



# STACK OVERFLOW DEVELOPER SURVEY 2019

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# OUTLINE



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

# EXECUTIVE SUMMARY



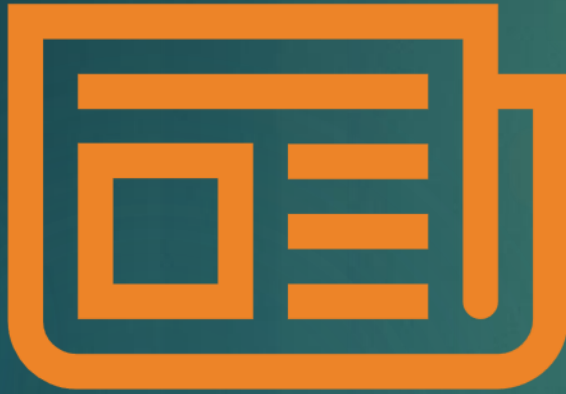
- ▶ Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- ▶ It is important to identify future skill requirements and trends to keep pace with changing technologies and remain competitive.
- ▶ This presentation will show current and future trends in Programming Languages, Databases, Platforms and WebFrames.
- ▶ Overall, the aim in identifying future skill requirements and trends is to help the firm make more informed data-driven hiring and budgetary decisions.

# INTRODUCTION



- This presentation has been created for stakeholders and business decision makers within the global IT and business consulting services firm.
- The presentation will help identify future skill requirements in the global IT sector necessary for the firm to keep pace with changing technologies and remain competitive.
- Recommendations will be stated based on the analysis.

# METHODOLOGY



- ▶ Using a modified subset of the Stack Overflow dataset<sup>1</sup>, the data was wrangled in order to remove duplicates, impute missing values and normalize data.
- ▶ Next, the data underwent exploratory analysis in order to find the distribution of data , presence of outliers and determine the correlation between different columns in the dataset.
- ▶ The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of data.
- ▶ Finally, after downloading two files<sup>2</sup>, which are also a modified subset of the Stack Overflow dataset, Cognos Dashboard Embedded (CDE) was used to create the “ Current Technology Usage ” , “ Future Technology Trends” and “Demographics” slides.
- ▶ **Appendix**
- ▶ To obtain average annual salaries web scraping was used to extract information from a website then saved to a csv file.

# RESULTS

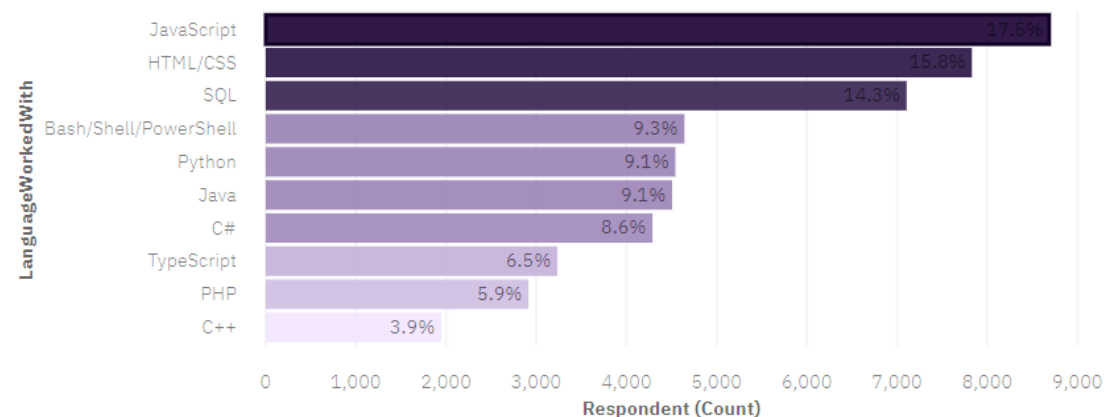


# PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Language Worked With

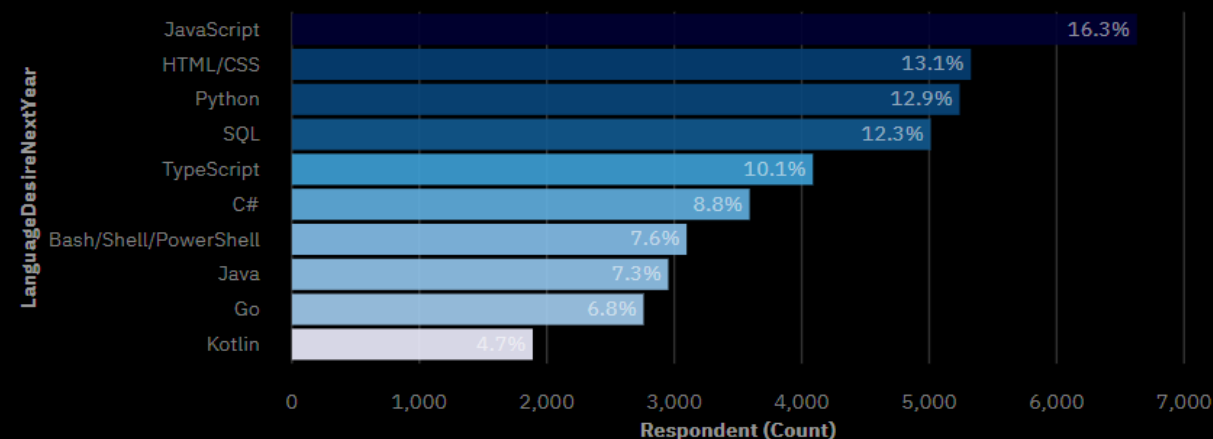
Respondent (Cou...)



Next Year

Top 10 Language Desire Next Year

Respondent (Cou...)



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- JavaScript , HTML/CSS , SQL continue to be the top three most popular programming languages for this year and next with little difference .
- Python and TypeScript have gained more interest for next year.
- Whereas interest in Bash /Shell/ PowerShell has decreased.
- Where PHP and C++ were exist in this year and disappear from next year and appear Go and Kotlin.

## Implications

1

- Continue to employ a similar number of people skilled in JavaScript ,SQL , and HTML/CSS.

2

- Employ more people skilled in Python and TypeScript.

3

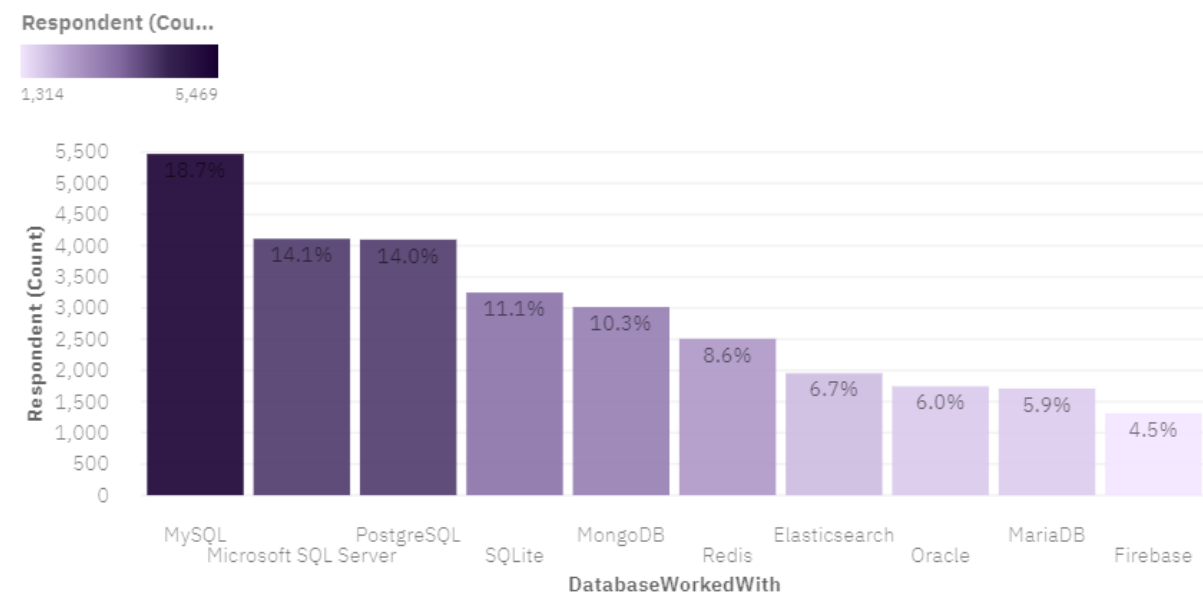
- Employ less people skilled in Bash/Shell/PowerShell , PHP , and C++.



# DATABASE TRENDS

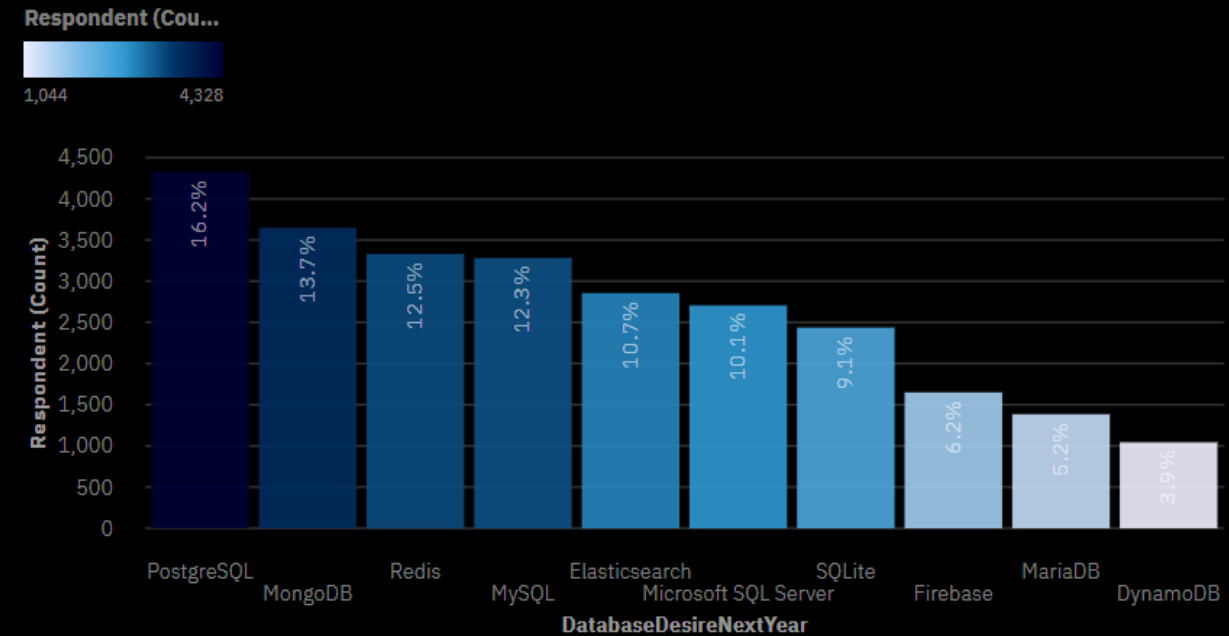
## Current Year

### Top 10 DatabaseWorkedWith



## Next Year

### Top 10 DatabaseDesireNextYear



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- Interest in MySQL, Microsoft SQL Server and SQLite has decreased for next year.
- Interest in PostgreSQL, Redis, and MongoDB has increased compared to the current year.
- There is gained interest in Elasticsearch for next year.

## Implications

1

- Employ less people skilled in MySQL, Microsoft SQL Server and SQLite.

2

- Employ more people skilled in PostgreSQL, Redis, and MongoDB.

3

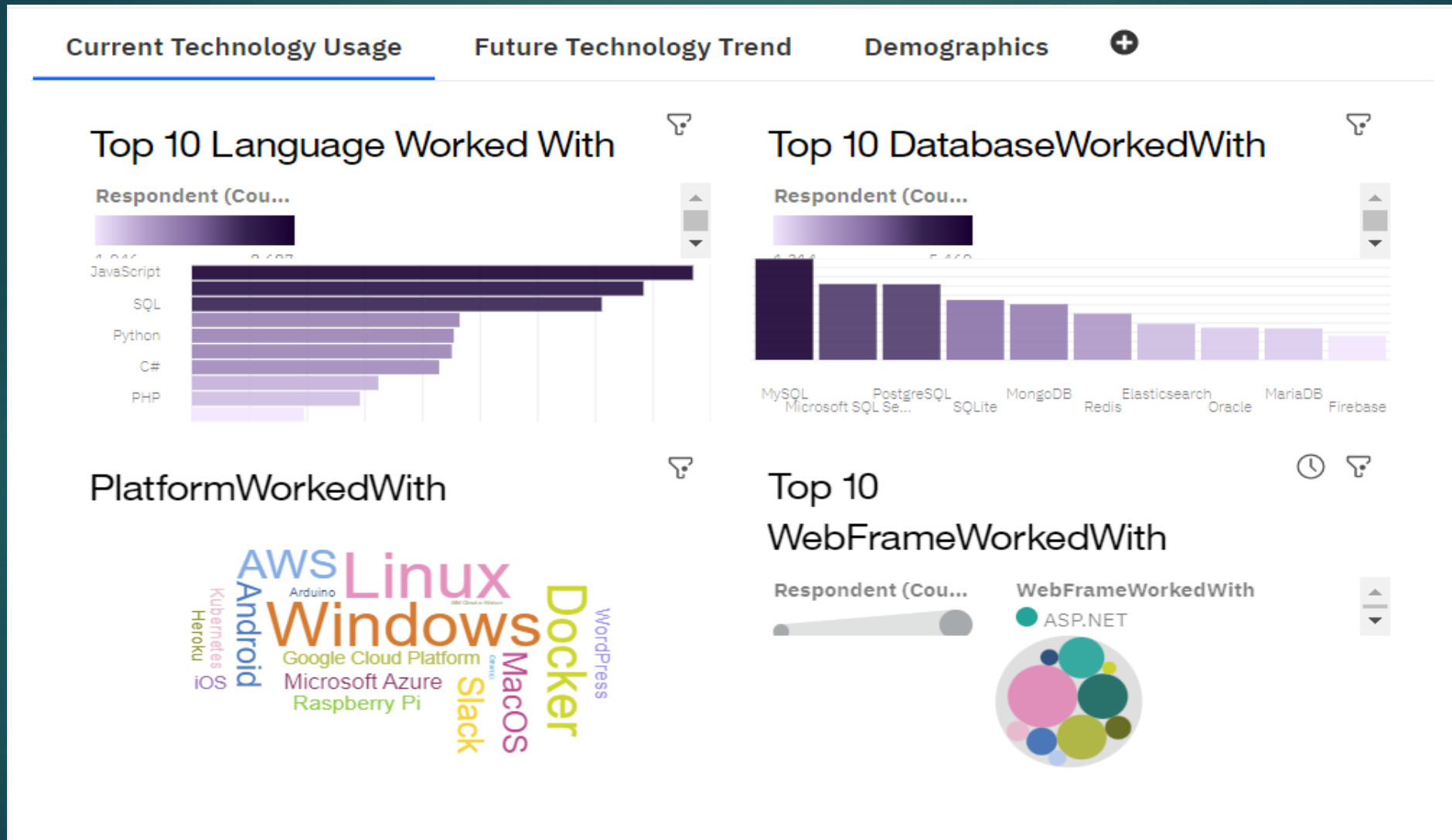
- Employ more people skilled in Elasticsearch.

# DASHBOARD

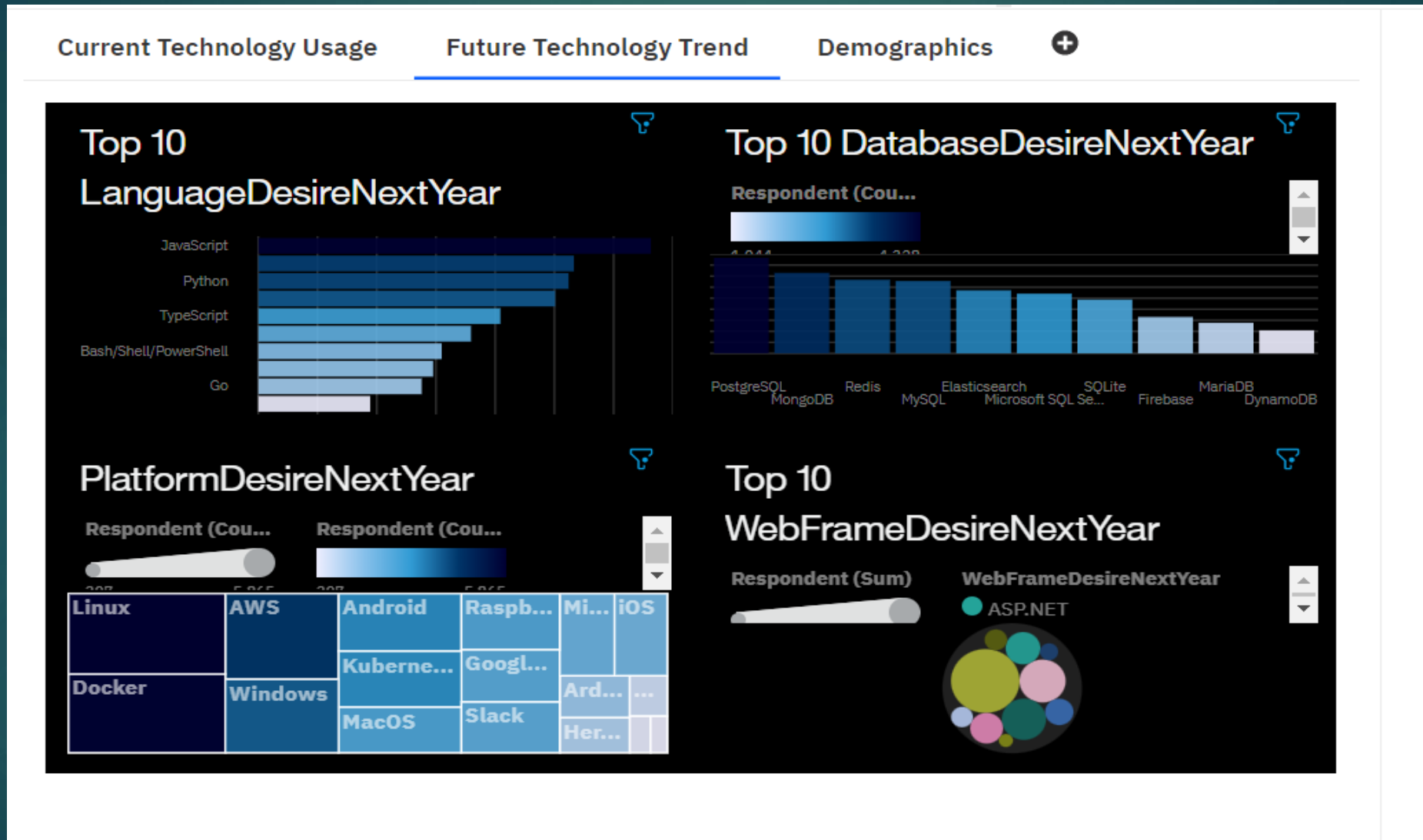


▶ Click [Link](#) to view the Cognos dashboard

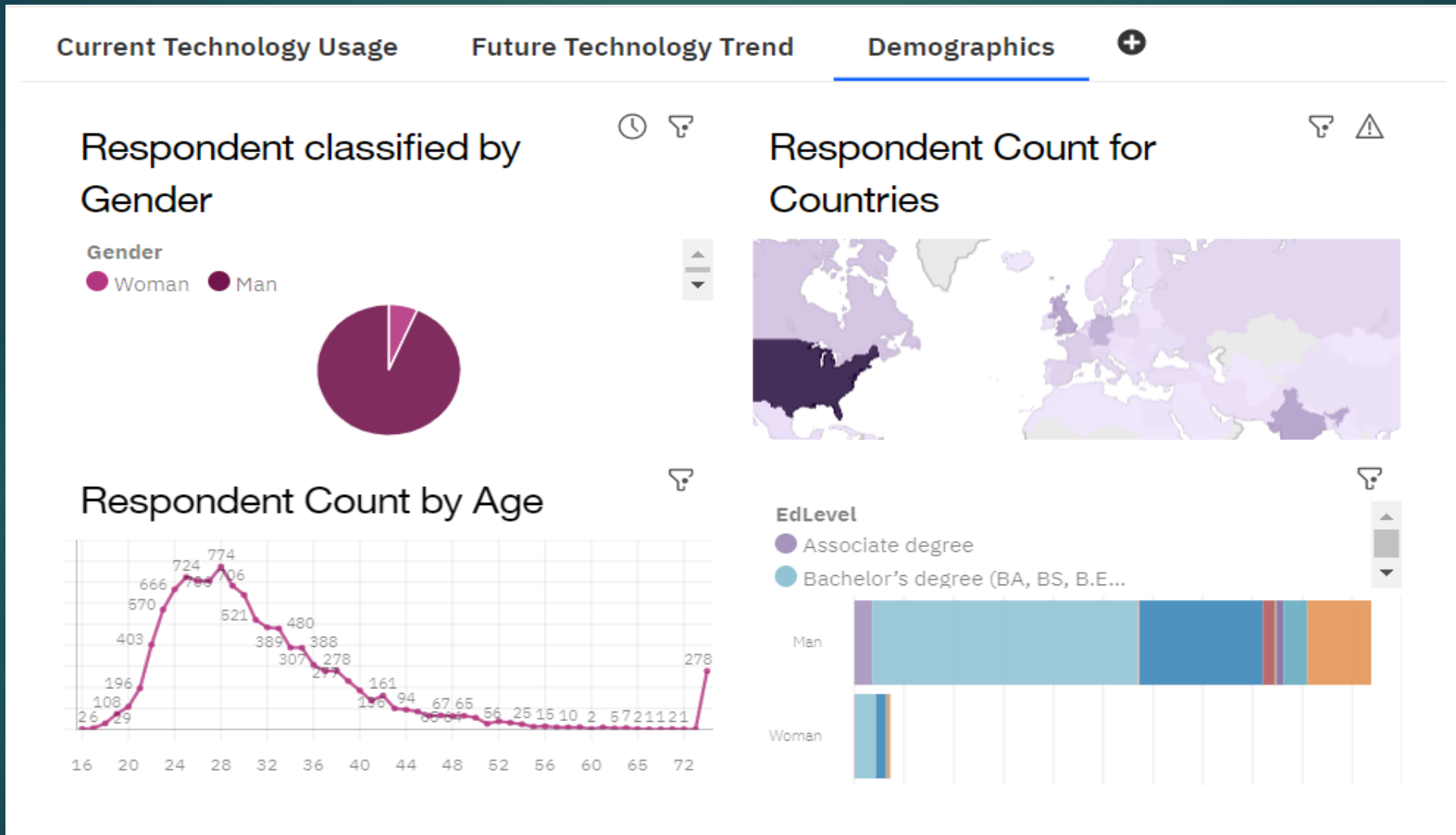
# Current Technology Usage



# Future Technology Trend



# Demographics





# DISCUSSION



- ▶ What are language ,  
Databases , Platforms ,  
and WebFrames we  
should employ people  
have them ?
- ▶ What should we do with  
budget ?
- ▶ What should we do with  
our stuff who have old  
shills ?

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Languages: TypeScript is gaining significant interest and Python continues to grow as well.
- Databases : Redis, Elasticsearch, PostgreSQL and MongoDB are gaining more interest.
- Platforms : Interest Slack and Windows is dropping significantly and Linux , AWS , and Docker are increasing .
- WebFrames : Vue.js is gaining substantial interest and React.js continues to grow as well. jQuery is dropping .

## Implications

1

- Continue to staff enough JavaScript and HTML/CSS but employ more people skilled in TypeScript and Python.

2

- Employ more people skilled in Redis, Elasticsearch, PostgreSQL and MongoDB.

3

- Continue to staff enough Linux, employ more people skilled in Docker, AWS and Android, but make reductions to Slack and Windows.

4

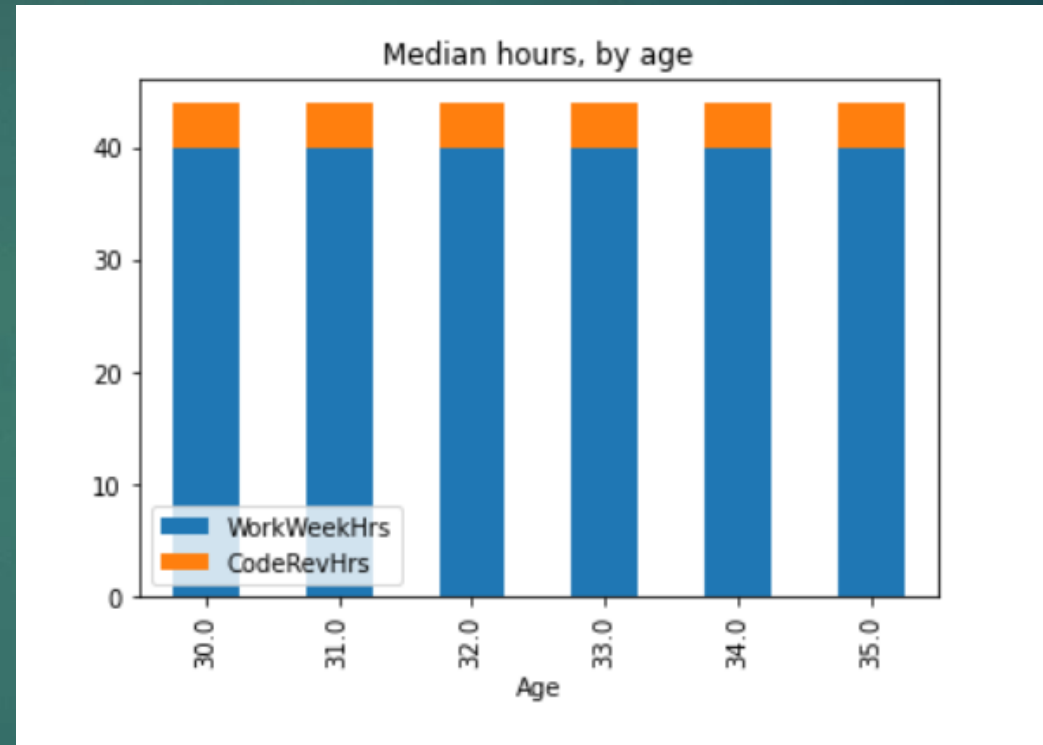
- Continue to staff enough ASP.NET but employ more people skilled in Vue.js and React.js.

# CONCLUSION

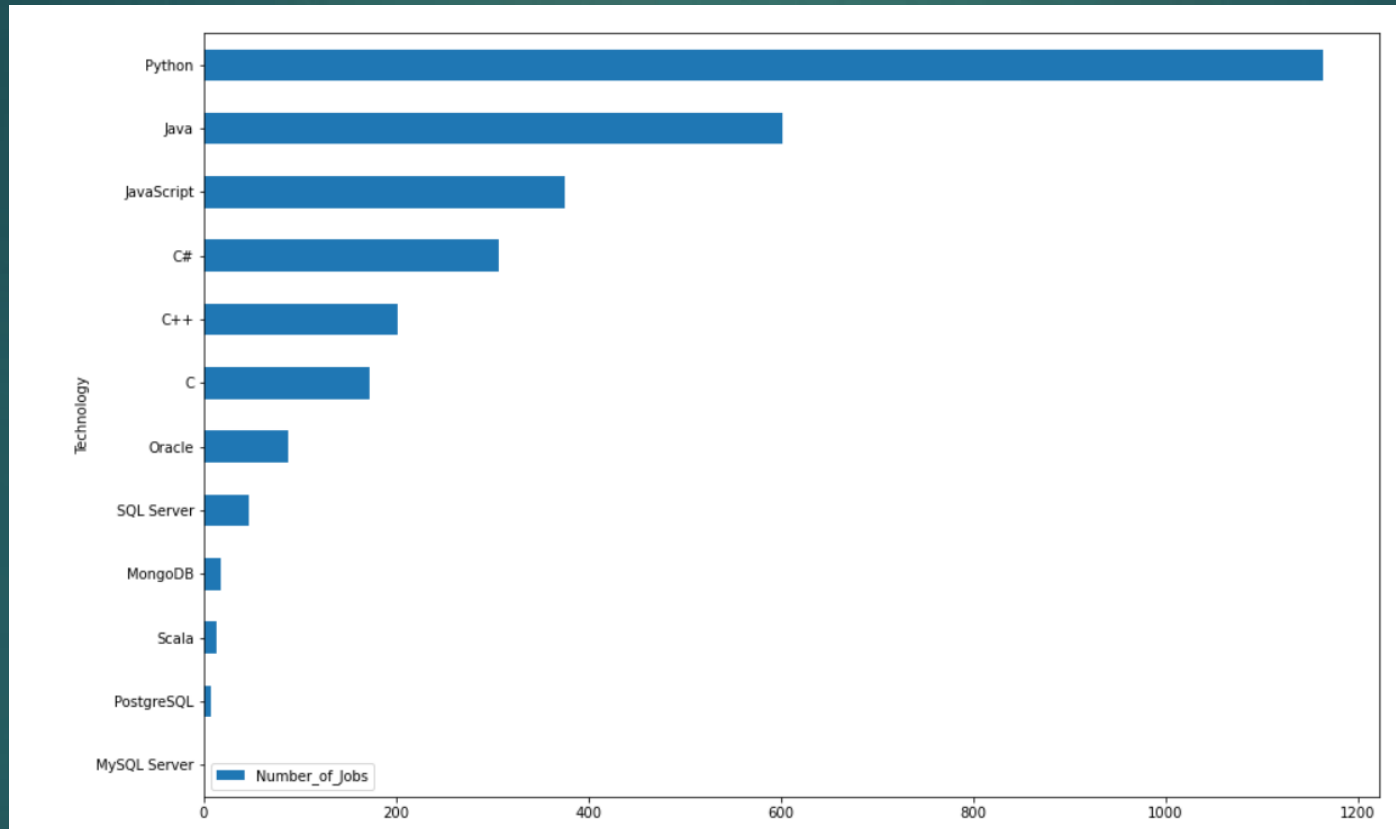


- ▶ Carve out budget in order to hire additional staff with skills needed to fill any gaps.
- ▶ Set aside budget or put a program in place to up skill those already employed.
- ▶ Make adjustments in staff for those skills no longer in demand.

# APPENDIX



# JOB POSTINGS



# POPULAR LANGUAGES

