Trends for Emerging Technologies

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SKILLS NETWORK

OUTLINE

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- Methodology
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  - Dashboard
- Discussion
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- Conclusion
- Appendix

EXECUTIVE SUMMARY

- To carry out the data analysis on emerging technologies trends, data was gathered from job postings, training portals and surveys via API and Web scraping. After gathering the data, the data was wrangled to deal with duplicate records, missing values and outliers. The data was explored using data visualization and SQL queries
- Finally, a Dashboard was created using Cognos to show
  - Demographic information of survey respondents
  - Current programming languages used and Future programming languages desired
  - Current database skills used and Future database skills desired
  - Current platforms used and Future platforms desired
  - Current Webframes used and Future Webframes desired
- Key highlights of the analysis showed
  - 93.7% of respondents were male
  - Popular languages such as JavaScript, SQL, Python and HTML/CSS are still desired by respondents
  - Non-relational databases such as MongoDB, Redis and ElasticSearch are gaining more desirability by respondents

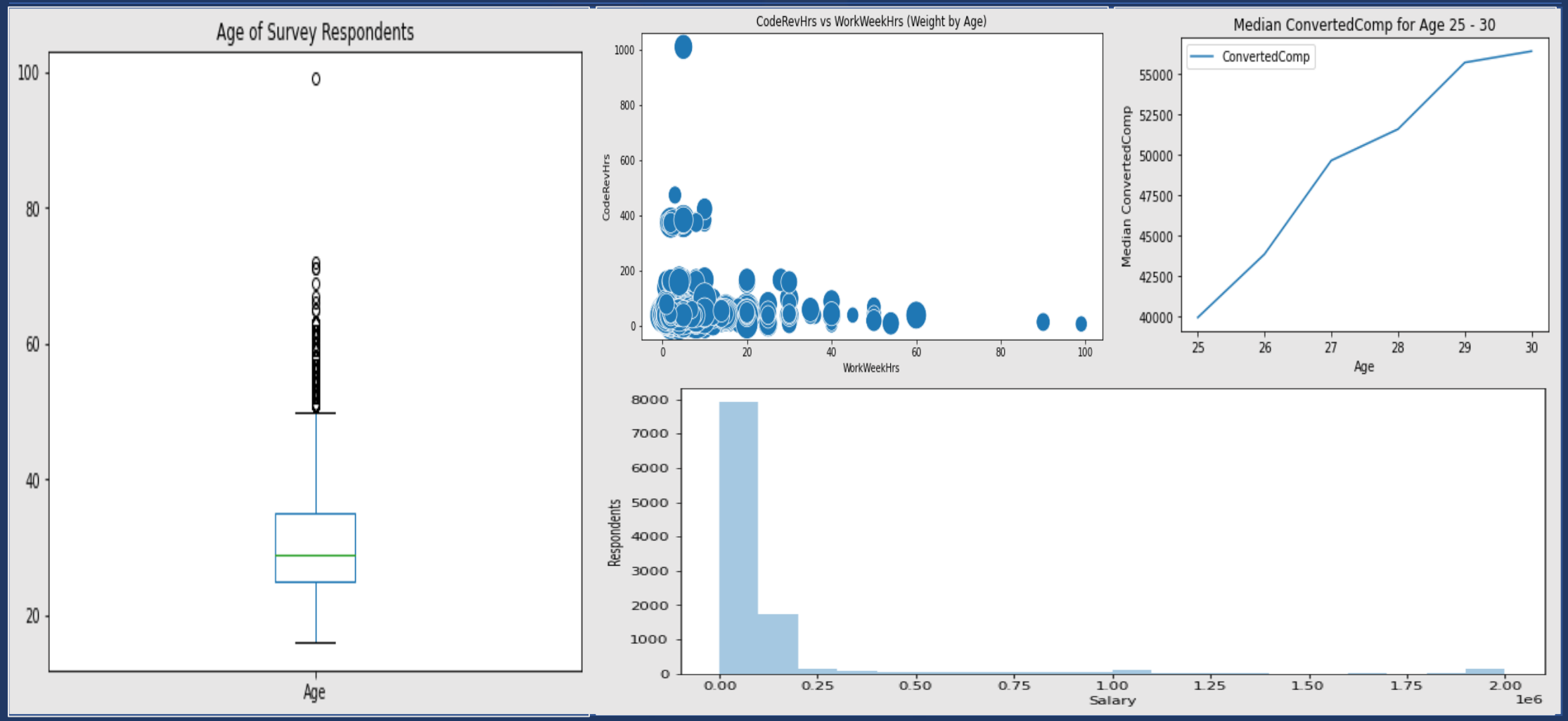
INTRODUCTION

- Technologies are very key in today's global industry workspace and is very relevant in most jobs
- Technlogies can however be very volatile as technology used yesterday may not be relevant as technologies of today
- In order to keep pace with changing technologies and remain competitive, we are going to carry out a data analysis task to analyze data to help identify future skill requirements.

METHODOLOGY

- Data was gathered primarily via api and webscraping on the top programming skills most in demand from job postings, training portals and surveys
- Perform data wrangling
  - Duplicate records were expunged
  - missing values were for the WorkLoc column were replaced with its mode
  - Outliers of salary were removed from the data
- Perform exploratory data analysis (EDA) using visualization and SQL
- Perform interactive visual analytics using IBM Cognos

RESULTS



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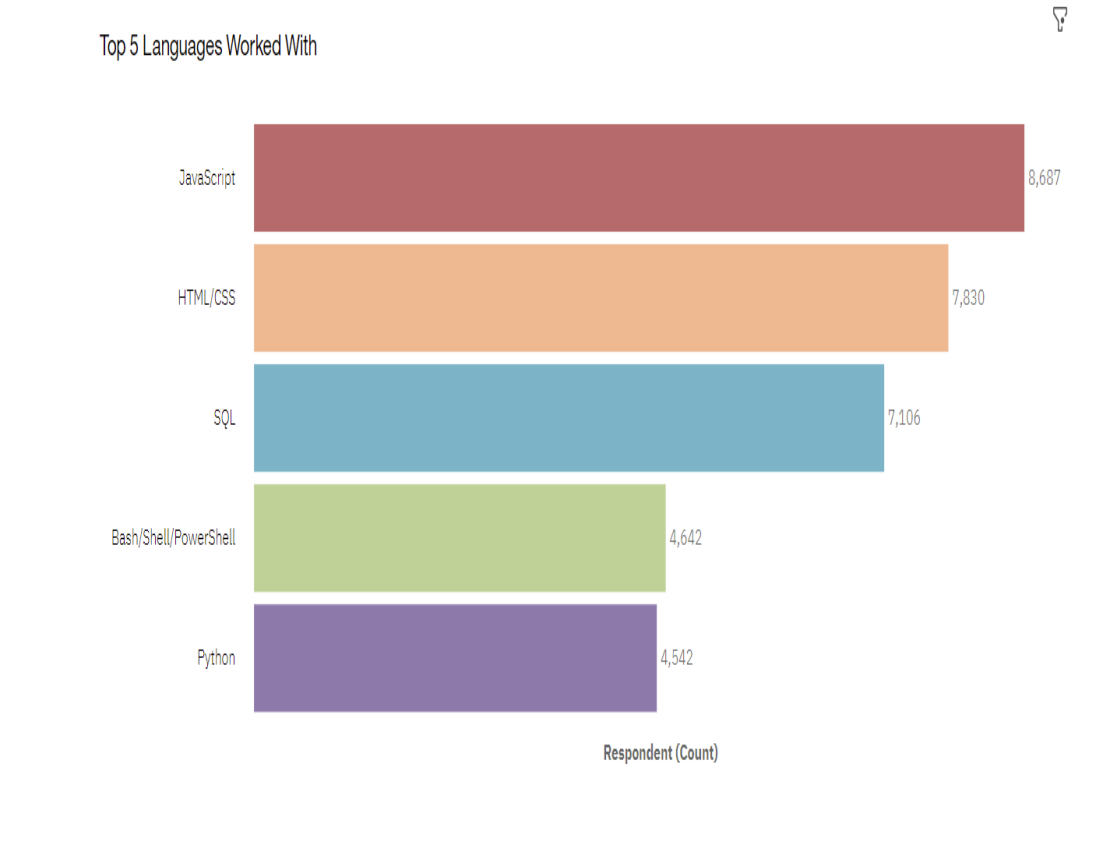
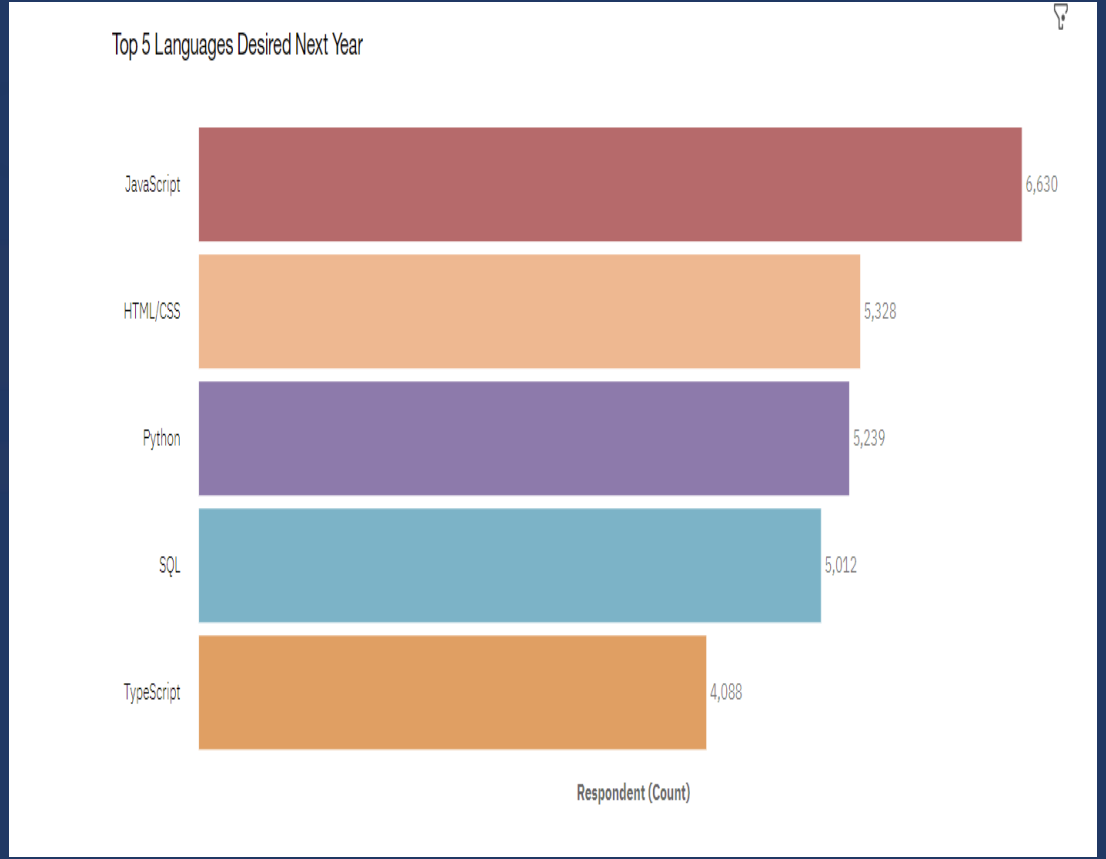
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

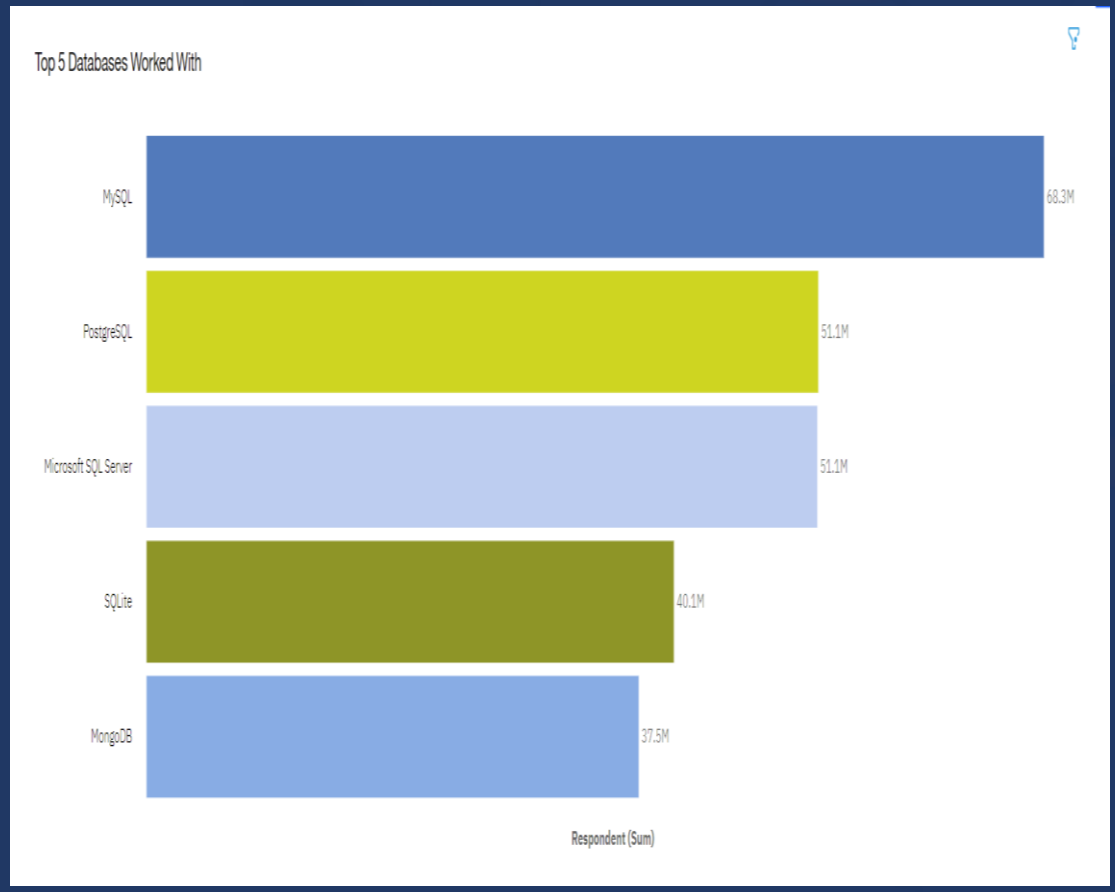
- JavaScript, HTML and CSS are the languages most used in the current year and are still the most desired languages for the coming year
- Interest in Python and Typescript are growing making them the 3rd and 5th most desired languages for the coming year respectively
- There are also increased interest in Go and Koitlin
- Interest in C++ and PHP are declining as they are not in the 10 most interested languages in the coming year

Implications

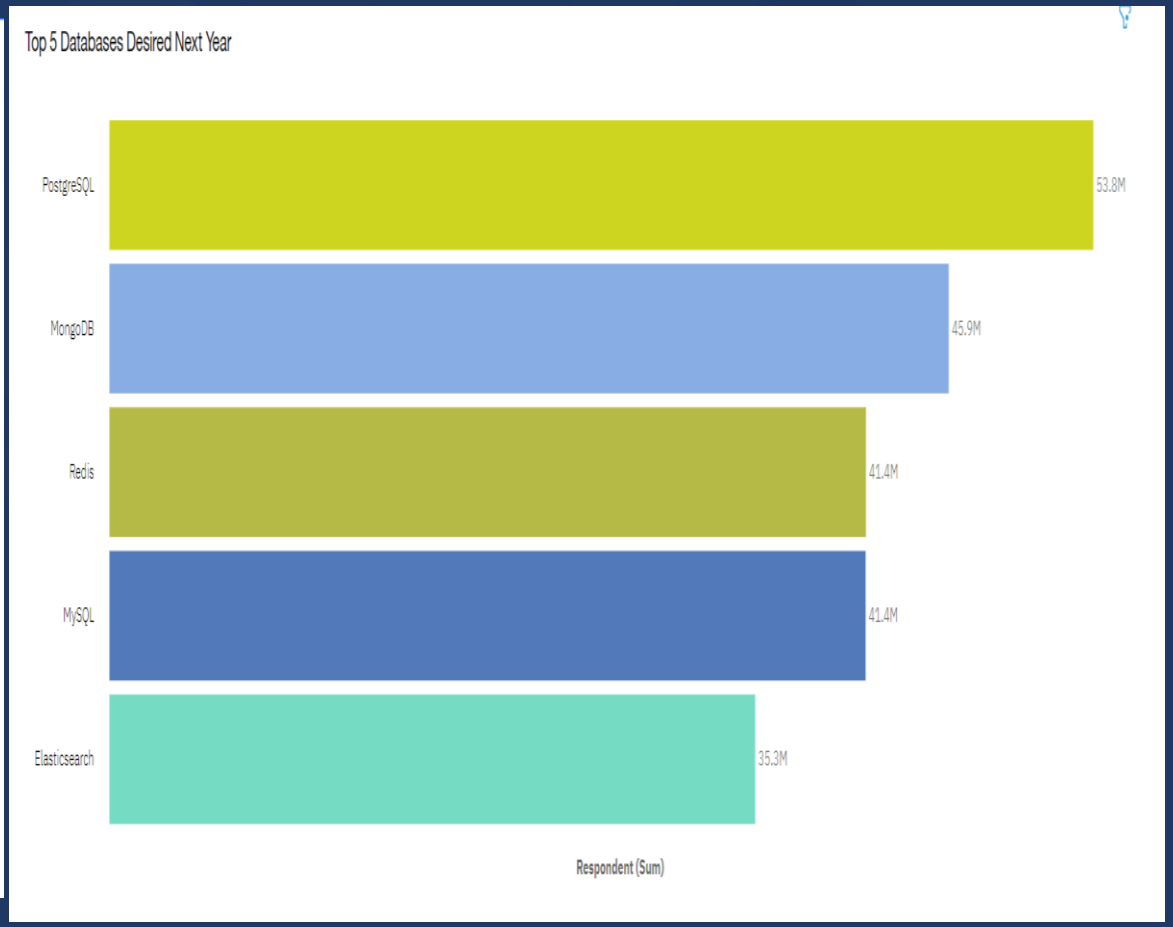
- There is a lot of stability in the languages used and desired so there shouldn't be much shakeup in the industry
- However, due to interest in new languages, it is expected that they may be a change in languages used in the coming years

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL was the database used by most survey respondents
- Interest in relational databases are declining as non-relational databases are becoming more popular
- Evidence of non-relational databases increasing popularity is shown by the interest in Databases desired next year as most of the top databases desired next year are non-relational

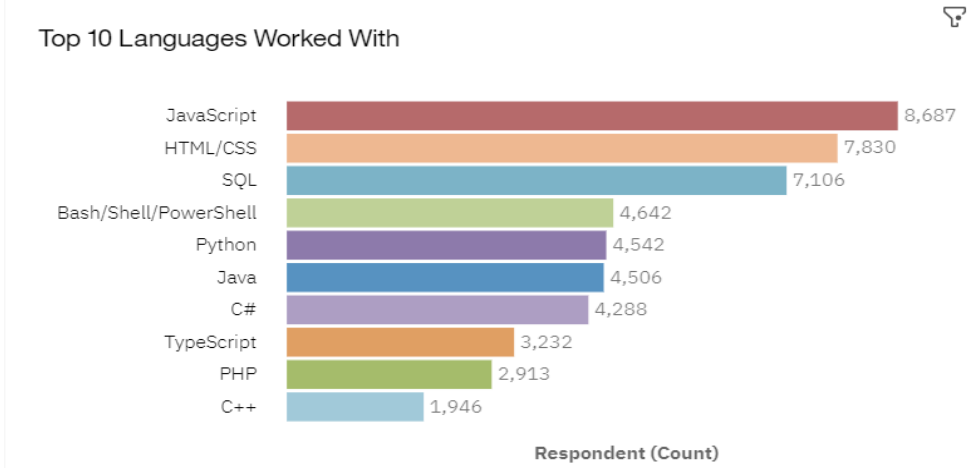
Implications

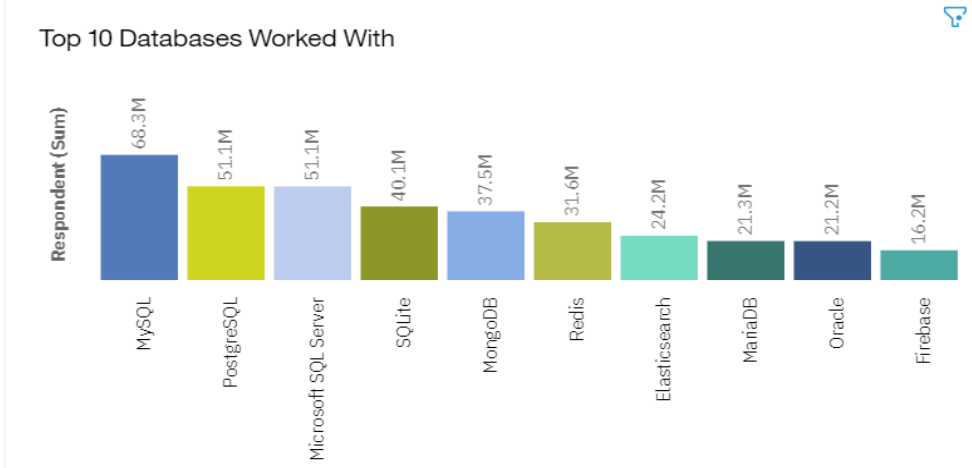
- The popularity of non-relational databases mean a lot of companies are likely going to adopt them for their business operations and this will require them looking for skilled hands to manage and navigate these databases
- This is likely going to further interest in these databases in the coming years
- However, relational databases are a staple and are likely to still be very popular among respondents

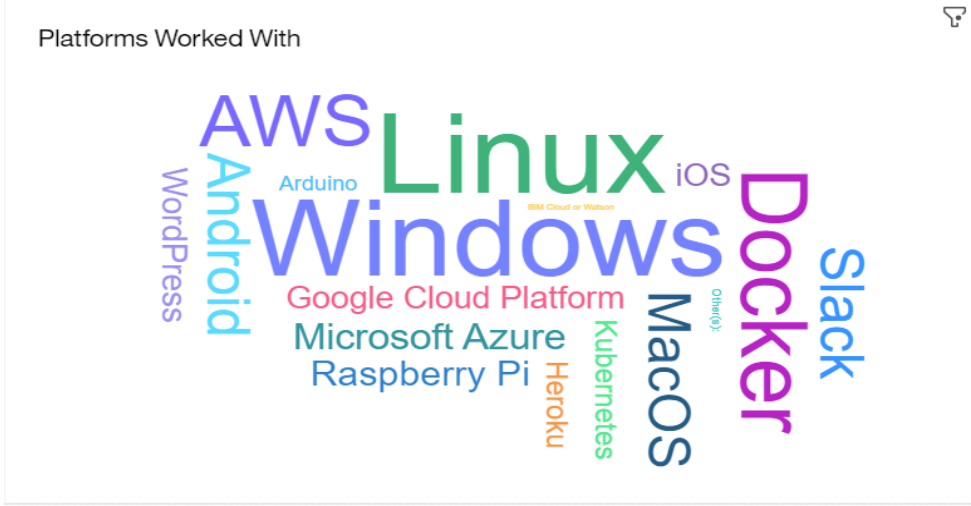
DASHBOARD

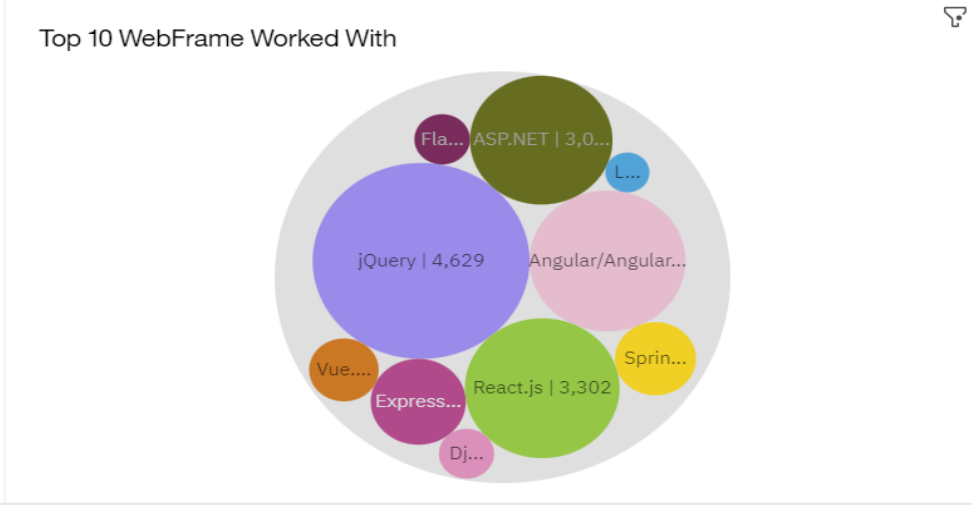
Cognos dashboard link

DASHBOARD TAB 1 – Current Technology Usage









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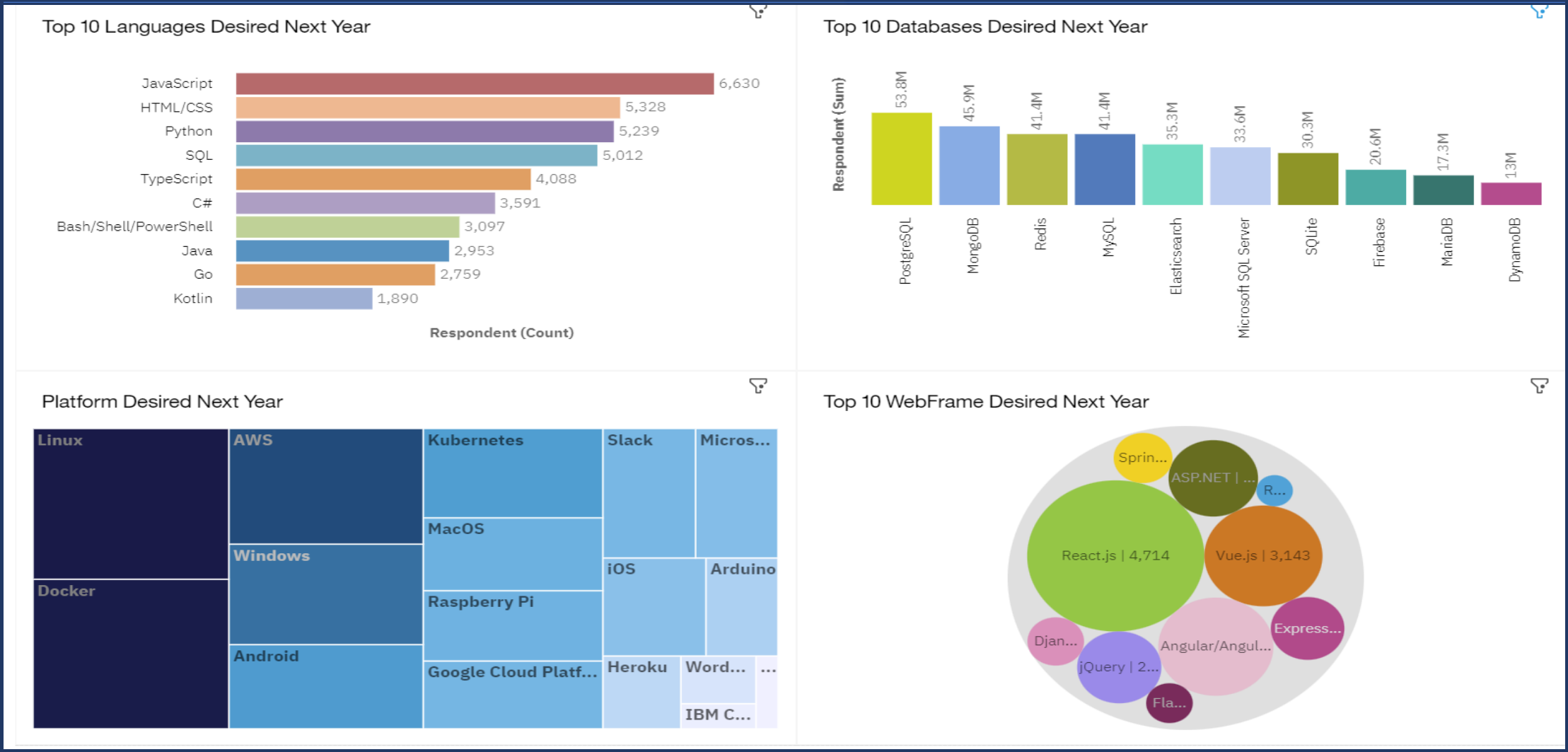
DASHBOARD TAB 2 – Future Technology Trend



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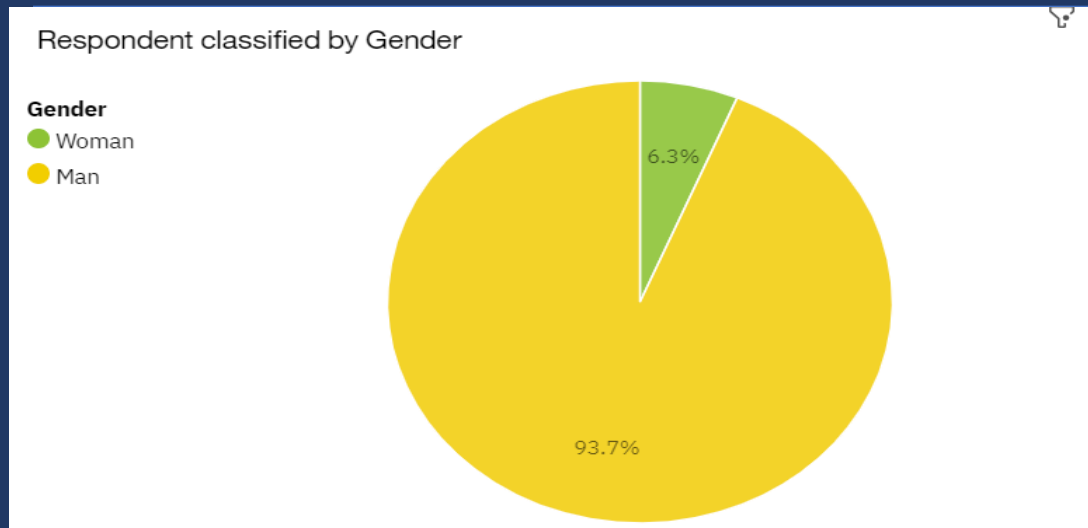
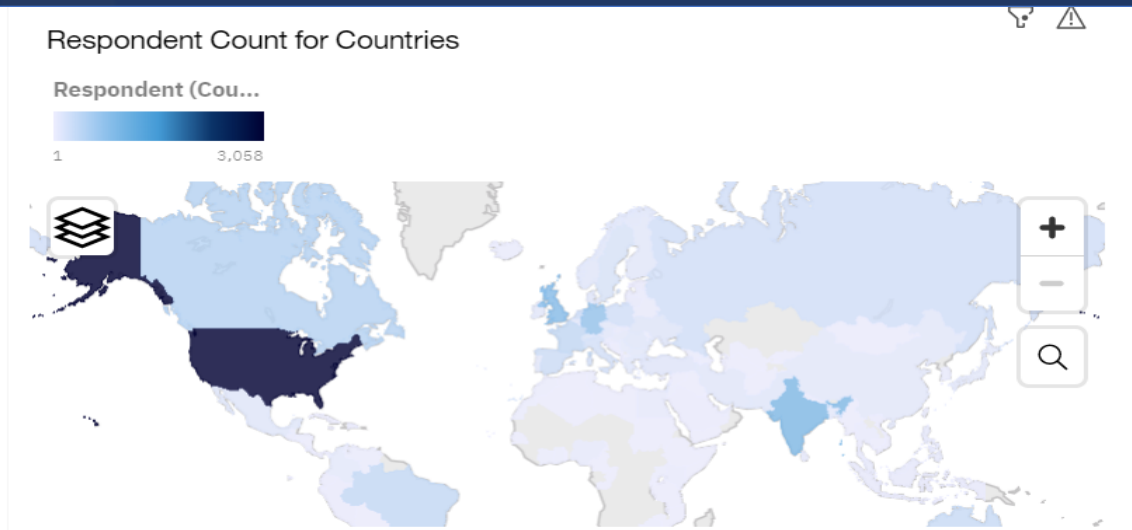
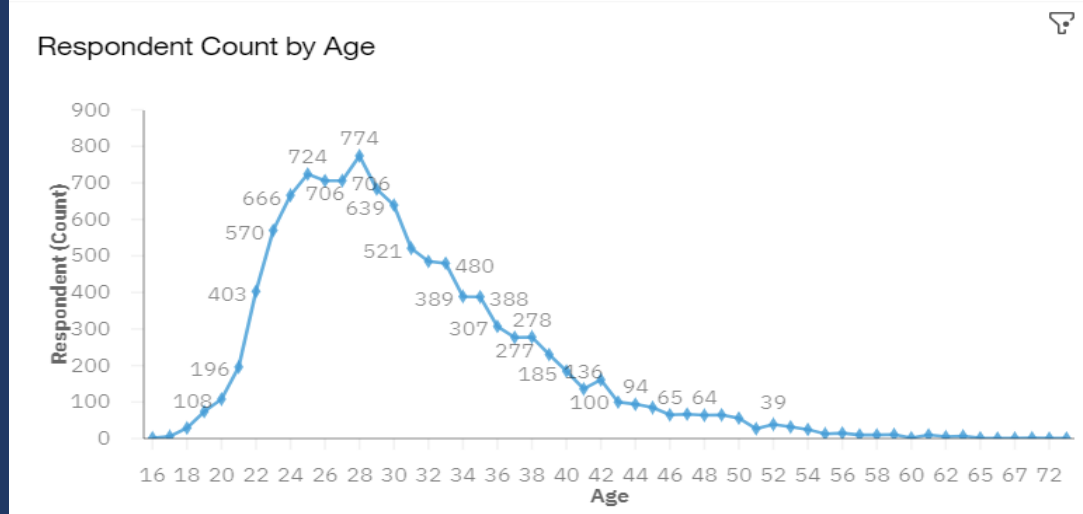
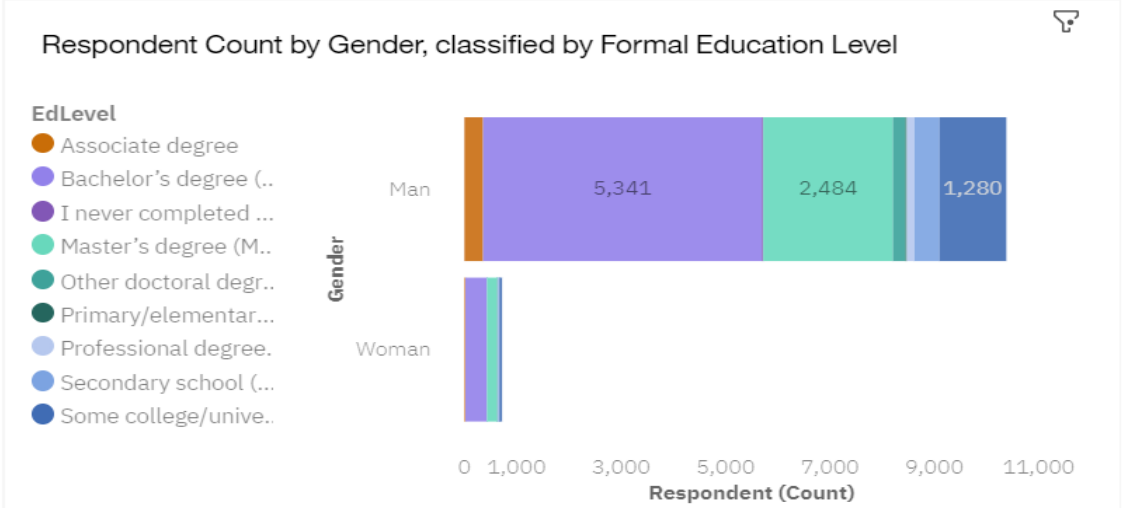
DASHBOARD TAB 3 - Demographics









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DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- 93.7% of respondents were male which shows a lot of gap in the data collected
- About 30% of respondents were from US, followed by UK, India and Germany
- With respect to languages, there is no significant difference between current language used and language desired next year
- For databases there is a significant difference between current databases worked with and those desired next year
- There is an increasing interest in other platforms such as Docker, AWS which is leading to decline in interest in Windows
- Vue.js is fast increasing in popularity among Webframes

Implications

- The data collected is overwhelming impacted by the male gender. It is unclear if the current information would have been different with the data collected from more female correspondents
- The finding are significantly reflecting the following countries: USA, UK, India and Germany. It is possible that other countries may reflect a different position
- There is going to be a significant shift in databases used in the common years as non-relational databases gain more popularity
- The Languages used are still going to be the most common but in a few years this may also see a shift
- Windows platform is losing popularity and it very likely that other platforms become more common
- Respondents are prioritizing ease over complexity and this is shown by interest in Vue.js next year

CONCLUSION

- There is a significant gap in the data collected as it overwhelmed by information gathered from men
- Languages like JavaScript, SQL, Python, HTML/CSS are still very popular among respondents in the USA, UK, India and Germany
- Respondents are taking interest in non-relational databases such as Mongo DB, Redis and ElasticSearch
- Vue.js is going to gaining popularity in Webframes
- It is advisable that anyone aiming to get a job or remain relevant in a job that requires knowledge in specific languages, databases, platforms and/or webframes consider these technologies making the most strides

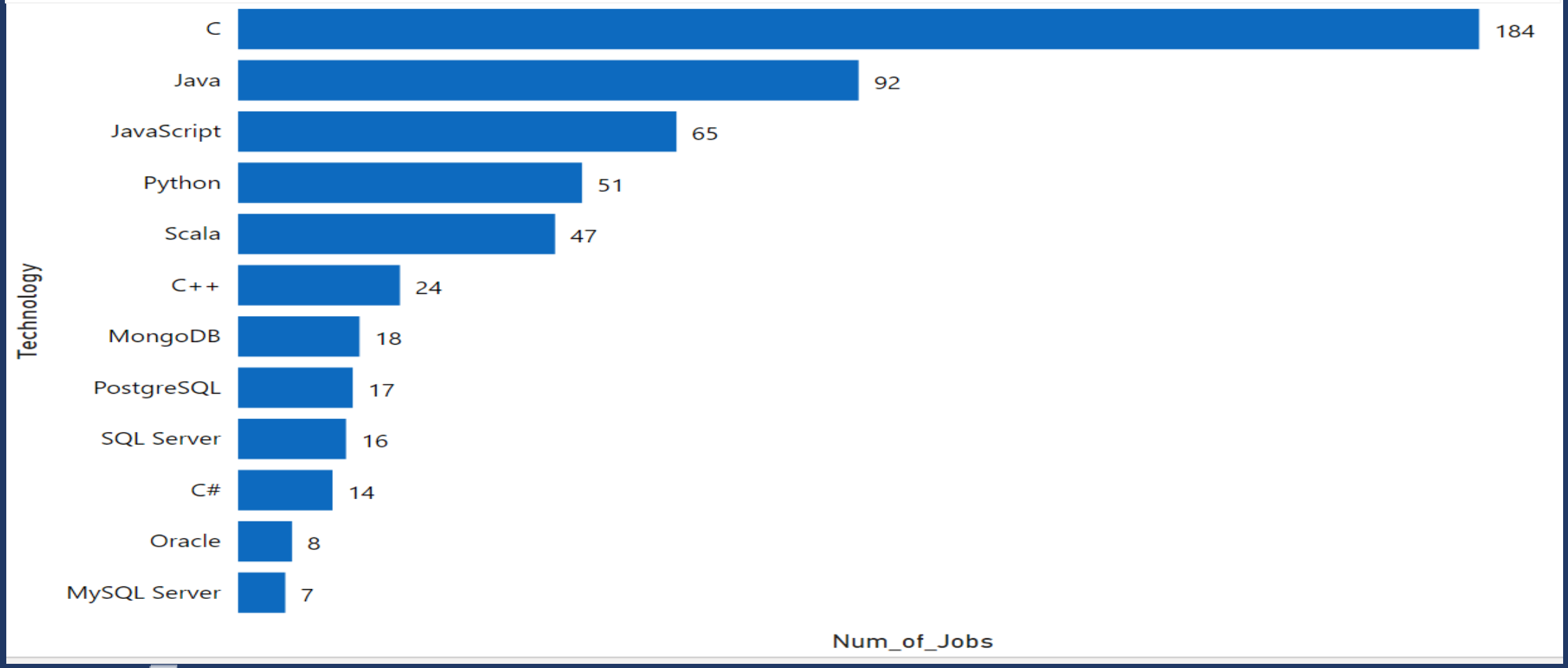
APPENDIX

- Breakdown of analysis done can be found in the github repository below

- Data Analysis Github Repository

GITHUB JOB POSTINGS

Number of Job Postings per Technology



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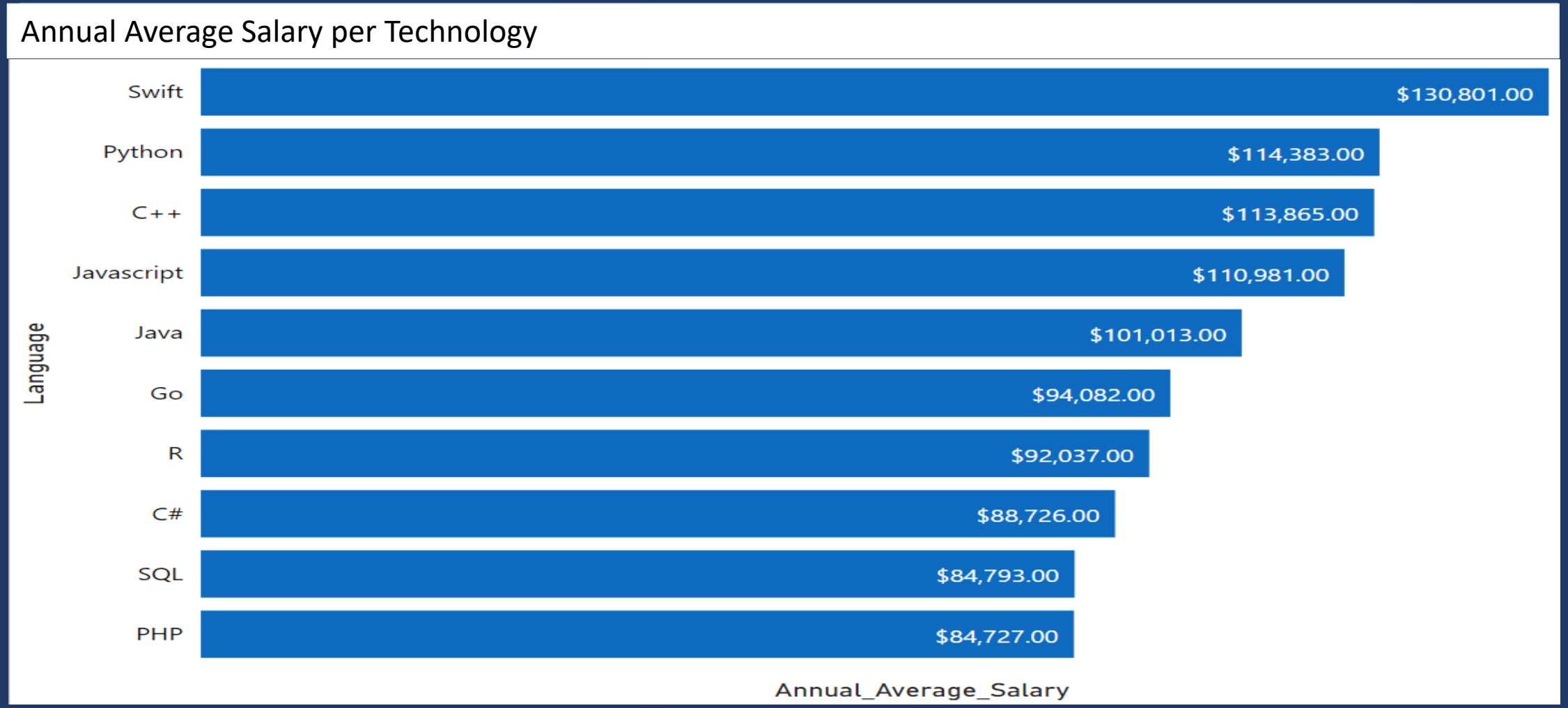
POPULAR LANGUAGES



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