



Technology Today and Tomorrow

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OUTLINE



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EXECUTIVE SUMMARY



- Present use of technology
 - Computer Languages
 - Databases
 - Platforms
 - Web Frames
- Future use of Technology
 - Computer Languages
 - Databases
 - Platforms
 - Web Frames
- Technology and People
- Technology and Gender

INTRODUCTION



- This study sheds light on trending programming languages among developers.
- What are the preferred languages now?
- Will these preferences change next year?
- Is there a gender gap among developers?
- AUDIENCE FOR THIS PRESENTATION
 - IT Professionals.
 - IT Students
 - Educators
 - Policy Makers

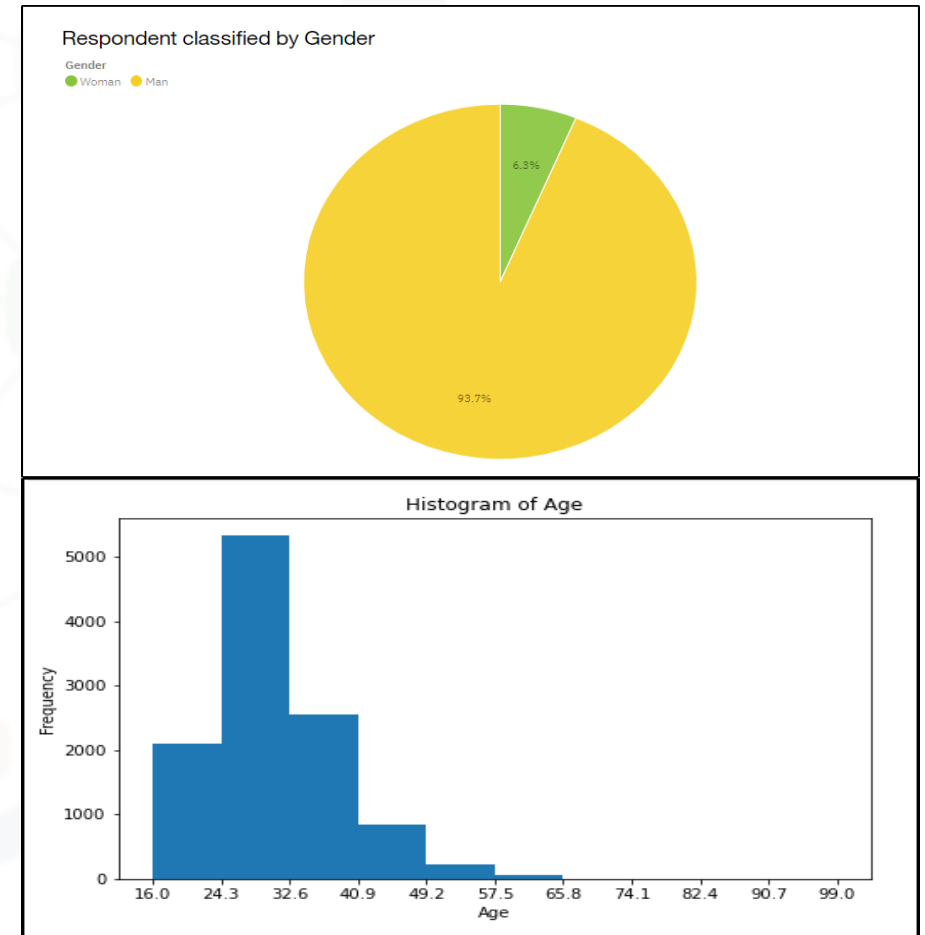
METHODOLOGY



- Data Source: A subset of the 2019 Stack Overflow Developer Survey provided by IBM
- Data Exploration
- Data Wrangling: Data subset cleaned using Python's Pandas library.
 - Cleaning Procedure: Data Imputation, Duplicates Elimination, Data Normalization
- Data Visualization: IBM Cognos.

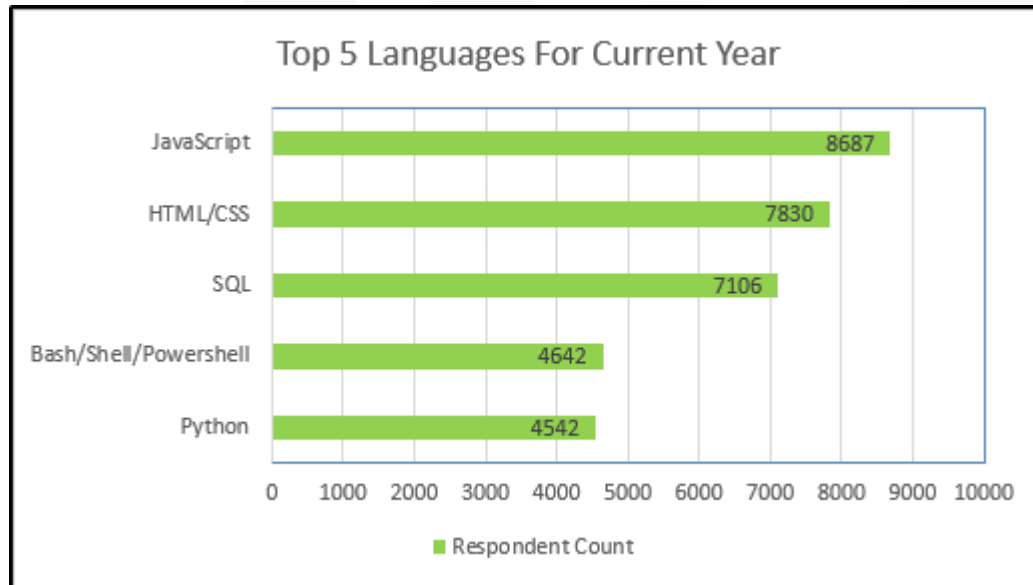
RESULTS: Gender Gap and Age

- The data subset included 11,398 respondents. 93.7% identified themselves as male vs 6.3% female.
- It is known that these figures have suffered little change since 2011. This suggests that this imbalance will not be corrected anytime soon.
- The median age of respondents is 29 years
- The majority of respondents are between 24 years and 40 years old.

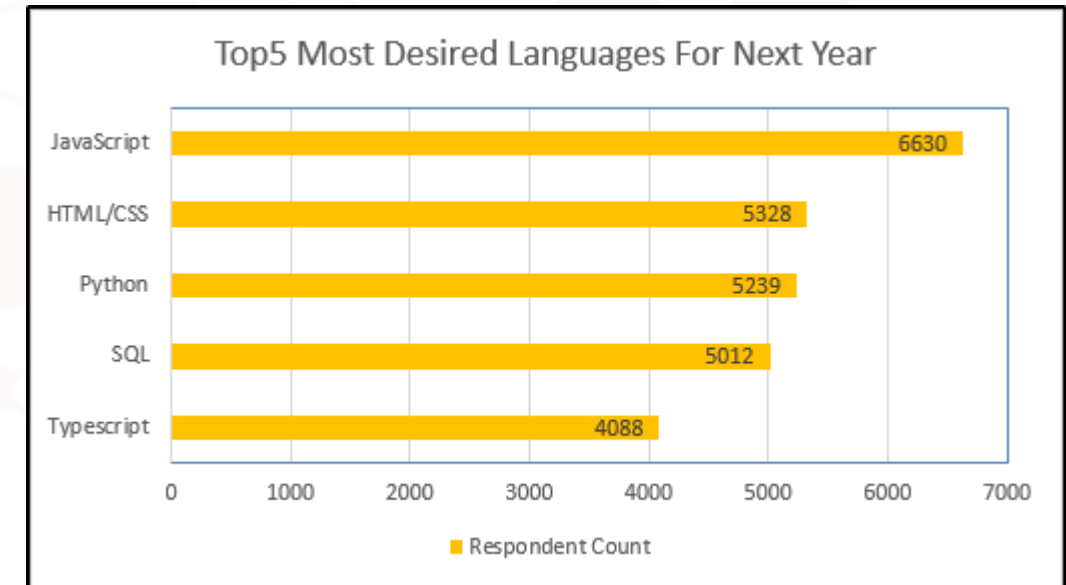


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

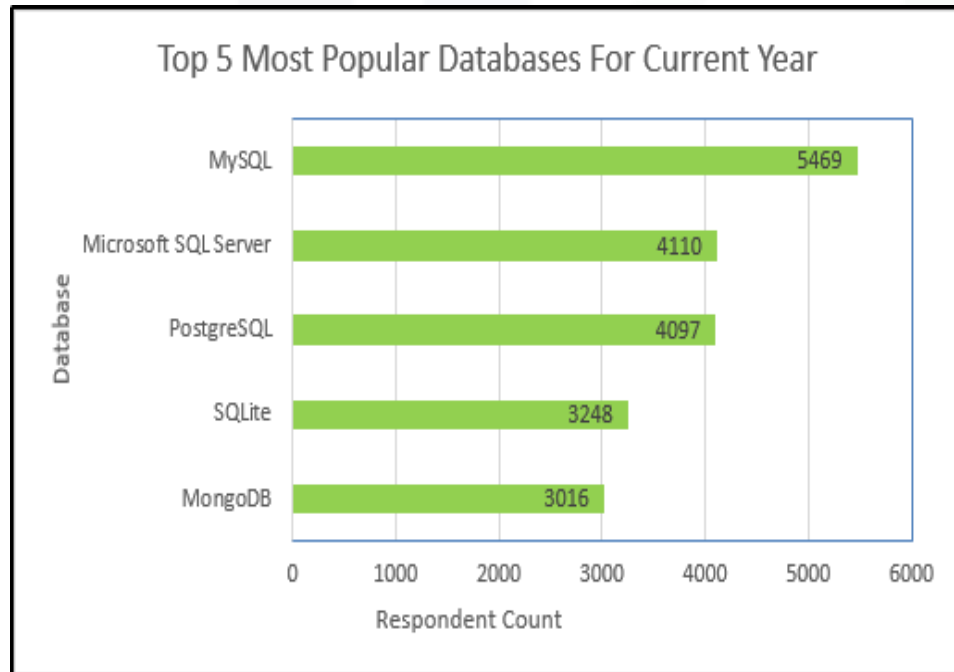
- Javascript has retained its place as the most popular programming language.
- Python is the fastest growing of the major programming languages.
- Typescript appears in the top 5 languages desired for next year for the first time.

Implications

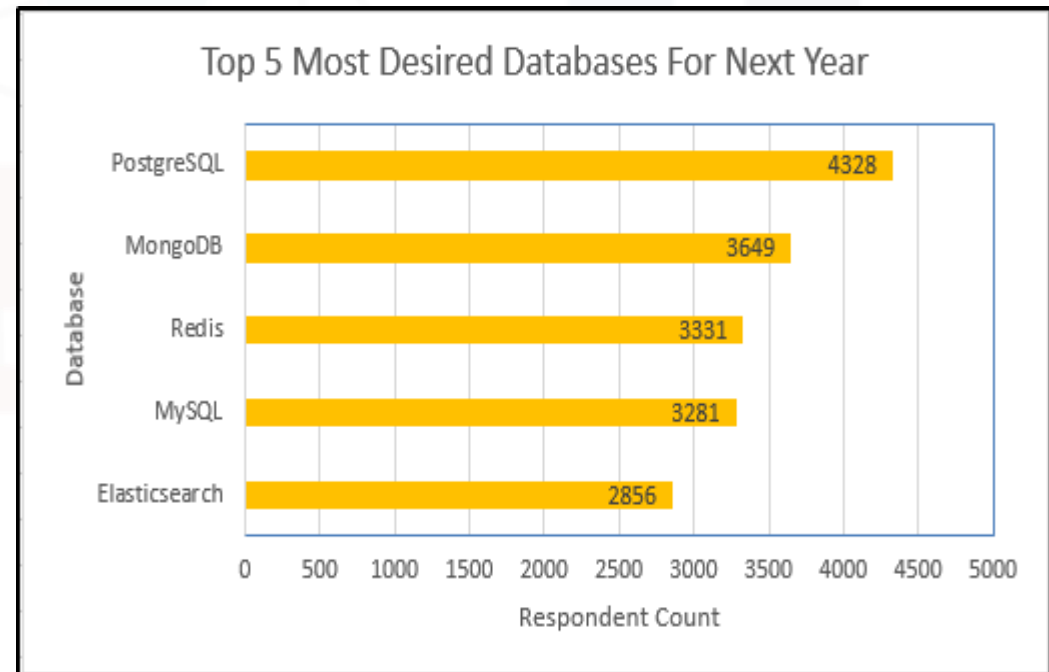
- The internet is growing as every business sees the need to have a Webpage on the internet for marketing purposes.
- There is an astronomical growth in the interest for AI, ML and Data Science.
- The fact that Typescript catches the errors during compilation to JavaScript, makes it an overwhelmingly popular extension to the JavaScript programming language. The result of this is a Webpage application incredible more robust.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL DBMS were the popular choice in 2019, with MySQL at the front.
- There is strong challenge from PostgreSQL as it positioned itself at the top of the desired database for next year.
- MongoDB coming second after PostgreSQL at the top of the desired database for next year.

Implications

- MySQL may still be the preferred choice for business perhaps due to costs
- We may be witnessing a transition from MySQL to PostgreSQL. This will have an impact on business as it is discovered that PostgreSQL offers support for more data types, like XML, arrays, ranges, etc.
- The strong showing of MonogoDB, opens the field and now we have a choice: NoSQL and SQL DBMS. This may have an impact on education as well as business.

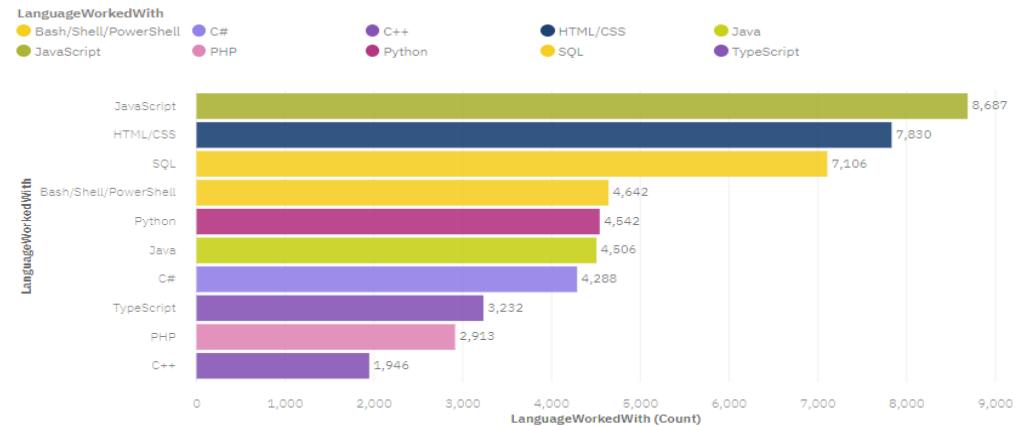
DASHBOARD

Below is the permanent link to the read-only of the Cognos Dashboard

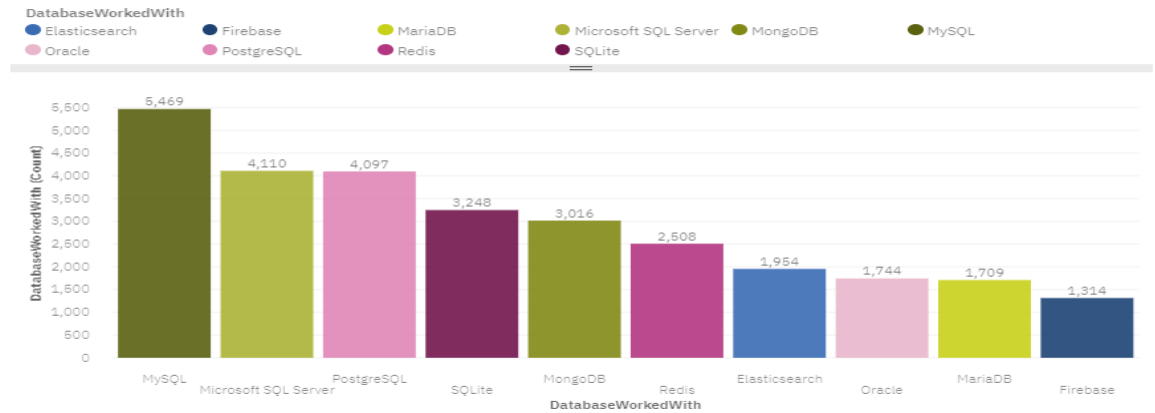
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DASHBOARD TAB 1

Top 10 LanguageWorkedWith



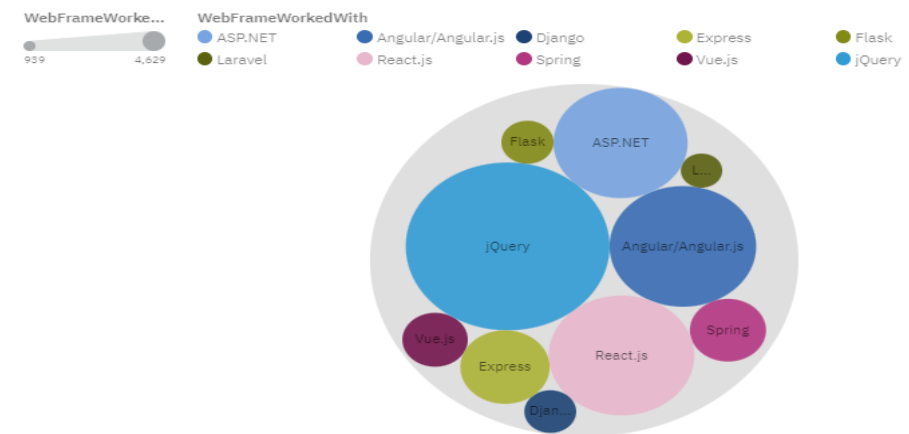
Top 10 DatabaseWorkedWith



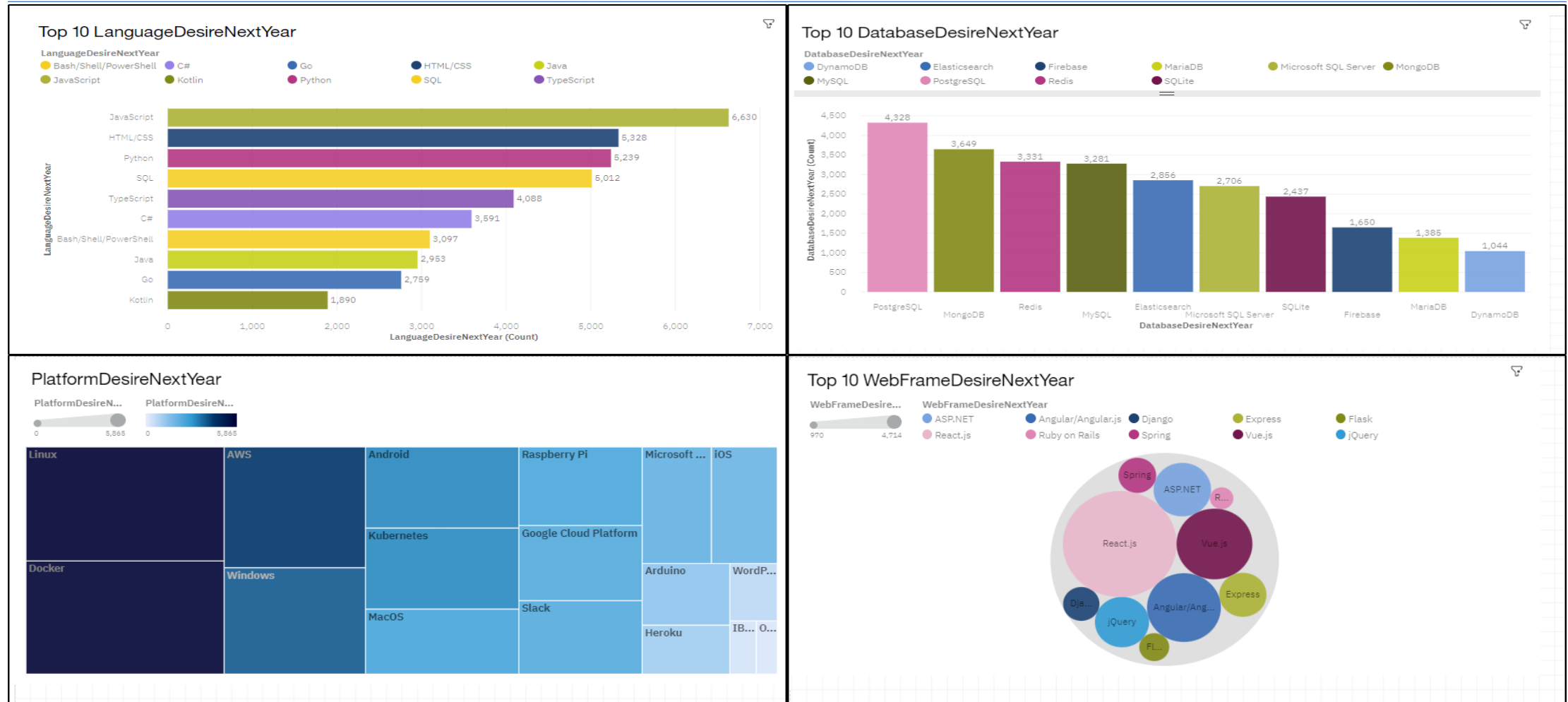
PlatformWorkedWith



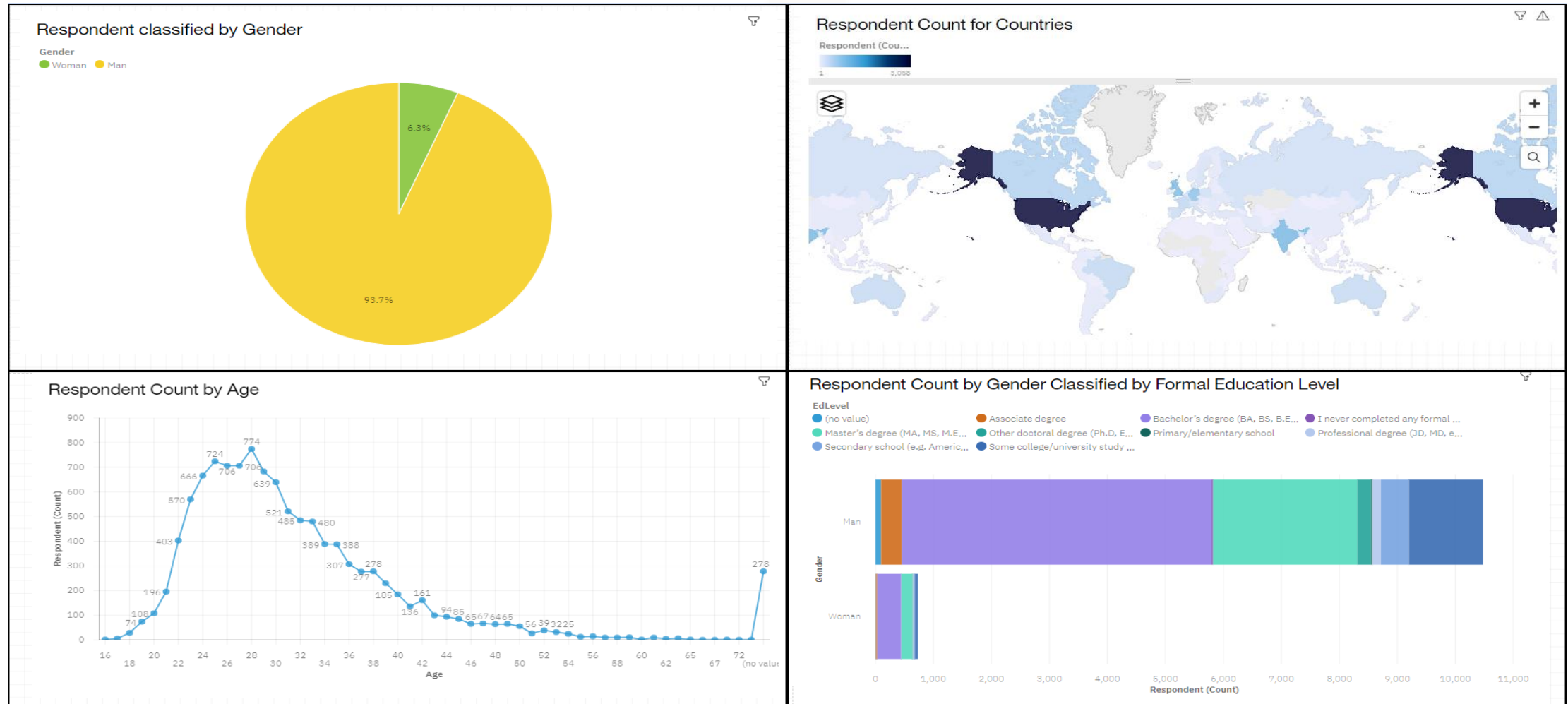
Top 10 WebFrameWorkedWith



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION – Is it better to learn lots of languages or become an expert at one?

In this presentation, when we compare current technology with next year technology, we note that new languages appear as preferred in the top 5.

New programming languages are developed to address specific issues, as such, technology will never remain constant.

This opens up the obvious question stated above.

I think that, as a developer, it would be nice to be versatile with a grasp of multiple languages so your skills never become outdated.

However, should I go on a wild goose chase trying to master every language there is?

Certainly not. If you are only learning new languages on the surface, it won't prove to be worth your time.

It is best practice that when learning a new language, you:

- Understand its guiding principles
- Know the limitations of the language
- Grasp the language's strengths
- Have a deep knowledge of its applications.

Therefore, I think it's better to choose one language and stick with it until you are comfortable with the four points mentioned above.

Anders Hejlsberg, technical fellow at Microsoft said, "Once a developer learns one language, it's relatively easy to learn another."

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS remain solid at the top of the ladder.
- Python's popularity is constantly increasing.
- There is a challenge to SQL database systems from NoSQL
- There is a big gender's gap in favor of men in the Developer's community.

Implications

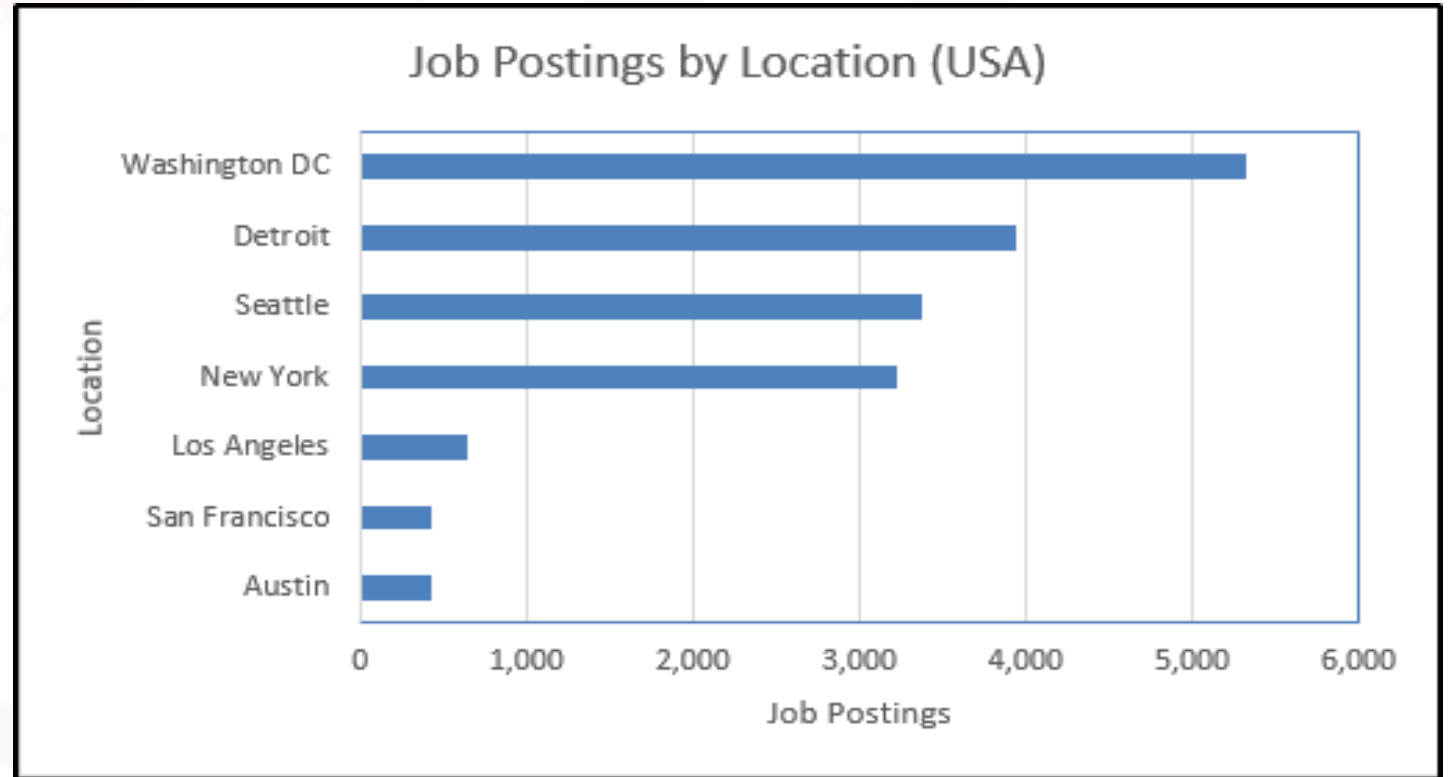
- There is a growing demand for Web applications and will remain like this.
- We may see a reduction in office building however.
- Business's inclination to base its decisions on data and computer modellings, keeps a healthy demand on python and databases
- Policy makers will need to address this big imbalance in the Developer's community.

CONCLUSION

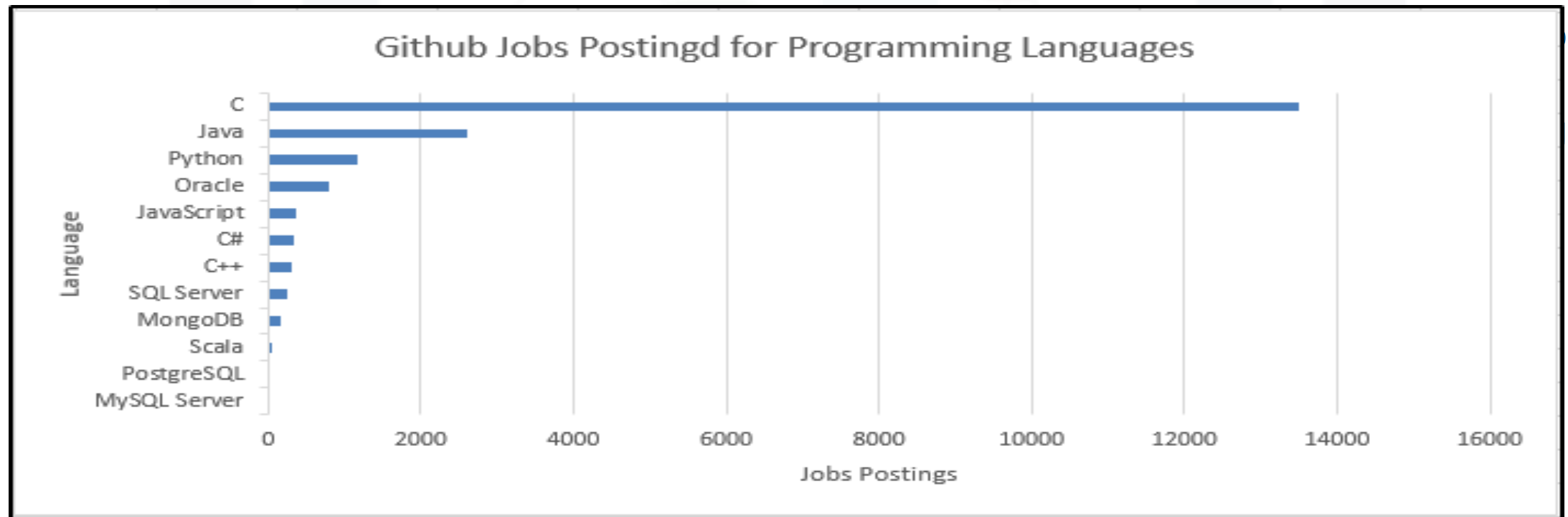


- Technology students must be prepared to learn more than one programming language.
- New technology is developed every year to address specific business's needs.
- Business's heavy reliance on digital technology will put pressure on skilled labor.
- Business investment in new technology will increase with the need for business to remain competitive.
- Policy makers need to work to address the gender inequality and the shortage of skilled labor.

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

