



# IBM Data Analyst Capstone Project

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IBM Developer

SKILLS NETWORK 

# OUTLINE

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

# EXECUTIVE SUMMARY

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- The most desirable programming languages for next year will be
  - JavaScript
  - HTML/CSS
  - Python
  - SQL
  - Typescript
- The most desirable databases for next year will be
  - PostgreSQL
  - MongoDB
  - Redis
  - MySQL
  - Elastic Search
- Gender Gap in IT industry
  - Male = 93.5%
  - Female = 6.5%

# INTRODUCTION

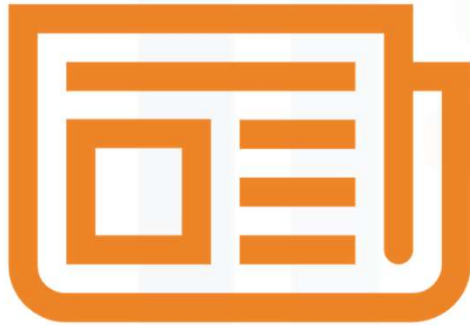
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- Several technology trends emerged based on latest Stack Overflow developer survey:
  - Programming Languages
  - Databases
  - Platforms
  - WebFrames
  - Demographics
- Audience:
  - IT Professionals
  - Human Resource

# METHODOLOGY

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- Data Collection
- Data Exploration
- Data Cleaning
- Data Visualization
- Presentation

# RESULTS



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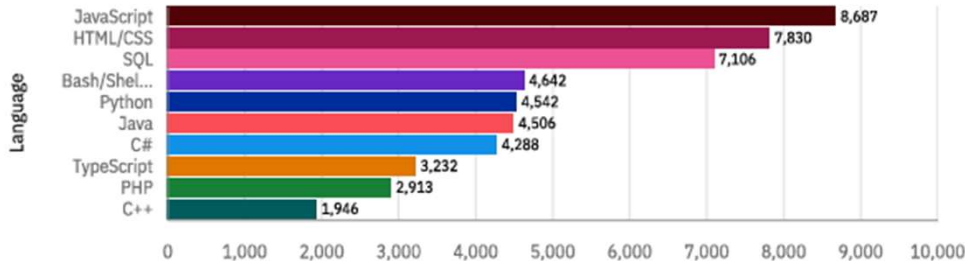
# PROGRAMMING LANGUAGE TRENDS

## Current Year

Top 10 Languages Worked With

LanguageWorkedWith

● Bash/Shell/PowerShell ● C# ● C++ ● HTML/CSS  
● Java ● JavaScript ● PHP ● Python  
● SQL ● TypeScript



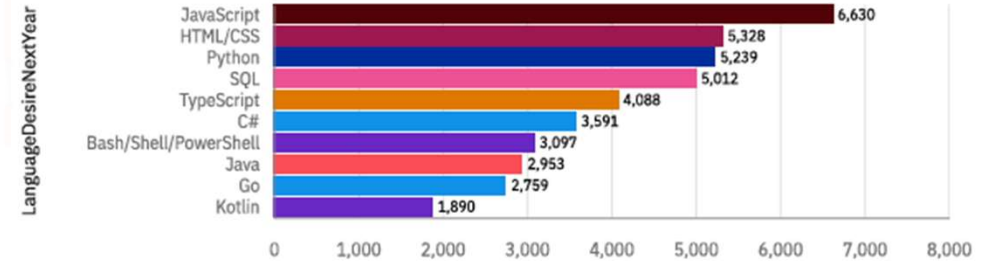
LanguageWorkedWith (Count)

## Next Year

Top 10 Languages Desired Next Year

LanguageDesireNextYear

● Bash/Shell/PowerShell ● C# ● Go ● HTML/CSS  
● Java ● JavaScript ● Kotlin ● Python  
● SQL ● TypeScript



LanguageDesireNextYear (Count)

# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript, HTML/CSS and SQL are in top 3
- SQL remains a critical skill for database management and querying, retaining high demand.
- PowerShell edged out in next year

## Implications

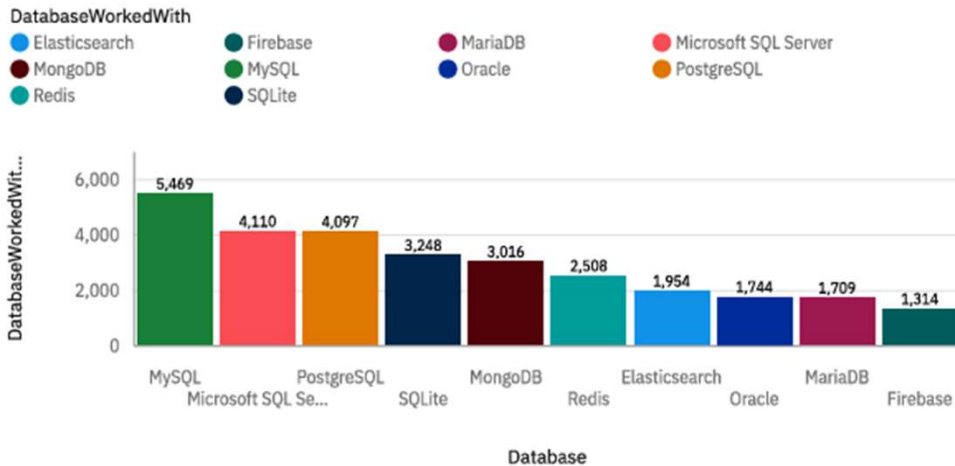
- Web Development is in high demand
- Big Data technology in companies still requires SQL
- The increasing popularity of Python in data-centric fields might lead to it overtaking JavaScript in overall demand.



# DATABASE TRENDS

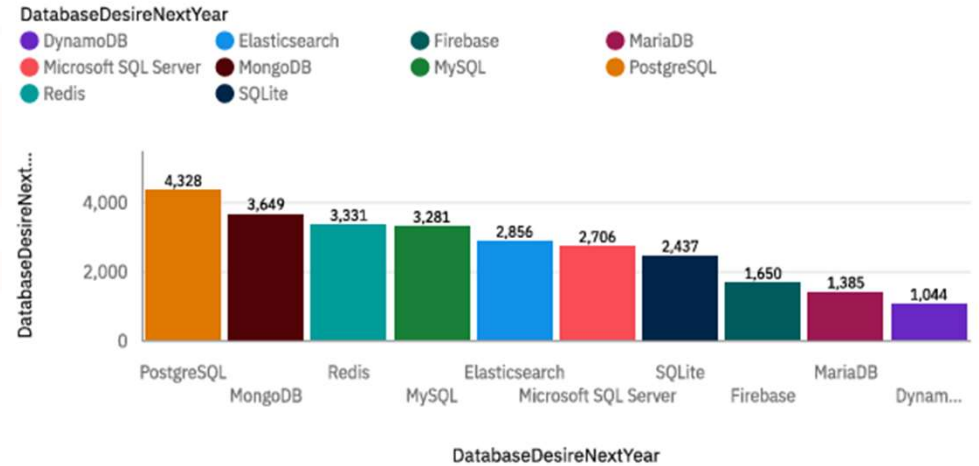
## Current Year

Top 10 Databases Worked With



## Next Year

Top 10 Databases Desired Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- MySQL is most popular
- Skills in Redis and ElasticSearch are more desirable than Microsoft SQL Server and SQLite for next year
- MongoDB and Redis are upcoming favorites

## Implications

- PostgreSQL and MongoDB are the most consistent in demand databases
- Open source databases are preferred
- NoSQL databases will make an impact for storing non relational data

# DASHBOARD

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[appu19n/IBM\\_Data\\_Analyst\\_Capstone\\_Project \(github.com\)](https://github.com/appu19n/IBM_Data_Analyst_Capstone_Project)

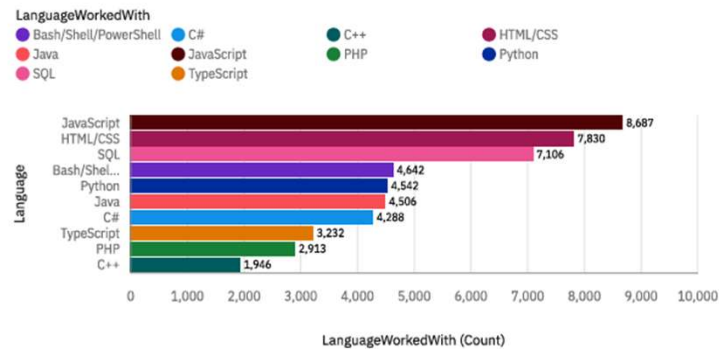
# DASHBOARD TAB 1

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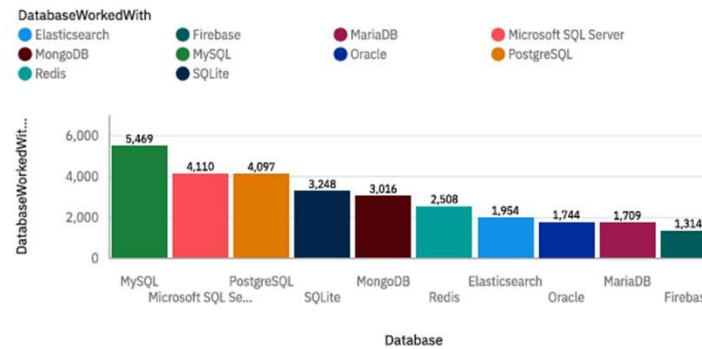
Part A

## Current Technology Usage

### Top 10 Languages Worked With



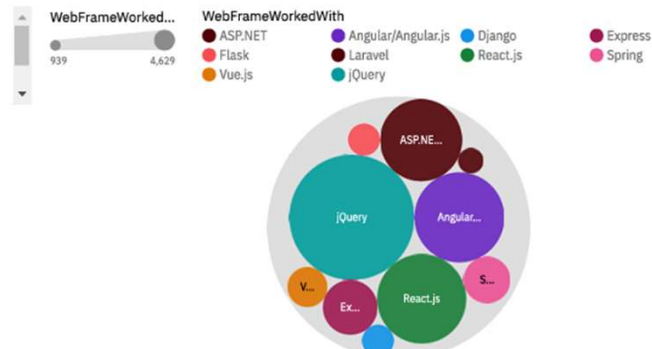
### Top 10 Databases Worked With



### Platforms Worked With



### Top 10 WebFrame Worked With



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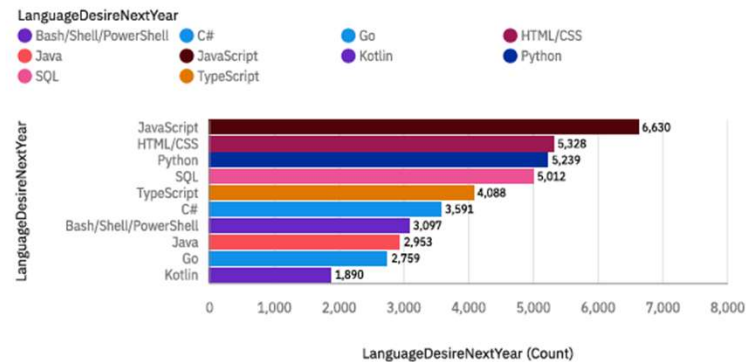
# DASHBOARD TAB 2

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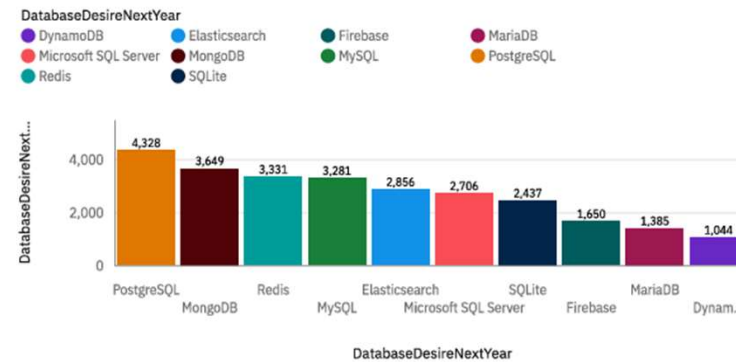
Part A

## Future Technology Trend

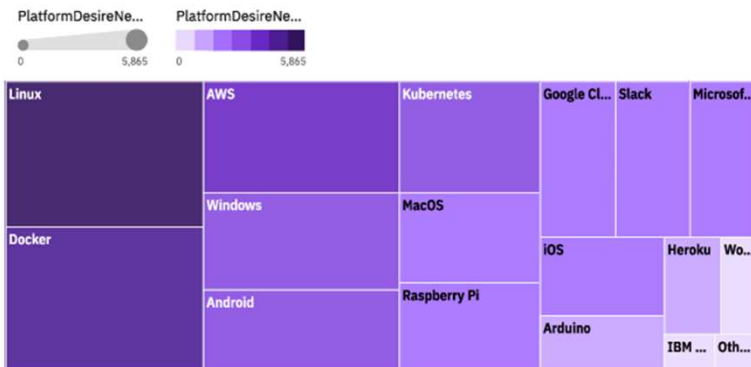
### Top 10 Languages Desired Next Year



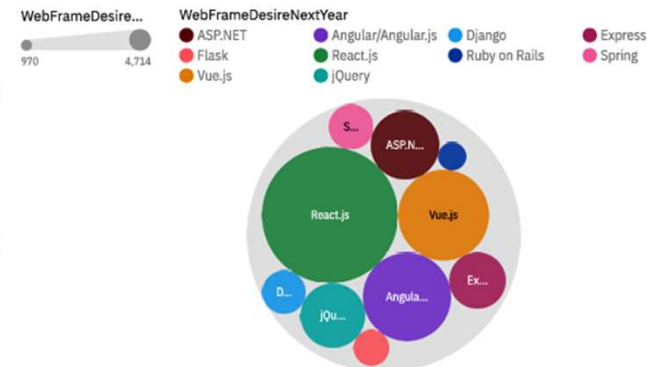
### Top 10 Databases Desired Next Year



### Platform Desired Next Year



### Top 10 WebFrame Desired Next Year



# DASHBOARD TAB 3

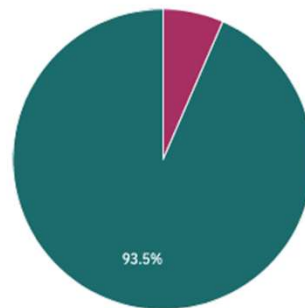
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Part A

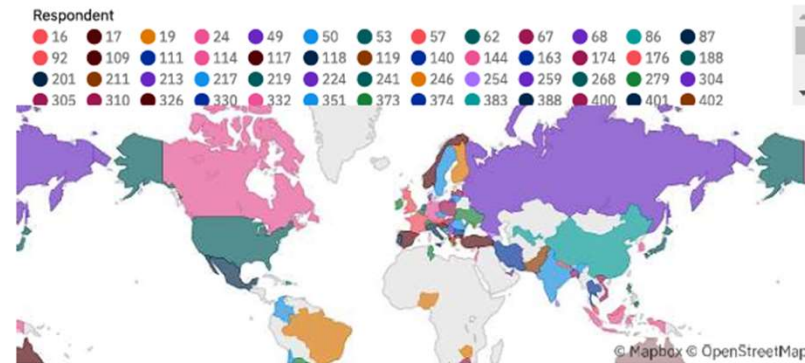
## Demographics

Respondent classified by Gender

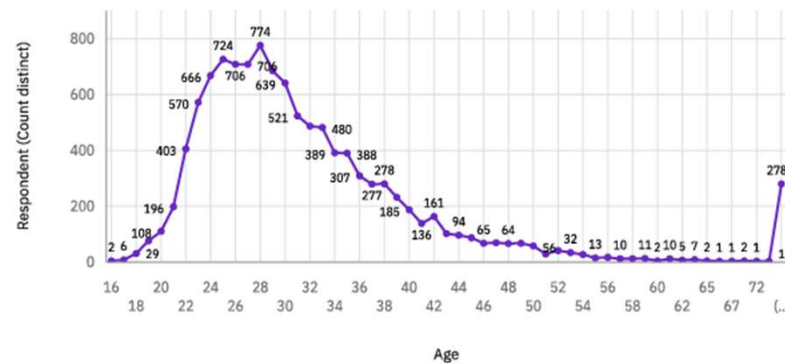
Gender  
● Woman ● Man



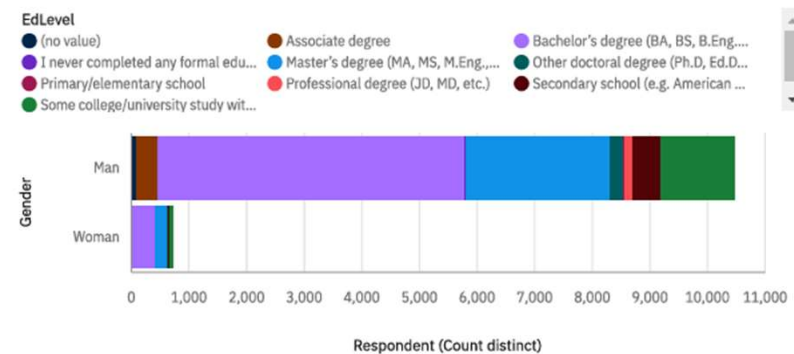
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



# DISCUSSION

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- Technology Trends now and future
- The IT industry needs to diversify in order to eliminate gender gap.
- Eliminate age and education discrimination in employment

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- JavaScript and Python are the most popular programming languages
- PostgreSQL is the most popular database
- Gender gap in the IT industry

## Implications

- Shift to faster app deployments and cloud services in future
- Having skills that are high in demand leads to more job opportunities.
- Gender gap will affect job hiring trend.



# CONCLUSION

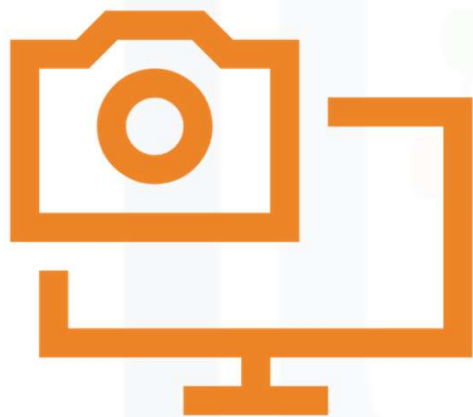
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- New technology leads to different trends and demands
- JavaScript and Python are the most popular programming languages.
- PostgreSQL is the most popular database
- The IT industry needs to diversify

# APPENDIX

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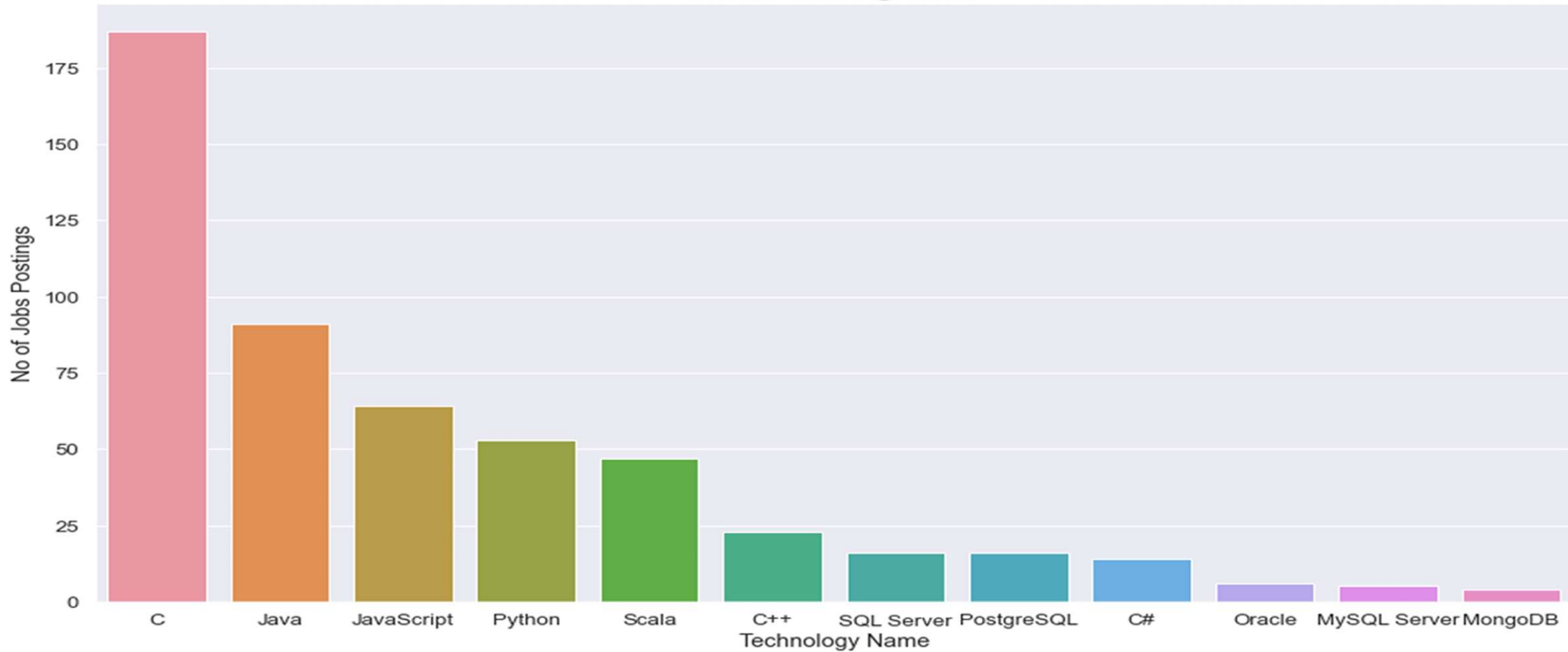


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# JOB POSTINGS

Number of Jobs @ Github



# POPULAR LANGUAGES

Job Salaries

