Technology Usage

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EXECUTIVE SUMMARY

- This report presents the findings from the analysis of the Stack Overflow Developer Survey 2019 data.
- The data provides insights into the current and future trends in technology usage, as well as demographic information about the respondents.
- Key findings include the dominance of JavaScript in programming languages, the popularity of MySQL and PostgreSQL databases, and the widespread use of Linux and Docker platforms.
- Future trends suggest a continued preference for JavaScript and an increasing interest in Python, PostgreSQL, and containerization technologies.
- Demographic data reveals a majority of respondents identifying as men, with the highest number of respondents located in the United States.

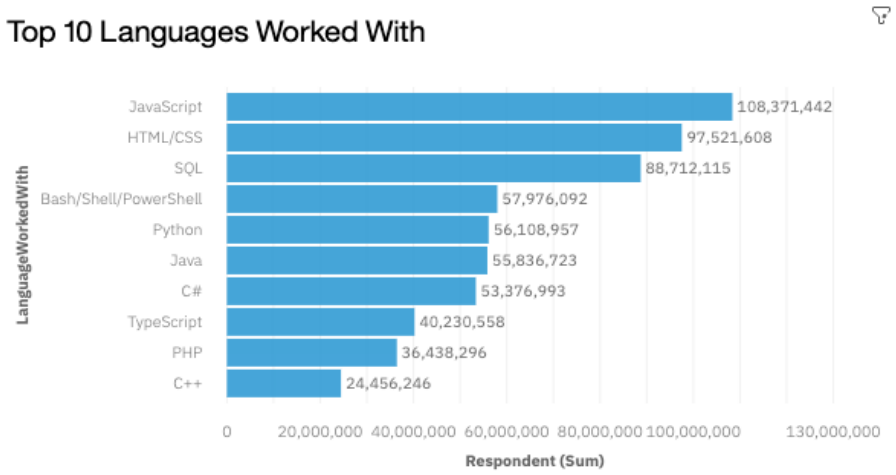
INTRODUCTION

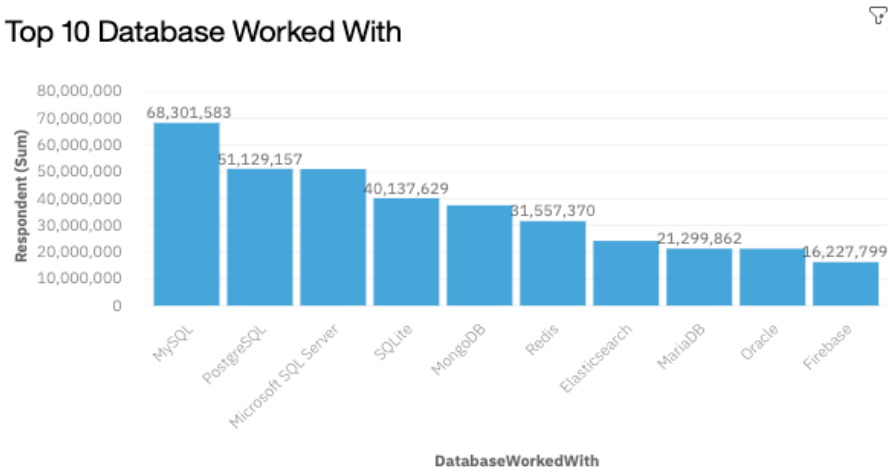
- The purpose of this report is to analyze the current and future trends in technology usage, based on data from two datasets.
- The "m5_survey_data_technologies_normalised.csv" dataset provides information on the current usage and future preferences for programming languages, databases, platforms, and web frameworks.
- The "m5_survey_data_demographics.csv" dataset provides demographic information about the respondents, including gender, country, age, and education level.Point3

METHODOLOGY

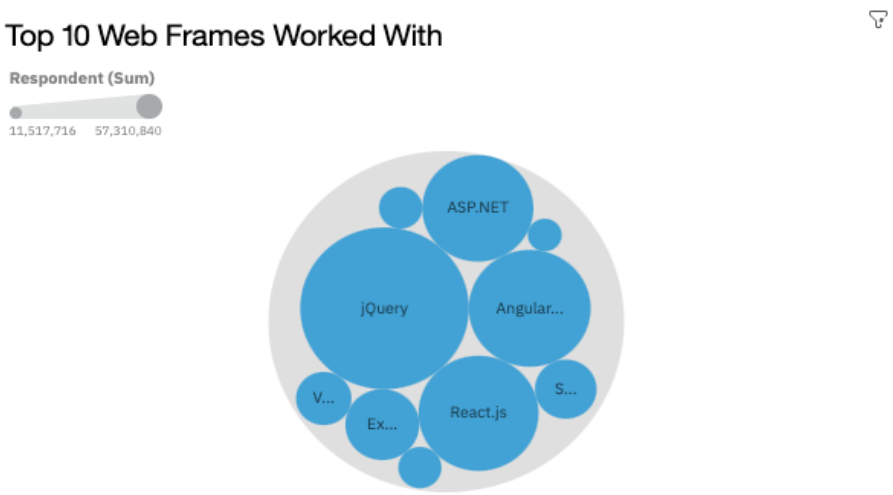
- Data Collection using APIs and web scraping
- Data Wrangling
  - Handling missing values
  - Remove Duplicates
  - Normalization
- Exploratory Data Analysis
  - Examining the distribution of the data
  - Identify outliers
  - Examining the correlations between variables
- Data Visualization

RESULTS


Top 10 Languages Worked With
JavaScript
HTML/CSS
SQL
Bash/Shell/PowerShell
Python
Java
C#
TypeScript
PHP
C++
108,371,442
97,521,608
88,712,115
57,976,092
56,108,957
55,836,723
53,376,993
40,230,558
36,438,296
24,456,246
LanguageWorkedWith
0
20,000,000
40,000,000
60,000,000
80,000,000
100,000,000
130,000,000
Respondent (Sum)

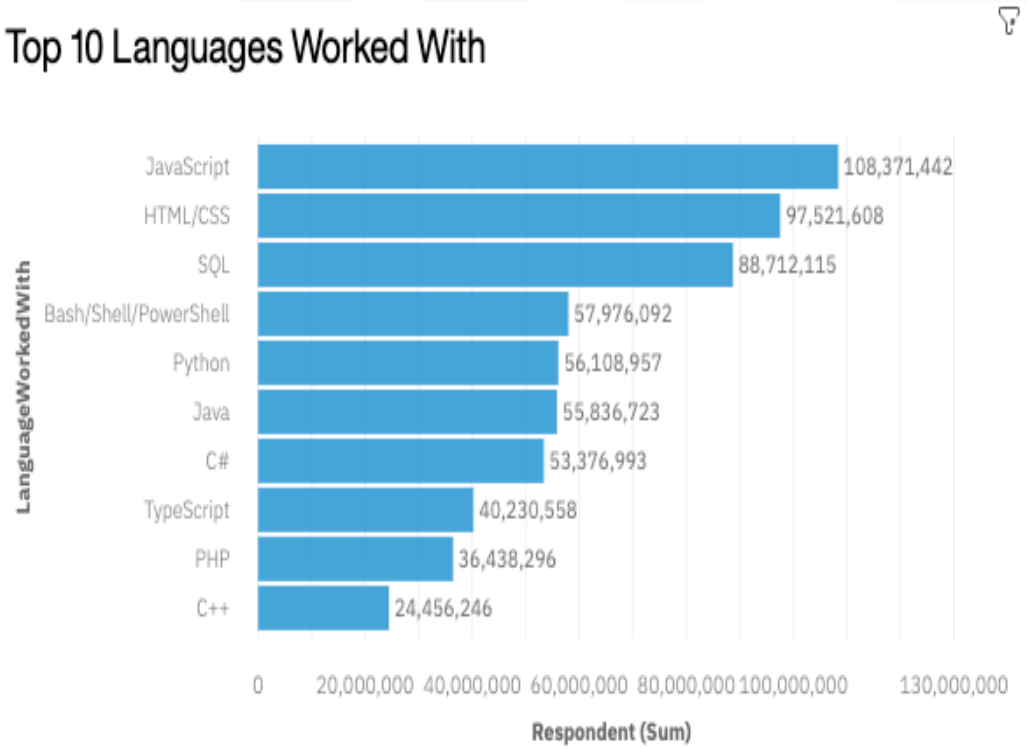

Top 10 Database Worked With
80,000,000
70,000,000
60,000,000
50,000,000
40,000,000
30,000,000
20,000,000
10,000,000
0
Respondent (Sum)
68,301,583
51,129,157
40,137,629
31,557,370
21,299,862
16,227,799
MySQL
PostgreSQL
Microsoft SQL Server
SQLite
MongoDB
Redis
Elasticsearch
MariaDB
Oracle
Firebase
DatabaseWorkedWith

Platform Worked With
Respondent (Sum)
2,532,293
72,858,619
AWS
Linux
iOS
Windows
Docker
Android
Heroku
Google Cloud Platform
Microsoft Azure
Arduino
Raspberry Pi
Slack
MacOS
Kubernetes
WordPress

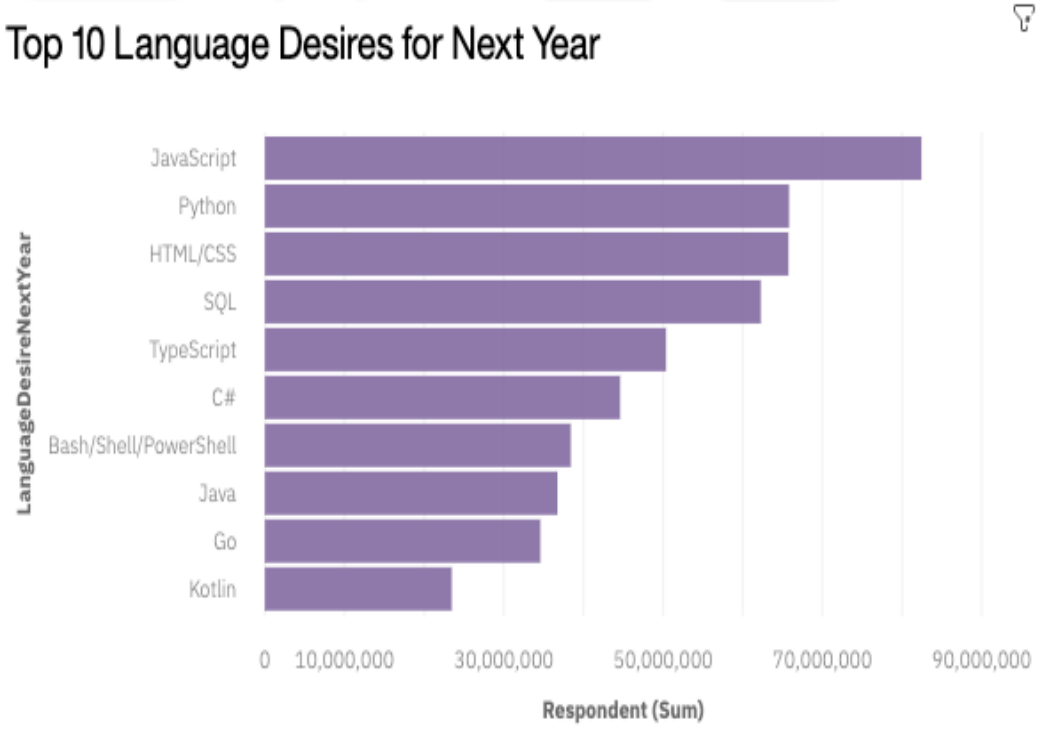

Top 10 Web Frames Worked With
Respondent (Sum)
11,517,716
57,310,840
ASP.NET
jQuery
Angular...
V...
Ex...
React.js
S...

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

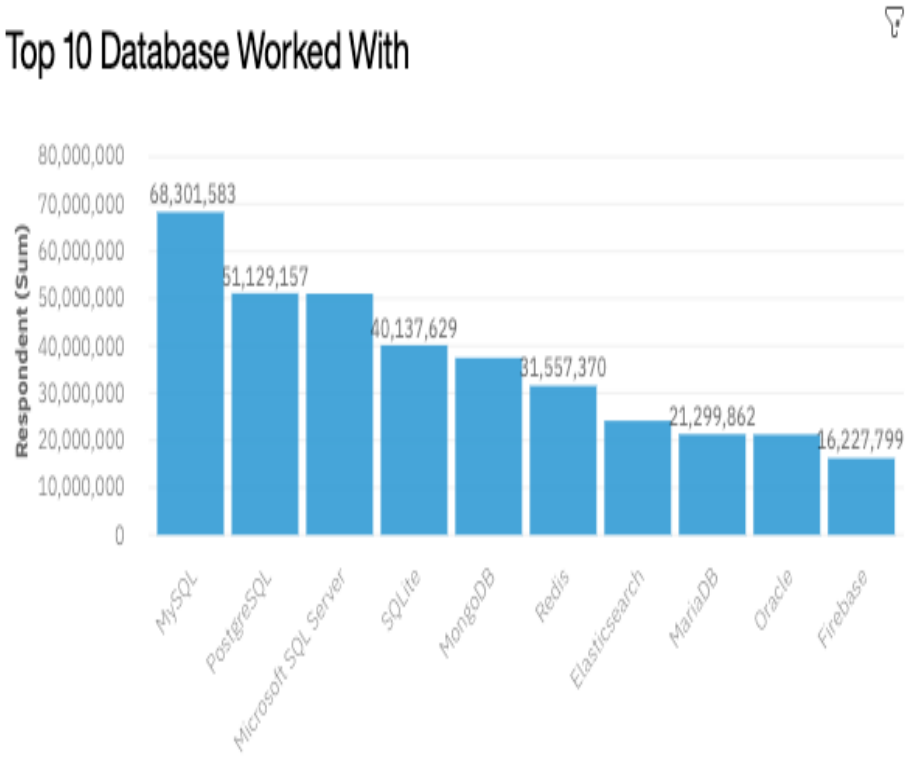
- JavaScript is currently the most commonly used programing language followed HTML/CSS
- JavaScript remains the most desired programming language for the next year followed by Python
- TypeScript shows a significant demand in the upcoming year

Implications

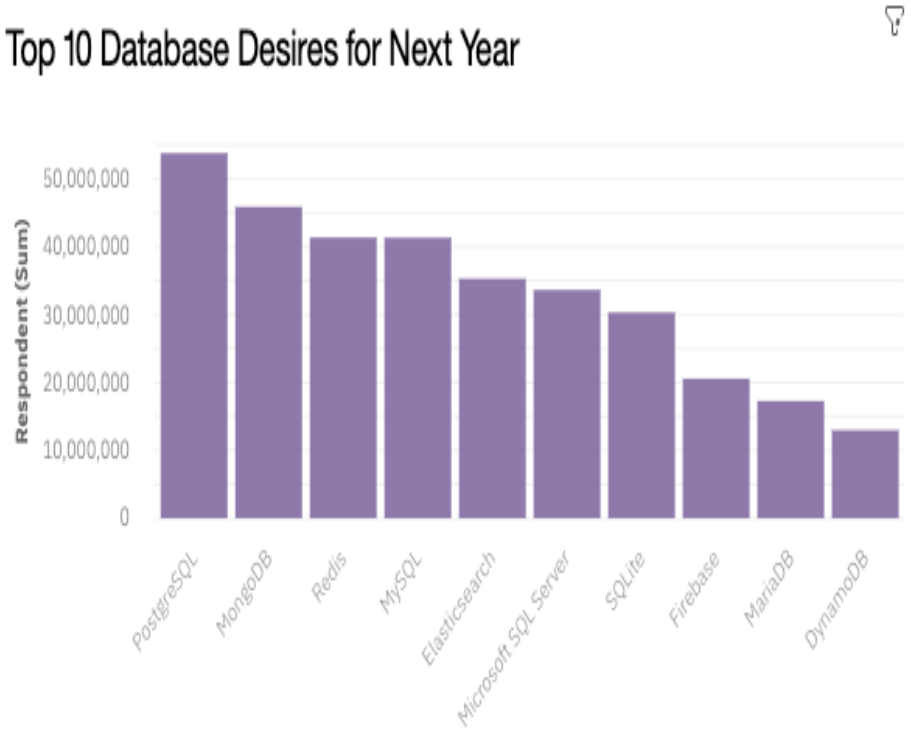
- A strong focus on web developments among the respondents.
- Data Science is becoming more popular in next year
- Trend toward more robust tools for large-scale JavaScript development.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database. This is followed by Microsoft SQL Server and PostgreSQL.
- PostgreSQL is the most desired database for the next year, followed by MongoDB and Redis.

Implications

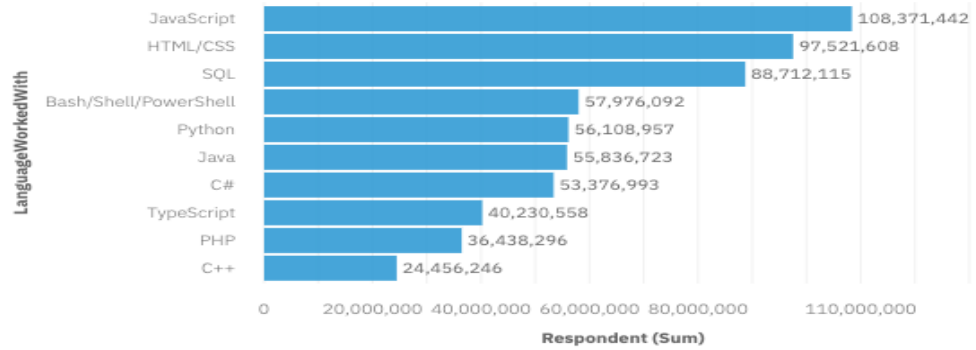
- The popularity of MySQL and PostgreSQL suggests that open-source databases are widely adopted in the industry
- This suggests a growing interest in a mix of relational (PostgreSQL) and NoSQL (MongoDB, Redis) databases

DASHBOARD

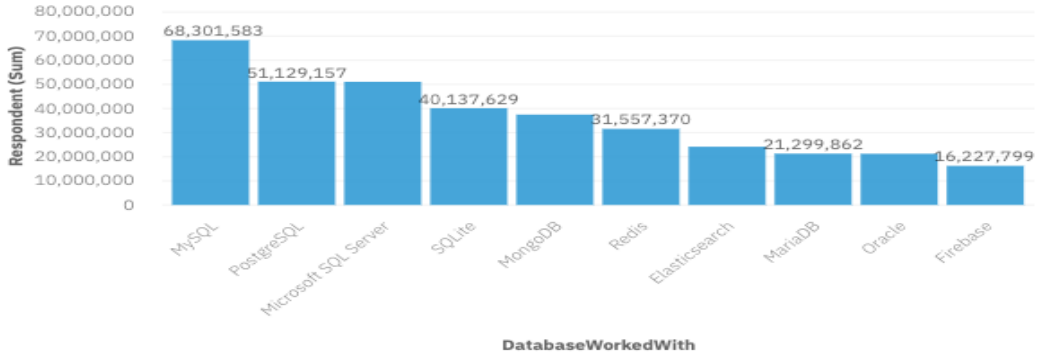
https://eu-de.dataplatform.cloud.ibm.com/dashboards/eac78226-53e4-45ee-9b5a-afa067599e98/view/433ddc35038071f669cdc0e4079979507c30205fb2bb800288837b495c637397f0684791c829190ed344006aa0e4465fcd

DASHBOARD TAB 1

Top 10 Languages Worked With

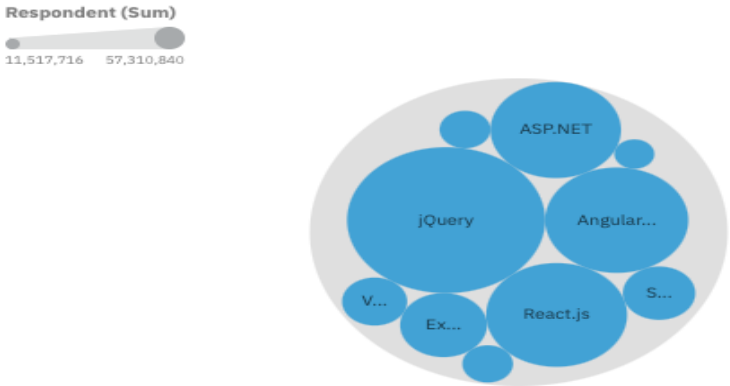


Top 10 Database Worked With

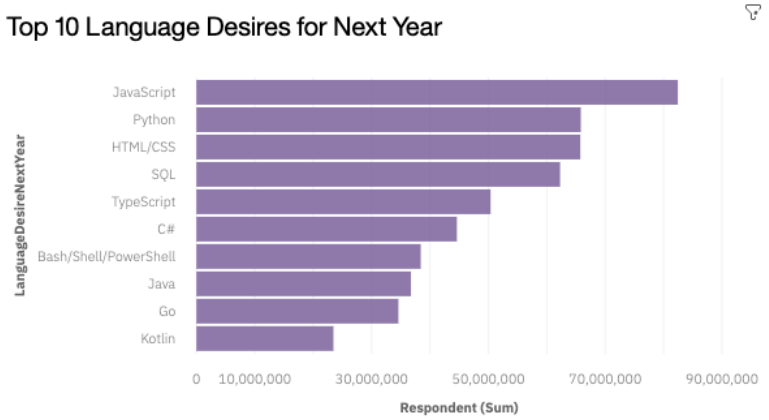


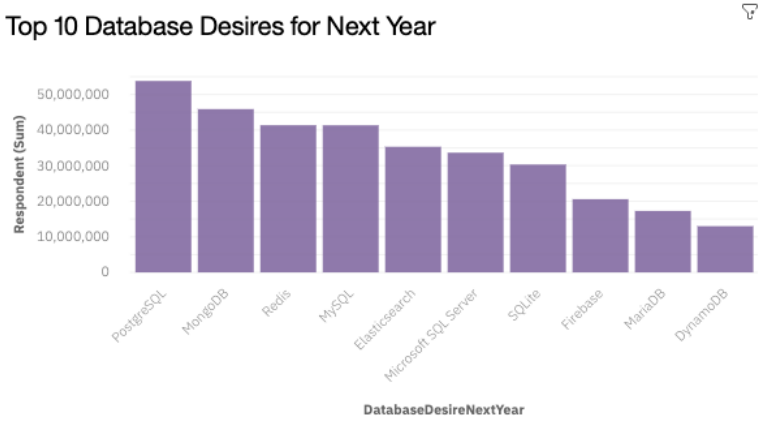
Platform Worked With

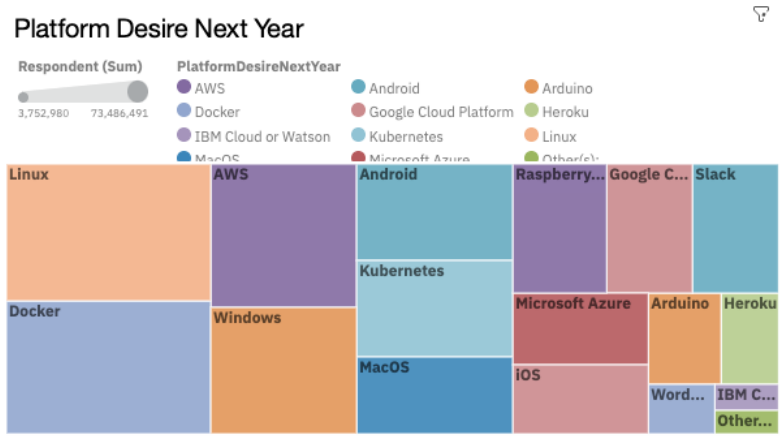
Top 10 Web Frames Worked With

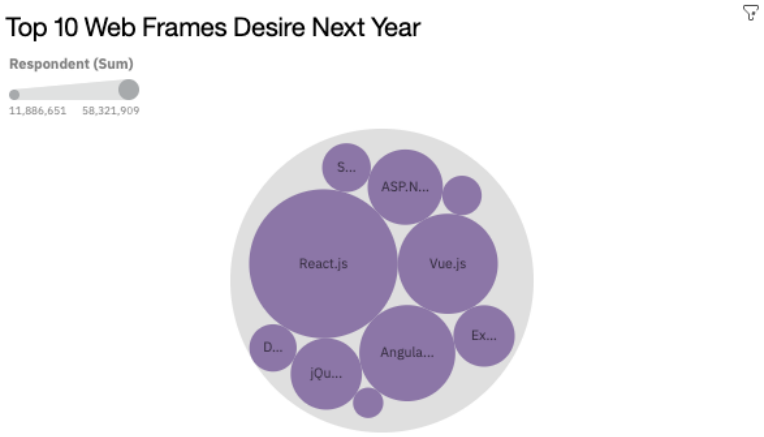


DASHBOARD TAB 2

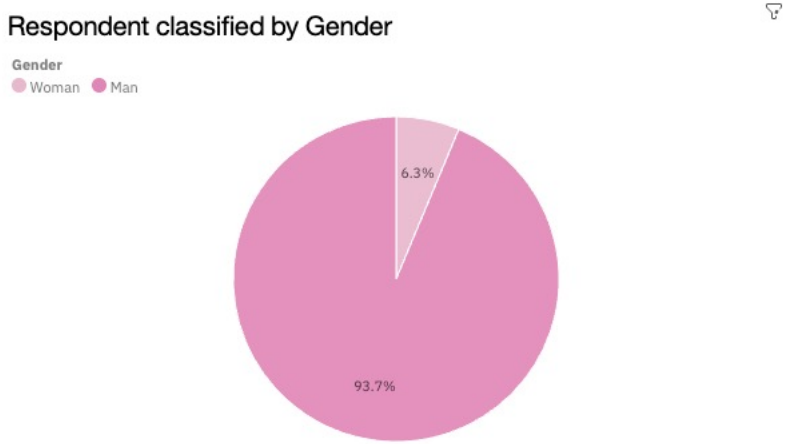


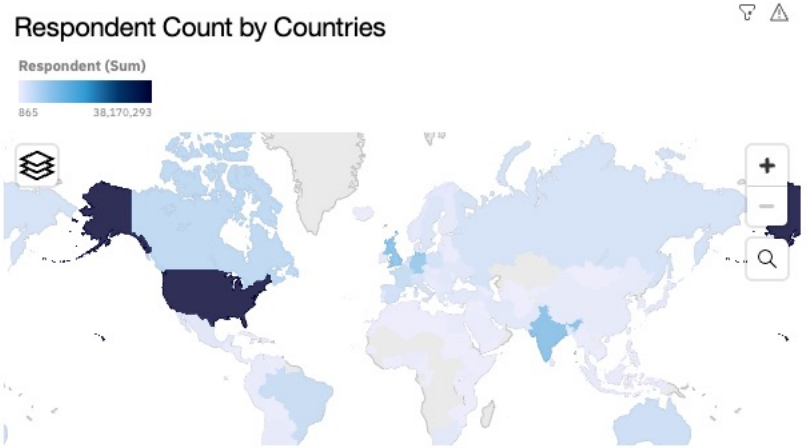


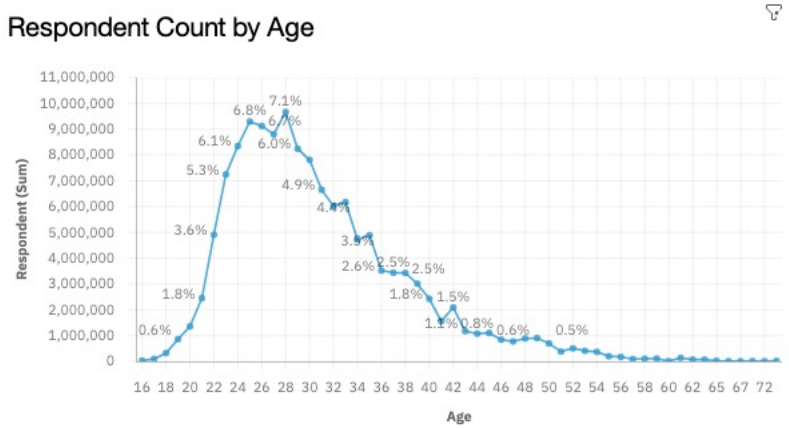


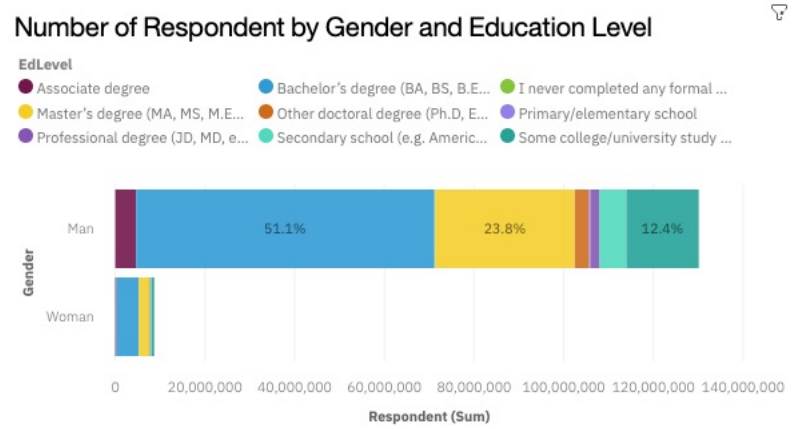


DASHBOARD TAB 3









DISCUSSION

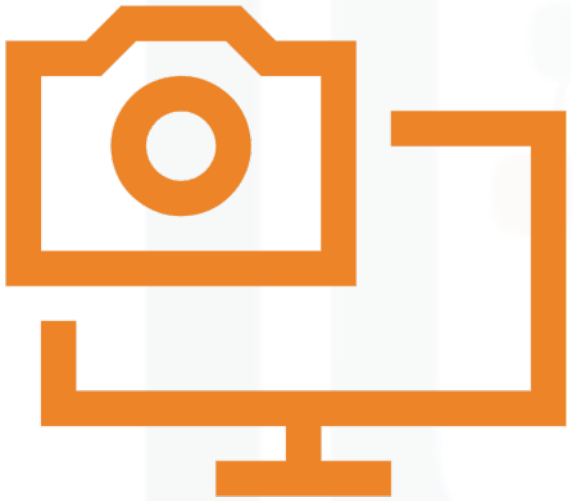
OVERALL FINDINGS & IMPLICATIONS

- Key findings include the dominance of JavaScript in programming languages, the popularity of MySQL and PostgreSQL databases, and the widespread use of Linux and Docker platforms.
- Future trends suggest a continued preference for JavaScript and an increasing interest in Python, PostgreSQL, and containerization technologies.
- Demographic data reveals a majority of respondents identifying as men, with the highest number of respondents located in the United States.

CONCLUSION

- The data suggests a strong focus on web development technologies, with JavaScript-based languages and frameworks being particularly popular.
- Open-source technologies are also widely adopted, as seen in the popularity of languages like Python, platforms like Linux, and databases like MySQL and PostgreSQL
- The popularity of Docker suggests that containerization is a significant trend in the industry.
- Looking forward, the data suggests a future trend towards open-source technologies, containerization, and real-time data analysis

APPENDIX



- https://github.com/qvunguyen/ibm_da_capstone_project