

# Analyzing Programming Language Trends

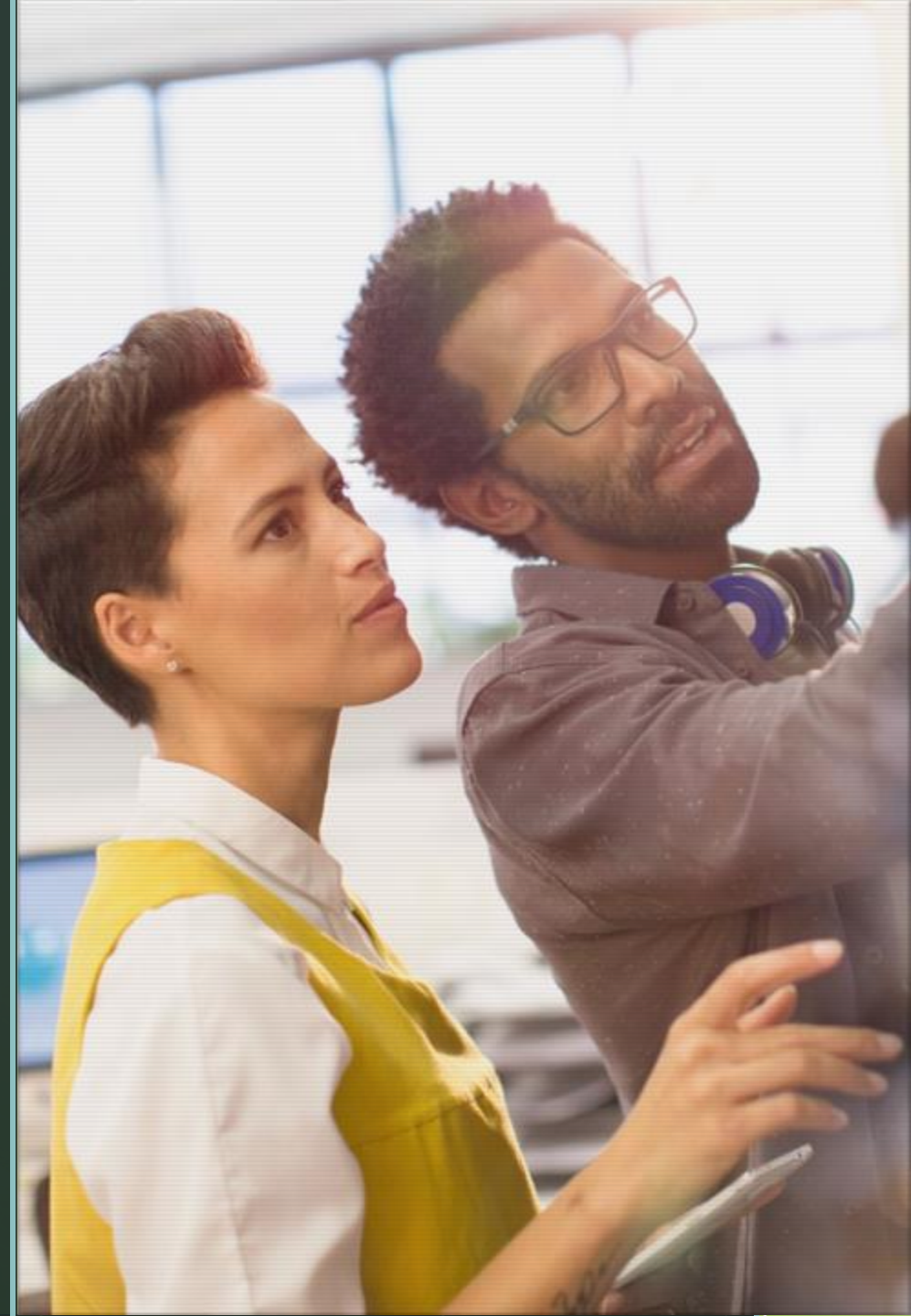
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# Outline

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- **Conclusion**
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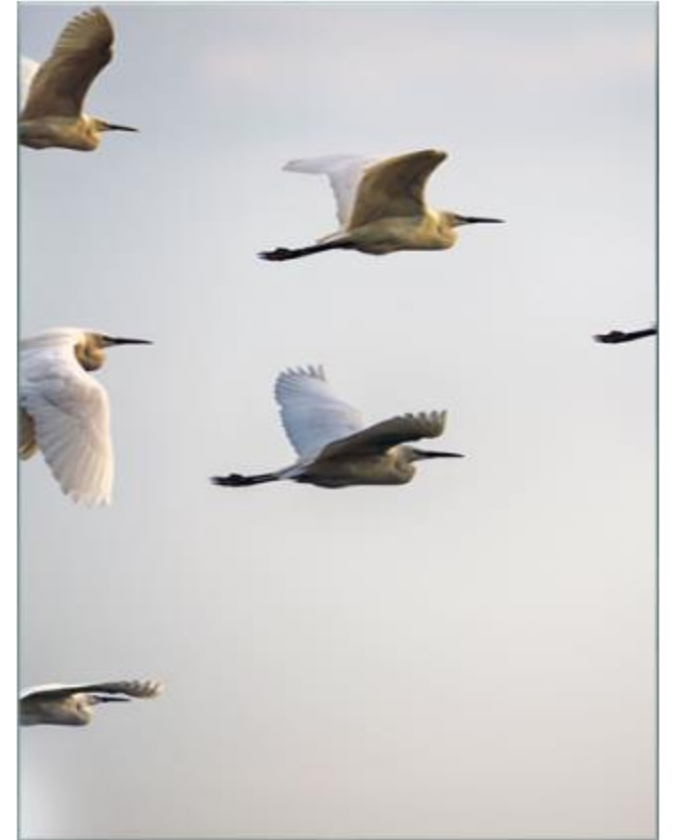
# Executive Summary

- Programming Language and Database Trends
- Demographic Survey
- Country-Technological Gap
- Job Gaps by Gender



# Introduction

- Background: Analysing the Trends in Programming Languages
- Objective:
  - Analyse the skill requirements for future
  - The top programming languages in demand
  - What are the top database skills in demand
  - What are the popular IDEs?
- Audience: Human Resource Team and The Company Director



# Methodology

- Data sources:
  - Stack Overflow Developer Survey 2019
  - Githubs Job Postings
- Data Exploration
- Data Wrangling
- Data Visualization
- Presentation



# Results

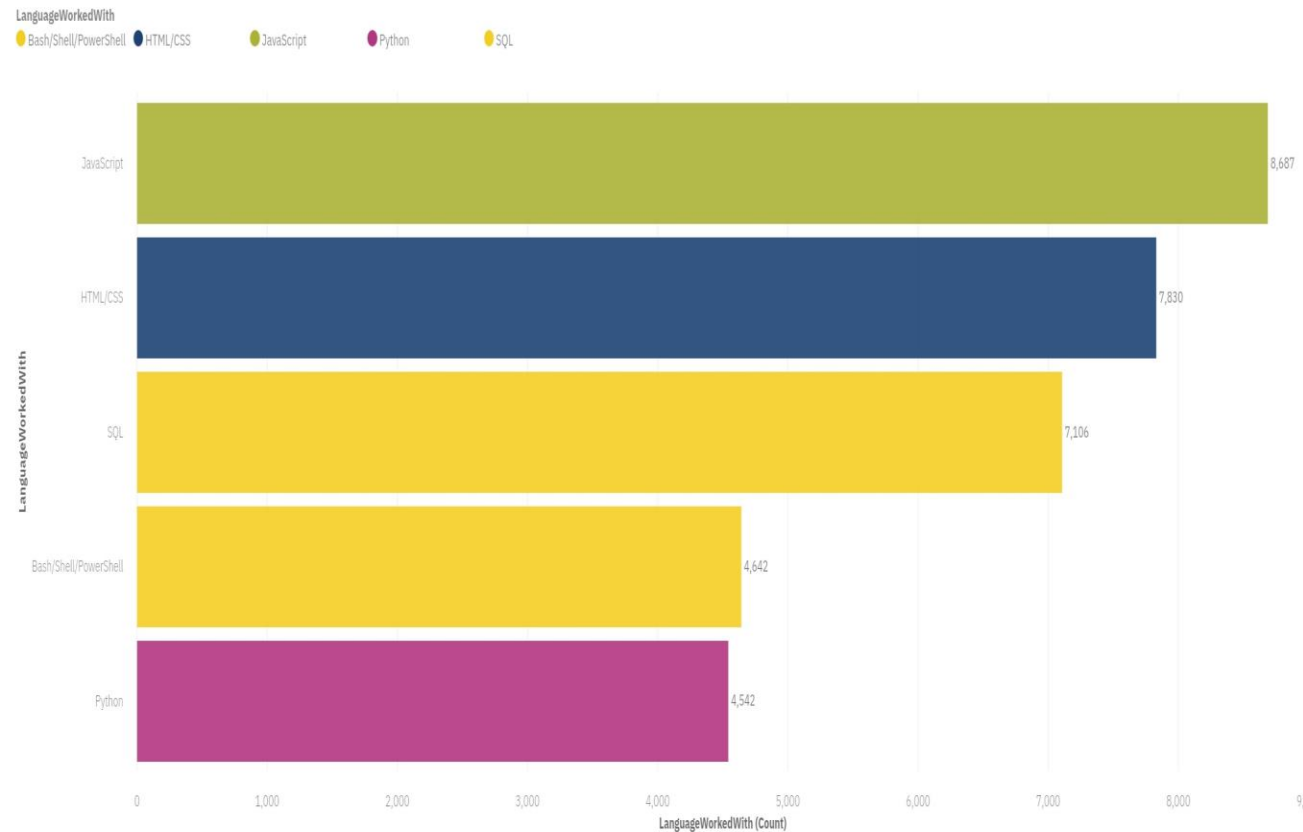
	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python	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

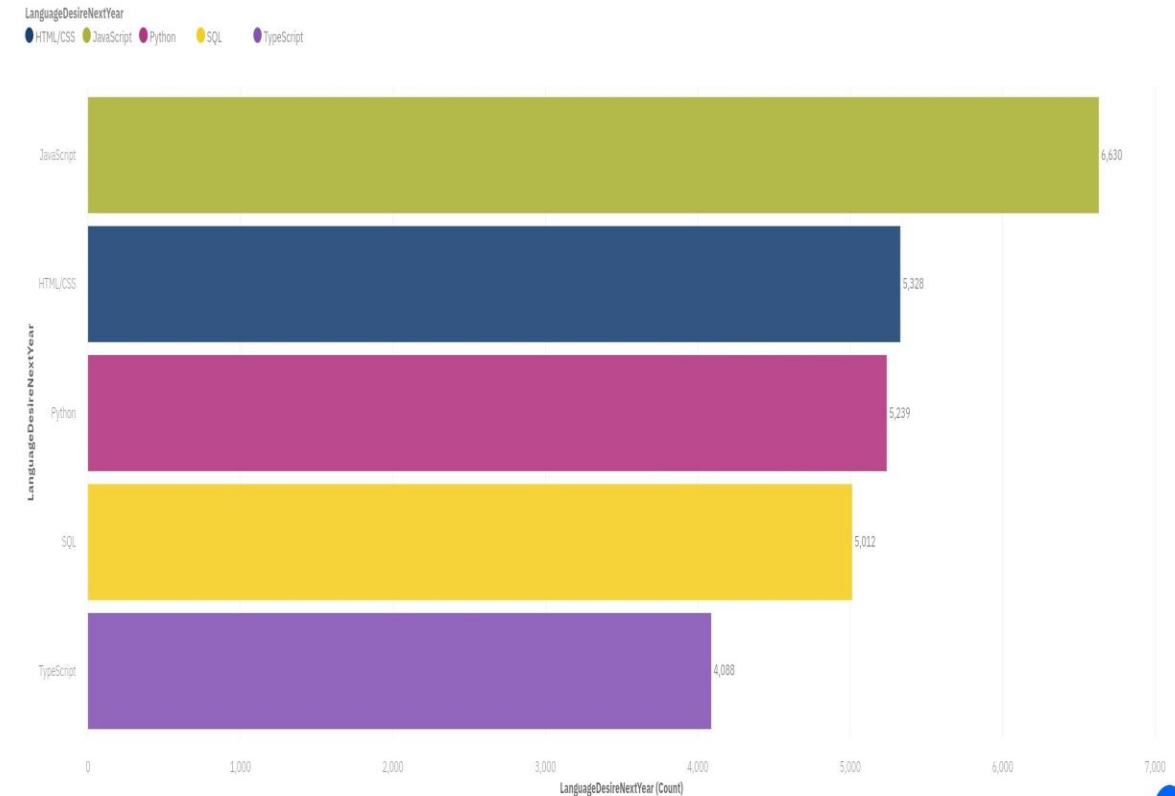
## Current Year

## Next Year

Top 5 Language Worked With



Top 5 Language Desired Next Year



# Programming Language Trends - Findings & Implications

## Findings

- The three top languages are Javascript, HTML/CSS, and SQL.
- Python is expected to be among the top 3 and powershell won't be used next year.

## Implications

- Python remains the best language option for the rising industry of AI and machine learning.
- SQL is still highly required in big data.

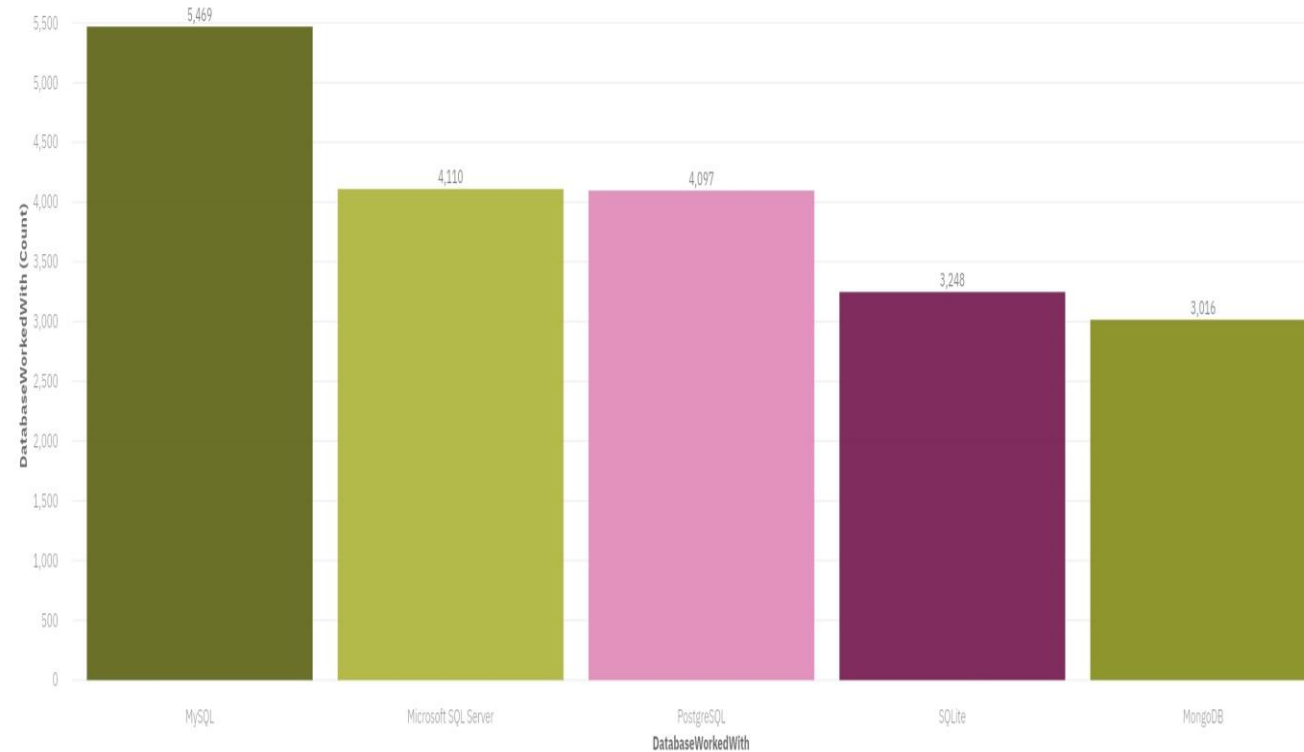


# Database Trends

## Current Year

Top 5 Database Worked With

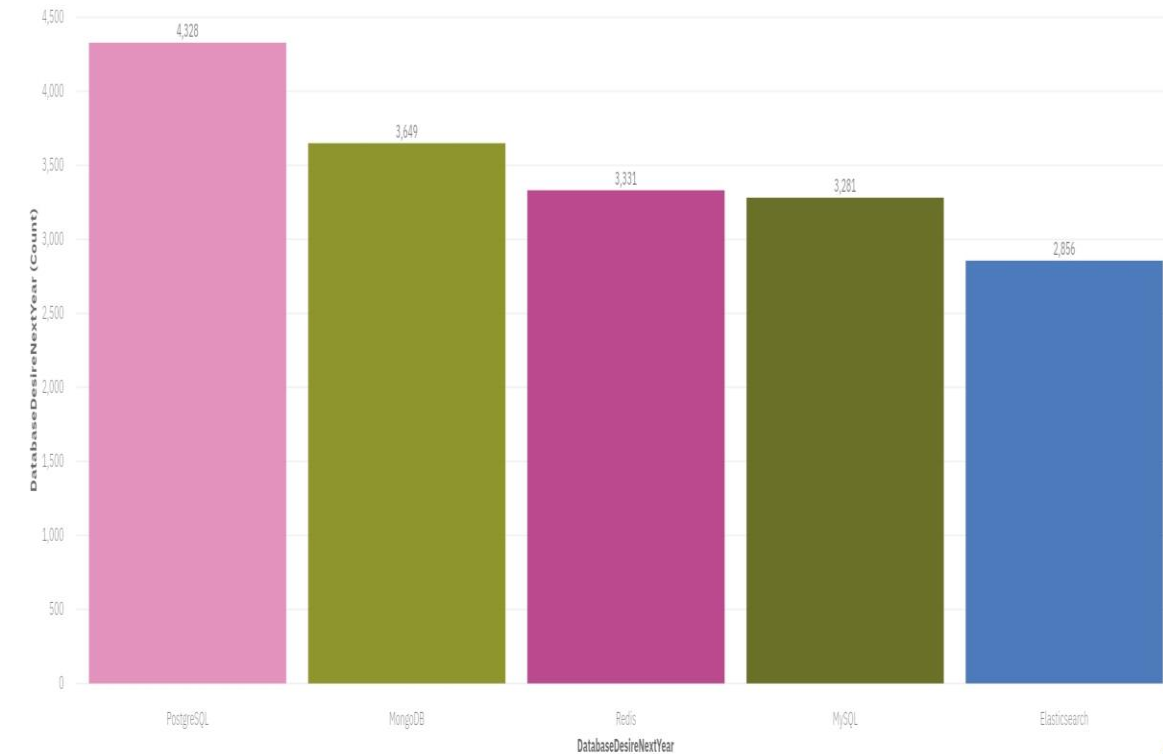
DatabaseWorkedWith  
Microsoft SQL Server MongoDB MySQL PostgreSQL SQLite



## Next Year

Top 5 Database Desire Next Year

DatabaseDesireNextYear  
Elasticsearch MongoDB MySQL PostgreSQL Redis





## Database trends - findings & implications

### Findings

- MySQL is the most popular database, followed by Microsoft SQL Server.
- Although MongoDB is currently the least popularly, it will be the second most popular next year.
- Electricsearch will be a new emerging database.

### Implications

- Companies still prefer open-source databases.
- MongoDB supports abstract data types



# Dashboard

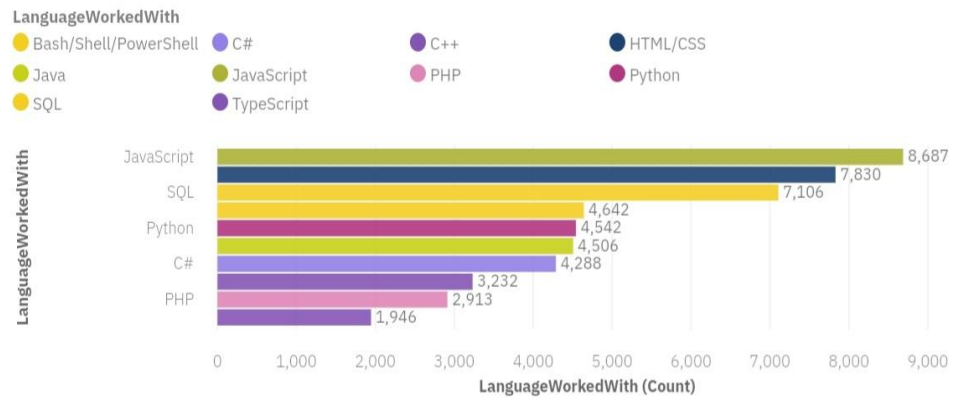
## **The Link to IMB Cognos Dashboard**

<https://ibm.co/3hYnK7w>

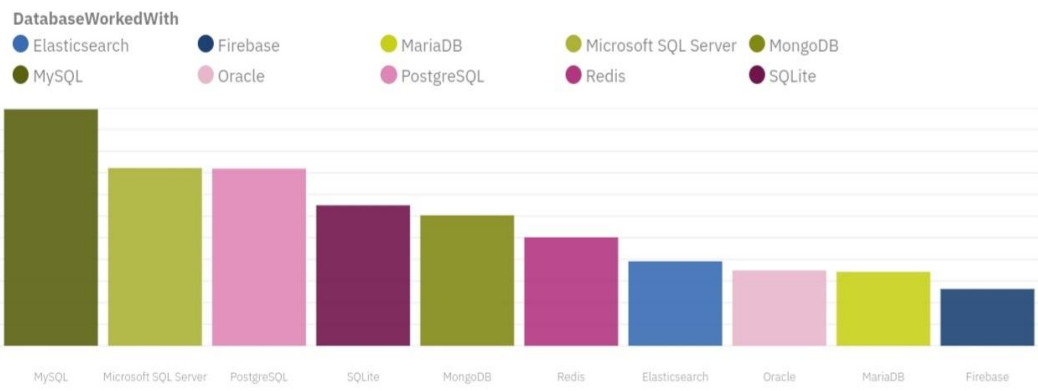
# Current Technology Usage Dashboard

Current Technology Usage   Future Technology Trend   Demographics

## Top 10 Language Worked With



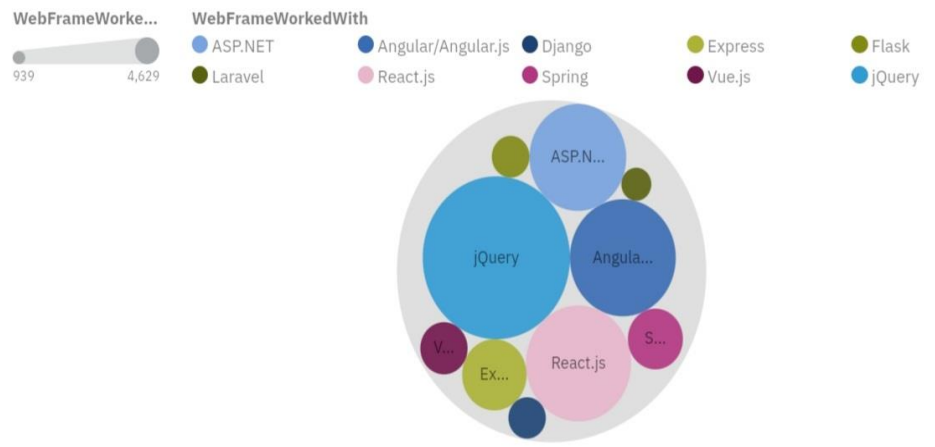
## Top 10 Database Worked With



## Platform Worked With



## Top 10 Webframe Worked With

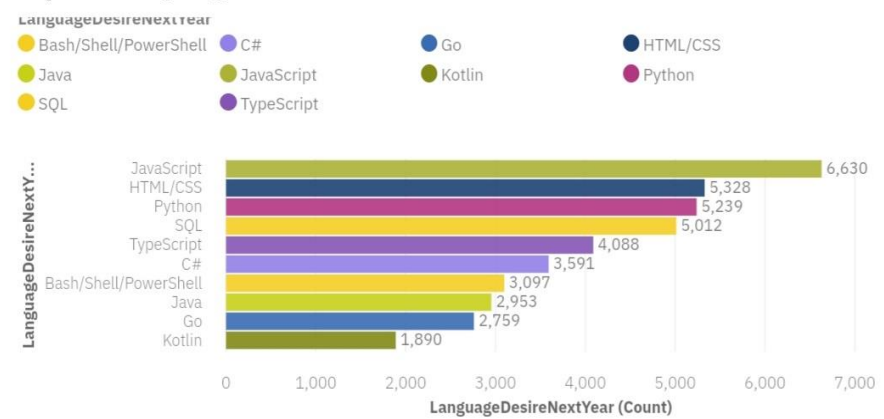


# Future Technology Trend Dashboard

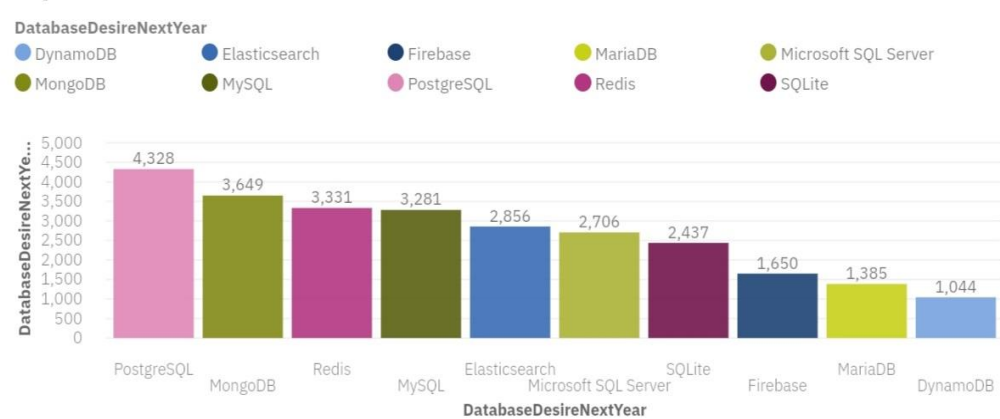
🔍 Filters Fields Props

Current Technology Usage Future Technology Trend Demographics +

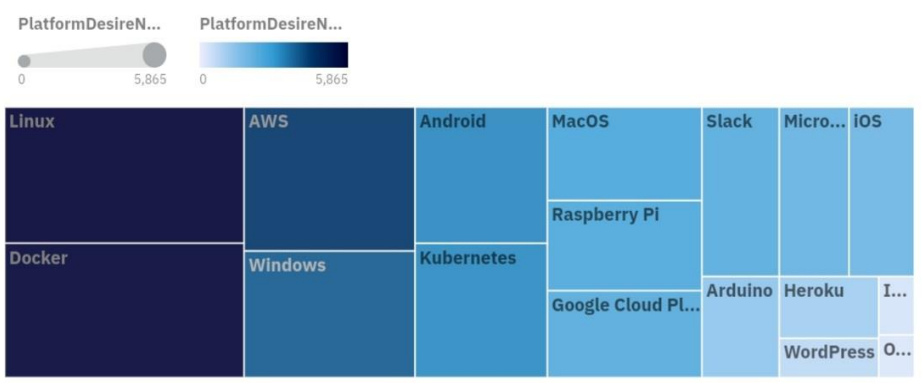
## Top 10 Language Desired Next Year



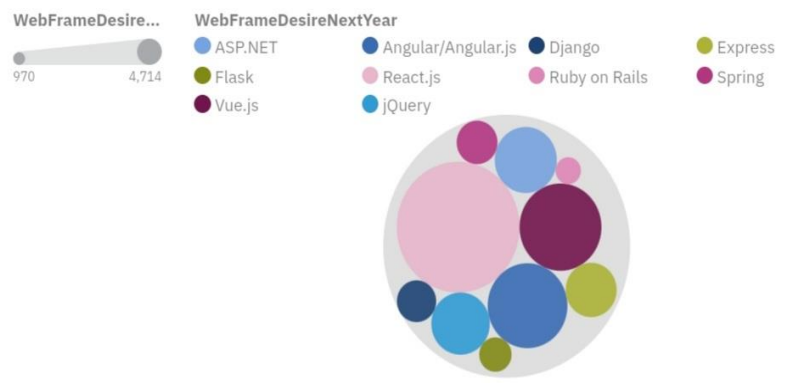
## Top 10 Database Desire Next Year



## Platform Desire Next Year



## Top 10 WebFrame Desire Next Year



# Demographics Dashboard

Projects / Capstone Project Dashboard / Dashboard Final Capstone



Current Technology Usage

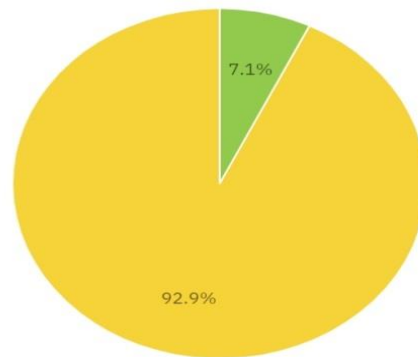
Future Technology Trend

Demographics



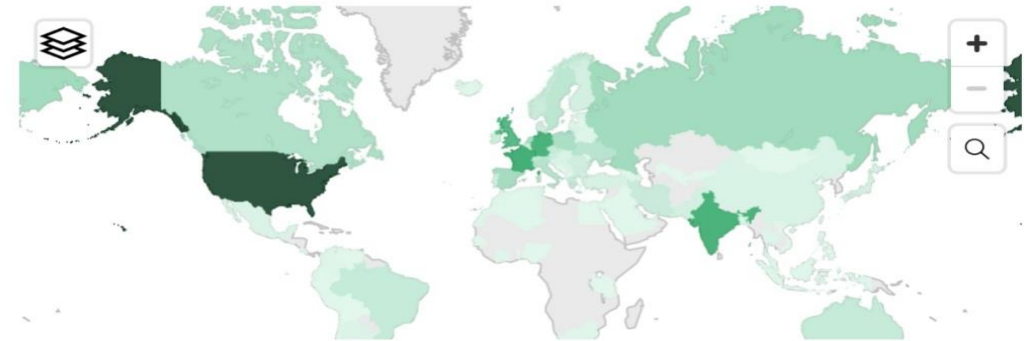
## Respondent classified by Gender

Gender  
● Woman ● Man



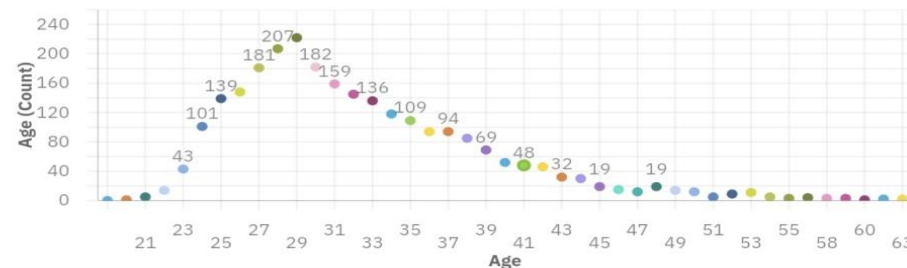
## Respondent Count for Countries

Country (Count)



## Respondent Count by Age

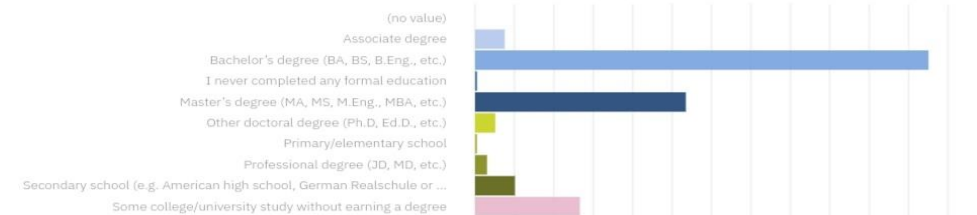
Age  
● (no value) ● 16 ● 21 ● 22 ● 23 ● 24 ● 25  
● 26 ● 27 ● 28 ● 29 ● 30 ● 31 ● 32  
● 33 ● 34 ● 35 ● 36 ● 37 ● 38 ● 39



## Respondent Count by Gender, classified by Formal Education Level

EdLevel

● (no value) ● Associate degree  
● Bachelor's degree (BA, BS, B.E... ● I never completed any formal ...  
● Master's degree (MA, MS, M.E... ● Other doctoral degree (Ph.D, E...





# Discussion

- Present and future trends in technological world.
- The agility and training of workers in IT and big data.
- Technological disparity between developed and developing world should be narrowed.
- End gender and age gap discriminations in hiring.

# Overall Findings & Implications

## Findings

- Technology is changing rapidly.
- The IT industry is still man-dominated.
- Electricsearch will be a new emerging database.
- Technological jobs are more concentrated in Canada and The US, followed by India.
- Linux remains the most used platform; AWS and Docker are growing in popularity.

## Implications

- Companies should always adjust to ever changing technological.
- Developing country should be given the same opportunity.
- Close the gender gap.
- Shift to cloud services in the future





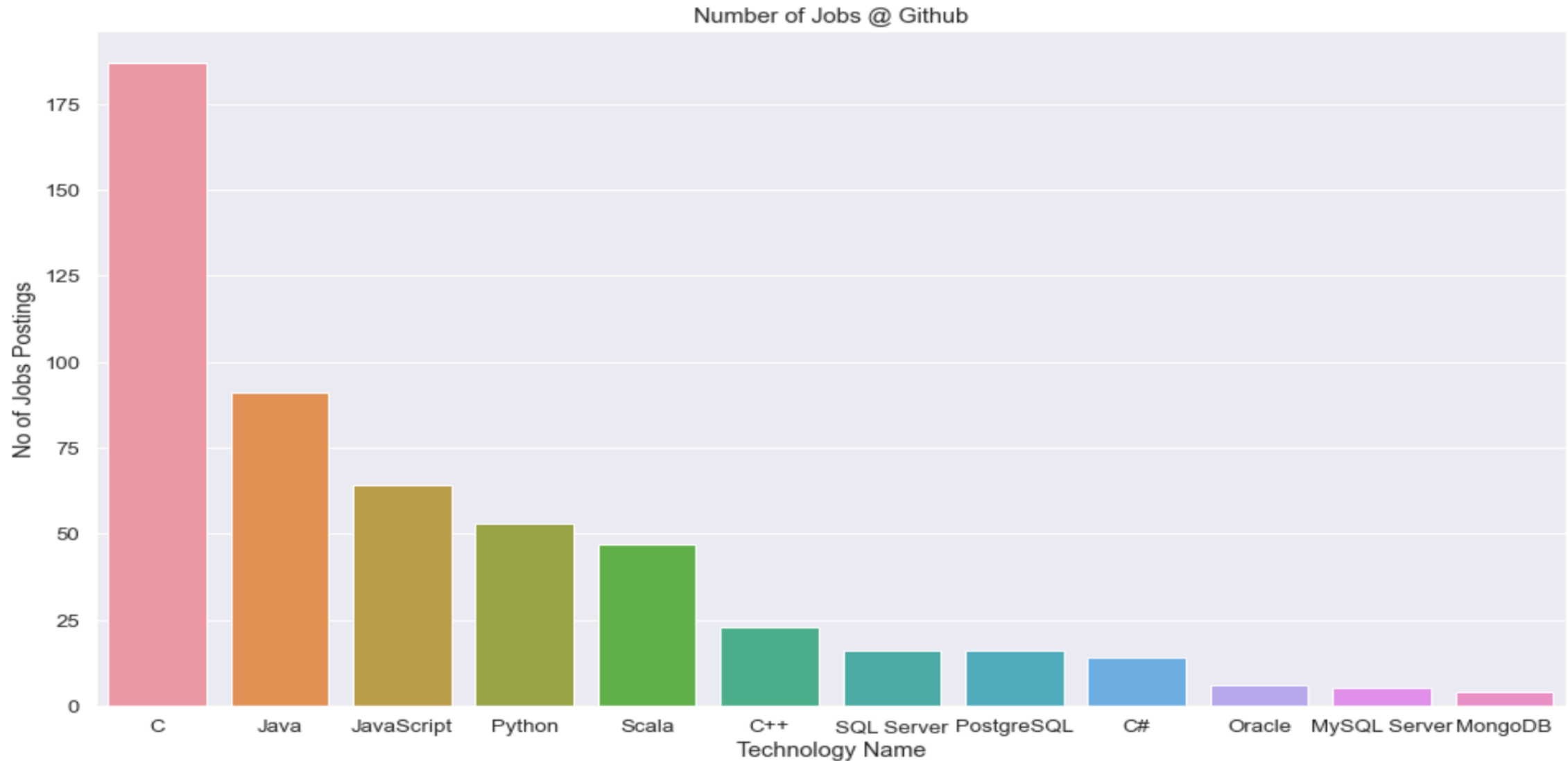
# Conclusion

- Technology trends for current and next year.
- The overview of programming languages, database, platform and demographics.
- Adjust with fast changing technology, and provide equal opportunities.
- Incorporate AI in forecasting technological trends.



# ▼ **Appendix**

# Github Job Postings



## Popular Languages by Salary

