



Stack Overflow Developer Survey Results

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OUTLINE



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EXECUTIVE SUMMARY



- It is crucial to stay updated about technology trending in this fast-changing market to remain competitive
- Developing new skills in advance can be the key element to start ahead of your competitors
- The data utilized in this analysis is open sourced survey from Stack Overflow conduct in 2019, containing around 90,000 responses
- For the sake of this presentation, a smaller sample was used

INTRODUCTION



- The objective of this presentation is to outline the top technologies used along the last year in comparison to the top technologies the respondents desire to work with next year
- This presentation display trends for: Programming Languages, Databases, Platforms, WebFrames and Demographic data
- Along with the results, findings and implications will also support the presentation
- Furthermore, the entire research done will be available in the Appendix section

METHODOLOGY



- From the original data set, a subset containing around 10% of the total was extracted using web scraping
- Through exploratory analysis, the subset was cleaned and prepared for the initial check of data distribution, outliers and correlation
- Using SQL Queries and data visualization libraries, the firsts graphics were generated
- Finally, utilizing the IBM Cognos environment, the final visualizations were created to display the past and next year graphics and identify trends.

RESULTS



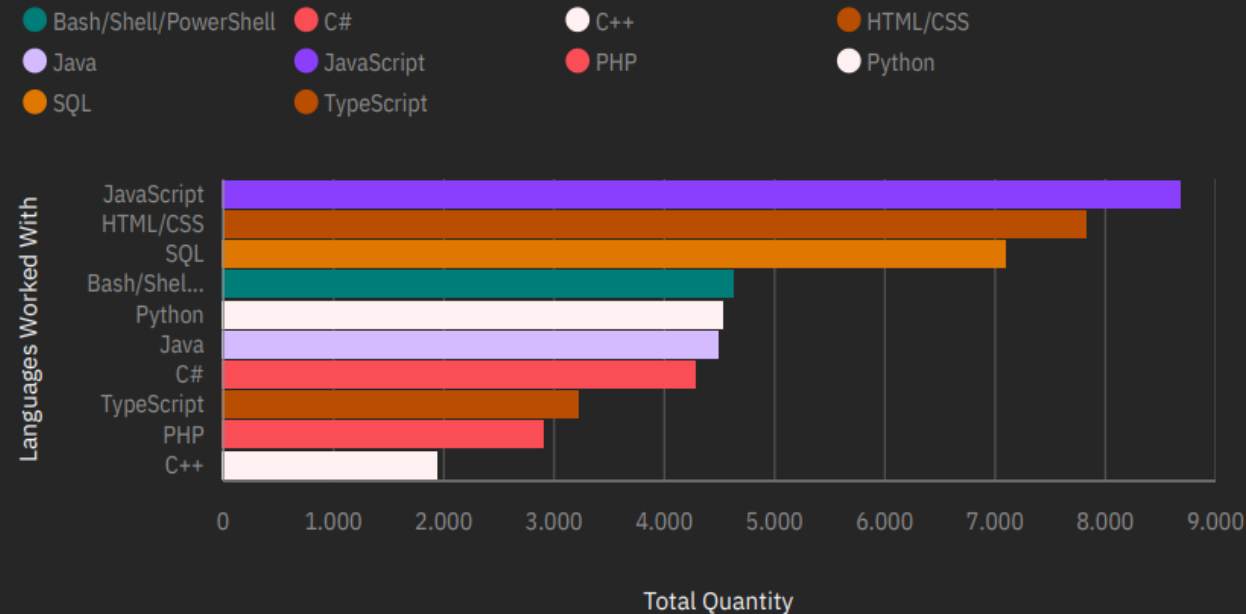
- In order to better display the results, in the following slides you will be presented with dashboards followed by the findings and implications
- The focus will be on programming languages and databases, comparing side by side the past results and future trends.
- The results found through this analysis show how fast the technology market can change

PROGRAMMING LANGUAGE TRENDS

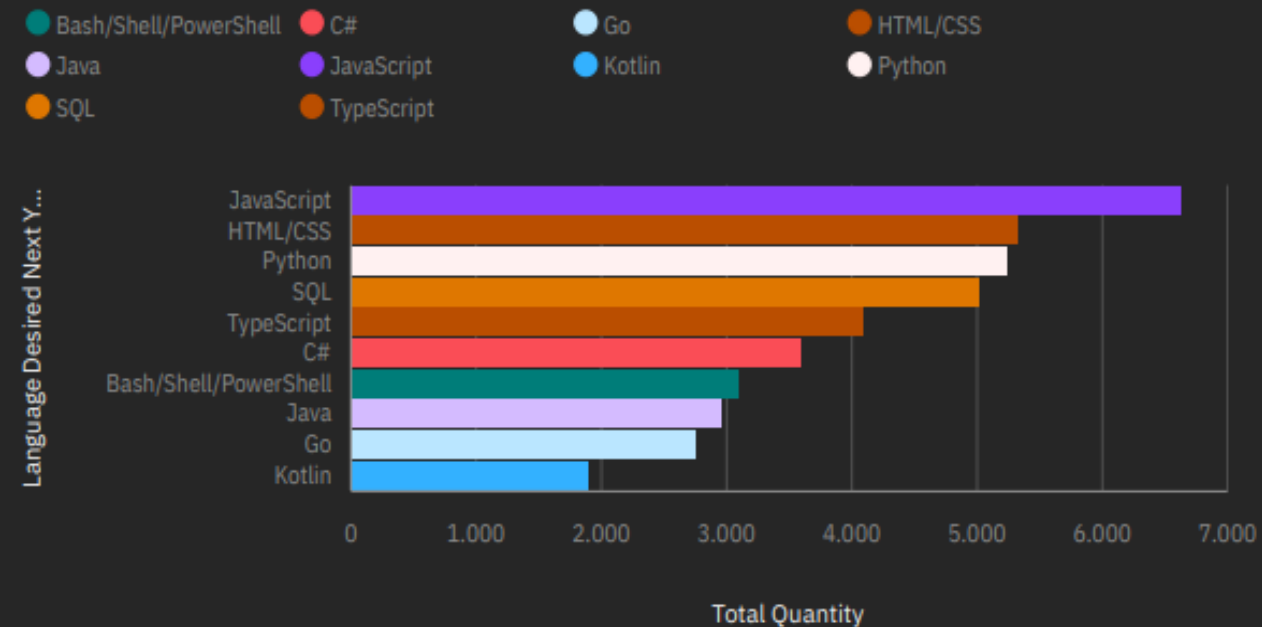
Current Year

Next Year

Top 10 Languages Repondents Worked With Over the Last Year



Top 10 Languages Respondents Desire to Work in Over the Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS kept their position as the top 2 languages
- Python and TypeScript show a significant increase
- The total quantity of the top 5 languages for the next year decreased (Note how JS went from above 8.500 to less than 7.000)

Implications

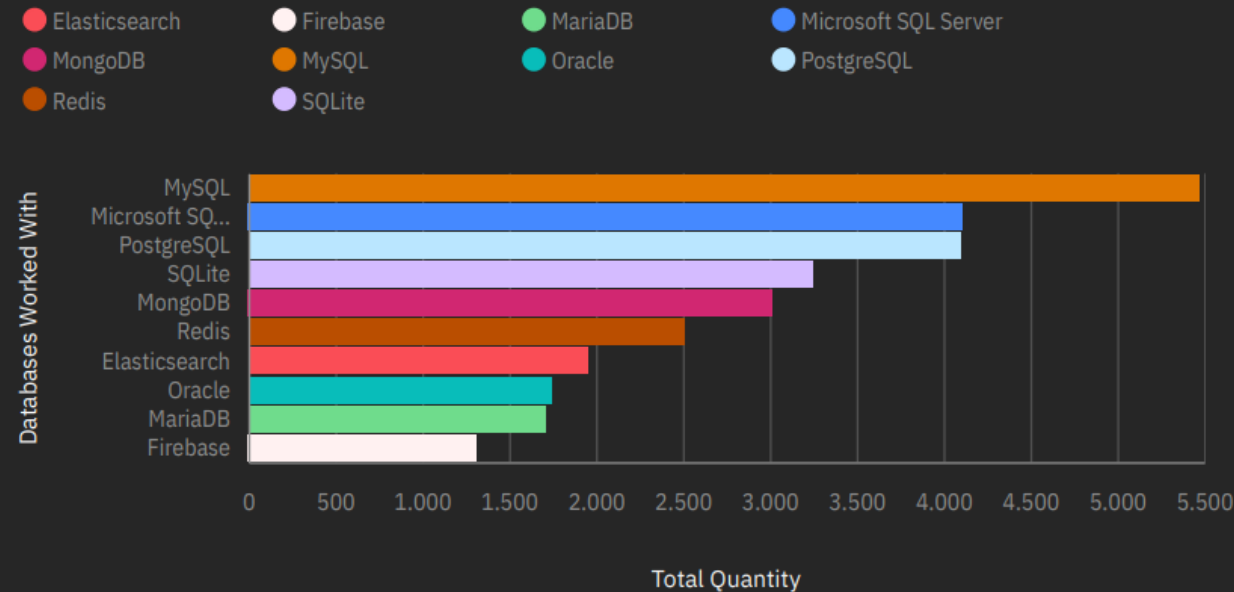
- As versatile and broadly used languages, JavaScript and HTML/CSS remain as top skills
- The AI and ML imminent rise, Python and TypeScript can be powerful set of skills
- The concentration on the top 5 dispersed among the other languages, creating a less unequal rank overall

DATABASE TRENDS

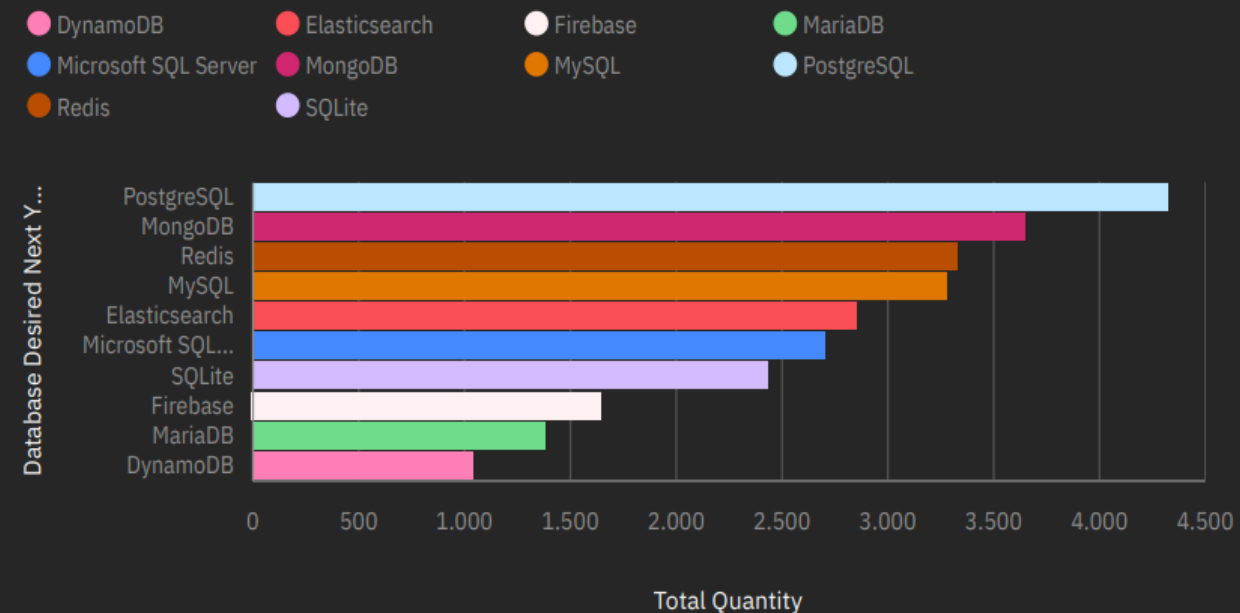
Current Year

Next Year

Top 10 Databases Respondents Worked With Last Year



Top 10 Databases Respondents Desire to Work in Over the Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft SQL and SQLite show a significant decrease
- Only Oracle left the rank, therefore 9 of the top 10 most used databases remain the same.
- The total quantity of the top 10 databases for the next year decreased

Implications

- PostgreSQL, MongoDB and Redis shows a strong trend for the future year
- Although the classification has undergone significant changes, 9 databases remain popular
- The concentration on the top 10 dispersed among the other databases, creating a less unequal rank overall

DASHBOARD



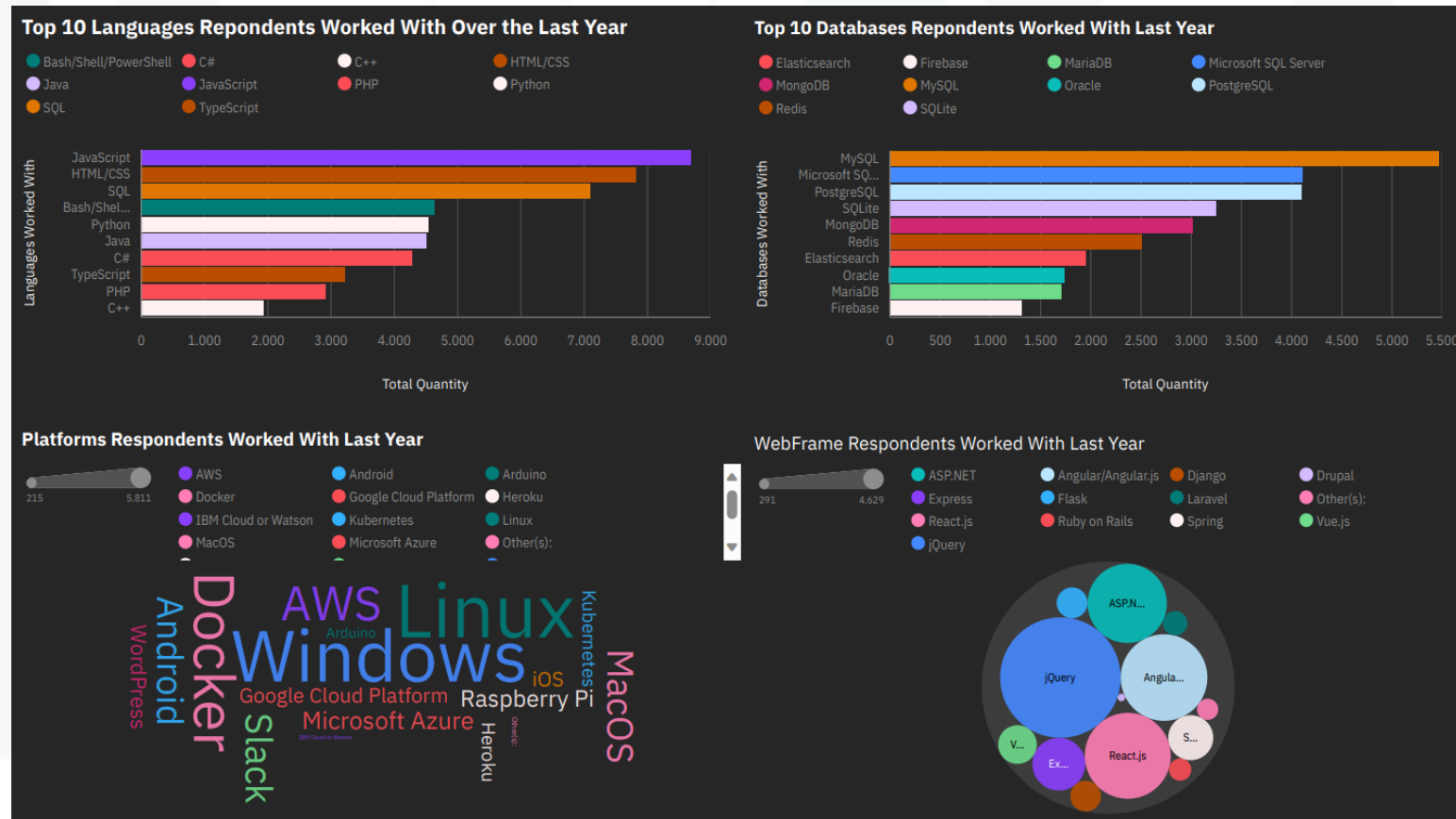
To explore the dashboards yourself, kindly refer to the link below to access the PDF file:

<https://github.com/ney333/Stack-Overflow-Developer-Survey-Results.git>

The next pages will display a preview of the dashboards

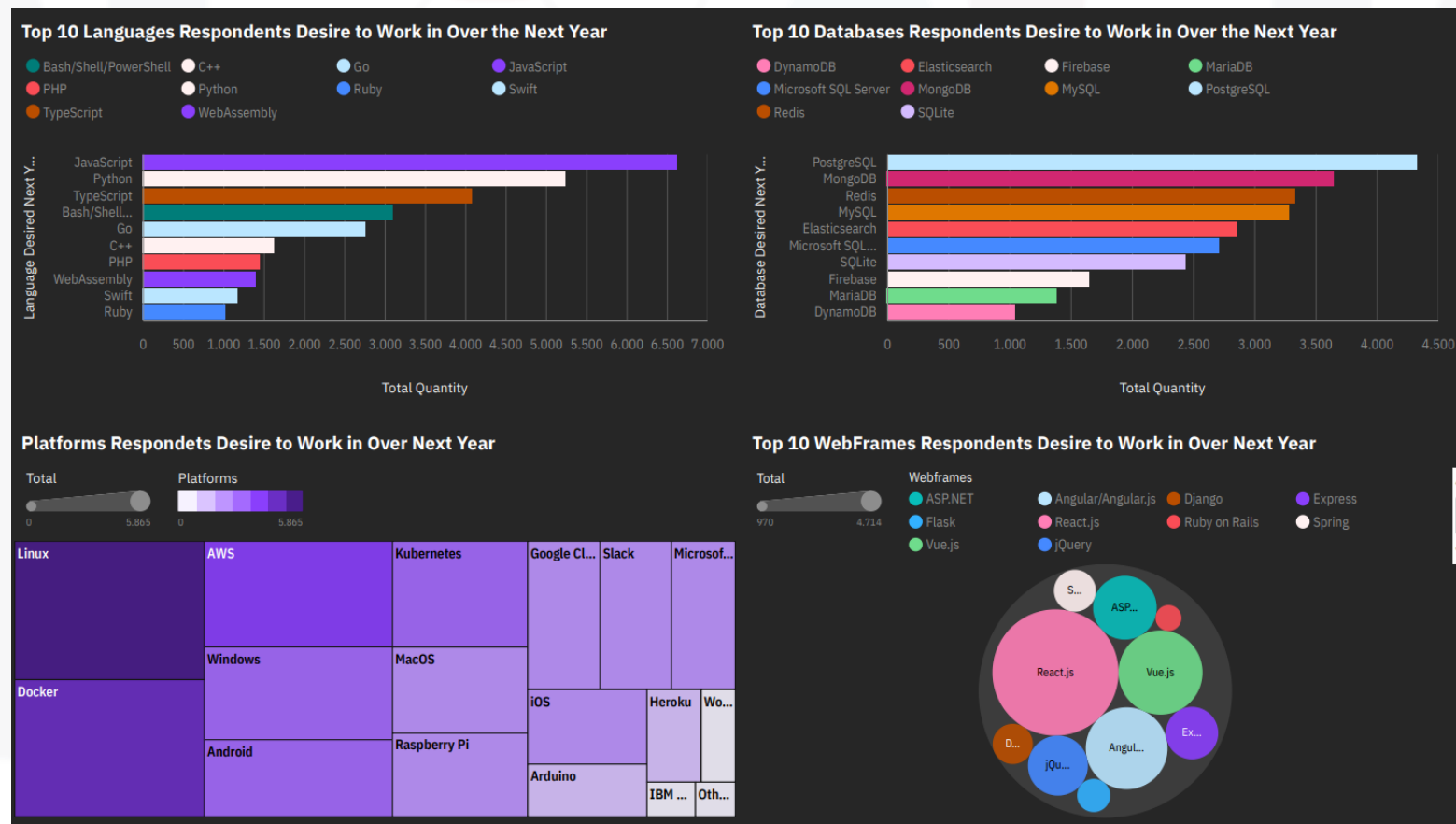
DASHBOARD PREVIEW – Tab 1

Current Technology Usage



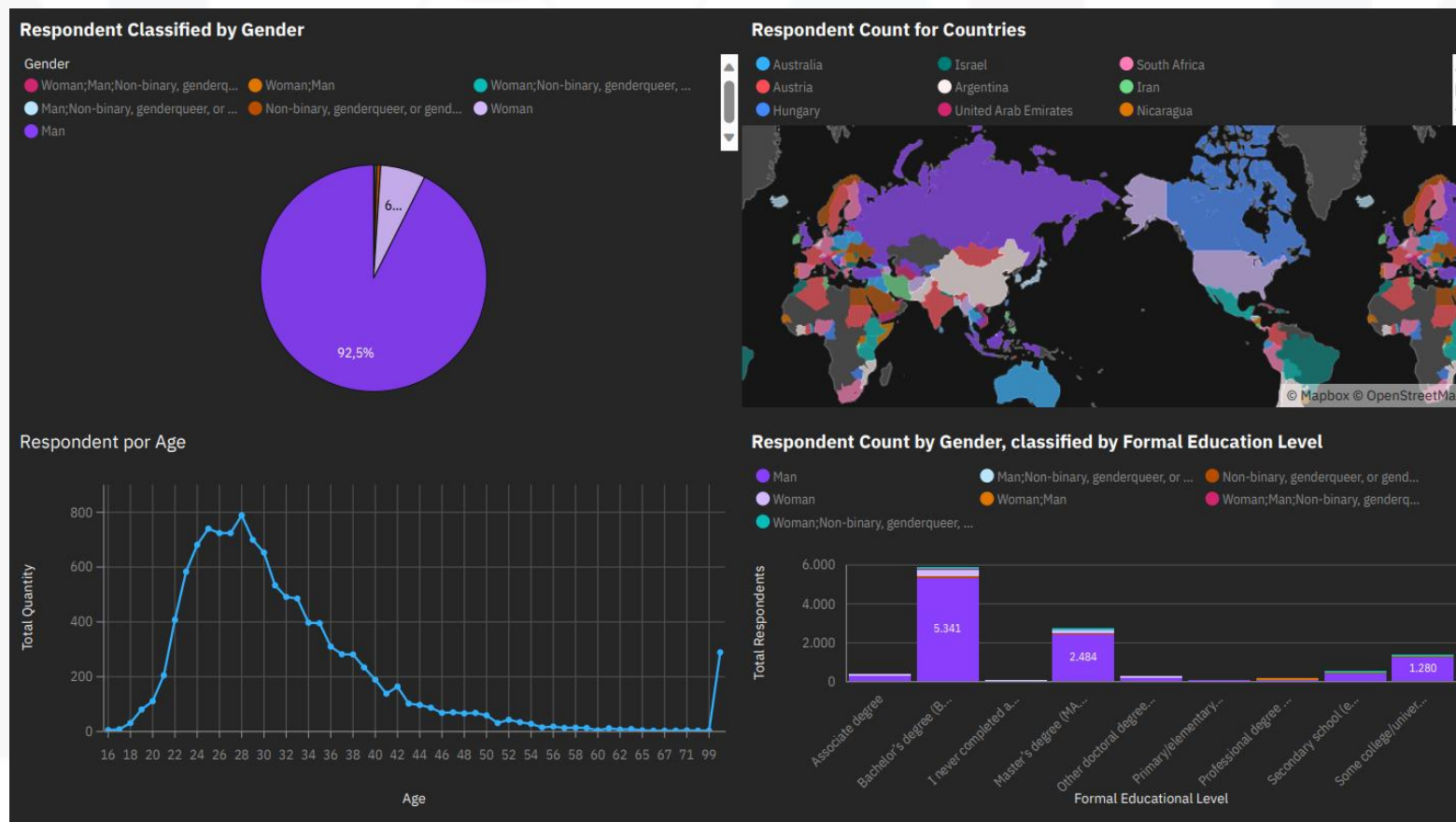
DASHBOARD PREVIEW - TAB 2

Future Technology Trend



DASHBOARD PREVIEW - TAB 3

Demographics



DISCUSSION



- What other insights could you extract from the dashboards?
- What other implications can it cause in the market?
- How to best respond to this changes?

OVERALL FINDINGS & IMPLICATIONS

Findings

- Programming Languages: TypeScript showed the biggest increase, however JS, HTML/CSS and SQL remain on top
- Databases: PostgreSQL, MongoDB and Redis are the future trend, surpassing the current most popular databases
- Platforms and WebFrames are also fast changing
- The gender distribution is extremely unequal

Implications

- It is crucial to keep informed, flexible and adapt as quick as possible to changes
- Learning new programming languages is always a good choice, but mastering JS and HTML/CSS first is also a wise strategy
- Databases seems to be more vulnerable to changes over the years, as well as Platforms and WebFrames

CONCLUSION



- This document presented data analysis on the following fields: Programming Languages, Databases, Platforms, WebFrames and Demographic Data
- The analysis compares the current scenario with the trend for next year
- Discussion for the best strategy on how to handle and keep updated for the future

APPENDIX



- Data preparation and analysis:

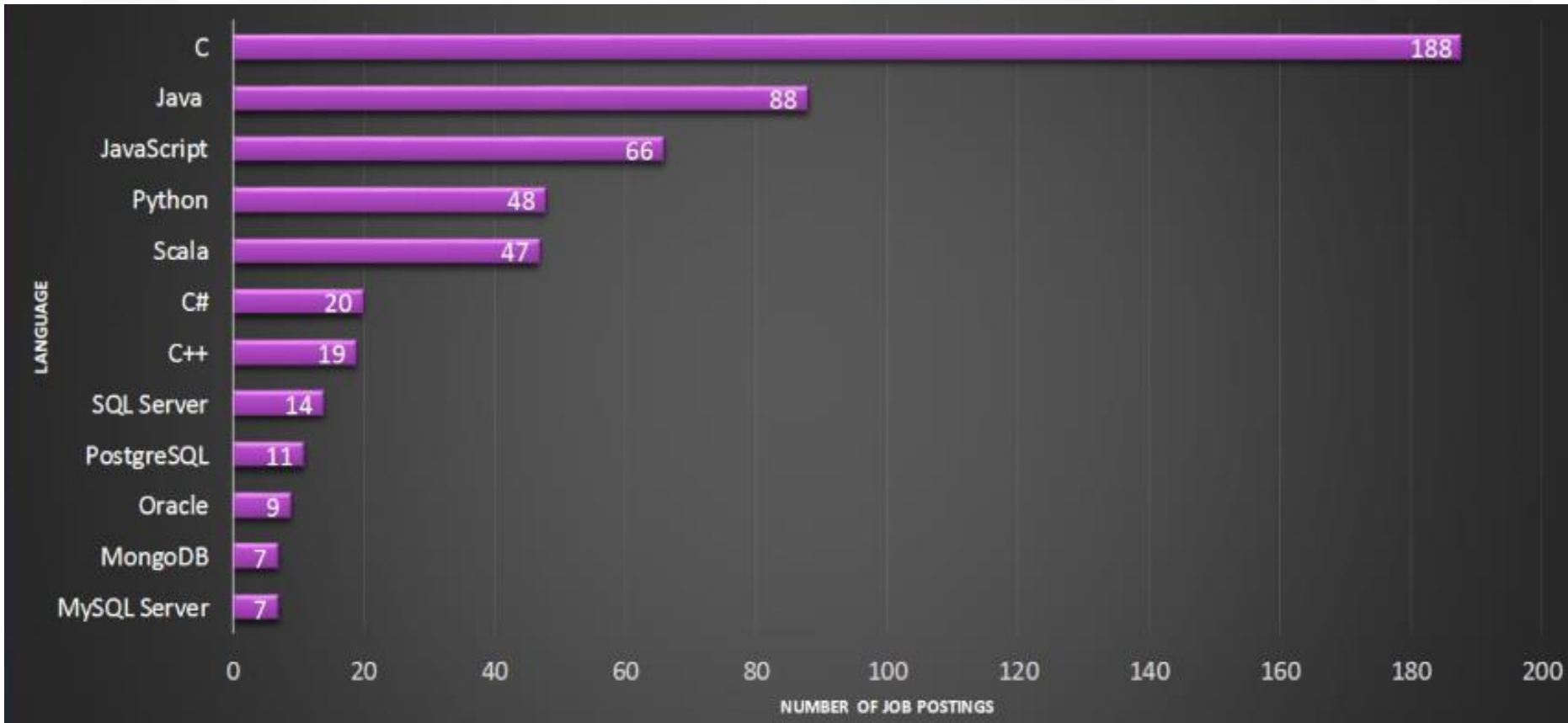
<https://github.com/ney333/IBM-Data-Analyst-Capstone-Project.git>

- Stack Overflow open source:

<https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>

JOB POSTINGS

Quantity of job postings grouped by programming language



POPULAR LANGUAGES

Popular languages ordered by average annual salary

