
# Navigating the Landscape: Exploring Employability and Essential Skills in the Evolving IT Industry

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# OUTLINE

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- Discussion
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# EXECUTIVE SUMMARY

- An analysis of a survey of the global developer community was used to assess current and future employability of developers per programming language and dev environment
- Survey results showed a strong bias towards younger, well-educated male respondents from the United States, thus not or under-representing earlier generations and female coders
- Strong deviations between survey results and actual job postings were found that could impede candidates looking for jobs in the industry
- Irrespective of programming language, programmers can expect to get a salary of >80k USD

# INTRODUCTION

- This analysis studies current and future trends in programming languages and infrastructure, and assesses their implications on the US job market
- It leverages Stack Overflow Developer Survey 2019 data of approximately 11’500 respondents
- It takes into account data on the following four sub-topics:
  - Top 10 programming languages
  - Top 10 databases
  - Main platforms
  - Top 10 WebFrames
- Data on job postings have been used as cross-reference. Source for this data is the github job postings API

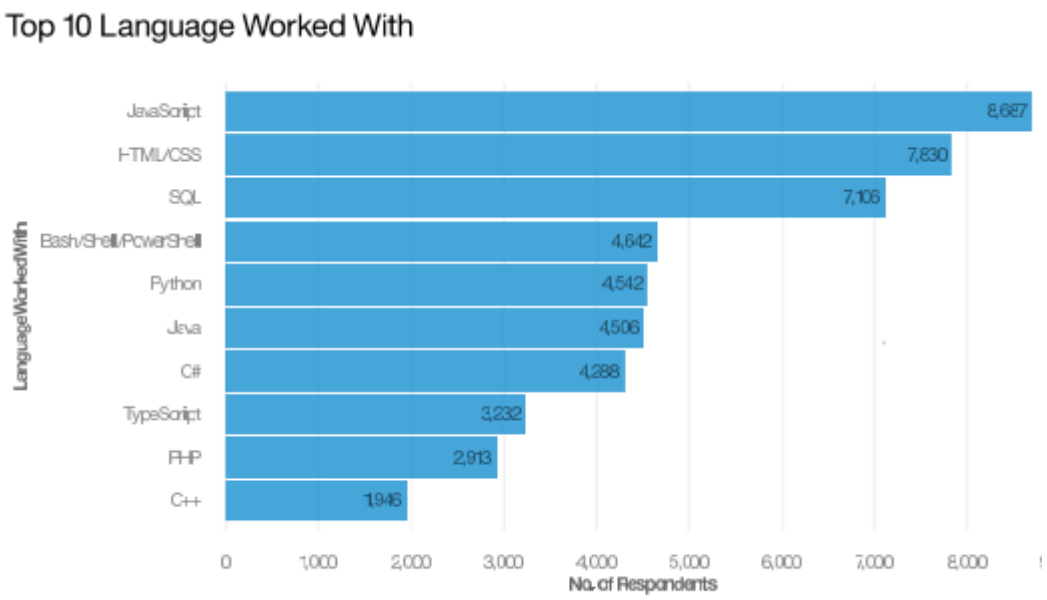
# METHODOLOGY

- Data Collection
  - As part of this analysis, two separate data sources have been consulted. The Stack Overflow 2019 data has been empirically collected and analysed in the form of descriptive statistics
  - Data has been scraped and retrieved via API
- Exploratory analysis performed
  - Analysis of data distribution
  - Data cleansing of outliers, NaaN values, etc.
- Data visualization with IBM Cognos dashboards in three categories
  - Current situation
  - Future trends
  - Demographics
- Conclusions were drawn from comparatory analysis of Stack Overflow survey and actual job postings scraped from web

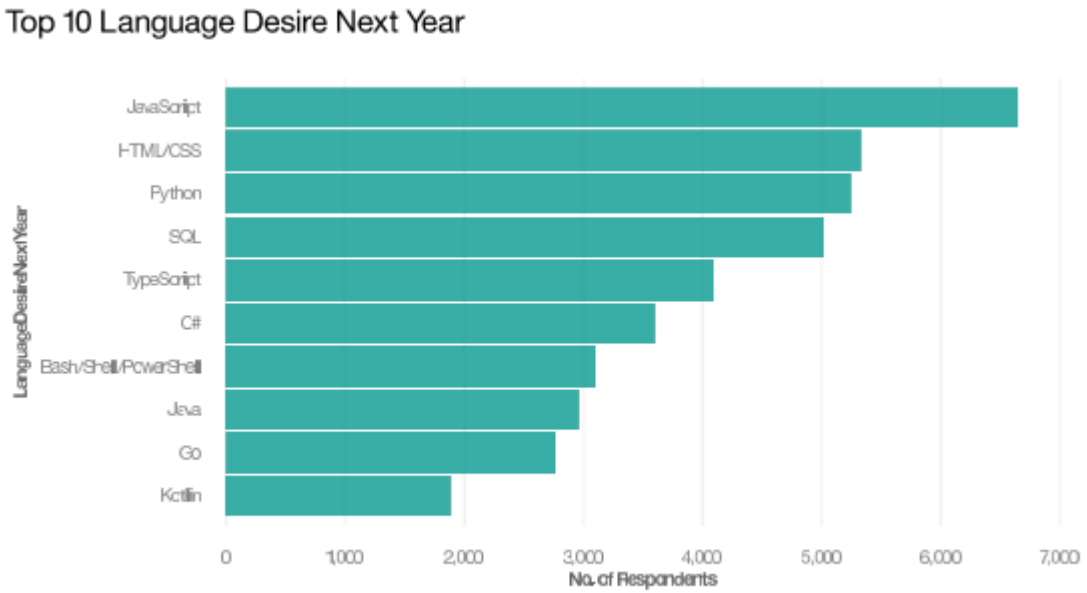
# RESULTS

# PROGRAMMING LANGUAGE TRENDS

## Current Year




## Next Year



# PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

## Findings

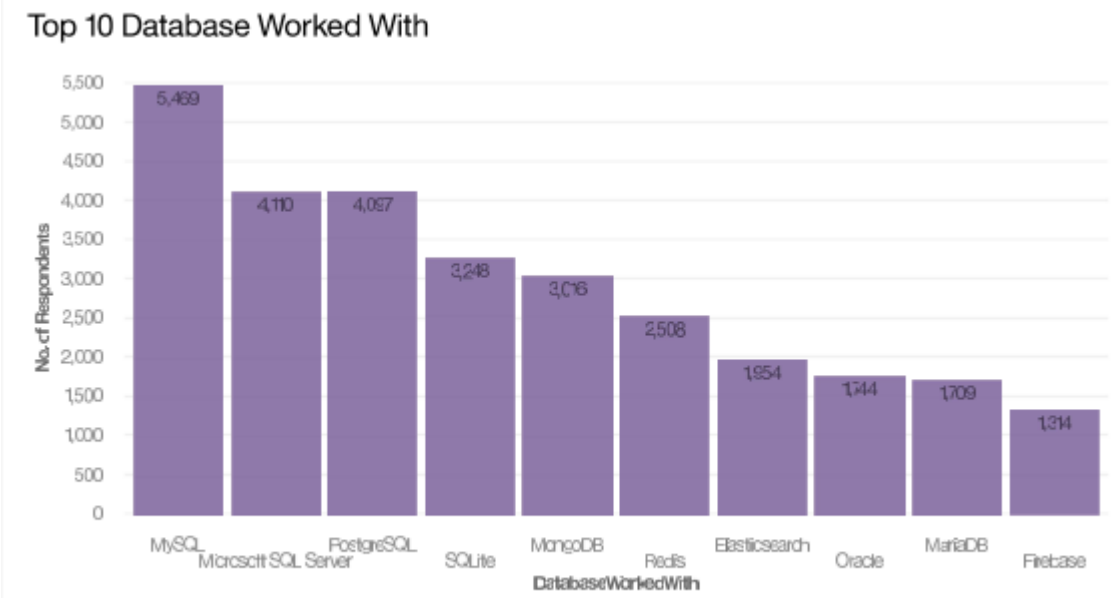
- JavaScript continues to be the no. one programming language in demand and use
- Use of Python expected to increase by ~20%
- Other programming languages to go down in usage (e.g. C++ or PHP)

## Implications

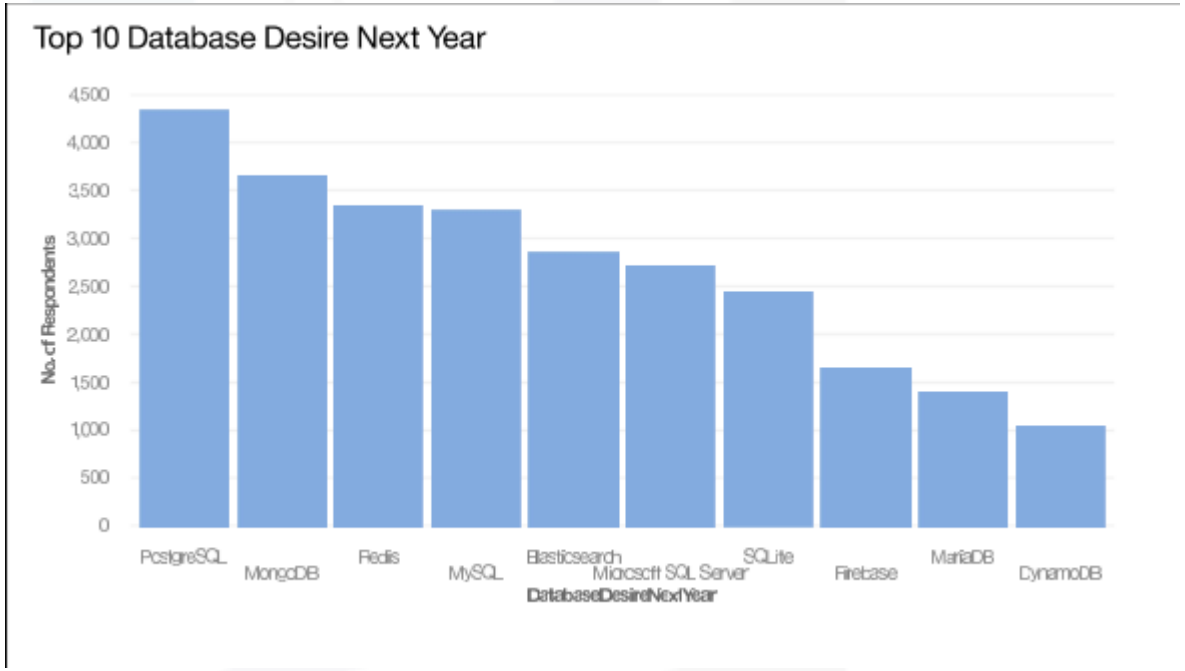
- Employers are expected to drive a high demand of JS job postings
- Demand for web-based products drives need for multiple programming languages, especially JavaScript, Python, HTML and CSS
- C++ and PHP tend to become sidelined or further specialized

# DATABASE TRENDS

## Current Year




## Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- Use of MySQL expected to decrease approx. 40% and Microsoft SQL Server by 34%
- Use of PostGreSQL remains steady
- Generally, no major changes of DB providers expected in top 10

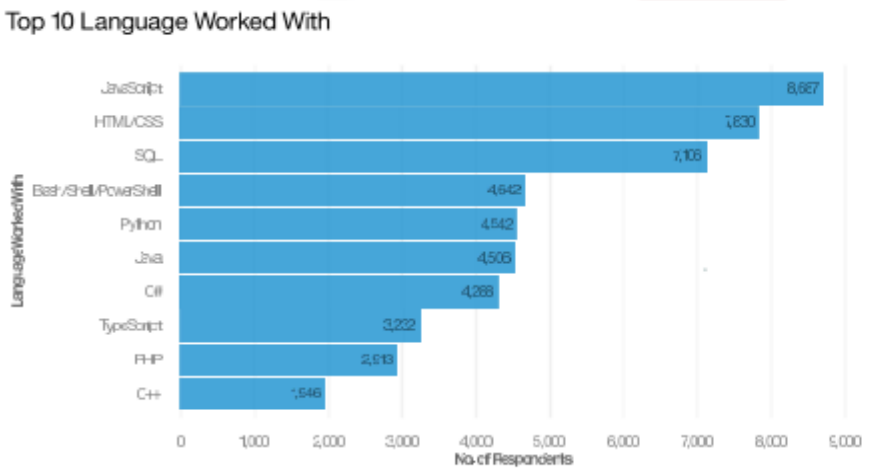
## Implications

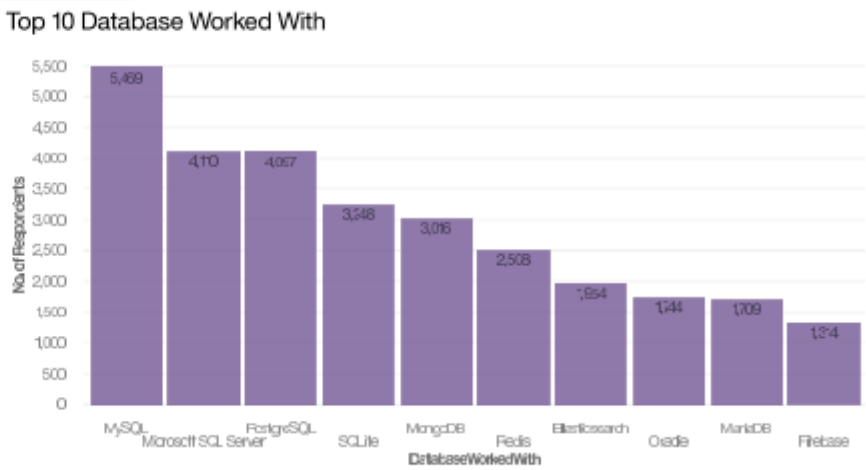
- DB developers/engineers for PostGreSQL will continue to be in demand
- Specialists of MySQL and Microsoft SQL Server should ensure to further grow their skills
- No major changes in DB industry expected over the next year

# DASHBOARD

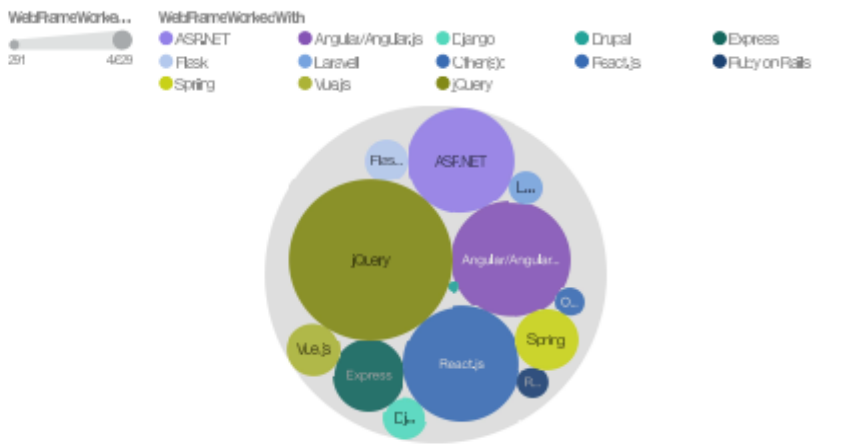
https://github.com/rohithaider/IBM-Capstone

# DASHBOARD TAB 1



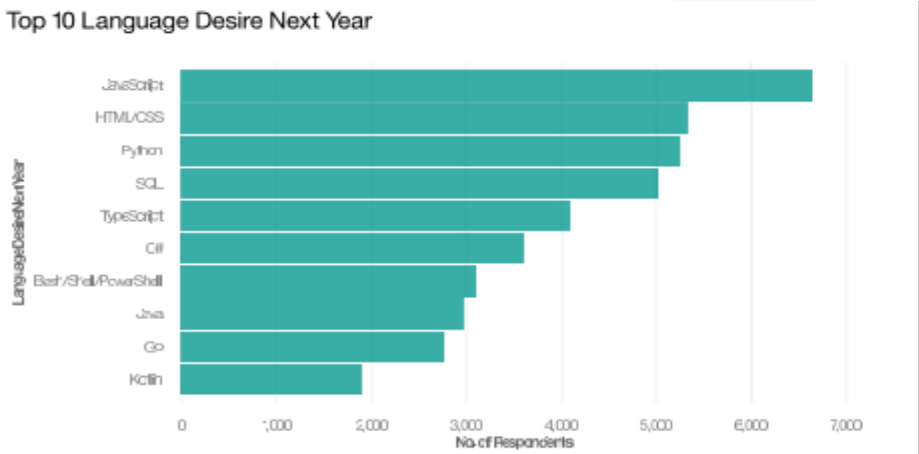


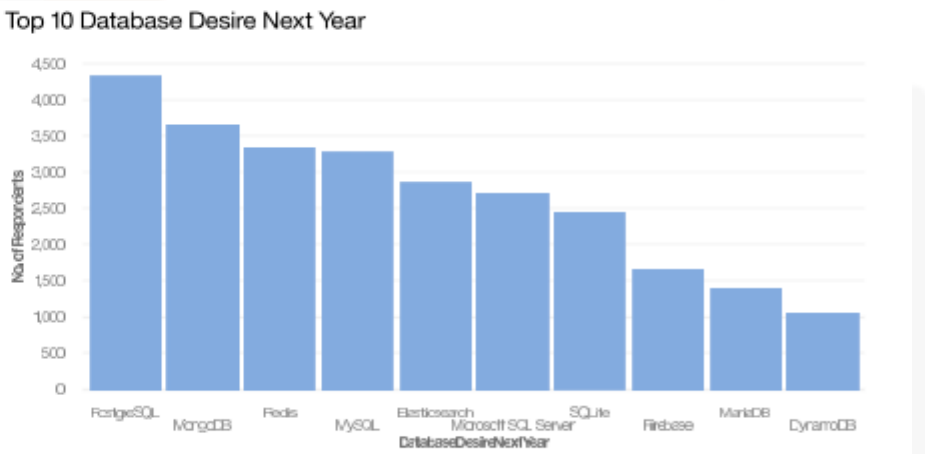


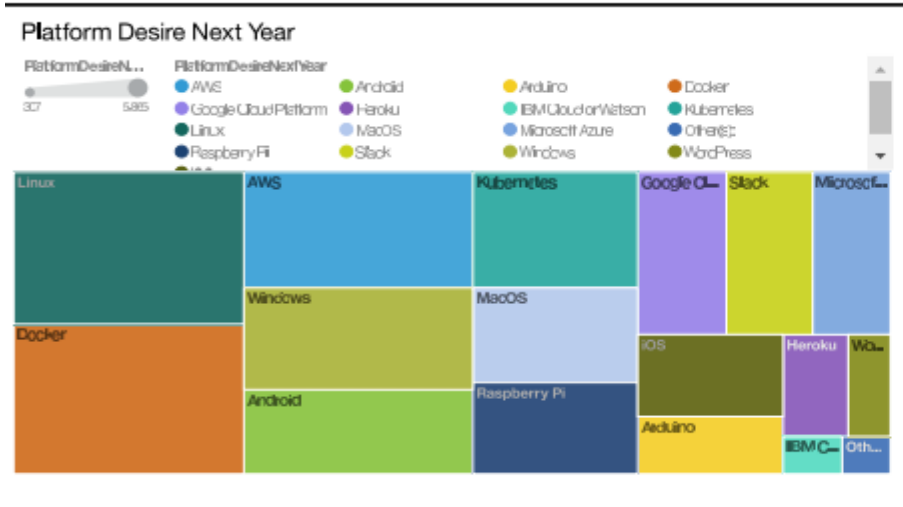

IBM Developer

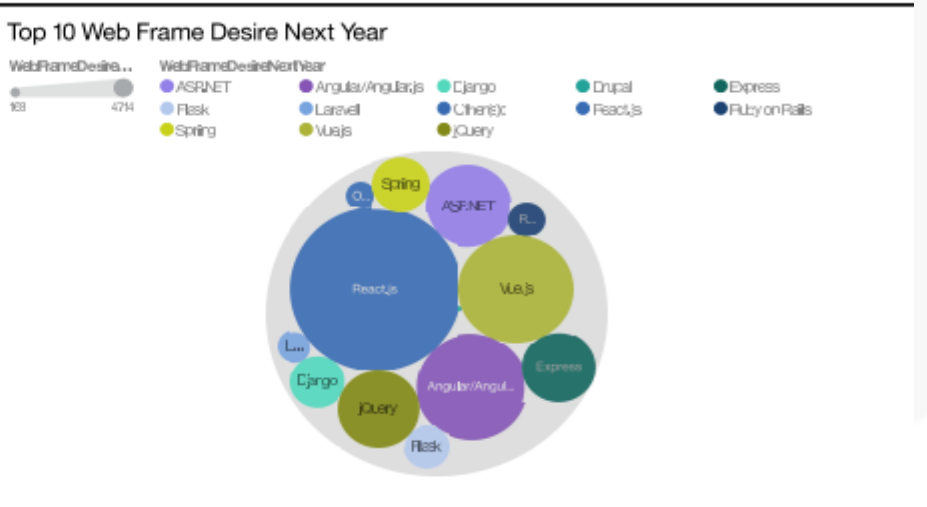
SKILLS NETWORK

# DASHBOARD TAB 2

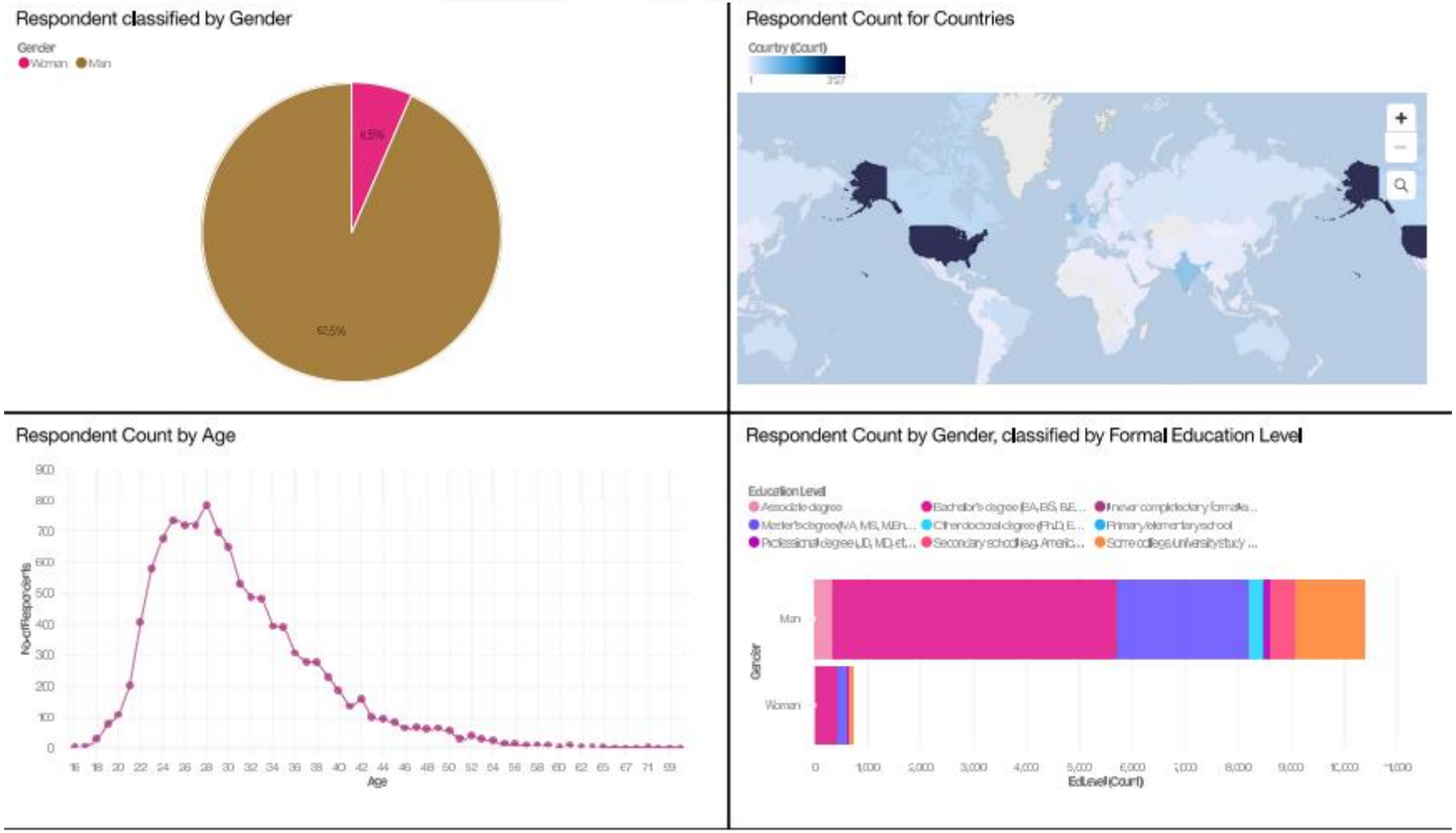


# DASHBOARD TAB 3



# DISCUSSION

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Survey results for programming languages do not reflect current job postings (high demand for C, JS and some Python)
- There are almost no job postings for the trending databases for next year
- Survey respondents are mainly between 22 and 40 years old, possibly pushing a age-bias

## Implications

- Job seekers could be mislead into obtaining the wrong skills when listening to the wrong sources
- Employers have not caught up with DB trends, thus a sharp rise in job postings for trending DBs should be expected
- Popular programming languages in job postings diverge from trending languages from survey respondents. This could be the result of age distributions in the survey and actual distribution in the industry (see job postings)

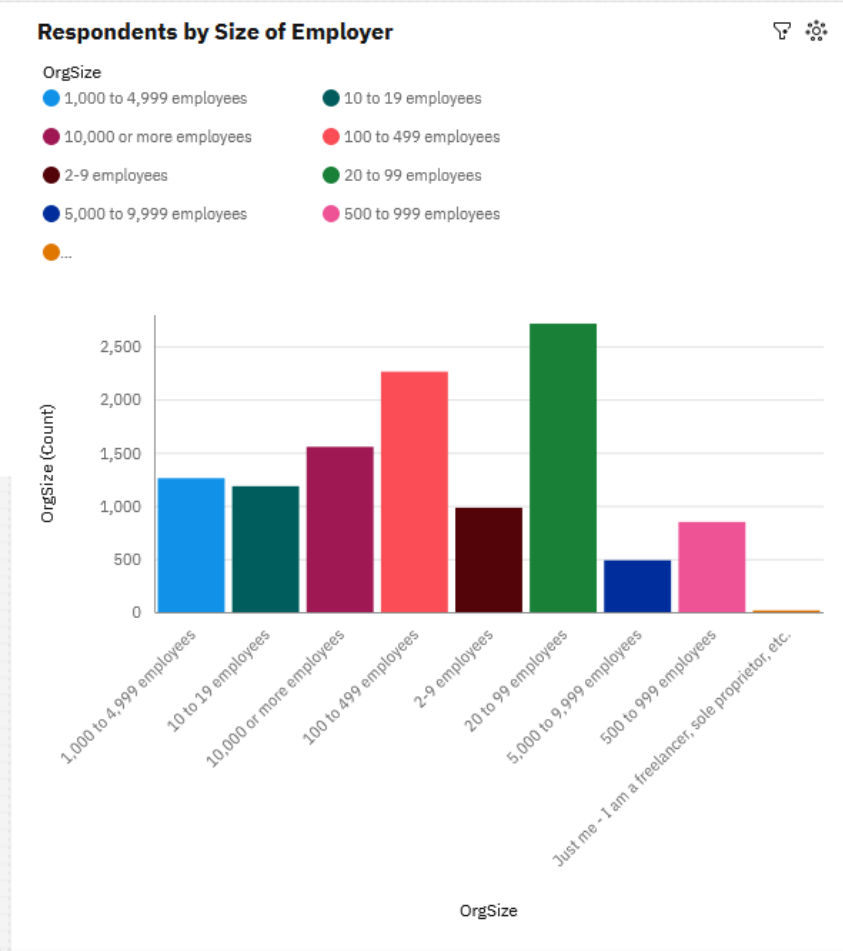
# CONCLUSION

- The survey and job postings have a very strong bias towards young male people from the US. It does not give a full view of the industry, but only a very focused snapshot
- The very high demand of “C” job postings compared to other programming language does strongly contradict survey results
- Irrespective of programming language, candidates can expect to earn about the same salary, most likely no less than 80k USD p.a.
- Expected trends for database technologies might give rise for a sharp skill shortage and an increase in overall job postings in the coming years

# APPENDIX

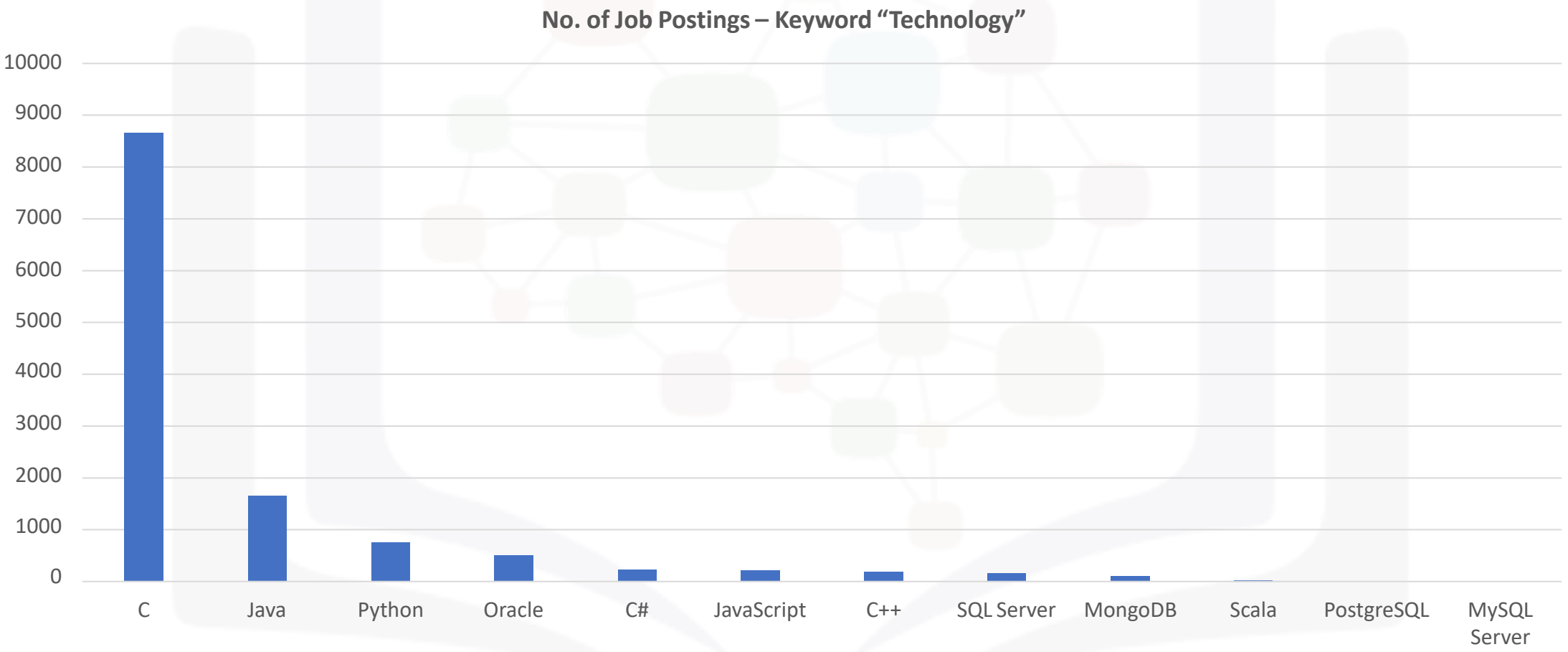
- Include any relevant additional charts, or tables that you may have created during the analysis phase.

# APPENDIX




- Survey respondents tend to come from a broad array of employer sizes
- The people thus give a good representation of the industry in terms of company variety

# JOB POSTINGS



# POPULAR LANGUAGES