Technology
Survey Analysis

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EXECUTIVE SUMMARY

- We analyzed a modified subset of Stack Overflow data consisting of two different datasets based on demographics and technologies in order to present both present and future trends.

- IBM Cognos Dashboard Embedded (CDE) helped visualize the results

- Current Technologies Dashboard: JavaScript results as the most popular language, while MySQL was the most popular database. Linux and Window results as preferite platforms to work and jQuery the favorite web frame.

- Future Technology Trend: JavaScript results as the favorite language to learn

- Demographics Dashboard: The majority of the respondants were male, resident in USA and India, with an ages between 21-43. Thus, the majority of the respondents hold a master/bachelor's degree.

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METHODOLOGY

- We started from scraping the two datasets from a modified subset.

- Thus, they didn't need any type of cleaning procedure, because the purpose of the project, but only a filter option to ignore the null values in the visualization.

- Using CBE and also Google Looker, we were able to create different dashboard to better get further in the analysis.
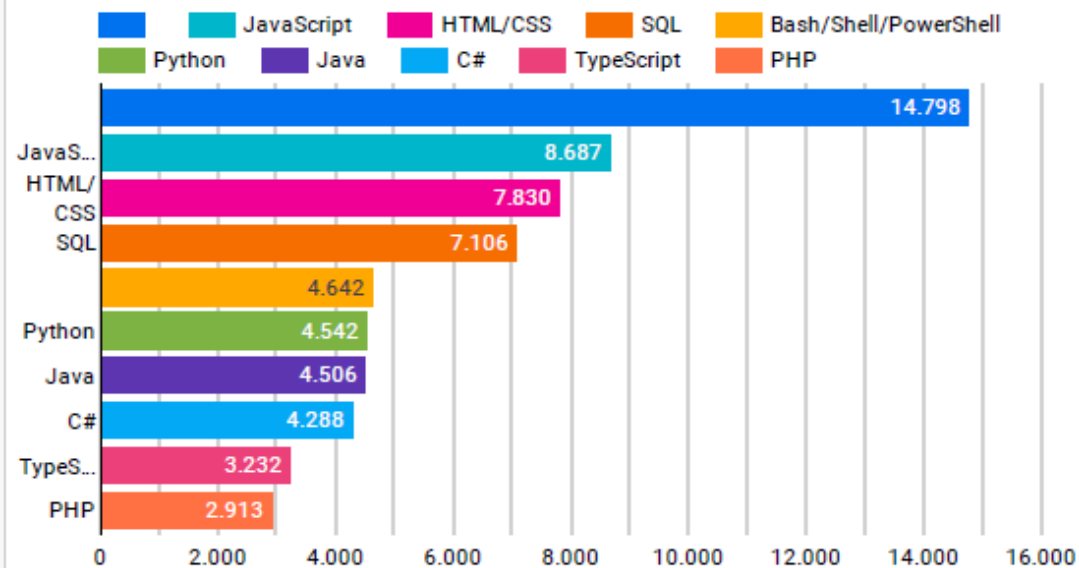
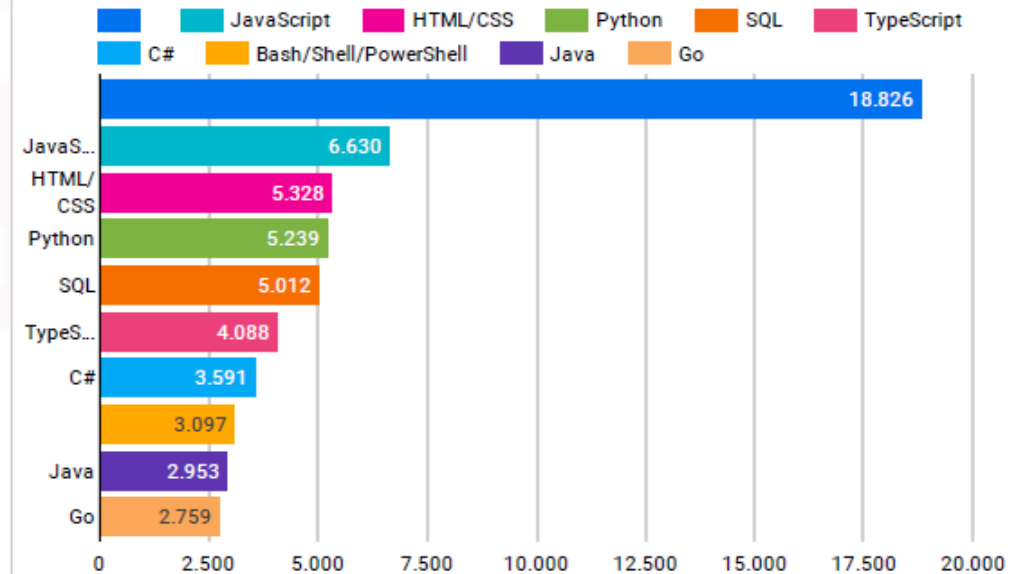# RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 10 Language Worked With

Legend: JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python, Java, C#, TypeScript, PHP

Language	Value
JavaScript	14.798
JavaS...	8.687
HTML/CSS	7.830
SQL	7.106
Bash/Shell/PowerShell	4.642
Python	4.542
Java	4.506
C#	4.288
TypeS...	3.232
PHP	2.913

Top 10 Language Desire Next Year

Legend: JavaScript, HTML/CSS, Python, SQL, TypeScript, C#, Bash/Shell/PowerShell, Java, Go

Language	Value
JavaScript	18.826
JavaS...	6.630
HTML/CSS	5.328
Python	5.239
SQL	5.012
TypeS...	4.088
C#	3.591
Bash/Shell/PowerShell	3.097
Java	2.953
Go	2.759

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

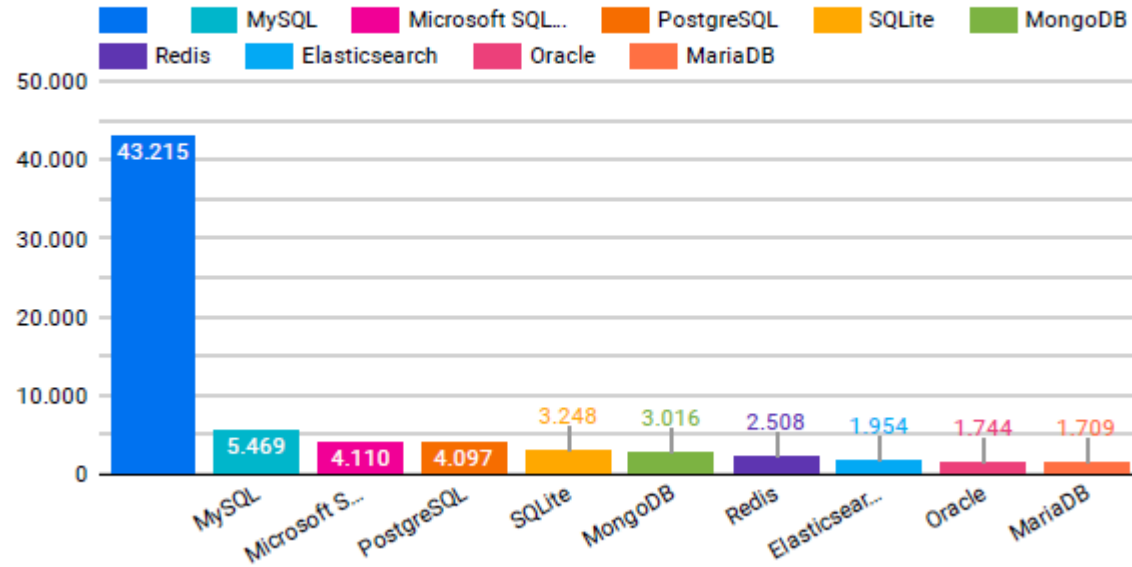| FINDINGS	IMPLICATIONS
JavaScript : the most widely used languages – 14,798 users	**JavaScript** is continuing is dominance in both development and beyond, because is both widley used.
HTML/CSS and SQL: these are also very popular programming languages – 8567 and 7830 users	**Python's** has a storng presence, because it's versatility and growing adoption (especially in AI, Machine Learning).
PHP and Bash/Shell/PowerShell: Less usage	**TypeScript's** is rising in popularity

DATABASE TRENDS

Current Year

Top 10 Database Worked With

Legend: MySQL, Microsoft SQL..., PostgreSQL, SQLite, MongoDB, Redis, Elasticsearch, Oracle, MariaDB

Database	Value
MySQL	43.215
Microsoft S...	5.469
PostgreSQL	4.110
SQLite	4.097
MongoDB	3.248
Redis	3.016
Elasticsear...	2.508
Oracle	1.954
MariaDB	1.744
(MariaDB)	1.709

Next Year

Top 10 Database Desire Next Year

Legend: PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch, Microsoft SQL Server, SQLite, Firebase, MariaDB

Database	Value
PostgreSQL	45.015
MongoDB	4.328
Redis	3.649
MySQL	3.331
Elasticsear...	3.281
Microsoft S...	2.856
SQLite	2.706
Firebase	2.437
MariaDB	1.650
(MariaDB)	1.385

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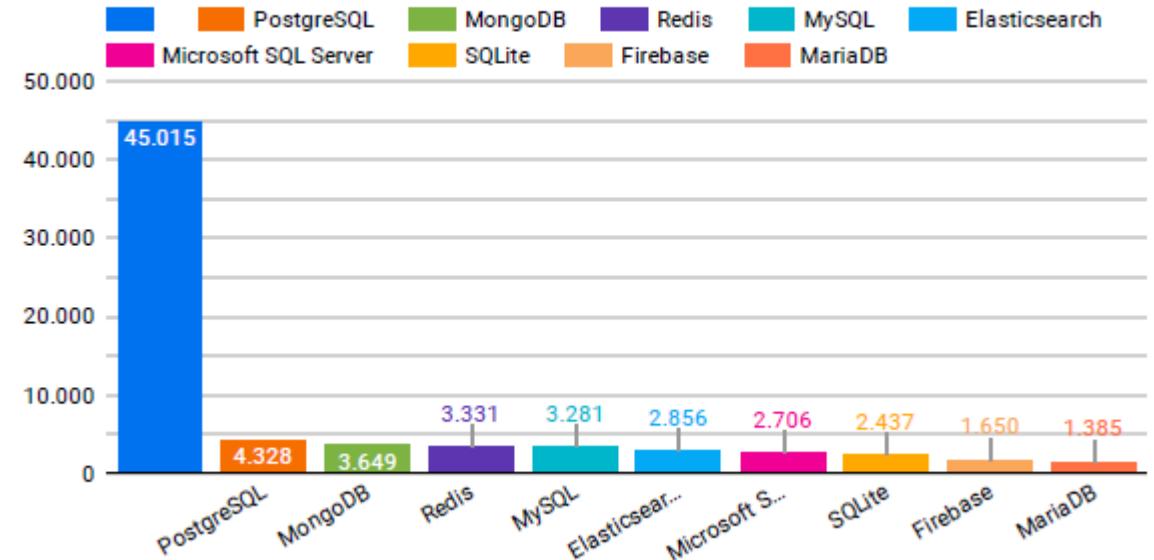
DATABASE TRENDS - FINDINGS & IMPLICATIONS

FINDINGS	IMPLICATIONS
MySQL: most used database because of its utilization in various applications.	PostgreSQL shows a rising position as the most desired databes, due to its versatility.
PostgreSQL and Microsoft SQL Server: significant	**MongoDB: rising demands, increasing the importance of NoSQL for unstructured data.**
SQLite and MongoDB: modarate	**Contiues the interest for Redis**

DASHBOARD

https://github.com/tatigi/example/tree/main

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DASHBOARD TAB 1

Top 10 Language Worked With

Legend: JavaScript, HTML/CSS, SQL, Bash/Shell/PowerShell, Python, Java, C#, TypeScript, PHP

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Top 10 Database Worked With

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Platform Worked With

Arduino, Docker, Android, MacOS, Kubernetes, Windows, iOS, WordPress, Raspberry Pi, Heroku, IBM Cloud or Watson, Slack, Google Cloud Platform, Linux, Other(s):, Microsoft Azure, AWS

Top 10 Web Frames Worked With

Legend: jQuery, Vue.js, Spring, Ruby on Rails, React.js, Other(s):, Laravel, Flask, Express, Drupal

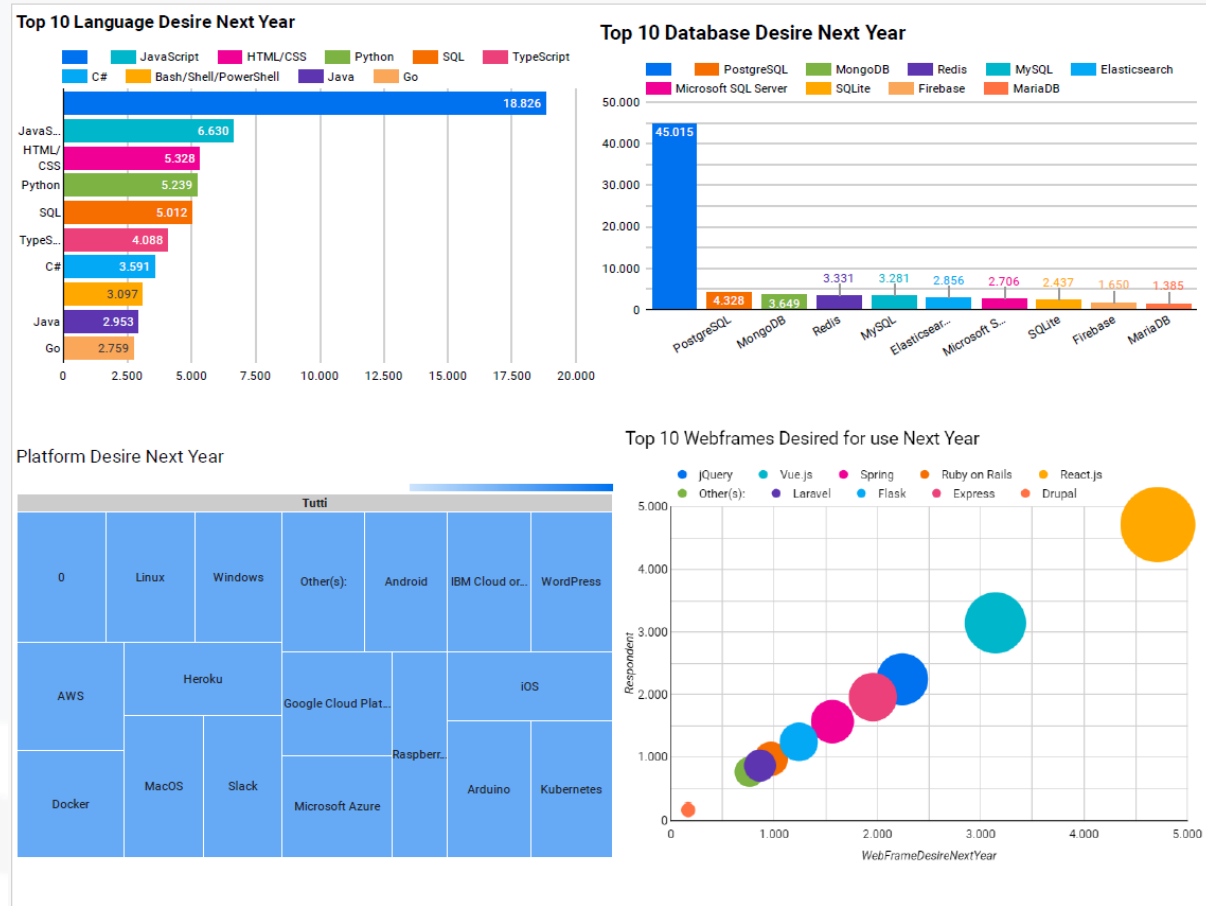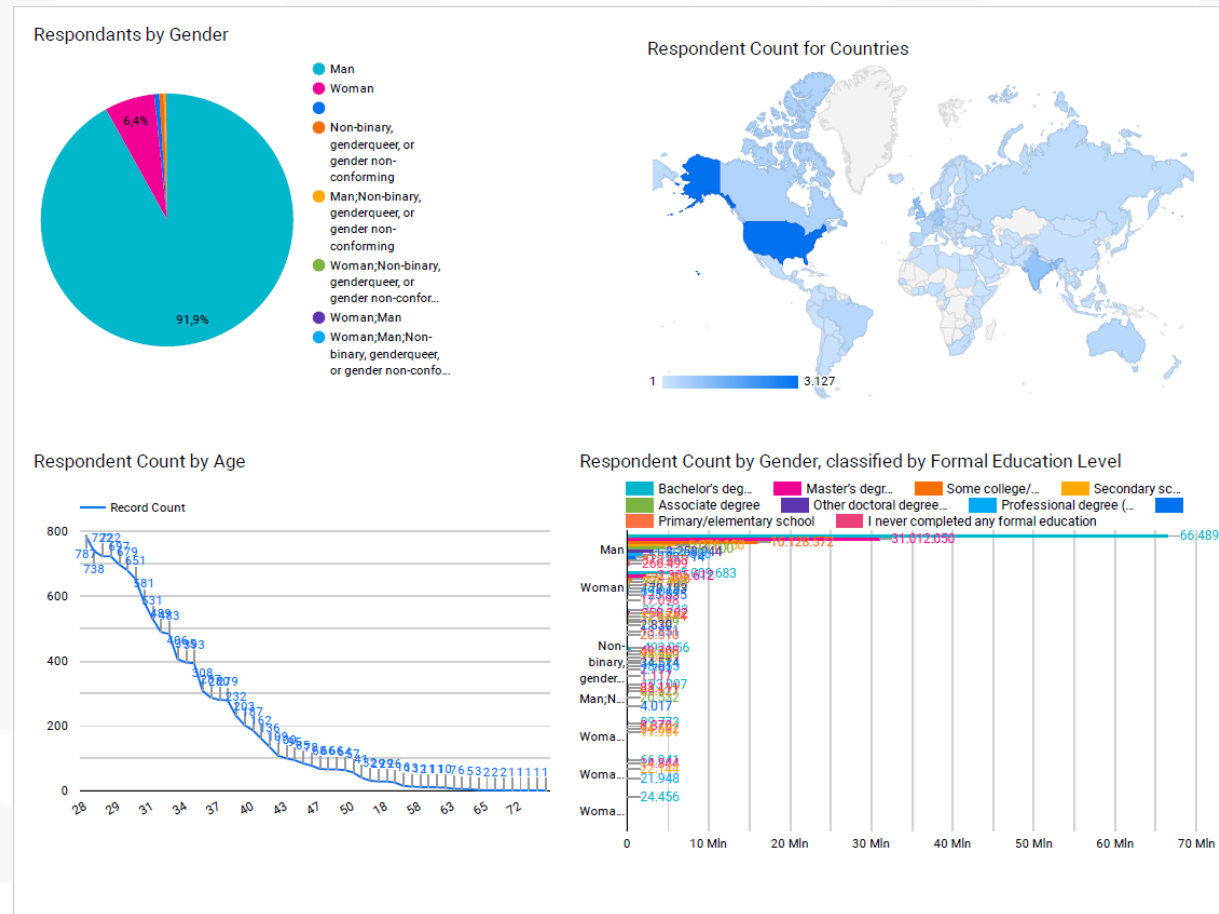Respondent vs WebFrameWorkedWith
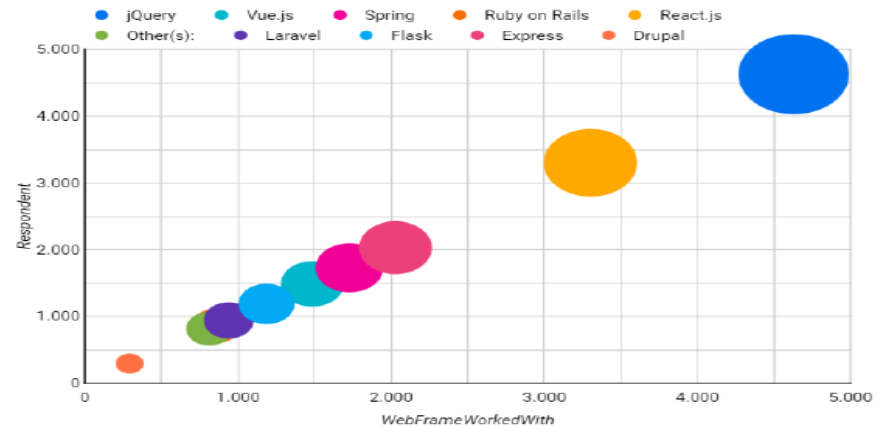
DASHBOARD TAB 2

DASHBOARD TAB 3

DISCUSSION

- The data demonstrates growing technology trends, with **JavaScript** remaining the most popular and requested language. Rising interest in **Python and TypeScript** reflects an emphasis on adaptability and rigorous typing, whereas Go's popularity indicates a trend towards performance-driven programming.

- In **databases**, the preference for **PostgreSQL** over MySQL reflects an increasing desire for feature-rich, scalable, open-source alternatives. The growing interest in **MongoDB** highlights the necessity of NoSQL databases for managing unstructured data. Overall, developers are flocking towards current, scalable technologies, emphasising the importance of adaptability in order to remain competitive.

OVERALL FINDINGS & IMPLICATIONS

FINDINGS	IMPLICATIONS
JavaScript remain most widely used and desired	Developers and organizations should prioritize learning **JavaScript** and **Python** to stay relevant.
PostgreSQL is surpassing MySQL in future demand	Adopting **TypeScript** can enhance code reliability in JavaScript ecosystems
Pythona dn TypeScript are gaining a shift toward versatility and strong typing	Shifting to **PostgreSQL** can provide advanced features and scalability for modern applications.

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CONCLUSION

- JavaScript continues to dominate as the most essential programming language for developers.

- The rising interest in Python and TypeScript signals a trend towards versatile and strongly-typed languages.

- PostgreSQL is becoming the preferred database, reflecting a shift towards scalable, feature-rich open-source solutions.

- To remain competitive, developers should focus on modern technologies like Go and NoSQL databases (e.g., MongoDB) that align with current industry trends.