



# Technology Trends & Analysis Presentation

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# OUTLINE

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

# EXECUTIVE SUMMARY

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- Trends in programming languages and databases
- Demographics survey
- Technological gap in countries
- Gender gap in jobs

# INTRODUCTION

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- 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

# METHODOLOGY

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

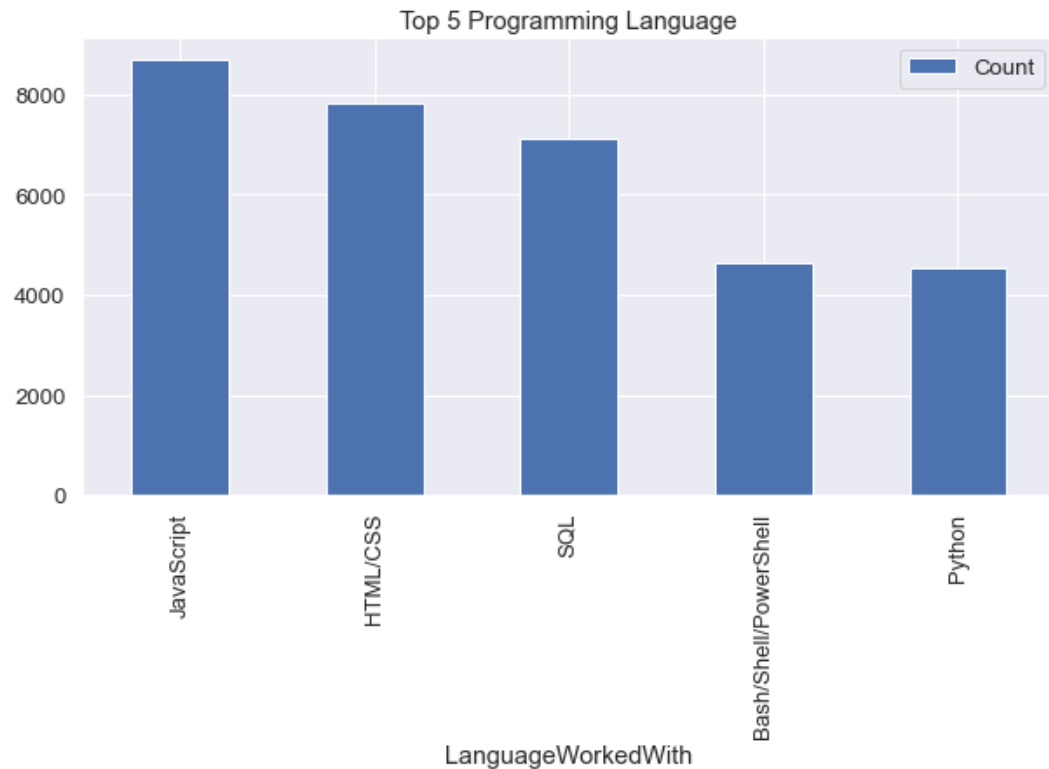
# RESULTS

Results are based on this table:

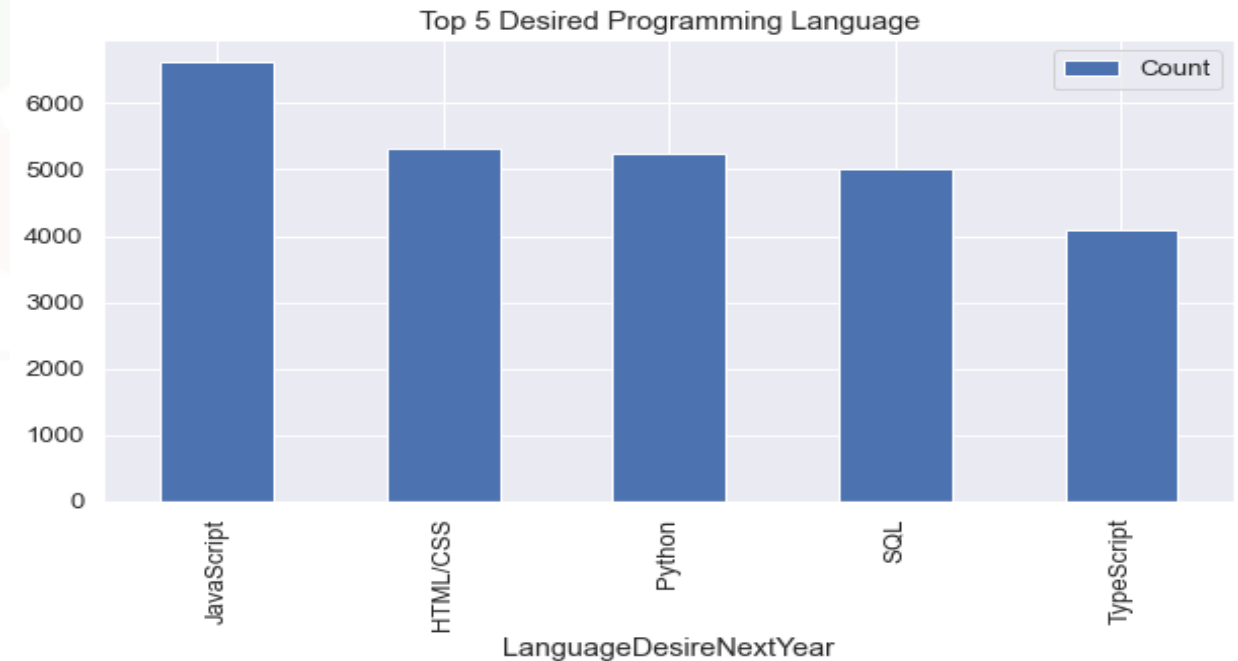
	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith
0	4	C	C	MySQL	MySQL	Linux
1	4	C++	C#	SQLite	SQLite	Windows
2	4	C#	JavaScript	NaN	NaN	NaN
3	4	Python	SQL	NaN	NaN	NaN
4	4	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...
74584	25142	Go	Python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



Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- JavaScript, HTML/CSS, SQL are top 3 this year
- Python and Typescript becoming popular next year
- PowerShell edged out in next year

## Implications

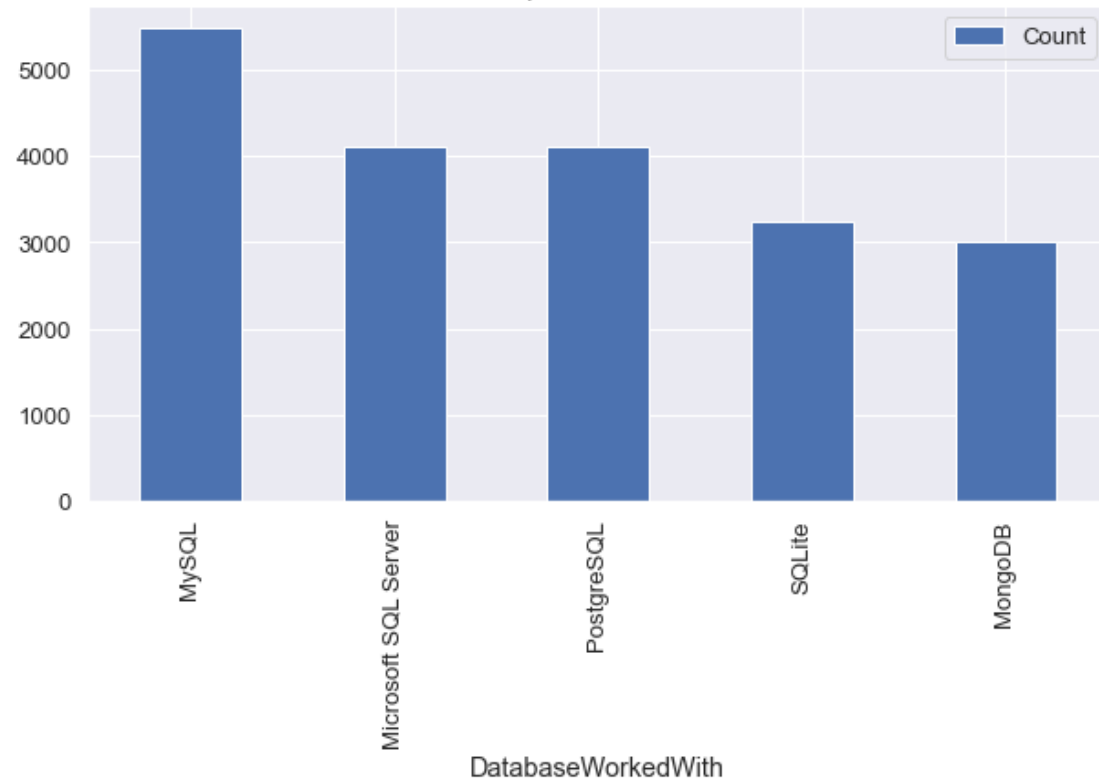
- Web development are still in high demand
- Big Data technology in companies still requires SQL
- With AI and ML in rising demand, Python is best choice



# DATABASE TRENDS

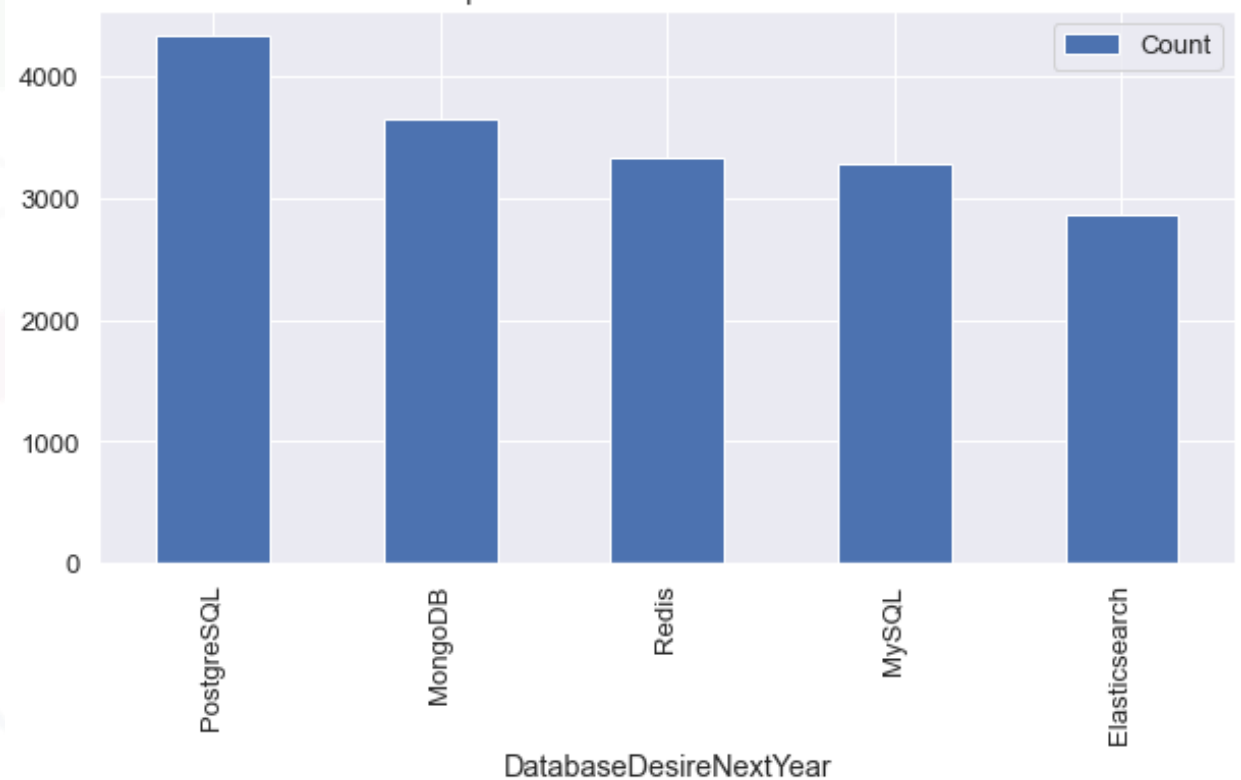
Current Year

Top 5 Databases



Next Year

Top 5 Databases Desired Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- MySQL most popular
- Behind is Microsoft SQL
- MongoDB and Redis are upcoming favorites
- New kid on the block: Elasticsearch

## 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

# DASHBOARD

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## IBM COGNOS LINK DASHBOARD



<https://dataplatfom.cloud.ibm.com/dashboards/6f971d53-bbf0-488a-aed0-0b05efe7e681/view/1d07c92715ab1be754e7eae407cf2c002b662158e0bb870a88d67b490b317397a86d1ac3c82f435ddd42536af2be405a9c>

# CURRENT TECHNOLOGY USAGE DASHBOARD

81

Bar

Map



Filters

Fields

Properties

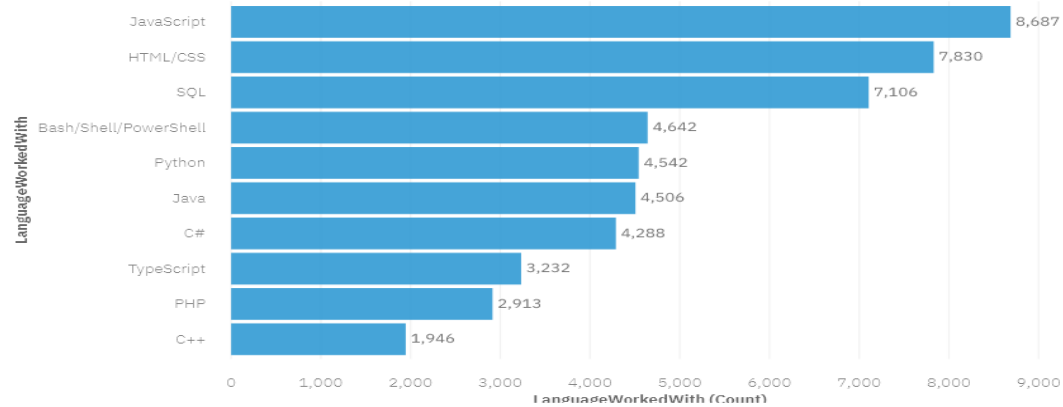
Current Technology Usage

Future Technology Trend

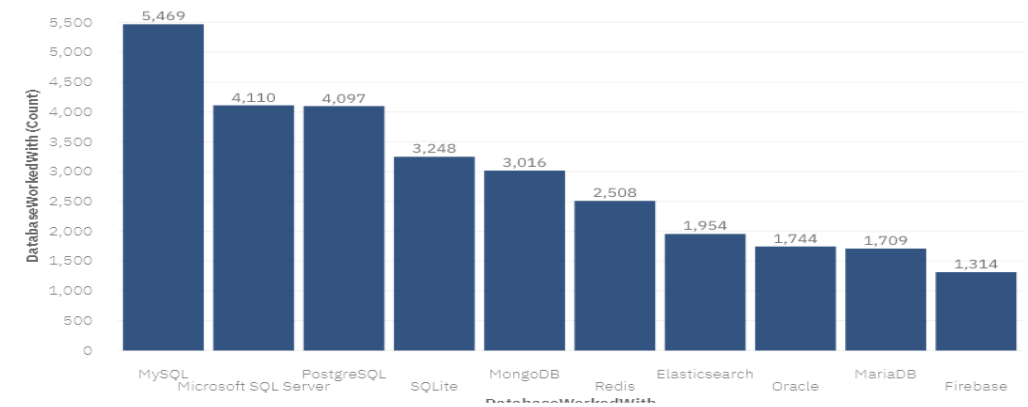
Demographics



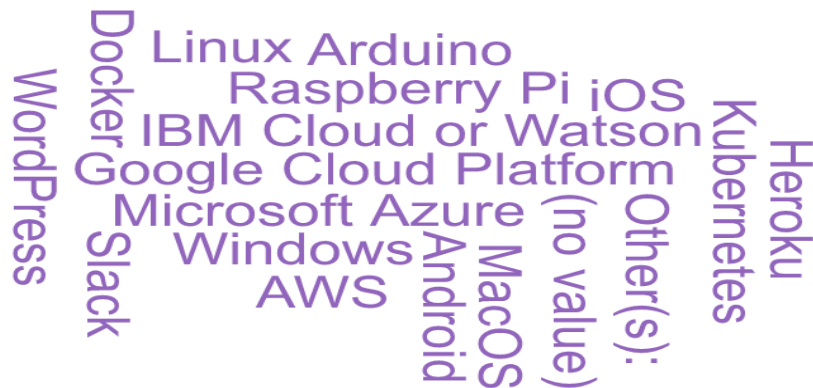
Top 10 Language



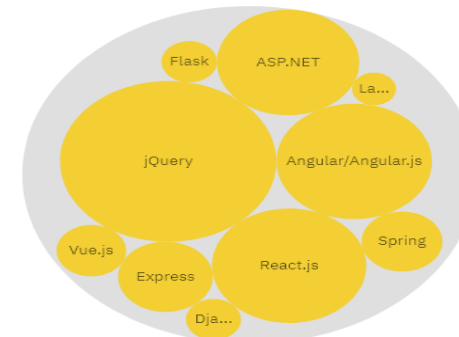
Top 10 Database



Platform Worked With



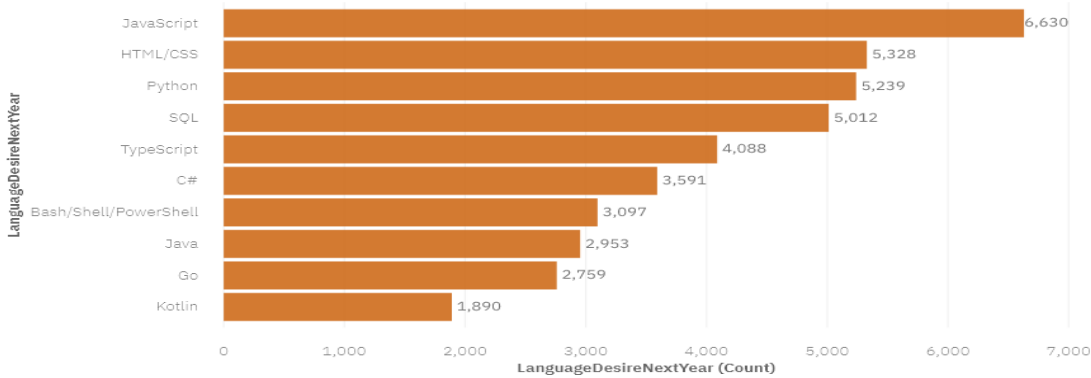
Top 10 Web Frame



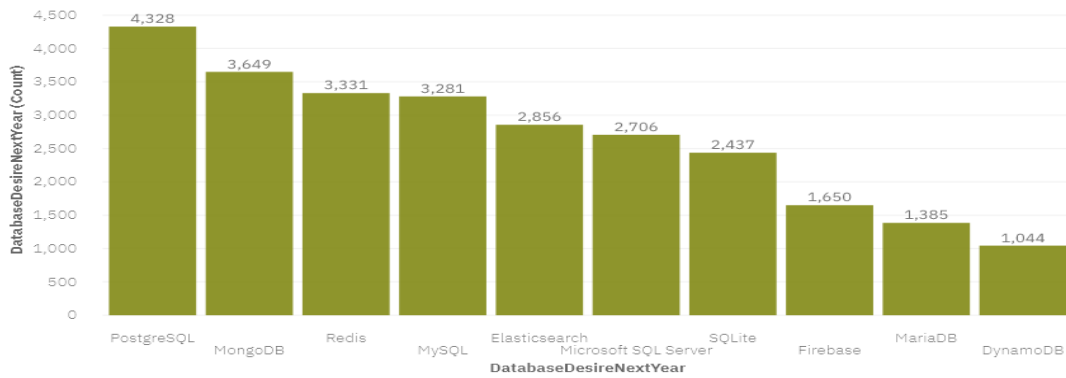
# FUTURE TECHNOLOGY TREND DASHBOARD



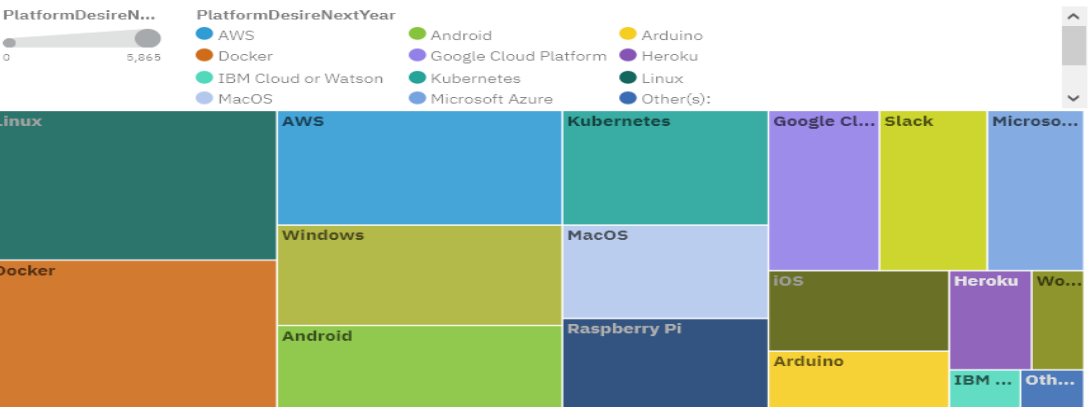
Top 10 Language Desired Next Year



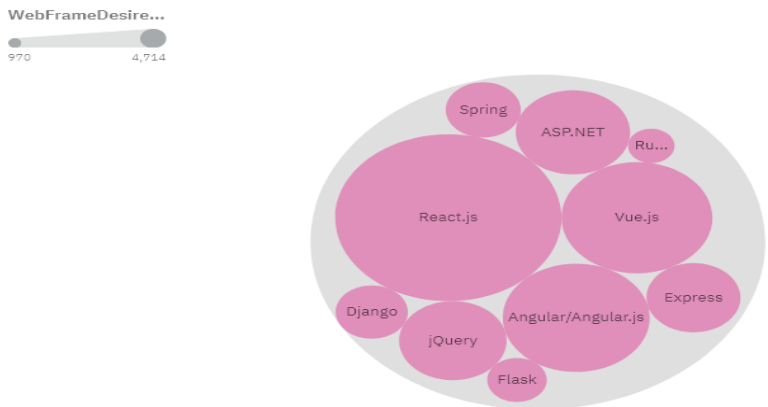
Top 10 Database Desired Next Year



Platform Desired Next Year



Top 10 Web Frame Desired Next Year



# DEMOGRAPHICS DASHBOARD



Filters



Fields



Properties

Current Technology Usage

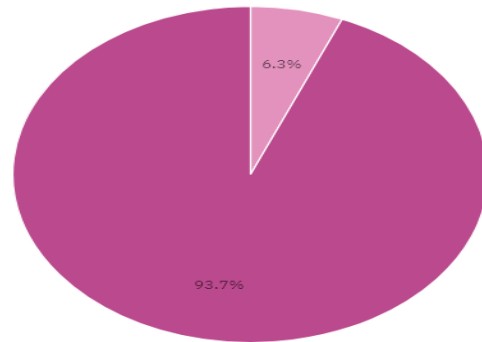
Future Technology Trend

Demographics



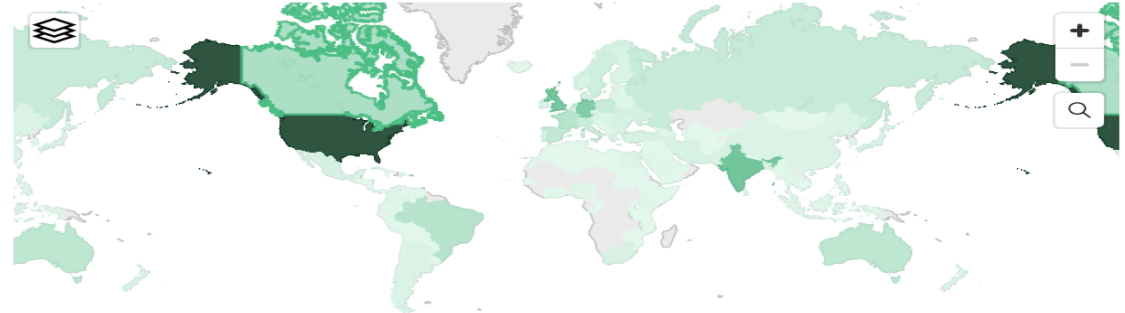
## Respondent classified by Gender

Gender  
● Woman ● Man

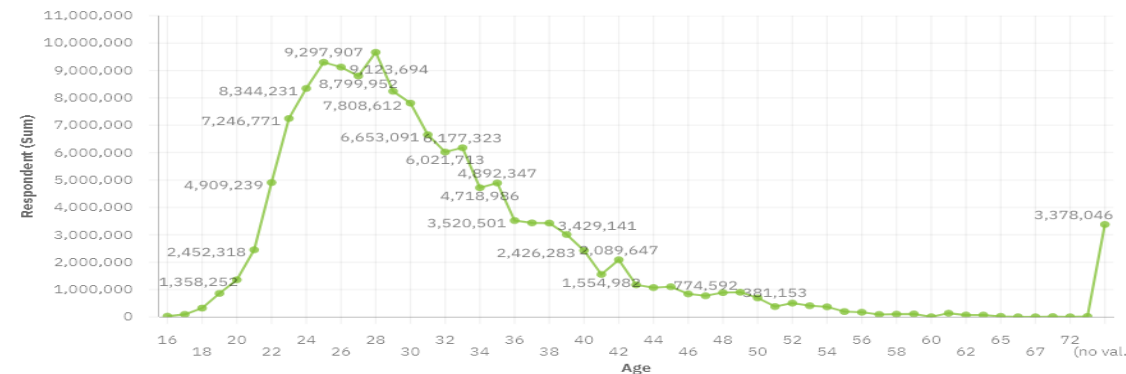


## Respondent Count for Countries

Respondent (Sum)  
865 38,170,293

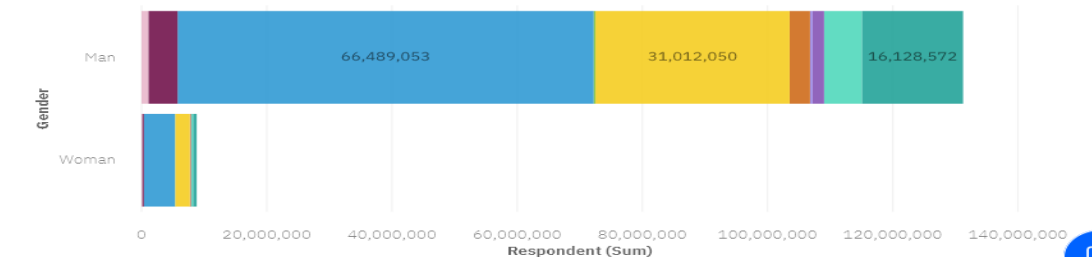


## Respondent Count by Age



## 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...  
● Primary/elementary school ● Professional degree (JD, MD, e... ● Secondary school (e.g. Americ...  
● Some college/university study ...



# DISCUSSION

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- Technology Trends now and future
- Training and Reskilling workers
- Females participation in Technology field
- Bridge divide of technology gaps in developing countries
- Eliminate age and education discrimination in employment

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Fast changing technology every year
- Concentration on several countries like USA and India
- Gender gap in technology jobs
- Platforms like Docker and AWS are growing

## Implications

- Companies need to be flexible and adjust to rapid changes
- Need to spread technology out to lagging countries
- Impact of job hiring's
- Shift to faster app deployments and cloud services in future



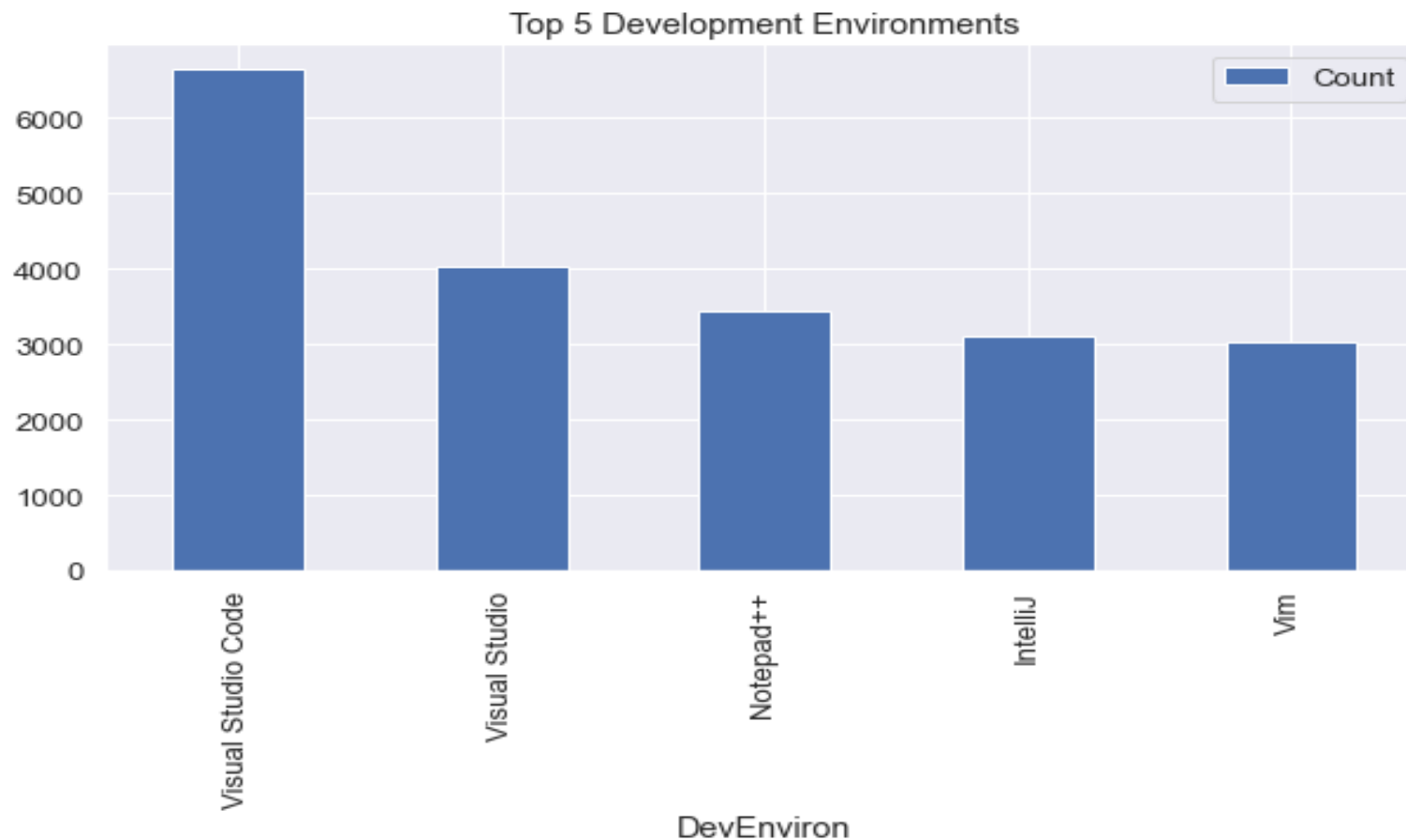
# CONCLUSION

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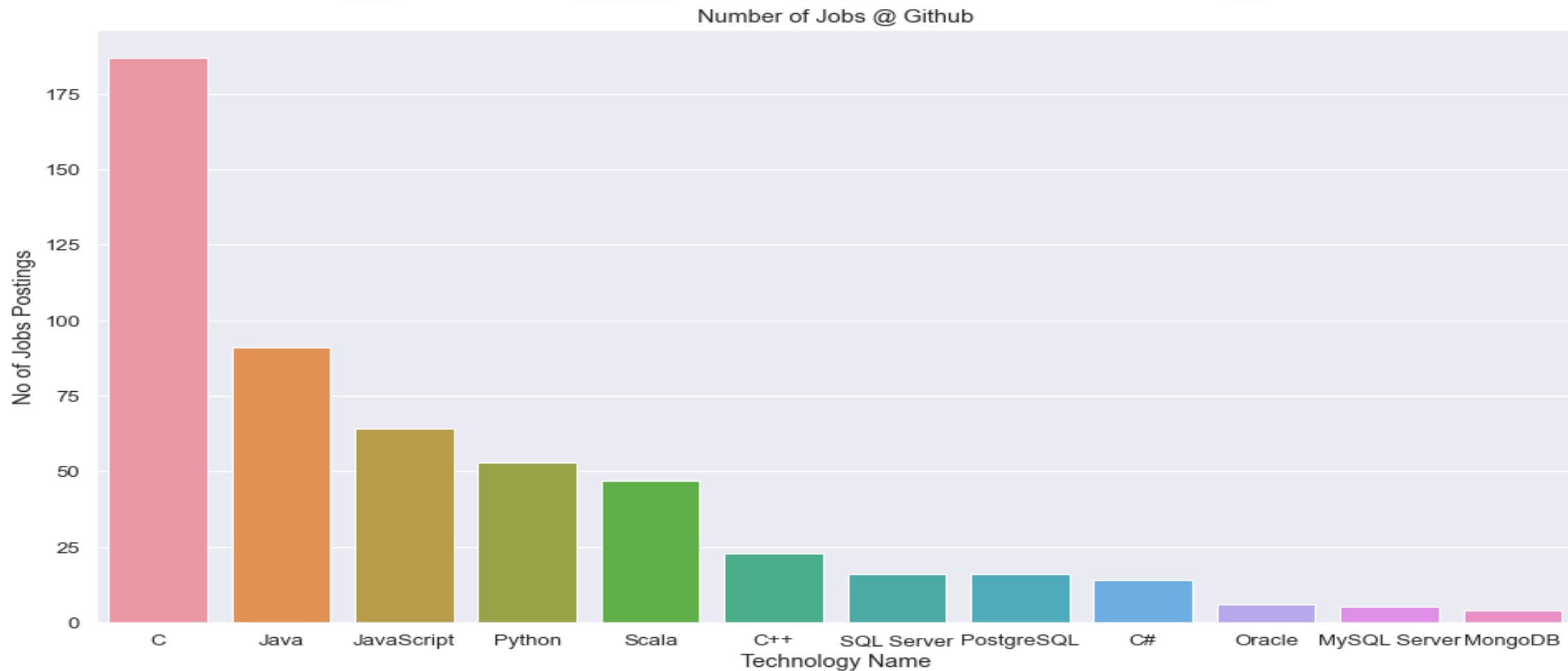


- Technology Trends for current and next year
- Programming Languages, Database and Platform overview
- Demographics overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

# APPENDIX



# GITHUB JOB POSTINGS



# POPULAR LANGUAGES BY SALARY

