



# Capstone Project Findings Report

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# OUTLINE

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# EXECUTIVE SUMMARY

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- Visualization of common tools used for SD
- Finding trends in Dataset for;
  - Current Technology Usage,
  - Future Technology Usage, and
  - Demographics
- Current most used Languages, Databases, Platforms, and Web Frames
- Predicted desired Languages, Databases, Platforms and Web Frames
- Regions in the world that study is based on by Gender

# INTRODUCTION

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- Dashboard analyzing current trends for software development
- Dashboard predicting desired trends for software development
- Identifies possible required skills and area of use
- Responsive real-time comparisons
  - Based on Gender
  - Based on Region

# METHODOLOGY

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- Data Source
  - m5\_survey\_data\_technologies\_normalised.csv
  - m5\_survey\_data\_demographics.csv
- Data Cleaning
  - Removal of blank values
- Data Exploration
- Data Visualization
  - Dashboards
  - Charts

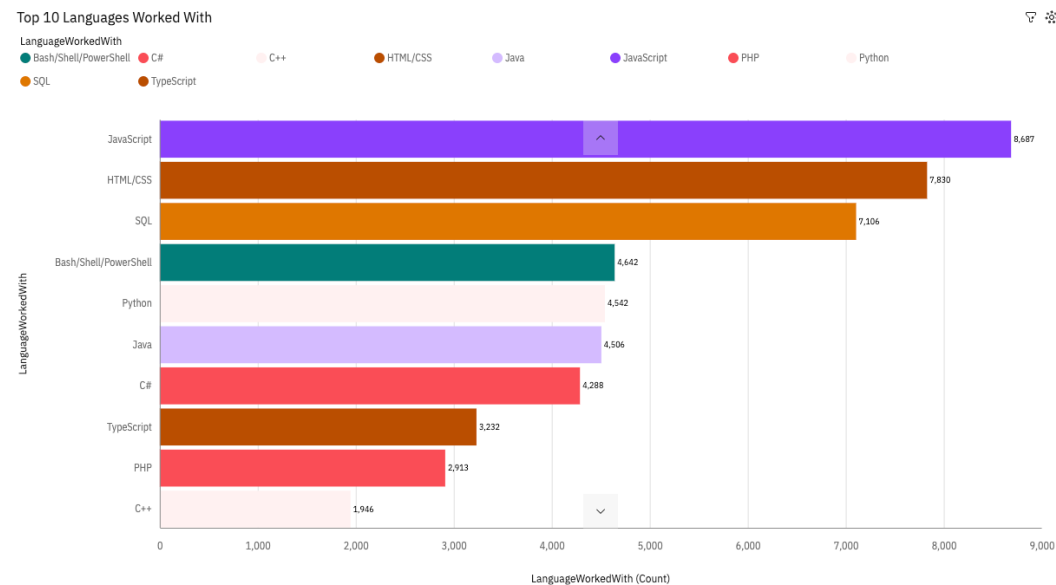
# RESULTS

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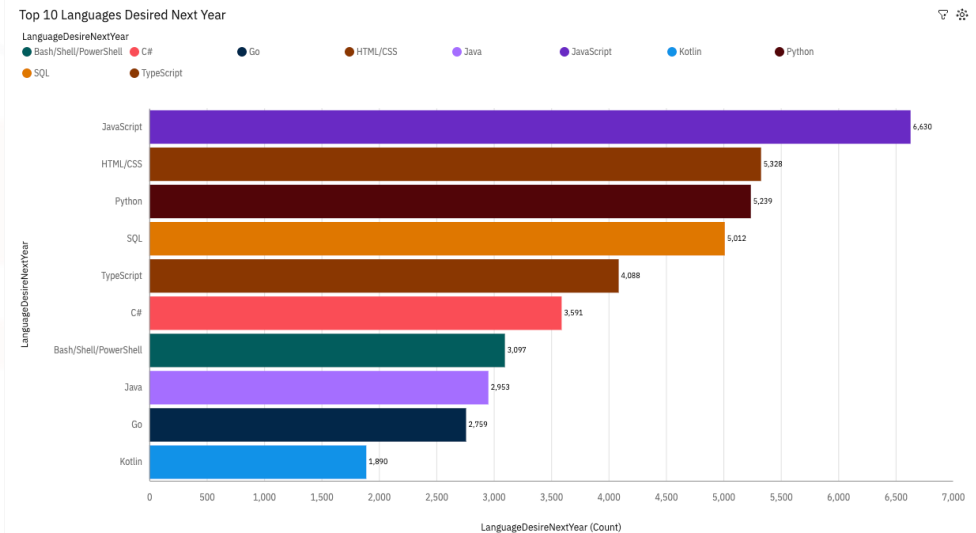
- PROGRAMMING LANGUAGE TRENDS
  - Graphs
  - Findings and Implications
- DATABASE TRENDS
  - Graphs
  - Findings and Implications

# PROGRAMMING LANGUAGE TRENDS

## Current Year



## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- Python is predicted to be more of use compared to its current popularity
- JavaScript and HTML/CSS prove to be relevant in the coming year
- C++ and PHP are predicted not to be in the top 10 next year
- Bash/Shell/Powershell has lost relevance

## Implications

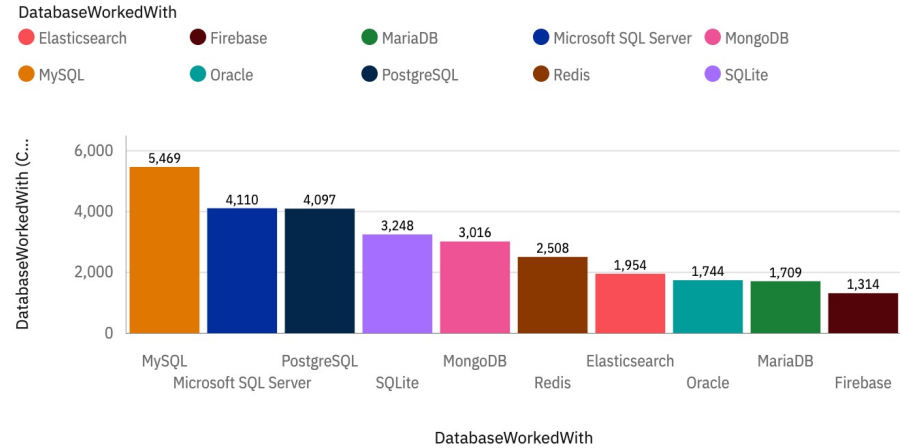
- SQL is still an essential requirement for in-demand languages
- Web Development seems to be a strong requirement
- New stronger, better, faster, easier languages will be required to know for new programmers
- Newer, better tools introduced eliminates use for unpopular ones



# DATABASE TRENDS

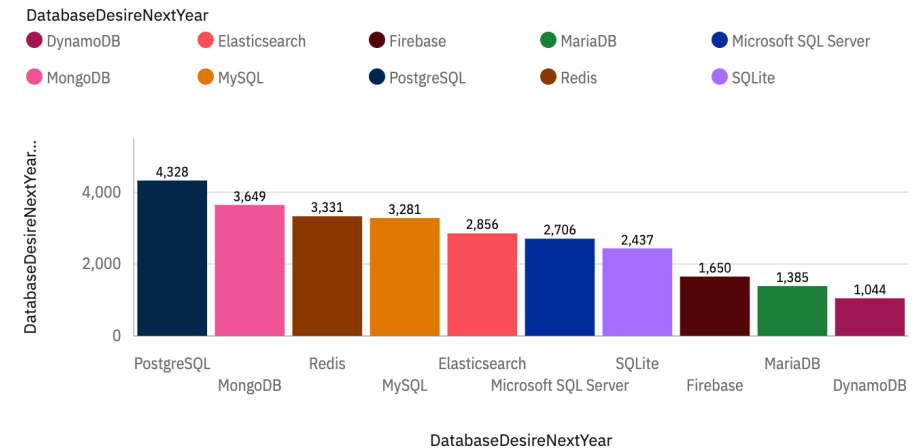
## Current Year

Top 10 Databases Worked With



## Next Year

Top 10 Databases Desired for Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- PostgreSQL seems to be of most relevance remaining in top 3
- MySQL and MS SQL server predicted to be of less use in the coming year
- DynamoDB has booted out Oracle for 10<sup>th</sup> place
- MySQL still remains in the top 5, could become a prominent tool again in the near future

## Implications

- MySQL had a bigger difference with MS SQL Server compared to PostgreSQL with MongoDB
- May be difficult to transition from current commonly used databases
- Not suitable for multi-item or cross tables transactions
- Tools that satisfy the basic requirements of data analysis will remain useful for practical teaching

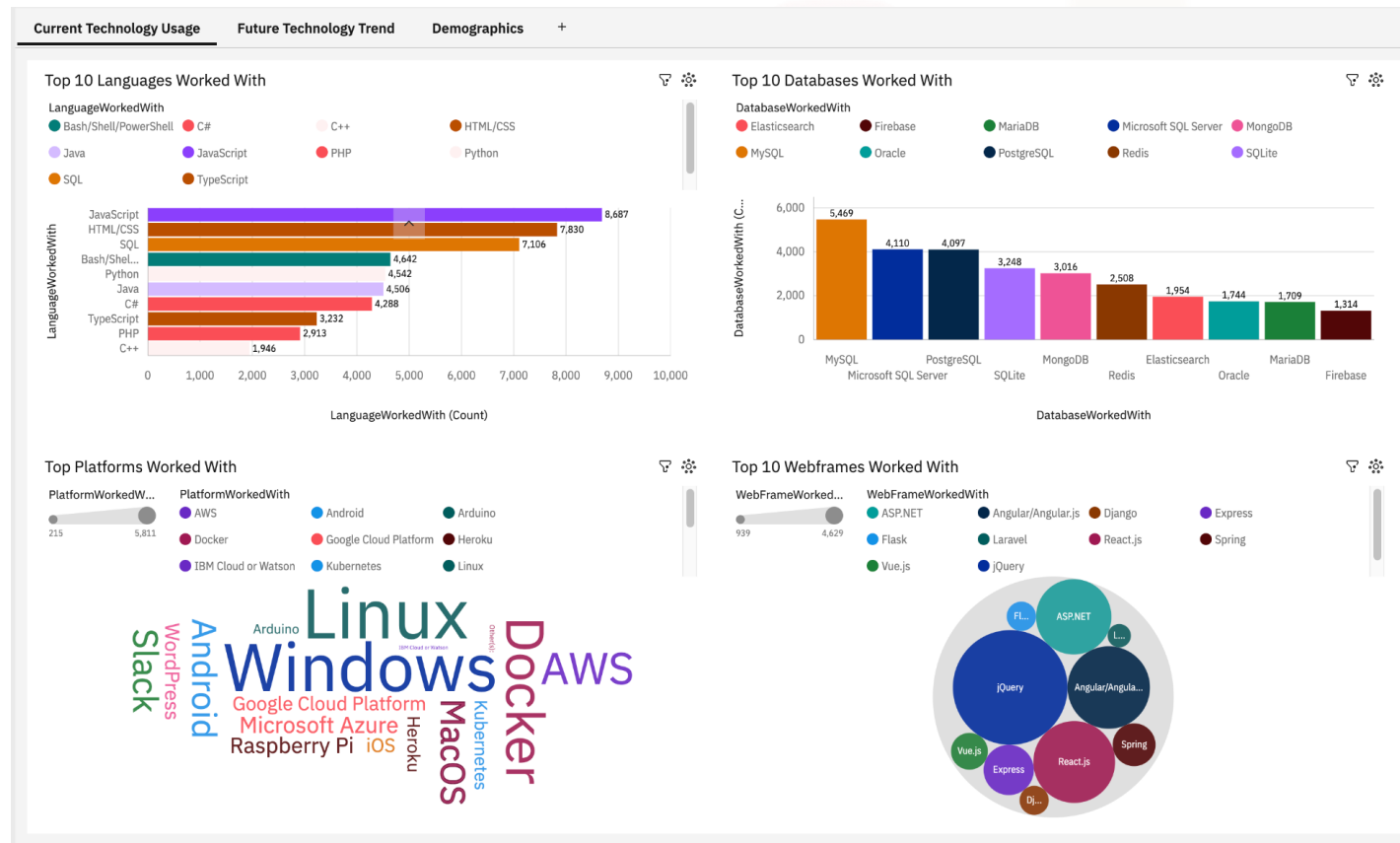
# DASHBOARD

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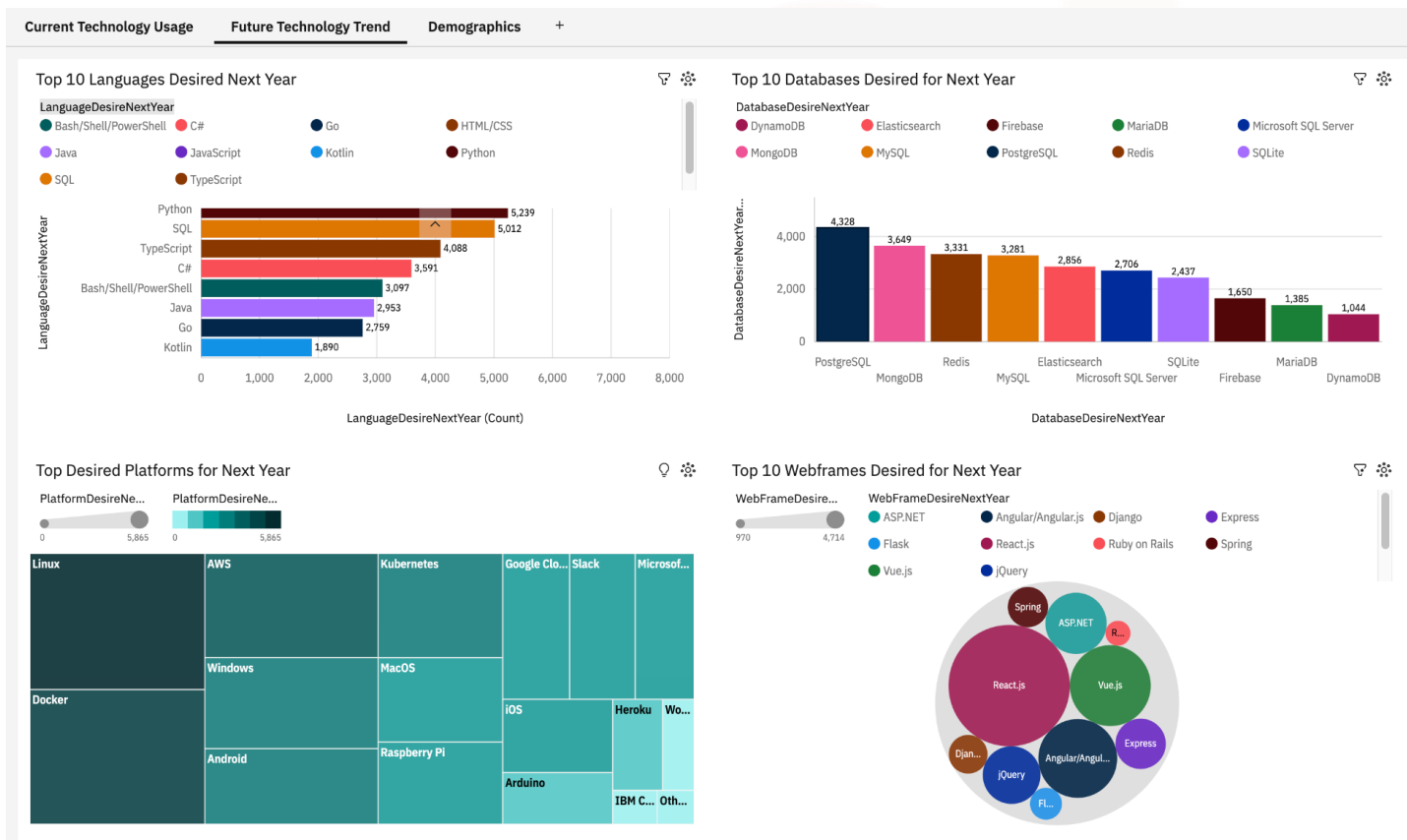


[https://github.com/g-v1sh/JDA\\_Activities/blob/main/Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf](https://github.com/g-v1sh/JDA_Activities/blob/main/Building%20a%20dashboard%20with%20IBM%20Cognos%20Analytics.pdf)

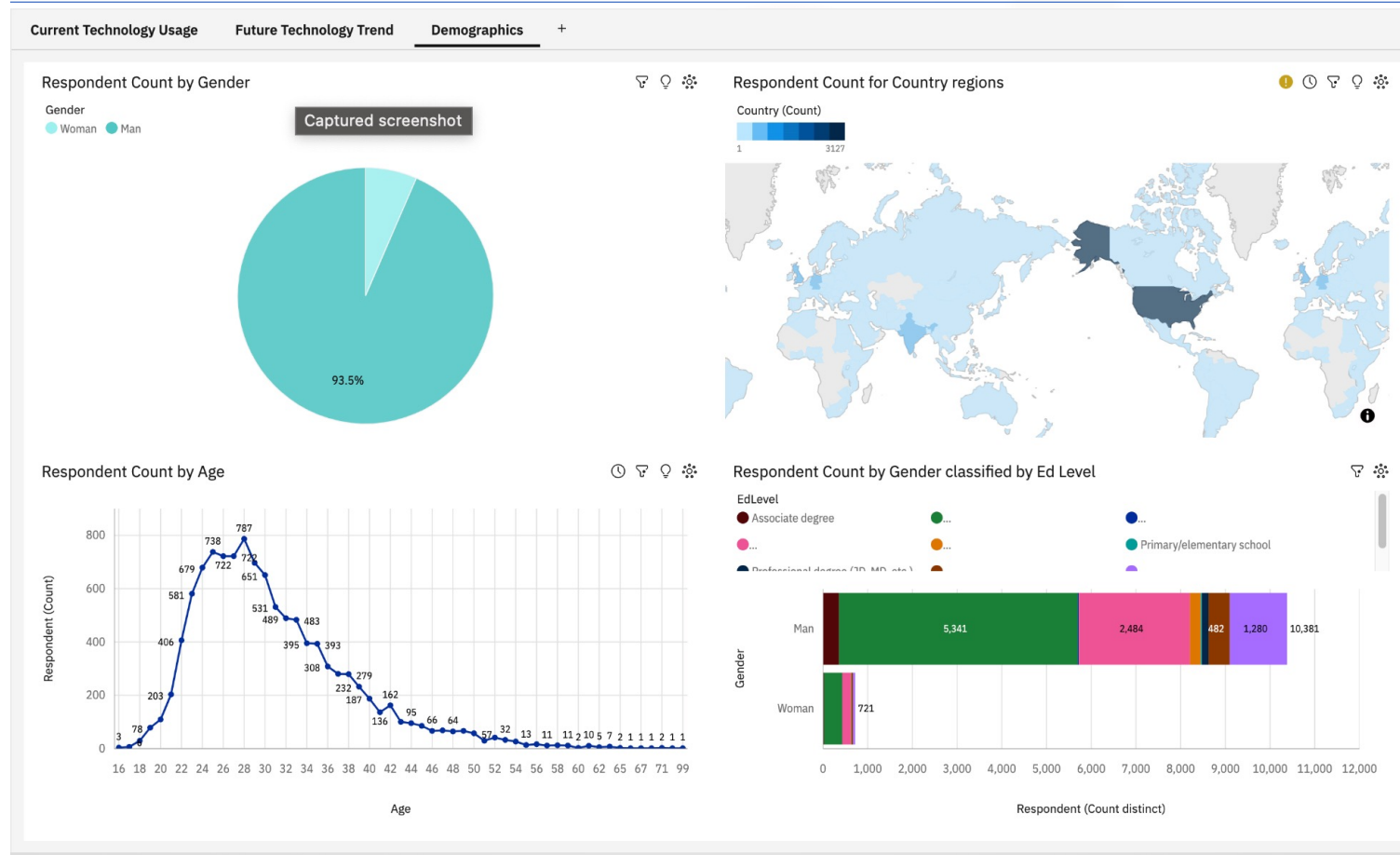
# DASHBOARD TAB 1



# DASHBOARD TAB 2



# DASHBOARD TAB 3



# DISCUSSION

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- Impact of changes of commonly used languages/databases/platforms/web frames
- How long will the predicted tools remain relevant

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- No guarantee of tools prominently being in use
- Huge prominence of usage in region such as India and America
- Men are still prominently more knowledgeable in this field
- Smaller/newer skills/tools are becoming more popular and in use

## Implications

- Companies need to focus on the ability of understanding core concepts rather than memorizing syntax
- Open more job opportunities in regions of lesser tech use
- Woman may not feel comfortable in such environments
- Hire based on adaptability instead of length of experience



# CONCLUSION

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- Technologies will always be on-going and requiring users to be up-to-date
- Spreading knowledge and skills through-out regions can help grow communities
- Focus on the concepts of data analysis and popularity of tools secondary
- Predictions and Estimations help provide an idea but results are not guaranteed

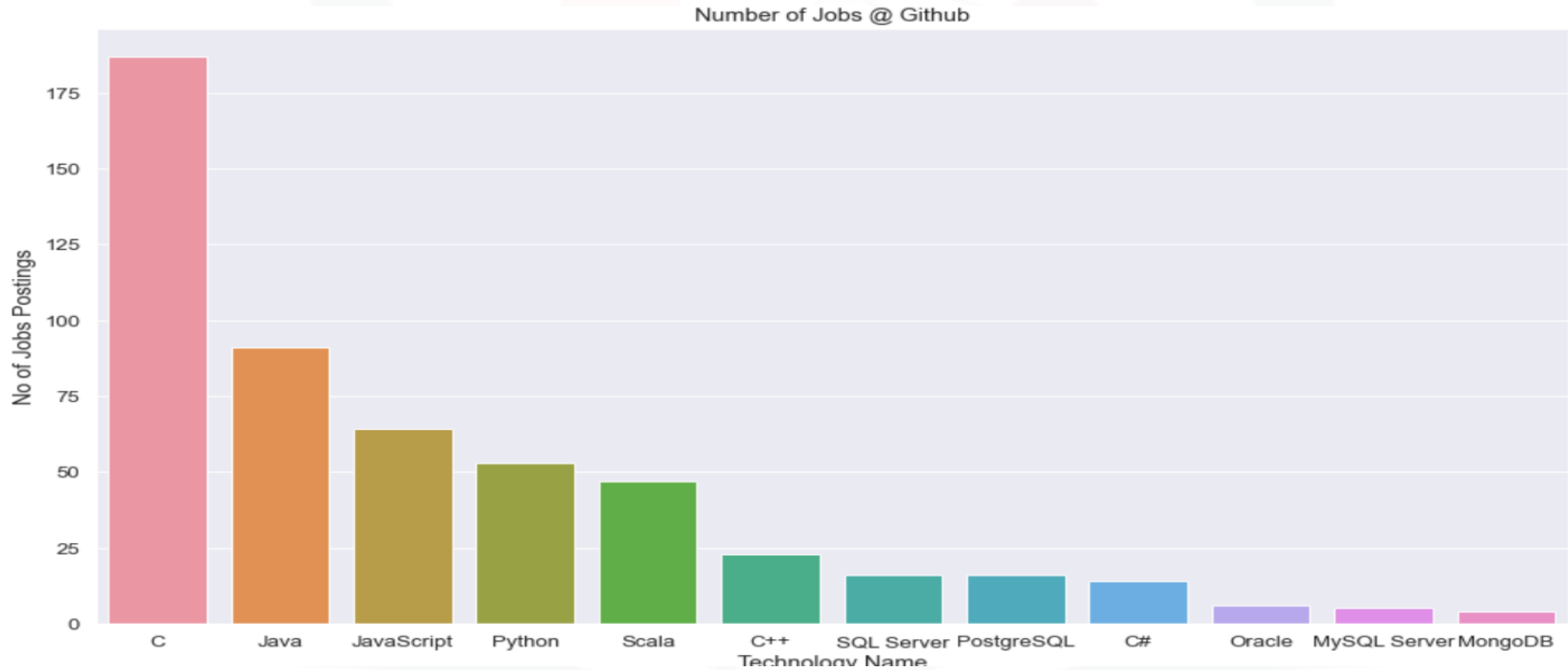
# APPENDIX

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

# JOB POSTINGS



# POPULAR LANGUAGES

