Developer Survey Data Analysis

Thibaut LANNERS

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OUTLINE

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

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EXECUTIVE SUMMARY

- **Top Languages & Databases**

	Current Year	Next Year
Top Language	• JavaScript	• JavaScript
Top Database	• MySQL	• PostgreSQL

- **Demography**

  - The respondents are mostly young men (under 35) and have completed higher education.

INTRODUCTION

- **What are the top programming languages in demand ?**

- **What are the top database skills in demand ?**

- **Who are the respondents to the survey ?**
  - Gender
  - Country
  - Age
  - Education Level

METHODOLOGY

- **Retrieve the data from "LanguageWorkedWith" & "LanguageDesireNextYear" tables :**
  - ➤ For theses 2 tables, for each language, calculate the number of respondents who designated this language.
  - ➤ Retrieve the 10 most popular languages.

- **Retrieve the data from "DatabaseWorkedWith" & "DatabaseDesireNextYear" tables :**
  - ➤ For theses 2 tables, for each database, calculate the number of respondents who designated this database.
  - ➤ Retrieve the 10 most popular databases.

- **Retrieve the data from "master" table corresponding to "Gender", "Age", "Country" and "Education" :**
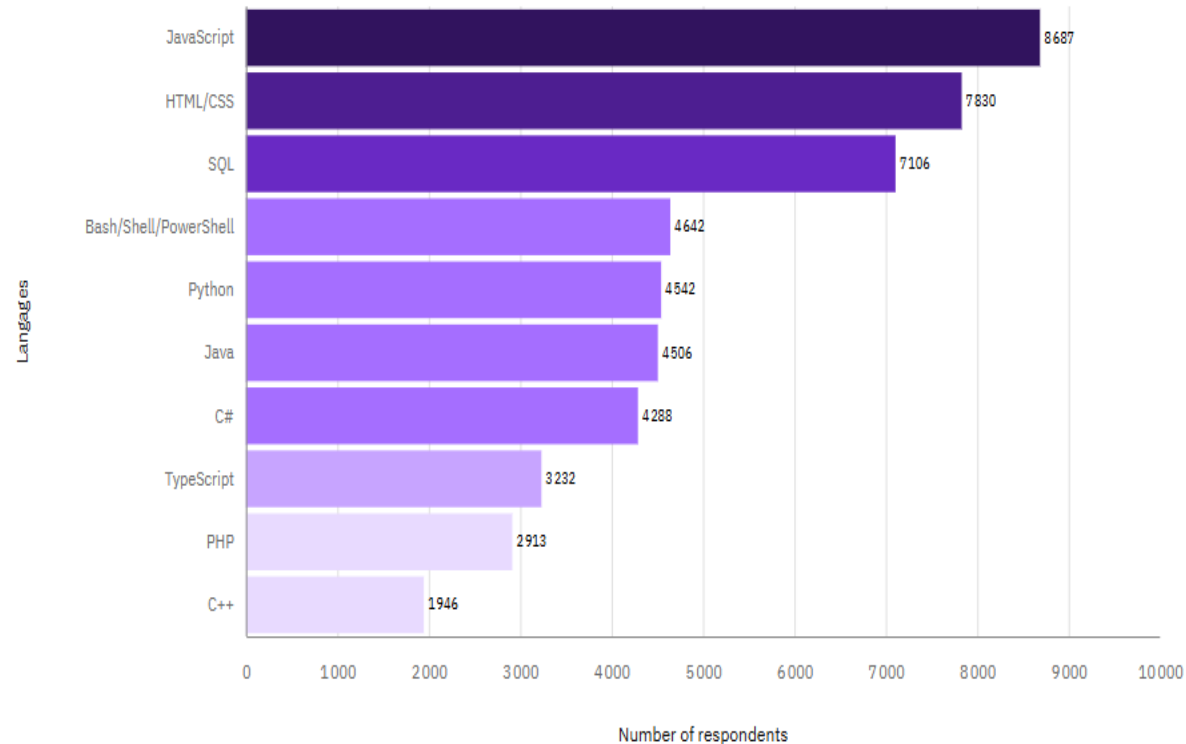 - ➤ Use descriptive statistics

RESULTS

	Current Year	Next Year
Top Languages	• JavaScript • HTML/CSS • SQL	• JavaScript • HTML/CSS • Go
Top Databases	• MySQL • SQL Server • PostgreSQL	• PostgreSQL • MongoDB • MySQL

Gender	Country	Age	Education
93 % Men	27 % USA	• 50 % : 25-35 • 25 % > 35	• 51 % : Bachelor's degree • 24 % Master's degree

PROGRAMMING LANGUAGE TRENDS

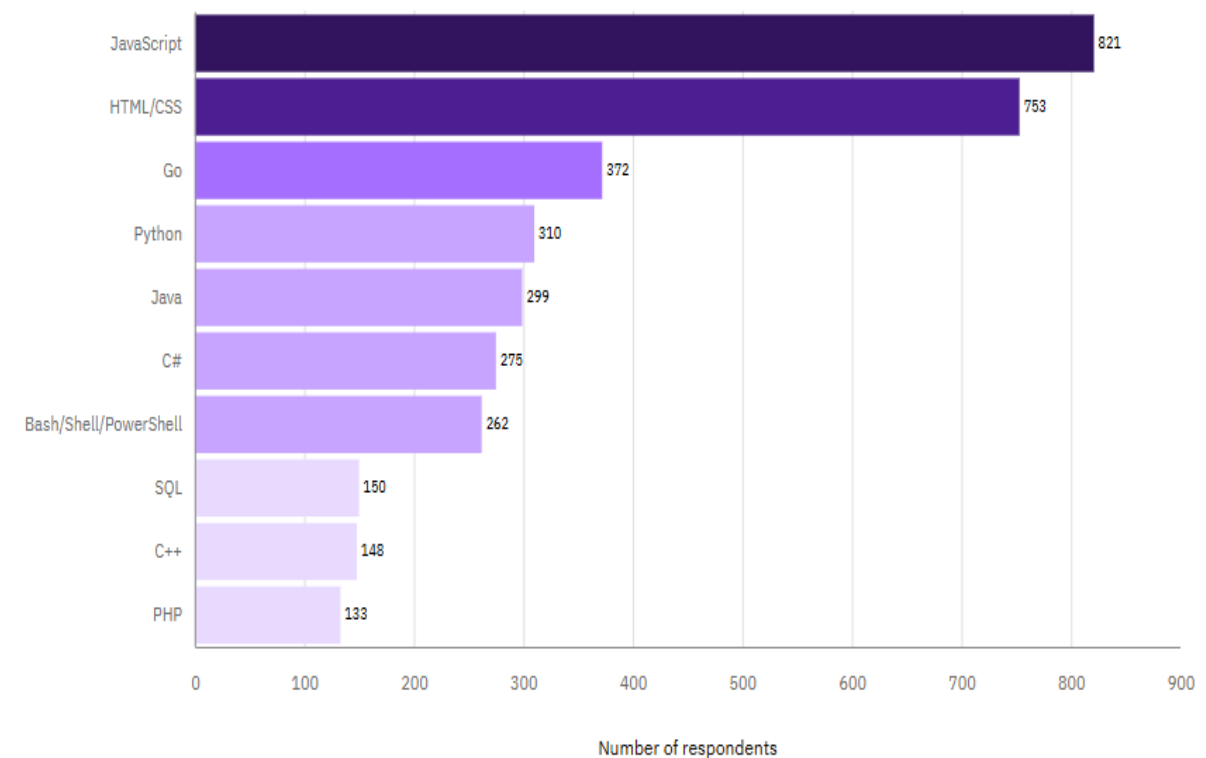## Current Year

Top 10 languages used for work by respondents

Language	Number of respondents
JavaScript	8687
HTML/CSS	7830
SQL	7106
Bash/Shell/PowerShell	4642
Python	4542
Java	4506
C#	4288
TypeScript	3232
PHP	2913
C++	1946

Next Year

Top 10 languages that respondents wish to learn next year

Language	Number of respondents
JavaScript	821
HTML/CSS	753
Go	372
Python	310
Java	299
C#	275
Bash/Shell/PowerShell	262
SQL	150
C++	148
PHP	133

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript & HTML/CSS are Top 1 in Current Year and Next Year.

- SQL is in the top 3 most used languages but it is not in the top 3 languages to learn.

- Go, appears to be in high demand for learning.
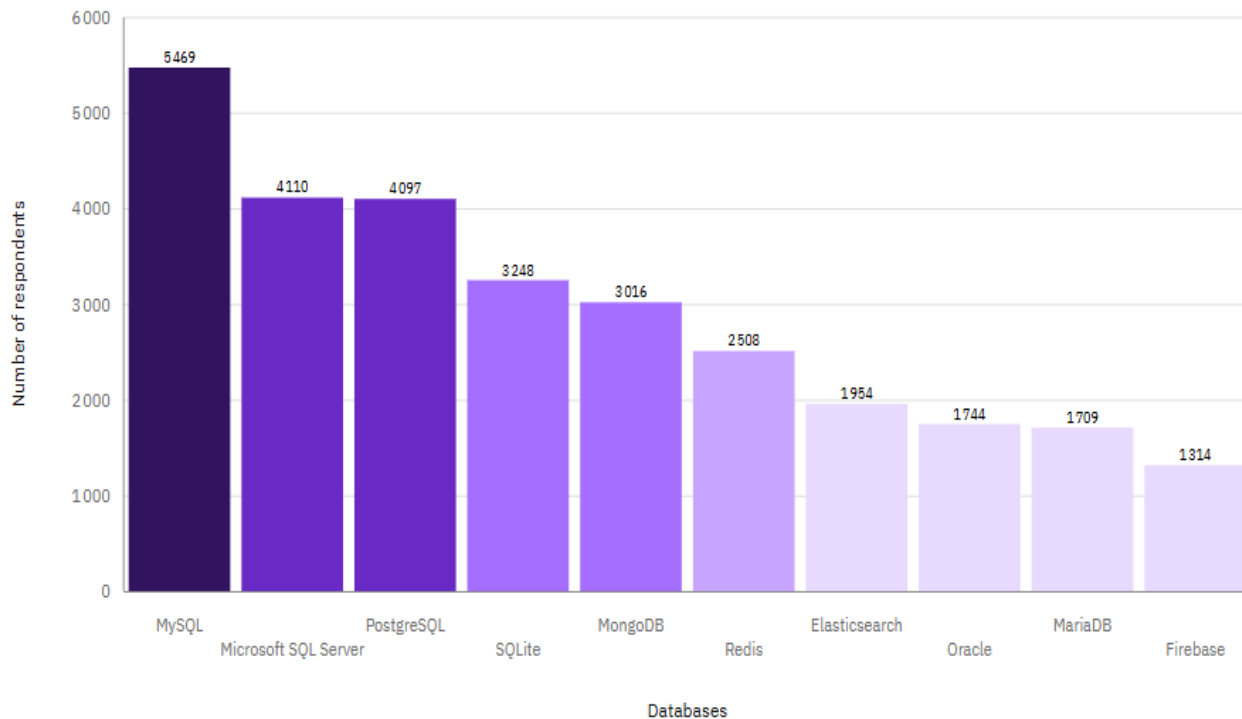
Implications

- It seems essential to learn these two languages to remain competitive in the job market.

- Although widely used, it doesn't appear to be a priority language to learn in the coming year. This may suggest that developers are already comfortable enough with SQL or that other technologies (especially NoSQL) are gaining popularity.

- Probably due to its performance, simplicity, and increasing adoption for backend development and distributed systems.
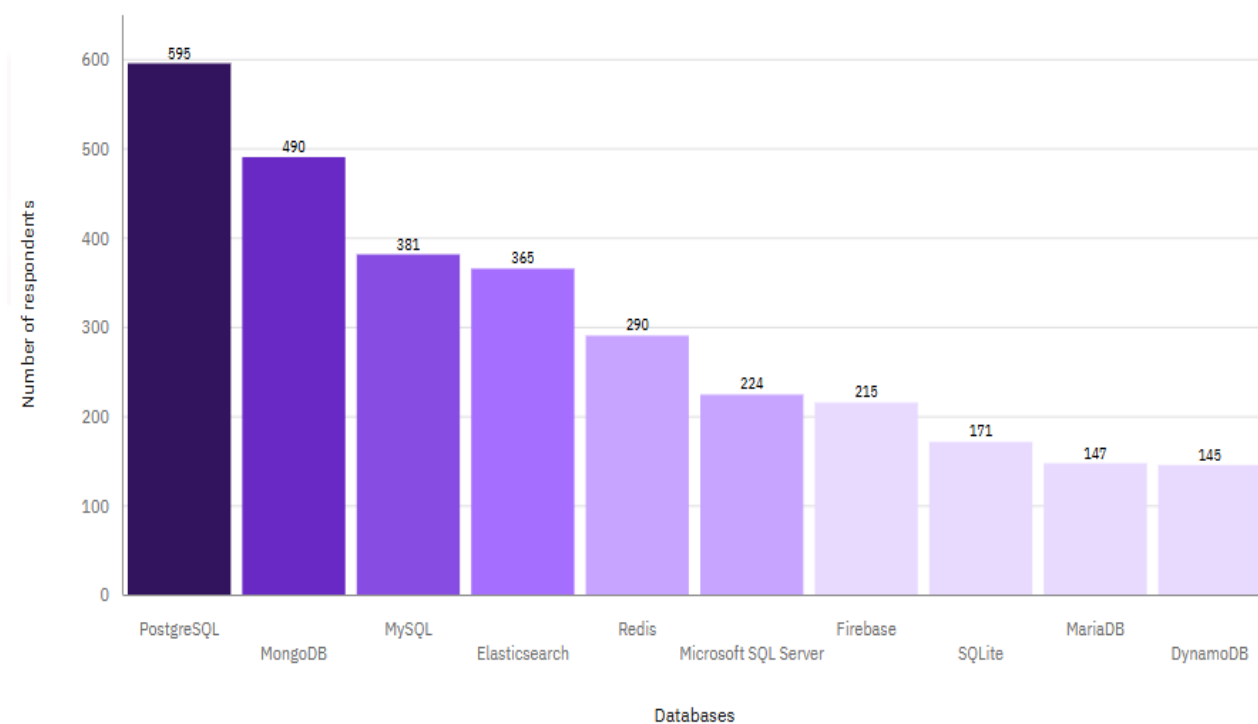
DATABASE TRENDS

Current Year

Next Year

Top 10 Databases used for work by respondents

Top 10 Databases that respondents wish to learn next year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Postgre SQL stands out in particular by being both widely used and in high demand for learning.

- MongoDB is at the top 3 of the technologies that developers would like to master in the coming year.

- MySQL maintains a strong position in both current usage and interest in learning it.

Implications

- This could be explained by its growing popularity due to its flexibility, performance, and compliance with SQL standards.

- This trend highlights a growing interest in flexible and modern database like MongoDB (NoSQL).

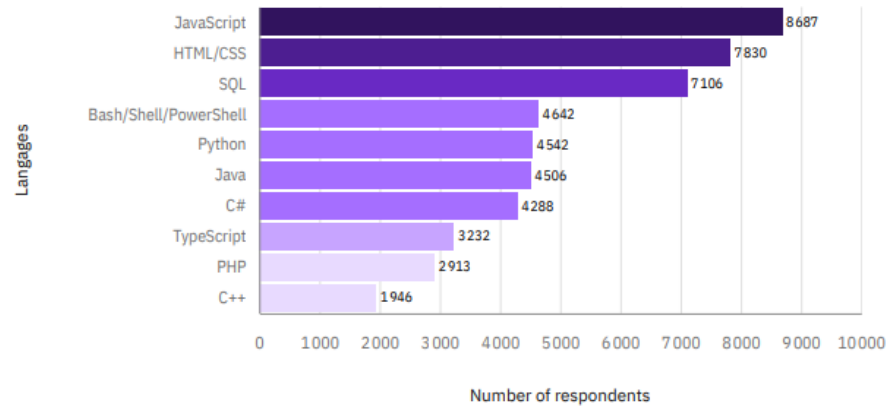- This confirms its robustness and widespread use in industry.

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DASHBOARD

[Developer_Survey_Data_Analysis/Dashboard_CognosAnalytics.pdf at main · Thibaut5599/Developer_Survey_Data_Analysis](#)
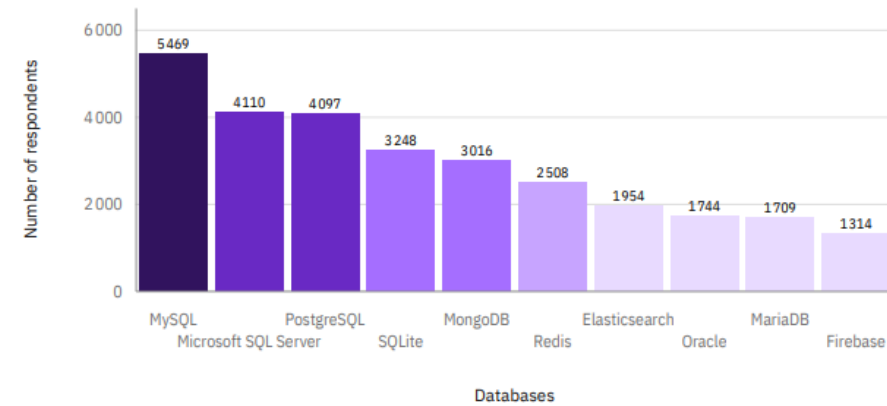
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DASHBOARD TAB 1

Current Technology Usage

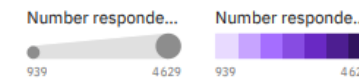### Top 10 languages used for work by respondents

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C#	4288
TypeScript	3232
PHP	2913
C++	1946

Number of respondents

Top 10 Databases used for work by respondents

Database	Number of respondents
MySQL	5469
Microsoft SQL Server	4110
PostgreSQL	4097
SQLite	3248
MongoDB	3016
Redis	2508
Elasticsearch	1954
Oracle	1744
MariaDB	1709
Firebase	1314

Databases

Platforms used for work by respondents

Number responde... 215 — 5811
Number responde... 215 — 5811

WordPress Kubernetes iOS AWS Linux Docker Windows Heroku MacOS Android Google Cloud Platform Arduino Microsoft Azure Raspberry Pi Slack
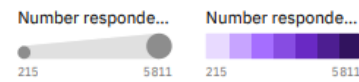
Top 10 Web Frame used for work by respondents

Number responde... 939 — 4629
Number responde... 939 — 4629

ASP.NET jQuery Angular/... V... Ex... React.js S...

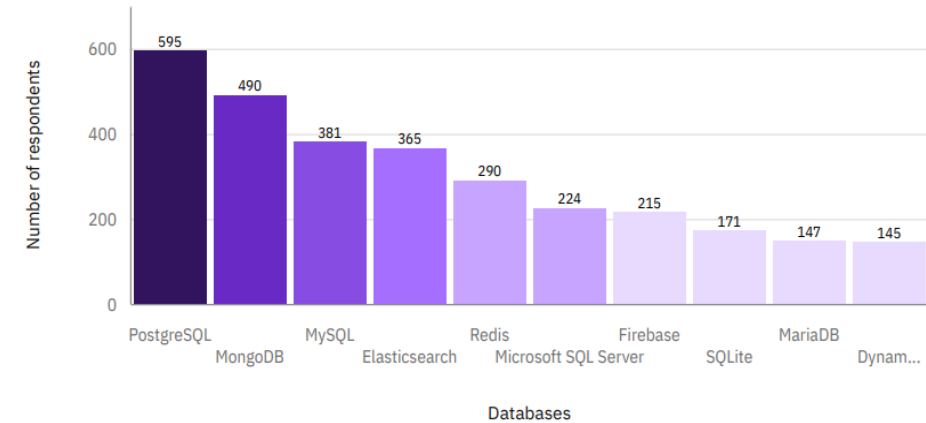**IBM Developer**

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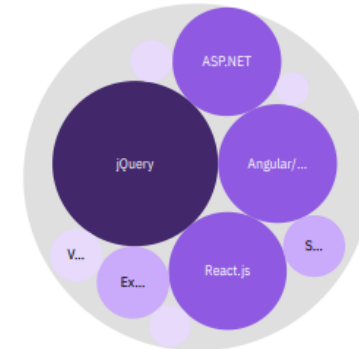
DASHBOARD TAB 2

Top 10 languages that respondents wish to learn next year

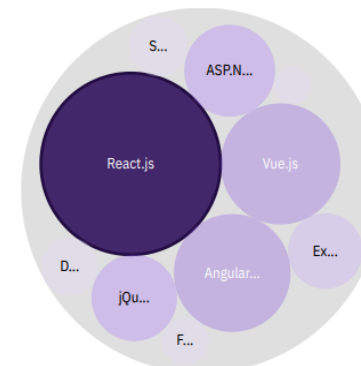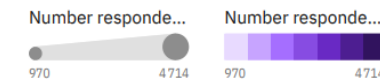| Language	Number of respondents
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HTML/CSS	753
Go	372
Python	310
Java	299
C#	275
Bash/Shell/PowerShell	262
SQL	150
C++	148
PHP	133

Languages / Number of respondents

Top 10 Databases that respondents wish to learn next year

Database	Number of respondents
PostgreSQL	595
MongoDB	490
MySQL	381
Elasticsearch	365
Redis	290
Microsoft SQL Server	224
Firebase	215
SQLite	171
MariaDB	147
Dynam...	145
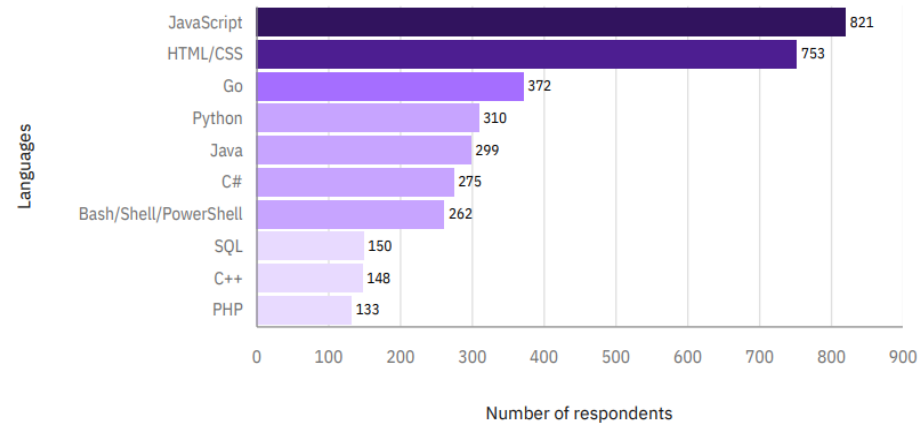
Databases

Platforms that respondents wish to learn next year

Number responde... 17 — 842
Number responde... 17 — 842

Docker

AWS

Linux

Google Cloud Platform

Kubernetes

Android

iOS

MacOS

Windows Heroku Arduino

Microsoft Azure Slack

Raspberry Pi IBM ...
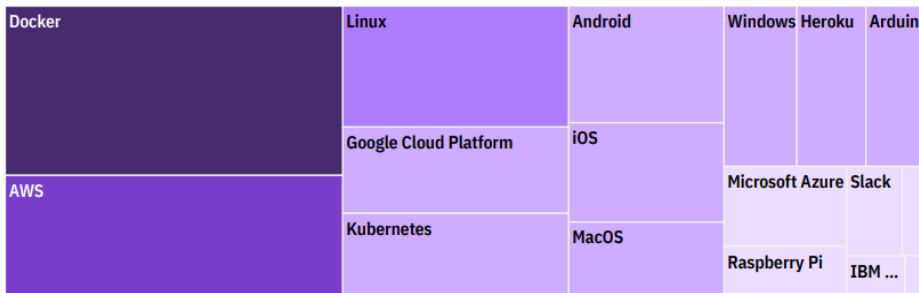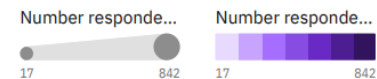
Top 10 Web Frame that respondents wish to learn next year

Number responde... 970 — 4714
Number responde... 970 — 4714

React.js

Vue.js

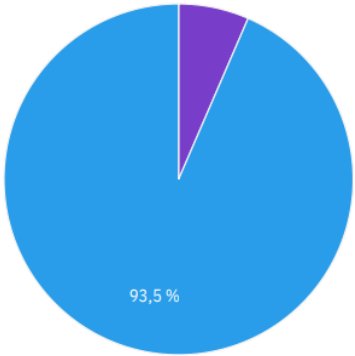S... ASP.N... Angular... Ex...
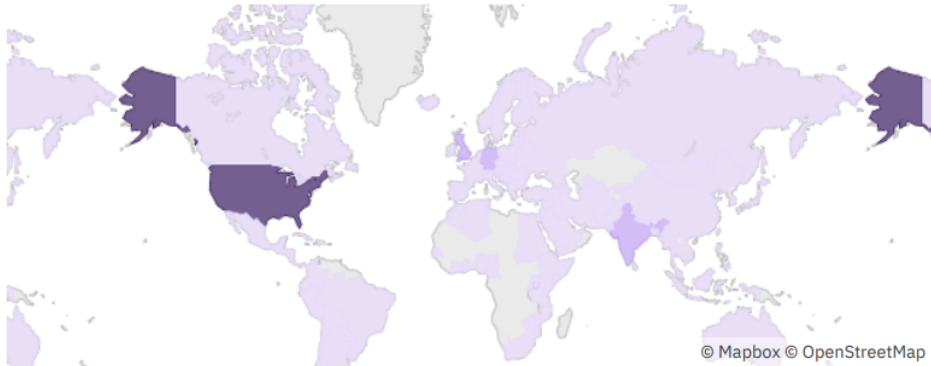
D... jQu... F...

DASHBOARD TAB 3

Demographics

Respondent classified by Gender

Gender
● Woman ● Man

93,5 %

Respondent Count for Countries

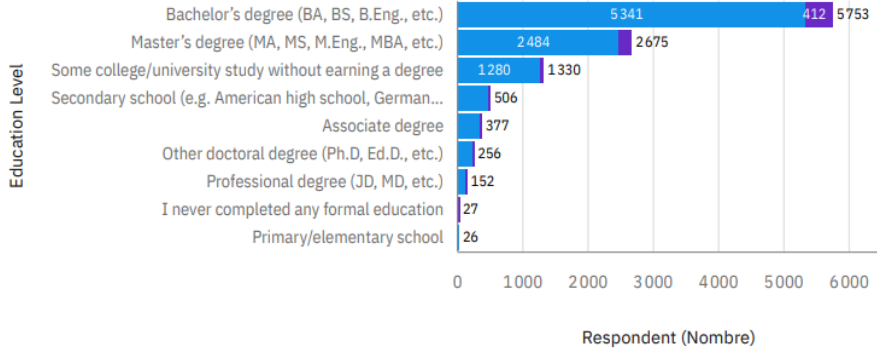Respondent (Nom...

1   3 058

© Mapbox © OpenStreetMap

Respondent Count by Age

Number of respondents

800 — 774
724 — 706 706
666 — 639
570 — 521
480
403 — 389 388
307 — 278
277
196 — 185
108 — 161
136 — 94
29 — 65 64
278
2 6 — 56 32
13 10 11 2 10 5 7 2 1 1 2 1 — 1

16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 65 67 72 (...)

Age
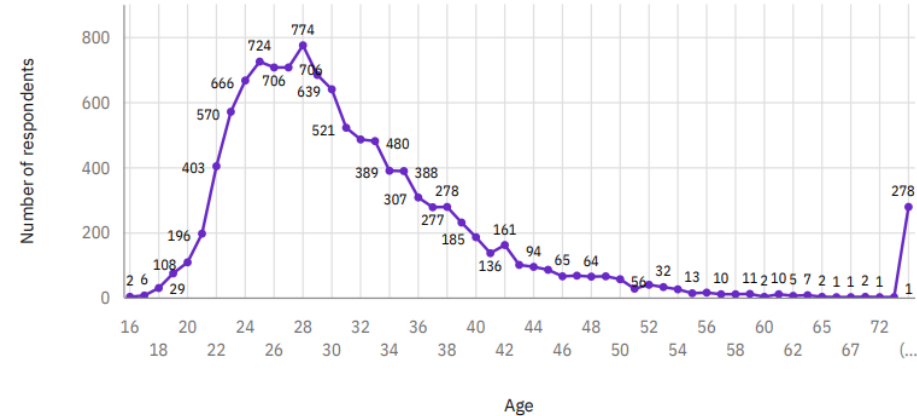
Respondent Count by Gender, classified by Formal Education Level

Gender
● Man ● Woman

Education Level

Bachelor's degree (BA, BS, B.Eng., etc.) — 5 341 | 412 | 5 753
Master's degree (MA, MS, M.Eng., MBA, etc.) — 2 484 | 2 675
Some college/university study without earning a degree — 1 280 | 1 330
Secondary school (e.g. American high school, German... — 506
Associate degree — 377
Other doctoral degree (Ph.D, Ed.D., etc.) — 256
Professional degree (JD, MD, etc.) — 152
I never completed any formal education — 27
Primary/elementary school — 26

0   1000   2000   3000   4000   5000   6000

Respondent (Nombre)

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DISCUSSION

- What skills do you think will be essential to develop in the coming years to remain competitive ?

- Have you ever been in a situation where diversity played a key role in the success of a project ?

- What tools or resources would you recommend for learning about new technologies like Go or MongoDB ?

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OVERALL FINDINGS & IMPLICATIONS

Findings

- SQL is widely used, but interest in MongoDB (NoSQL) is growing.
- JavaScript and HTML/CSS are popular, with a desire for continued learning.
- The majority of respondents are young men with high degrees.

Implications

- Professionals must master both SQL and NoSQL to meet the diverse data management needs of businesses.
- Companies must invest in ongoing training to keep their teams up to date with technological developments.
- This highlights the need for initiatives to improve diversity and attract talent from diverse backgrounds to the tech industry.

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CONCLUSION

- This study shows that classic web technologies remain crucial, but that there is growing interest in modern languages like Go, which meet the needs of an evolving infrastructure.

- Enterprises continue to rely on traditional relational databases, while developers are showing interest in newer, more flexible technologies, such as MongoDB.

- These data reveal a male-dominated tech industry, with a high proportion of young, highly educated professionals. This highlights both opportunities for improvement in gender diversity and a need for professionals to keep their skills up to date through continuing education and learning new technologies.
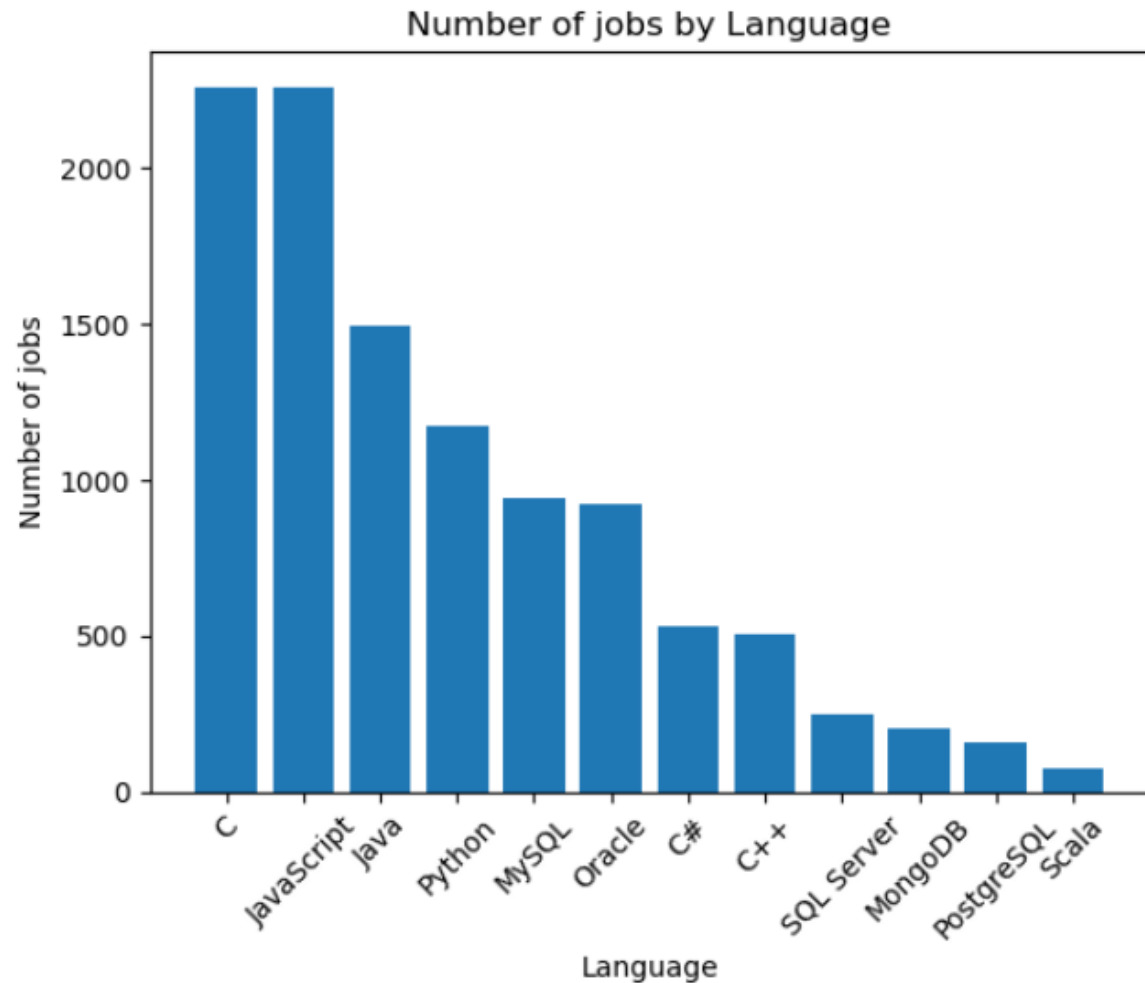
APPENDIX

- JOB POSTINGS

- POPULAR LANGUAGES

JOB POSTINGS

Number of jobs by Language

POPULAR LANGUAGES

Annual Average Salaries by Programming Language