



Skills Survey Analysis

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OUTLINE



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EXECUTIVE SUMMARY



- The data used for the analysis is the 2019 Stack Overflow Developer Survey under a ODbL: Open Database License
- As part of the analytics process, the following tools have been utilized:
 - Python Programming Language (packages such as numpy, pandas, requests, sqlite3, seaborn and matplotlib)
 - IBM Cognos Analytics
 - Github(for collaboration and presentation purposes only)
- The analysis identifies the top languages, databases and web platforms currently being used by professionals and also identifies future trends

INTRODUCTION



- The survey data was conducted by Stack Overflow with 90,000 professionals. The survey took about 20 minutes
- This does not represent the entire developer community however is able to help us understand the general trend to a certain degree
- The data can be broken down by demographic categories
- This report is for anyone who wishes to understand the current development landscape and future trends

METHODOLOGY



- Collecting Data (via requests library in python):
 - Accessing Data from APIs
 - Web Scraping
- Data Wrangling (via numpy and pandas library in python):
 - Finding Duplicates and Removing Duplicates
 - Identifying Missing Values
 - Replacing Missing Values
 - Removing Rows with Missing Values (if necessary)
 - Normalizing Dataset
- Visualization of Data (via matplotlib or seaborn library in python)
- Creating a Dashboard (via IBM Cognos Analytics)

RESULTS

Based on the survey conducted, it appears that Javascript is still the most popular programming language used by developers currently while MySQL is the most widely used Database.

Developers tend to opt for primarily Linux, Windows or Docker as their go-to development environments and prefer to use jQuery as their web framework.

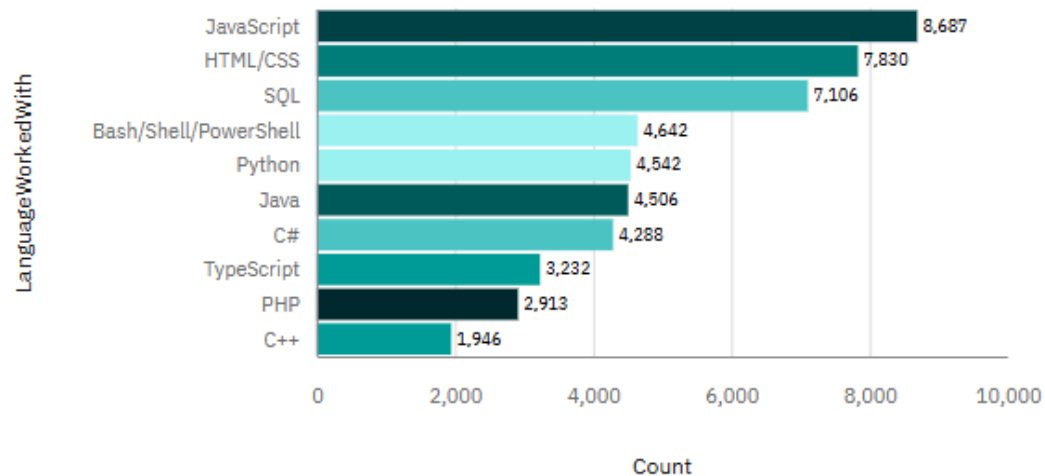
Future trends suggest a shift to PostgreSQL as opposed to MySQL and a much wider utilization of AWS as opposed to Windows. React.js is also picking up the pace in terms of web frameworks which developers find desirable.

The survey was completed by a number of professionals varying in age but the majority of the responders appear to be between the ages of 20 to 40 years old.

PROGRAMMING LANGUAGE TRENDS

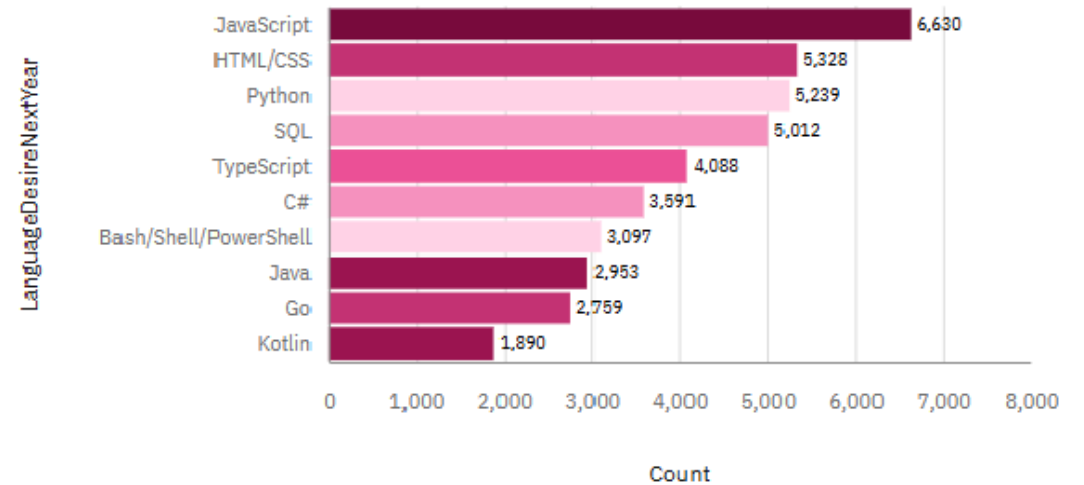
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS -FINDINGS & IMPLICATIONS

Findings

- Javascript continues to be the most popular programming language
- Python and Typescript appear to be gaining traction among developers
- SQL remains a steady favorite

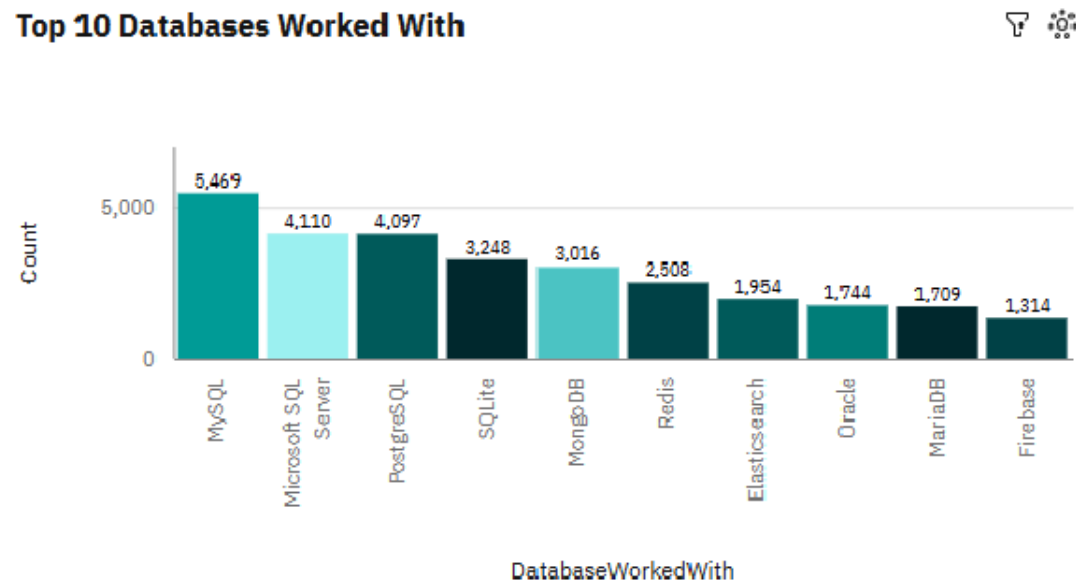
Implications

- Python is a more desirable language than SQL
- Typescript is becoming more popular
- PHP and C++ are no longer a fan favorite

DATABASE TRENDS

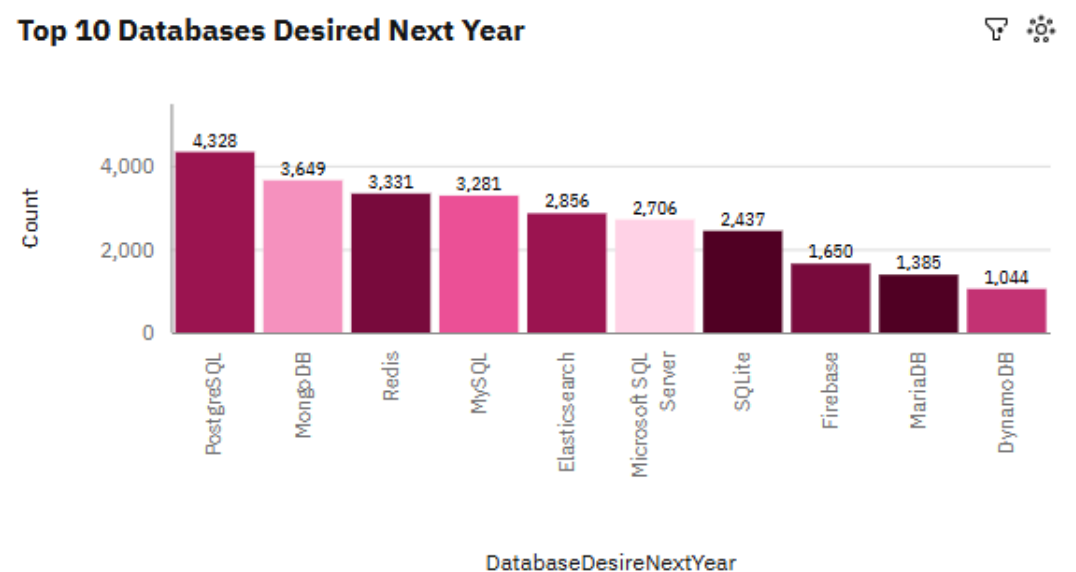
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS -FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft SQL Server and PostgreSQL are currently the top 3 databases used by developers
- 5469 developers have worked with MySQL this year
- Developers are showing more interest in PostgreSQL, MongoDB and Redis while Oracle is no longer a fan favorite

Implications

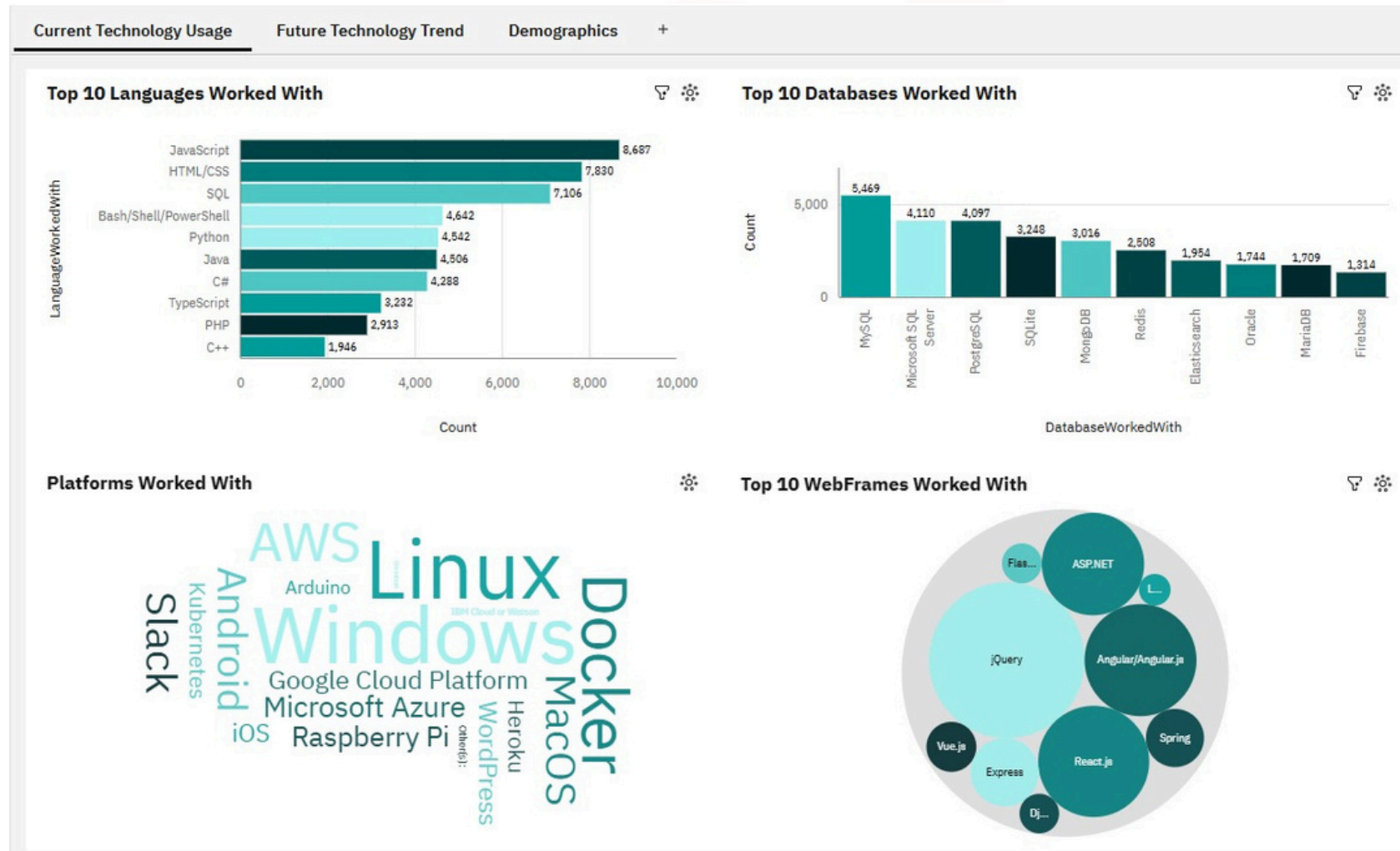
- Increase in interest in an object-relational database such as PostgreSQL
- Increase in interest in a non-relational (NoSQL) system such as MongoDB
- Increase in interest in a key-value store such as Redis

DASHBOARD

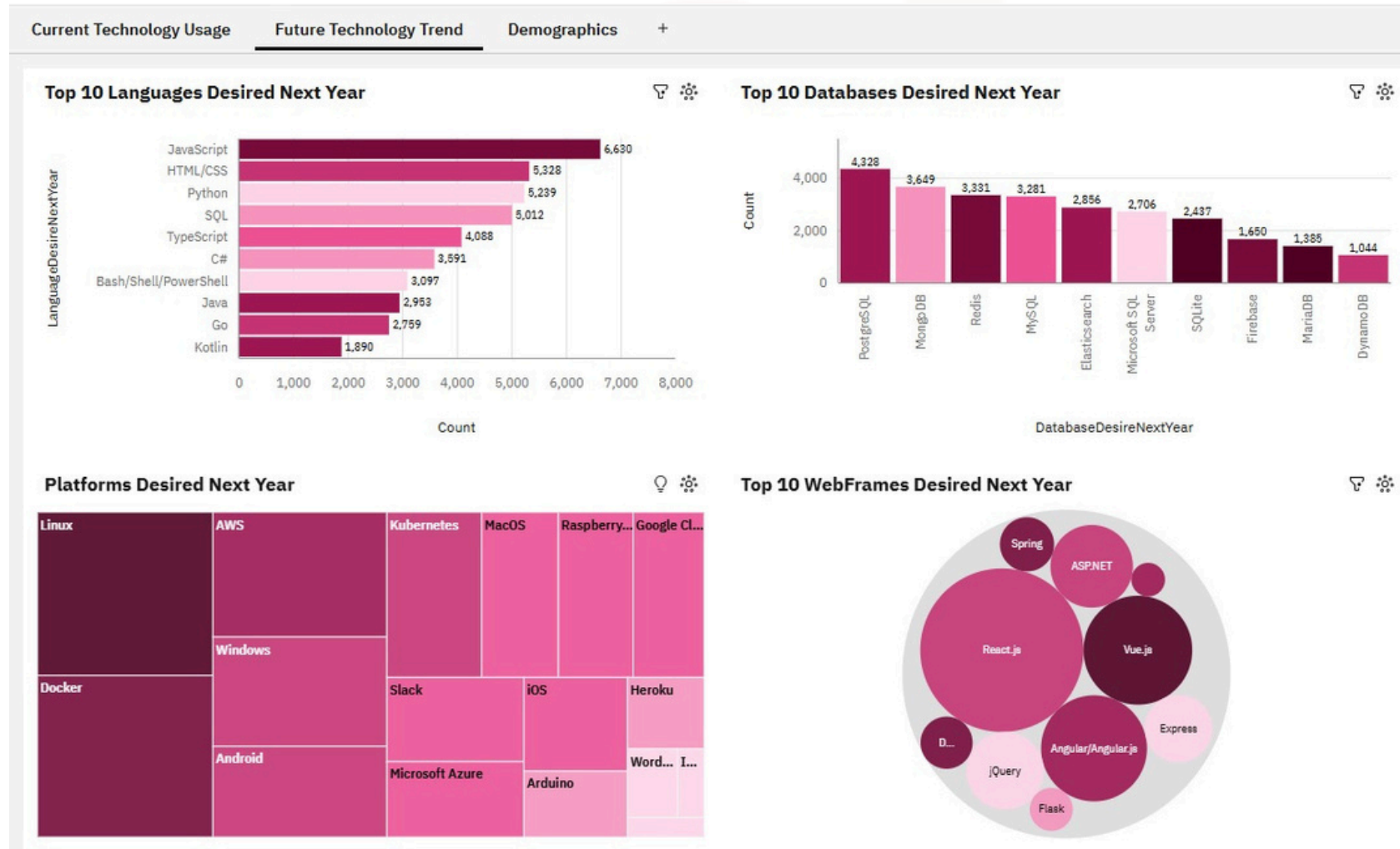


<https://github.com/Arnab-374/Peer-Graded-Assignment-Part-A---Building-a-dashboard-with-IBM-Cognos-Analytics.git>

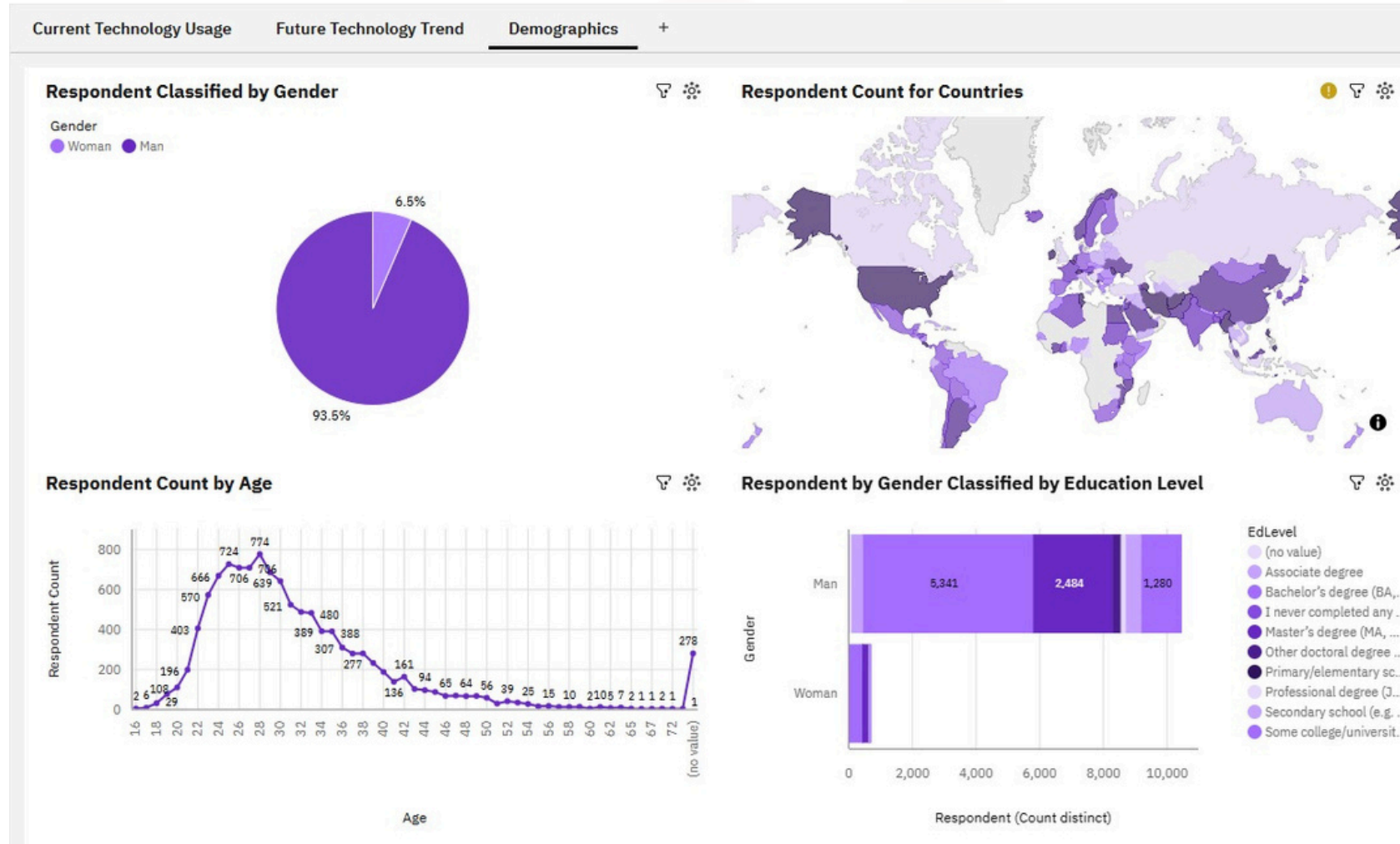
Current Technology Usage



Future Technology Trend



Demographics



DISCUSSION

Please feel free to ask any questions during the next 15 mins.

OVERALL FINDINGS & IMPLICATIONS

Findings

- ~93.5% of the responders are male
- Majority of the responders i.e., 5341 male and 412 female professionals hold a bachelor's degree
- Javascript still remains the most popular language used by developers

Implications

- Linux continues to offer a much more flexible development environment
- Go and Kotlin are steadily replacing PHP and C++ as fan favorites
- Currently, only an undergrad degree is sufficient for individuals to become a developer

CONCLUSION



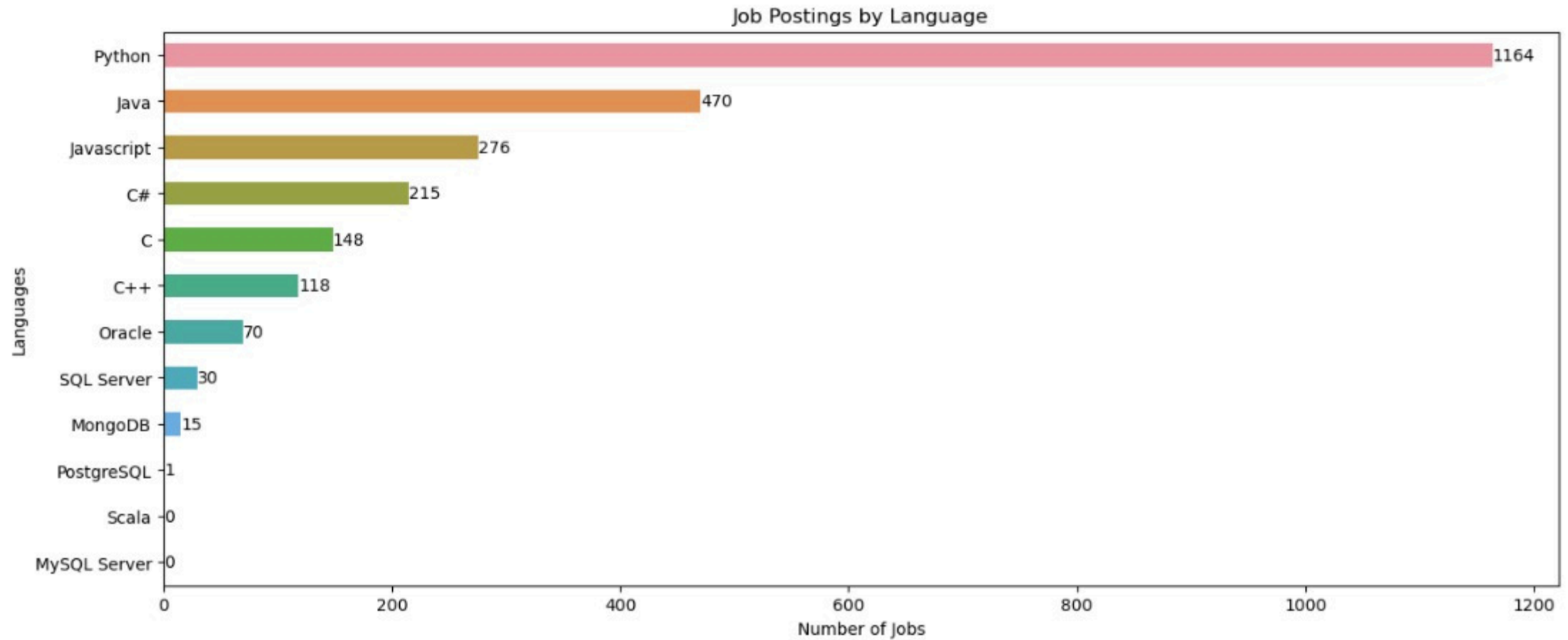
- This presentation highlights the current and future trends in terms of languages, databases and web frameworks being utilized by developers across the globe
- Only ~6.5% of the responders appear to be female
- Majority of the responders appear to be from developed countries
- Javascript remains the most widely used programming language this year and is expected to be used widely next year as well
- PostgreSQL will replace MySQL as the most widely used database while Reactjs will replace jquery

APPENDIX

Correlation between Age and Other Parameters such as Total Compensation

	Respondent	CompTotal	ConvertedComp	WorkWeekHrs	CodeRevHrs	Age
Respondent	1.000000	-0.013490	0.002181	-0.015314	0.004621	0.004041
CompTotal	-0.013490	1.000000	0.001037	0.003510	0.007063	0.006970
ConvertedComp	0.002181	0.001037	1.000000	0.021143	-0.033865	0.105386
WorkWeekHrs	-0.015314	0.003510	0.021143	1.000000	0.026517	0.036518
CodeRevHrs	0.004621	0.007063	-0.033865	0.026517	1.000000	-0.020469
Age	0.004041	0.006970	0.105386	0.036518	-0.020469	1.000000

JOB POSTINGS



POPULAR LANGUAGES

Average Salary by Language

