Technology Trends & Analysis Presentation

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IBM **D**eveloper

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OUTLINE

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

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EXECUTIVE SUMMARY

- Trends in programming languages and databases

- Demographics survey

- Technological gap in countries

- Gender gap in jobs

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

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METHODOLOGY
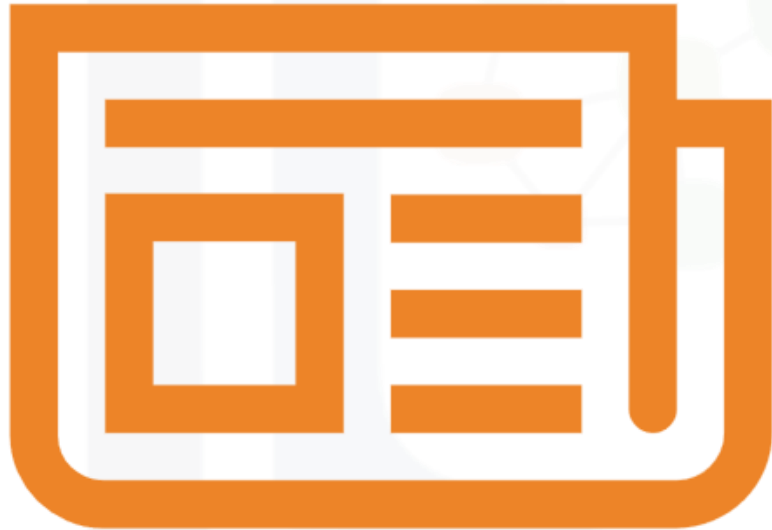
- Data Collection Sources
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Postings
  - Programming Languages Annual Salary
- Data Exploration
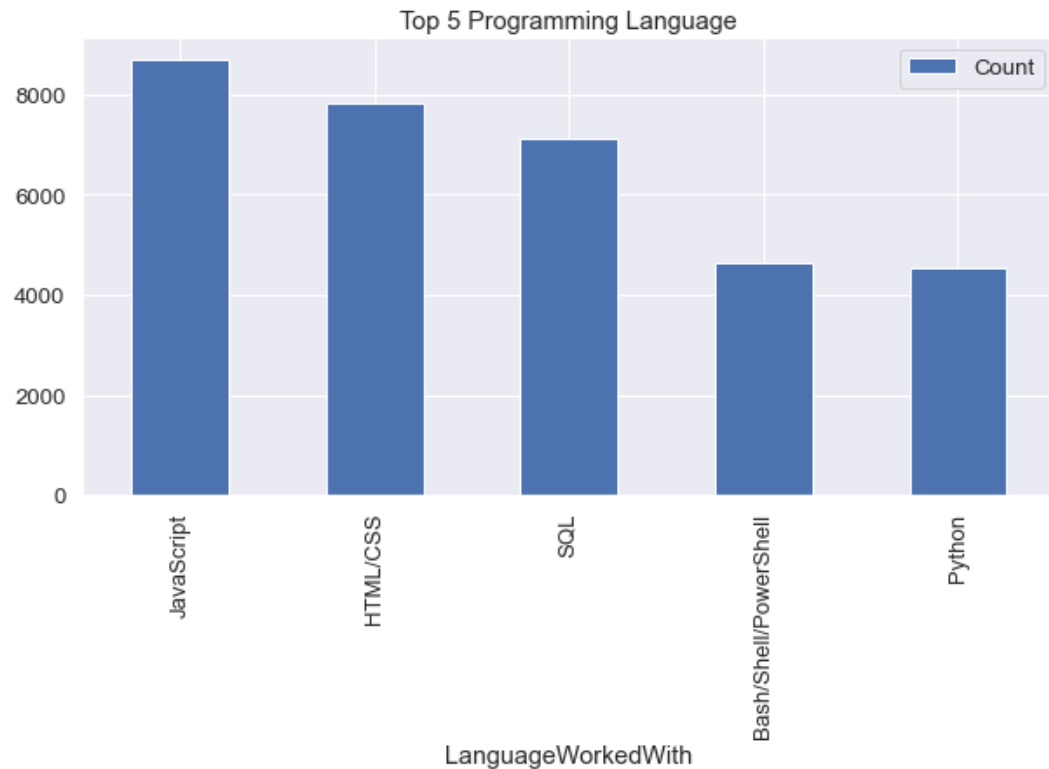- Data Cleaning
- Data Visualization
- Presentation

RESULTS

Results are based on this table:

	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

Top 5 Programming Language

Next Year

Top 5 Desired Programming Language

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS
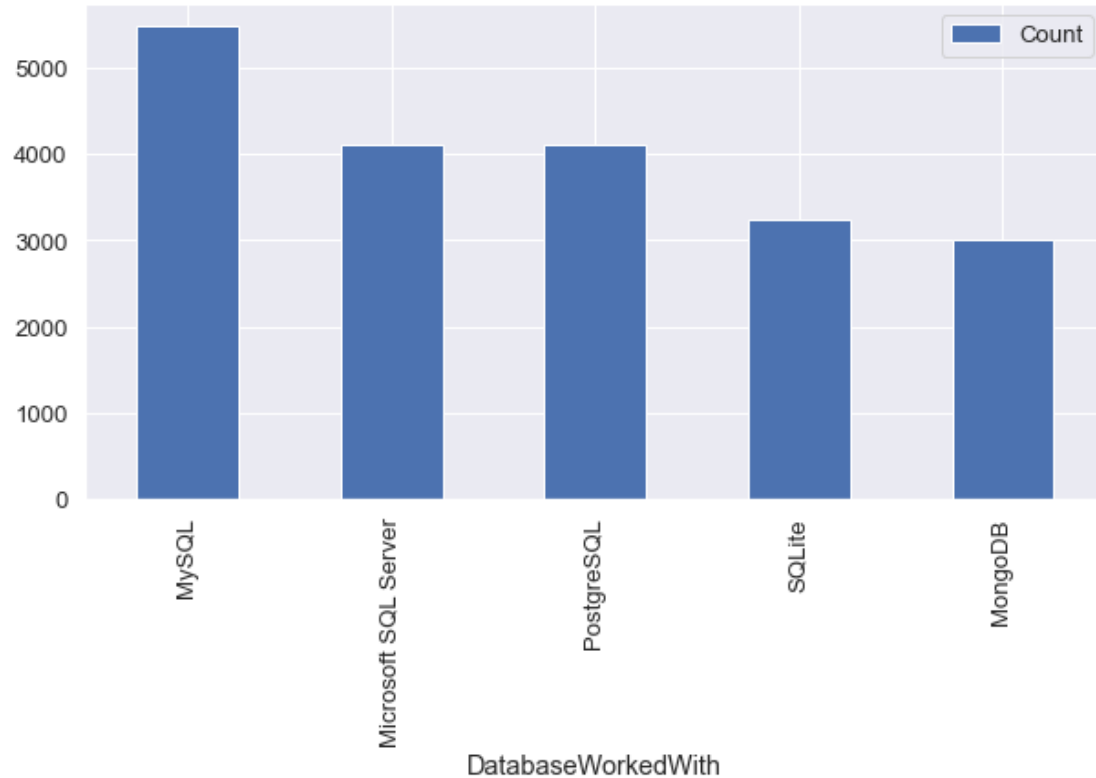
Implications

- Web development is still in high demand

- Big Data technology in companies still requires SQL

- With AI and ML in rising demand, Python is the best choice

FINDINGS

JAVASCRIPT, HTML/CSS, SQL ARE TOP 3 THIS YEAR

PYTHON AND TYPESCRIPT BECOMING POPULAR NEXT YEAR

POWERSHELL EDGED OUT IN NEXT YEAR

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DATABASE TRENDS

Current Year

Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Implications

- Open-source databases are still preferable in companies

- NoSQL databases will make an impact for storing non-relational data

- Redis supports abstract data types

- Pre-tuned search to website, app, or ecommerce store

Findings

MySQL most popular

Behind is Microsoft SQL

MongoDB and Redis are upcoming favorites
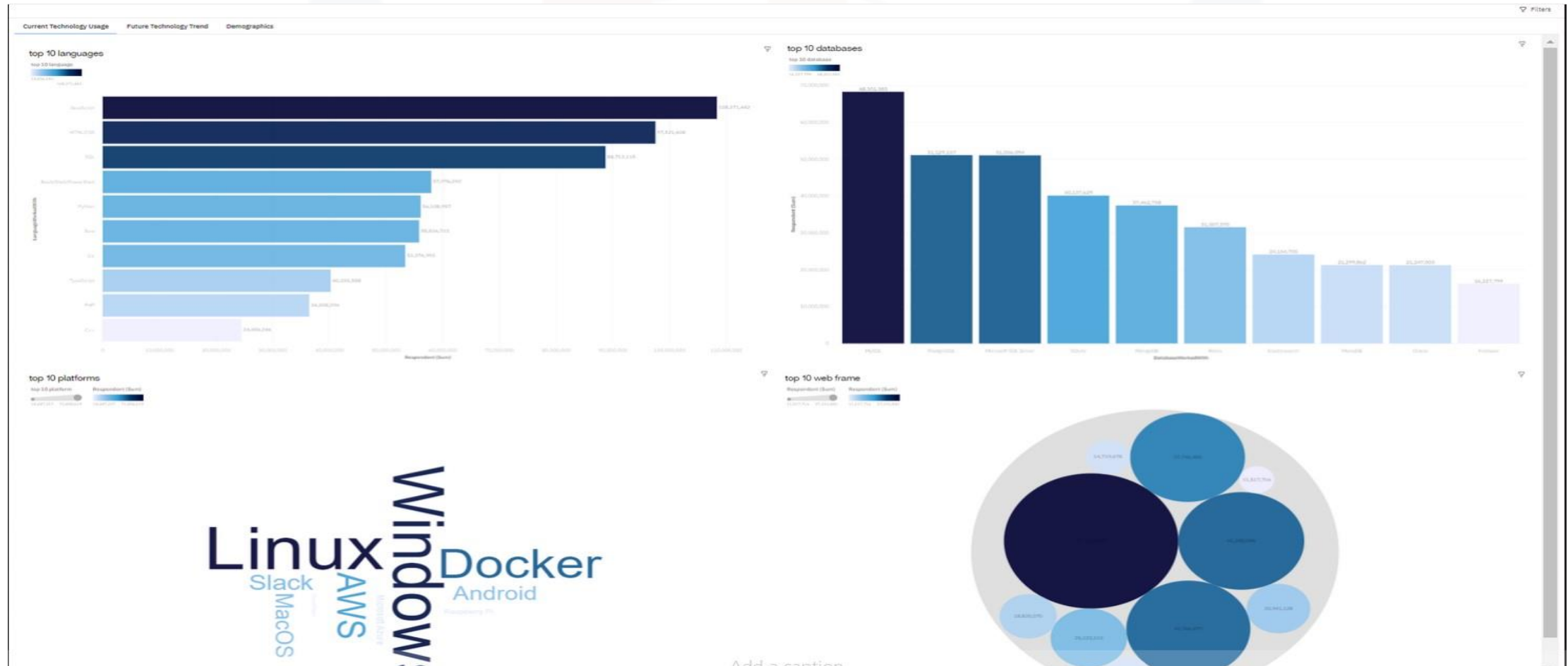
New kid on the block: Elasticsearch

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DASHBOARD

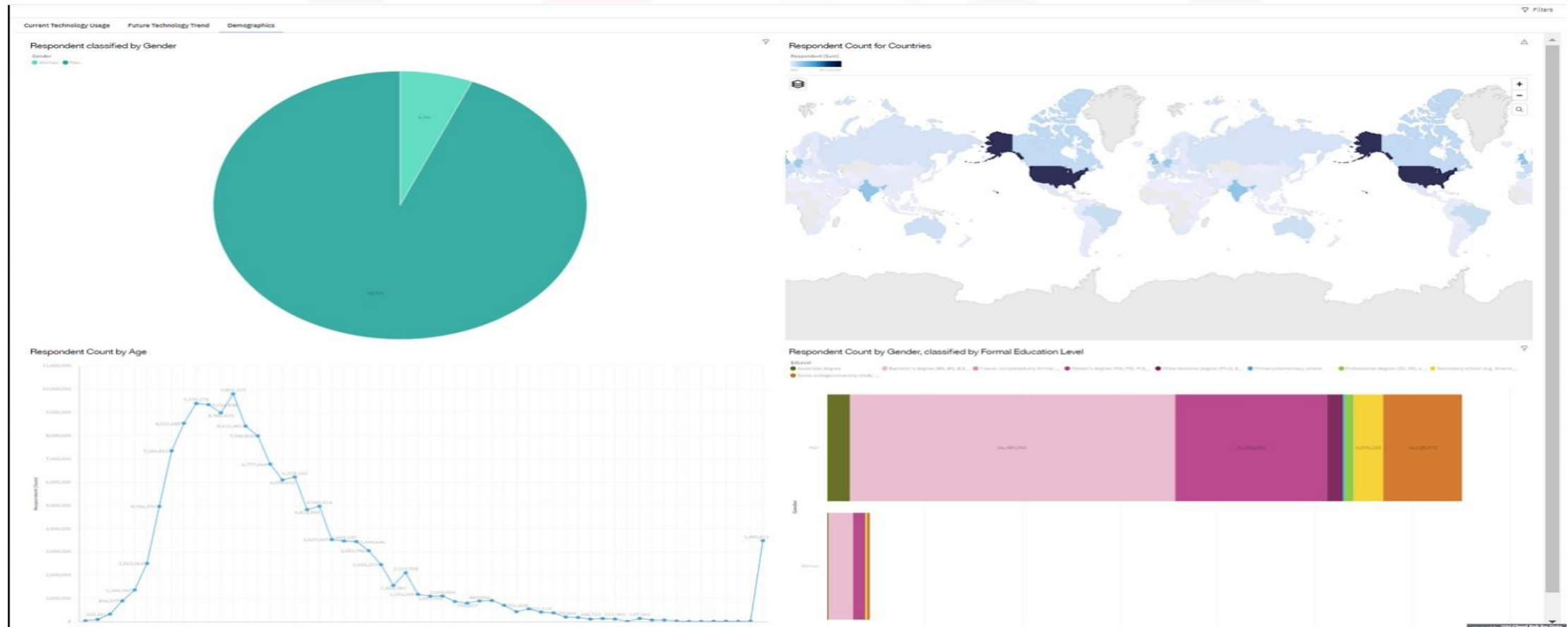**IBM COGNOS LINK DASHBOARD**

IBM Cloud Pak for Data

CURRENT TECHNOLOGY USAGE DASHBOARD

FUTURE TECHNOLOGY TREND DASHBOARD

DEMOGRAPHICS DASHBOARD

DISCUSSION

- Technology Trends now and future

- Training and Reskilling workers

- Female's participation in the Technology field

- Bridge the divide of technology gaps in developing countries

- Eliminate age and education discrimination in employment

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OVERALL FINDINGS & IMPLICATIONS

Findings	Implications
Fast changing technology every year	• Companies need to be flexible and adjust to rapid changes
Concentration on several countries like USA and India	• Need to spread technology out to lagging countries
Gender gap in technology jobs	• Impact of job hiring's
Platforms like Docker and AWS are growing	• Shift to faster app deployments and cloud services in future

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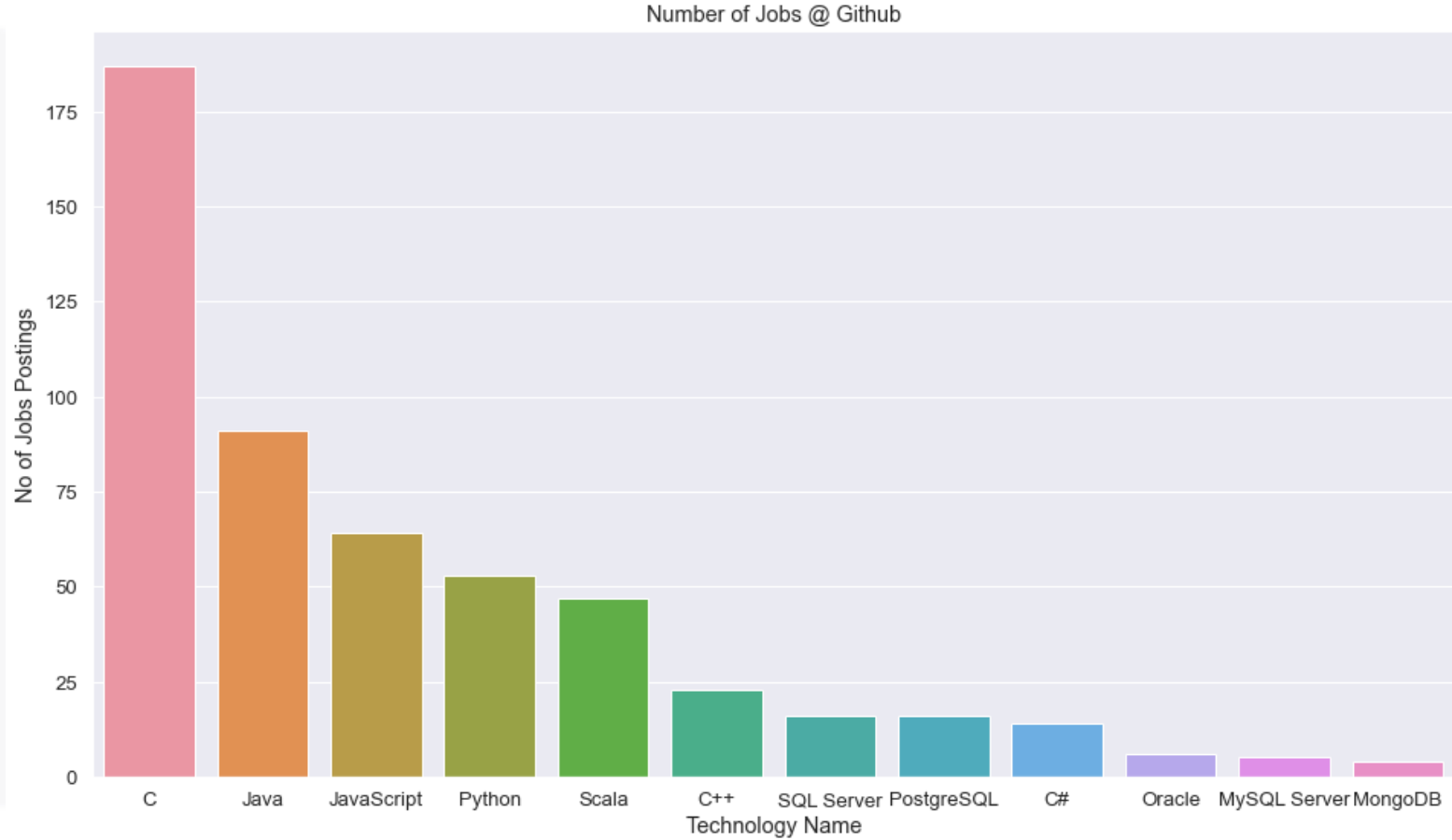
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CONCLUSION

- Technology Trends for current and next year

- Programming Languages, Database and Platform overview

- Demographics overview

- Actions to be taken

- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX

Top 5 Development Environments

GITHUB JOB POSTINGS

Number of Jobs @ Github
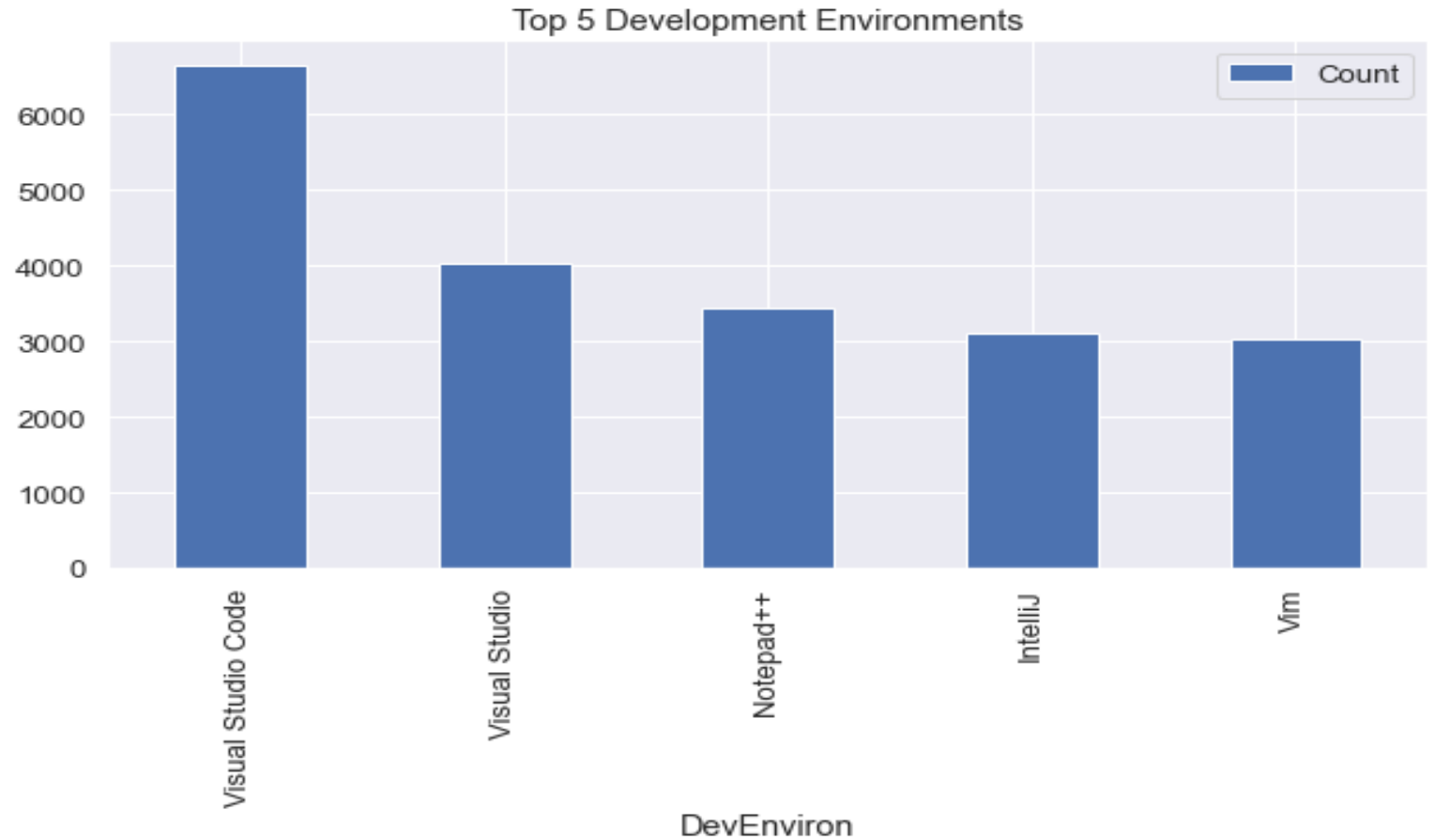
POPULAR LANGUAGES BY SALARY

Job Salaries