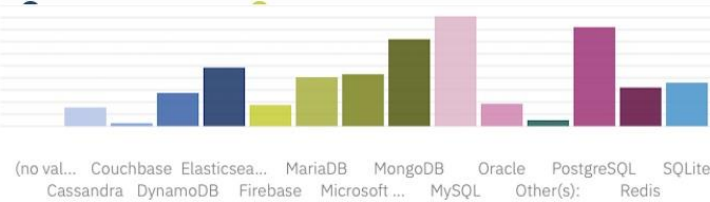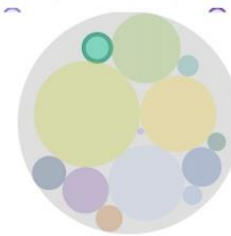
FUTURE TECHNOLOGY USAGE

DEMOGRAPHICS
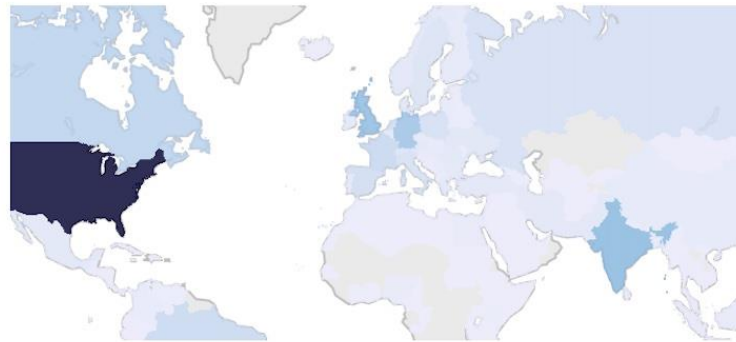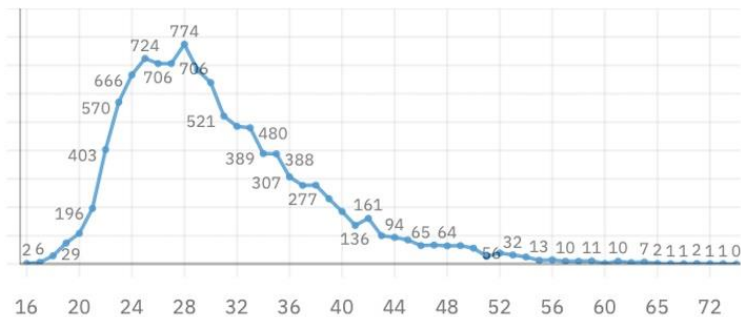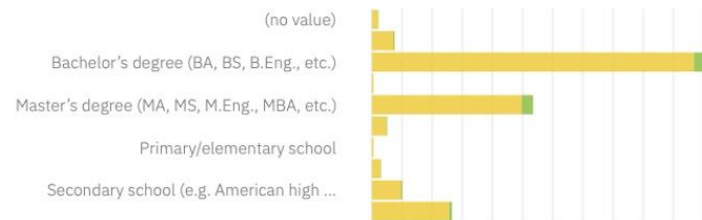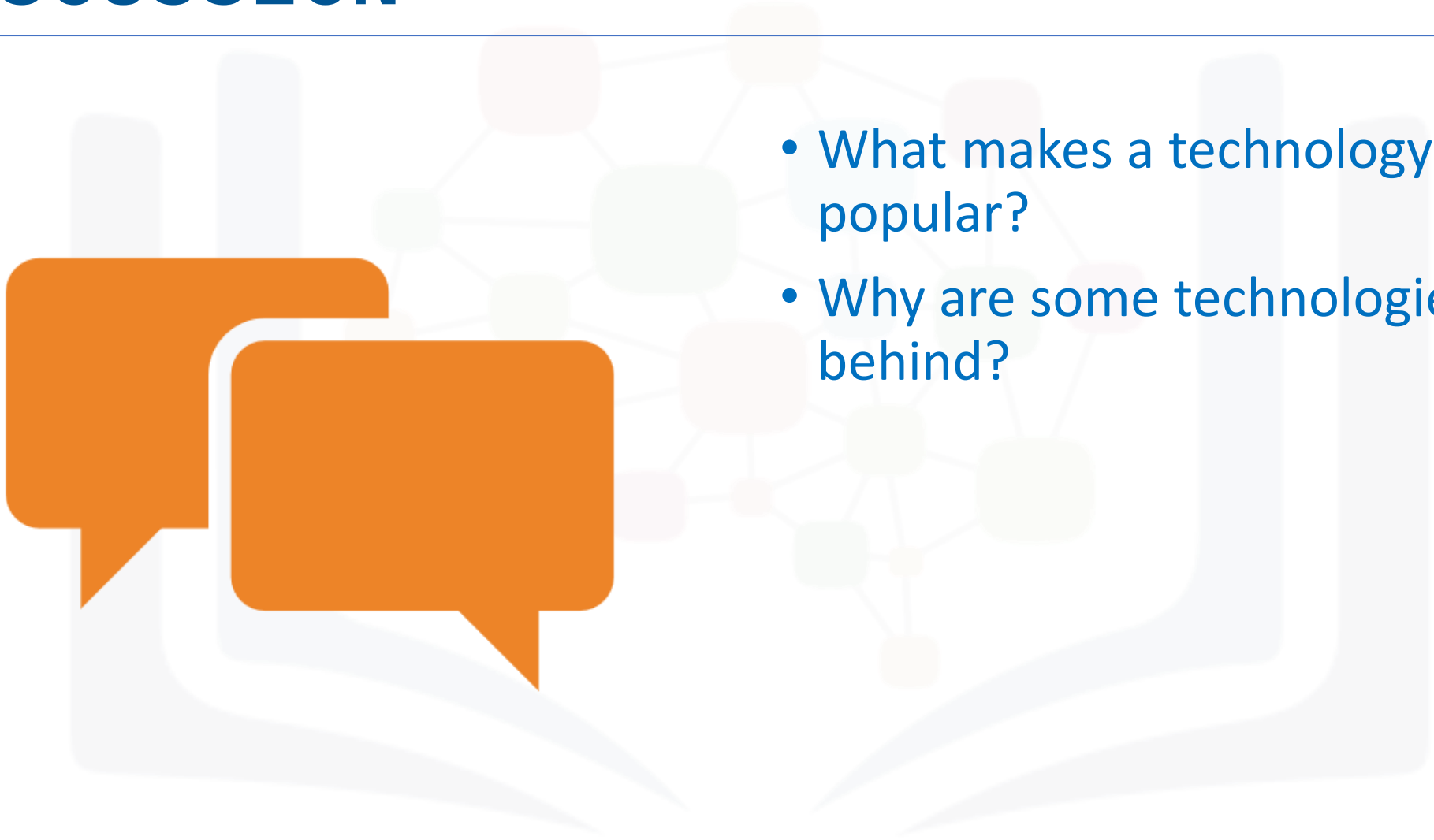
DISCUSSION

- What makes a technology popular?
- Why are some technologies left behind?

OVERALL FINDINGS & IMPLICATIONS

Findings

- In demand technologies can fluctuate from year to year
- React.js is predicted to be the most popular web framework replacing jQuery
- Linux, Docker and AWS are the most popular platforms.
- Gender imbalance as 93% more respondents were male

Implications

- Technologists should upskill where the demand is to keep themselves relevant in the market.
- Hire more people with frameworks experience like React.js and Vue.js
- Continue to staff Linux but employ people with Cloud experience – AWS, Docker, Kubernates etc
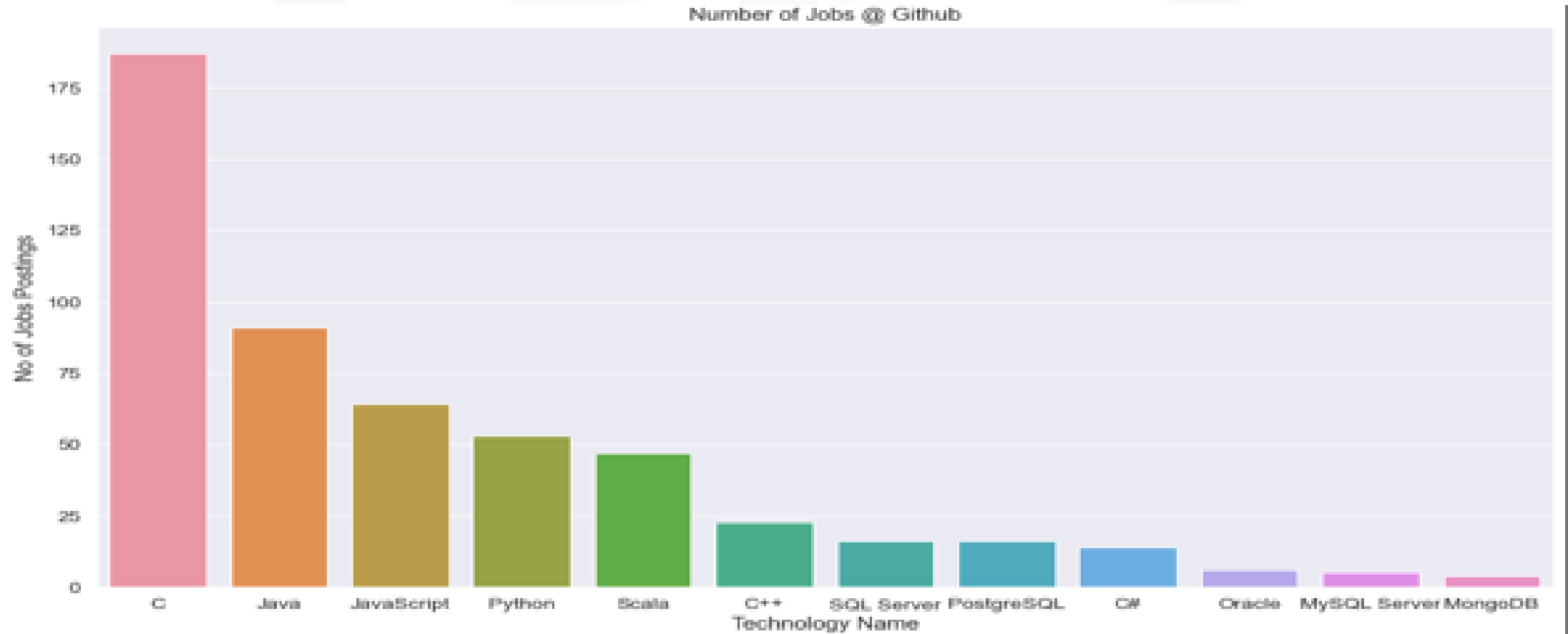
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CONCLUSION

- Hire more people with skills in future trend technologies

- Upskill those already employed

- Gender and Education

APPENDIX

- Include any relevant additional charts, or tables that you may have created during the analysis phase.

JOB POSTINGS

Number of Jobs @ Github

POPULAR LANGUAGES