Exploring Trends in Programming Languages and Databases: An Analysis of Dynamic Preferences

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IBM **Developer**

SKILLS NETWORK

OUTLINE

SUMMARY

INTRODUCTION

METHODOLOGY

RESULTS

DASHBOARD

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CONCLUSION

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SUMMARY

➢ The analysis showcases dynamic shifts in both programming language and database preferences

➢ It emphasizes the necessity for developers and businesses to adapt to emerging technologies and evolving preferences

➢ Staying agile and embracing innovation is crucial for maintaining competitiveness in the everchanging software development landscape

INTRODUCTION

Understanding programming languages and database trends is crucial for strategic decision-making, streamlining development processes, and maintaining competitiveness. It enables informed choices, efficient technology adoption, and staying ahead in the rapidly changing software development landscape.

METHODOLOGY

1. ***Collecting and Exploring Data***
   a. Web Scraping
   b. APIs
   c. Request Library
2. ***Data Wrangling***
3. ***Exploratory Data Analysis***
   a. Analyzing Data Distribution
   b. Handling Outliers
   c. Correlation
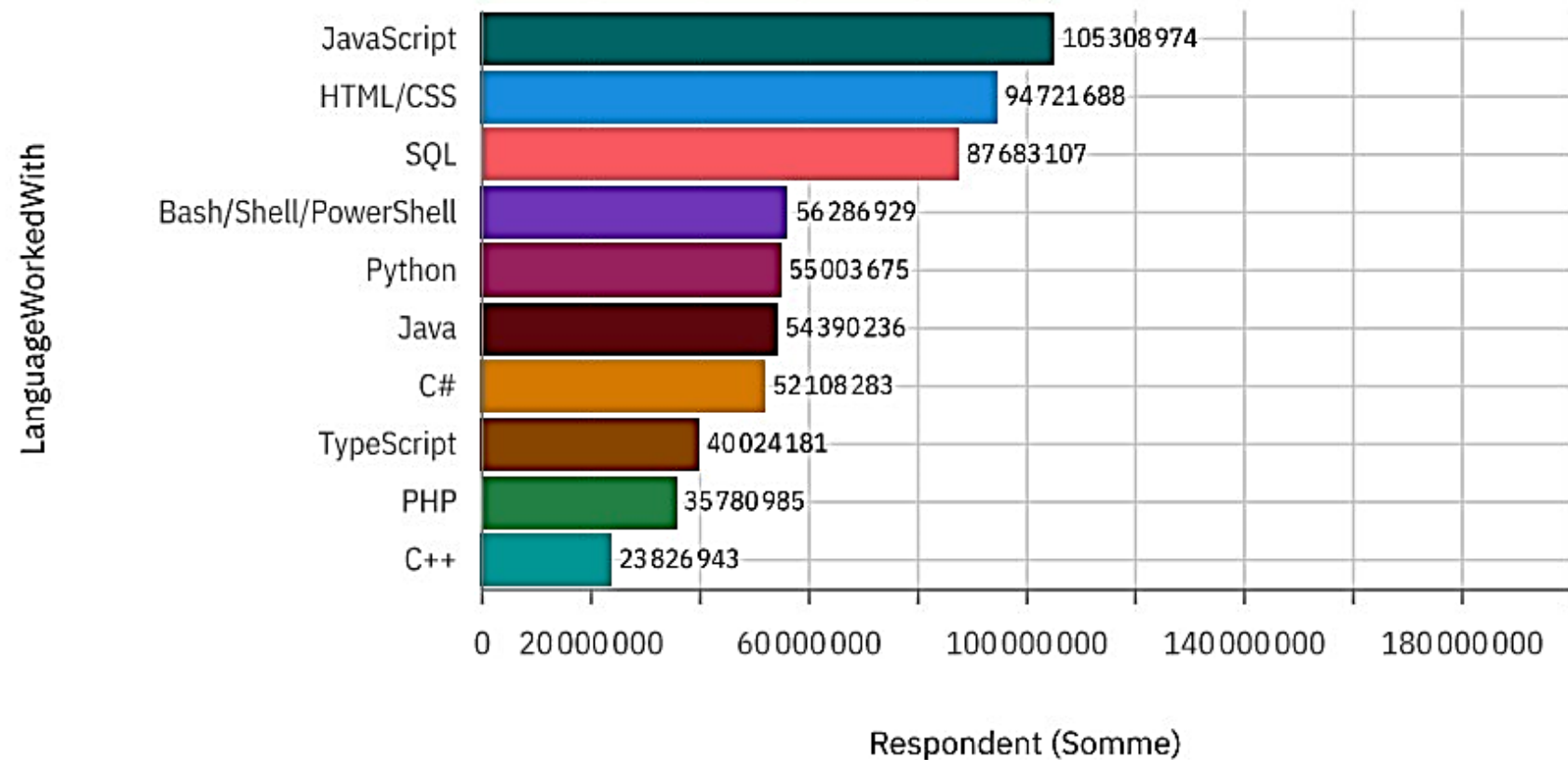4. ***Data Visualization***
5. ***Dashboards***

RESULTS

PROGRAMMING LANGUAGE TRENDS
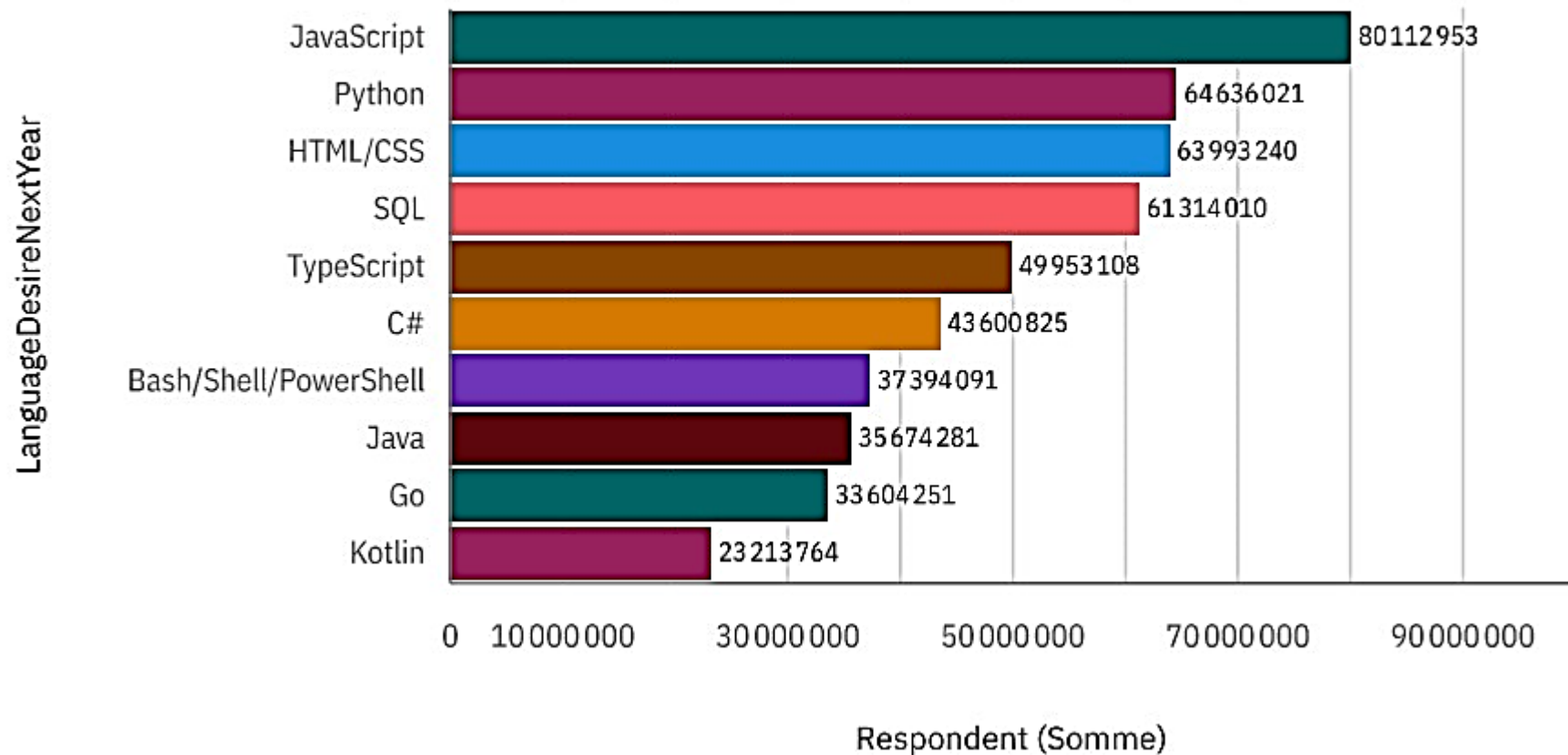

Top 10 Languages Worked with

RESULTS

PROGRAMMING LANGUAGE TRENDS

Top 10 Desired Language to Learn

RESULTS

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript continues to maintain its position as the dominant language
- Python is expressing rapid growth
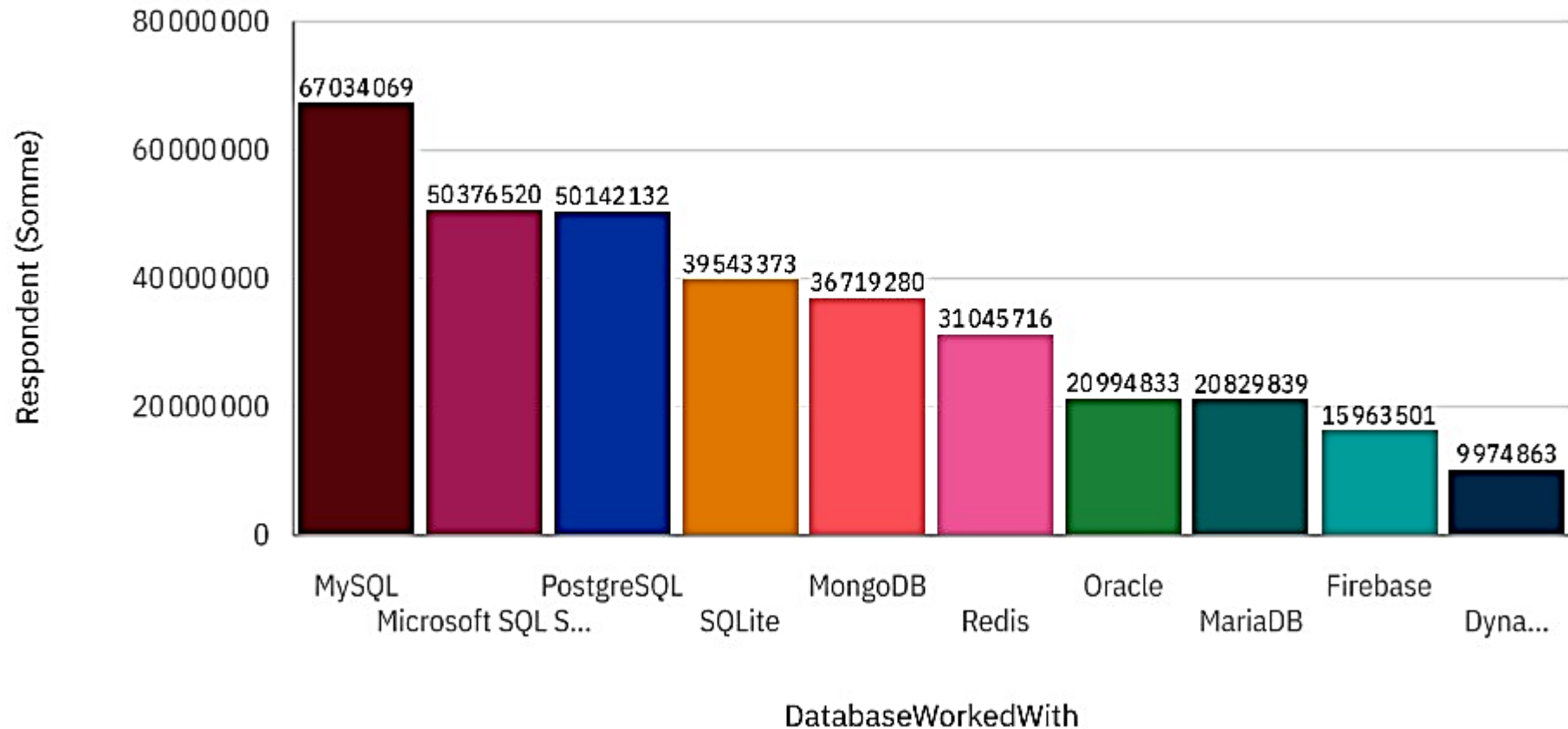- There is a significant interest in TypeScript

Implications

- There might be a trend of developers transitioning from JavaScript to TypeScript

RESULTS

DATABASE TRENDS
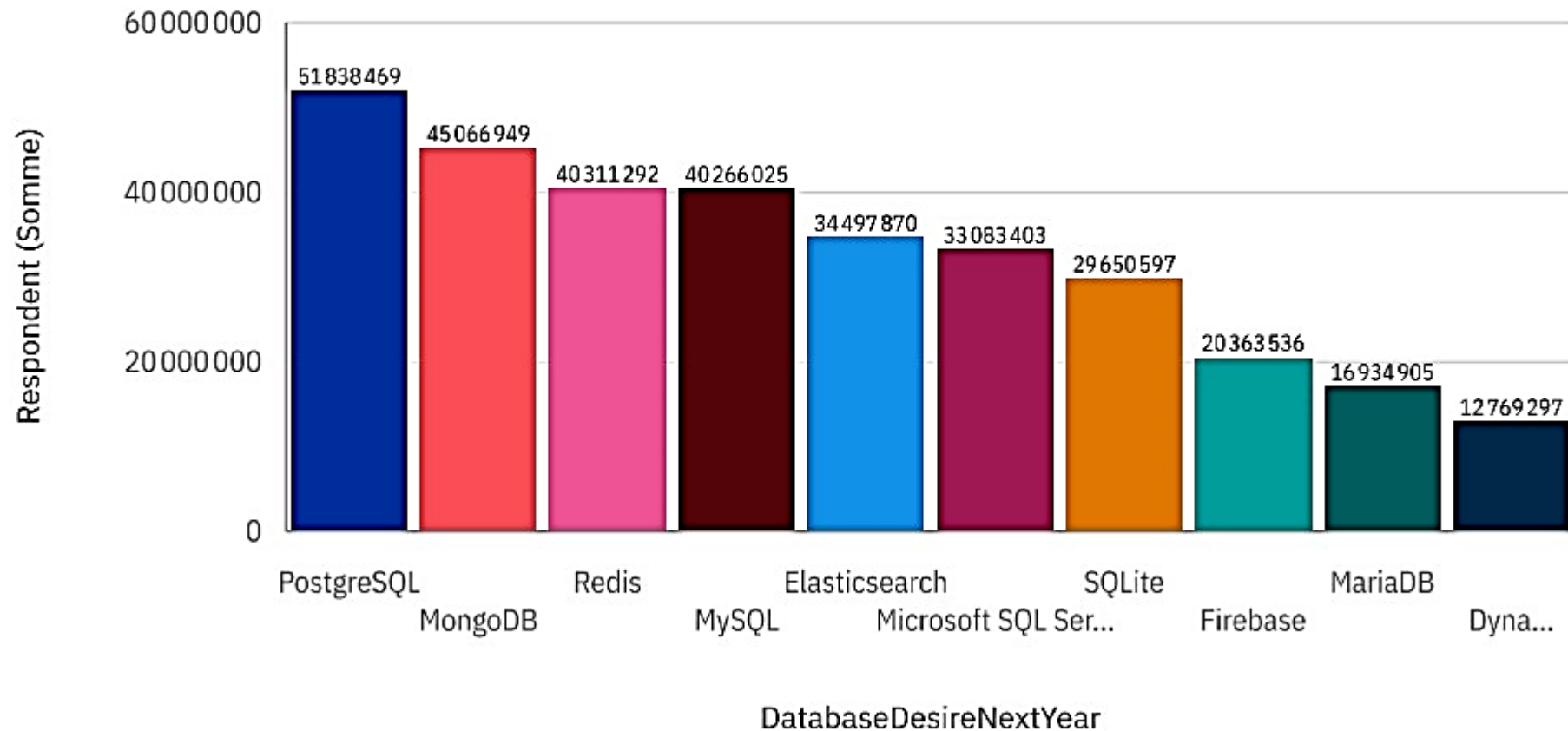

Top 10 Databases Worked with

RESULTS

DATABASE TRENDS

Top 10 Desired Databases to Learn

RESULTS

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL remains the most commonly used database

- There is a notable lack of interest in Microsoft SQL Server and SQLite

- Interest in PostgreSQL and MongoDB is on the rise

Implications

- Microsoft SQL Server and SQLite are experiencing a decline in market presence

- PostgreSQL and MongoDB are gaining traction and establishing themselves in the market
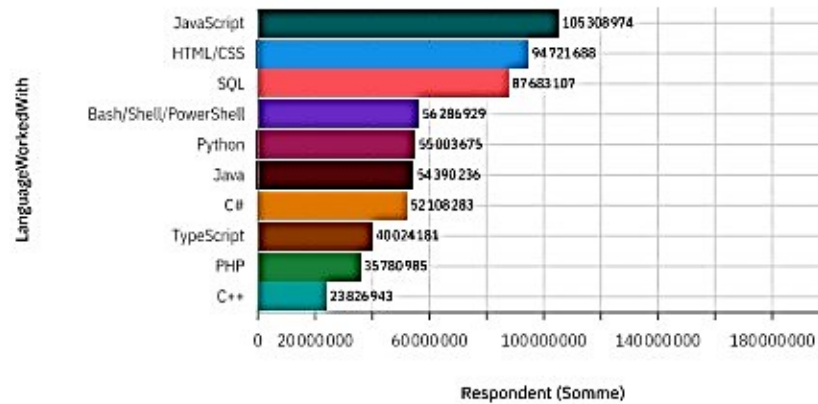
DASHBOARD

https://github.com/SoulaimaneA/Capstone-Project-Aourraz-Soulaimane-/blob/1c1525b17657128fc58aebe4e69d5dcfe82ee2d7/Capstone%20Project%20Soulaimane%20Aourraz.pdf
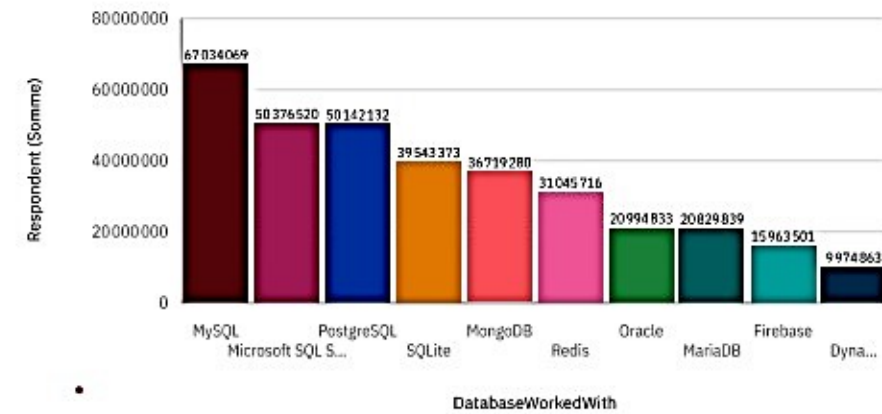
DASHBOARD TAB 1

DASHBOARD TAB 2

Future Technolgy Trend

Top 10 Desired Language to Learn

Language	Respondent (Somme)
JavaScript	80112953
Python	64636021
HTML/CSS	63993240
SQL	61314010
TypeScript	49953108
C#	43600825
Bash/Shell/PowerShell	37394091
Java	35674281
Go	33604251
Kotlin	23213764

Top 10 Desired Databases to Learn

Database	Respondent (Somme)
PostgreSQL	51838469
MongoDB	45066909
Redis	40311292
MySQL	40266025
Elasticsearch	34493870
Microsoft SQL Ser...	31083403
SQLite	29650597
Firebase	20363536
MariaDB	16934905
Dyna...	12769297

Platform Desired Next Year

Linux, AWS, Kubernetes, MacOS, Raspberry Pi, Slack, Windows, Docker, Android, Google Cloud Platform, iOS, Heroku, Microsoft Azure, Arduino, WordP..., I..., Other(s):

Top 10 Web Frame Desired Next Year

React.js, Vue.js, ASP.NET, Sp..., F..., Angular/A..., jQuery, Dj..., Expr...
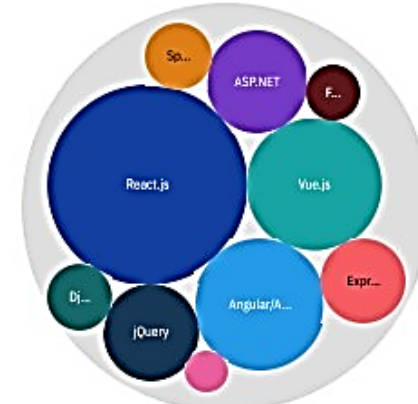
DASHBOARD TAB 3

Demographics

Respondent classified by Gender

Gender
- Woman
- Man

6,...
93,5 %
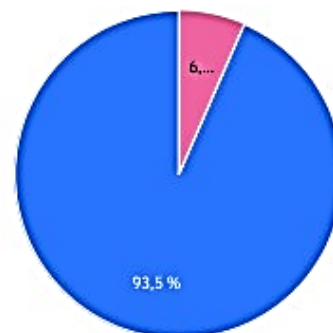
Respondent Locations

© Mapbox © OpenStreetMap

Respondent Count by Age
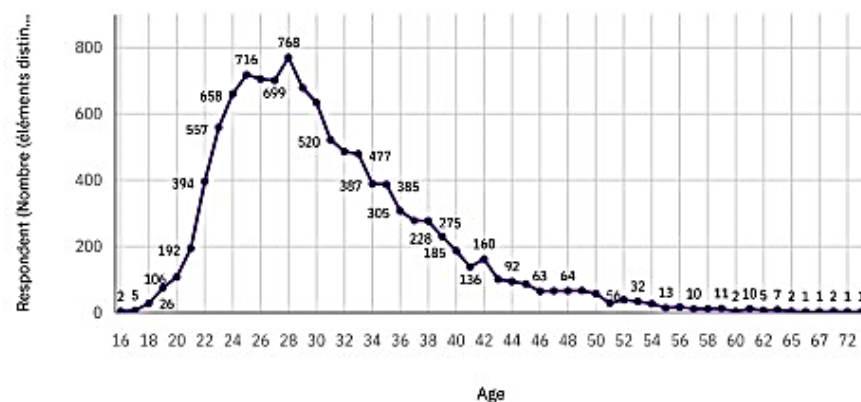
Respondent Count by Gender, classified by Formal Education Level

Man: 5196, 2412, 477, 1255
Woman
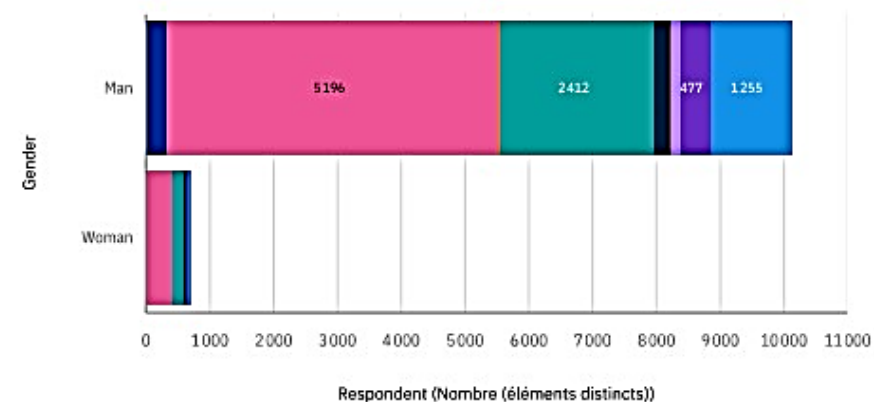
DISCUSSION

Language Trends

JavaScript Dominance

➢ JavaScript remains crucial in web development due to its versatility and widespread adoption

Python's Growth

➢ Python's rapid rise is fueled by its readability versatility, and extensive libraries

Interest in TypeScript

➢ TypeScript gains traction for its enhanced productivity and code quality, suggesting a shift towards stronger type systems

DISCUSSION

Database Landscape Analysis

MySQL's Popularity

➤ MySQL is favored for its reliability and computability with new technologies

Decline in Microsoft SQL Server and SQLite

➤ Decreased interest my result from factors like licensing costs and scalability limitations

Rise of PostgreSQL and MongoDB

➤ PostgreSQL and MongoDB are preferred for their scalability and support for unstructured data

DISCUSSION

Industry Shifts and Developer Behavior

Impact on Development Practices

➤ Trends influence technology stack choices and development methodologies

Challenges and Opportunities

➤ Trends present both challenges and differentiation

Future Outlook

➤ These trends will continue to shape the industry, driving further innovation and evolution
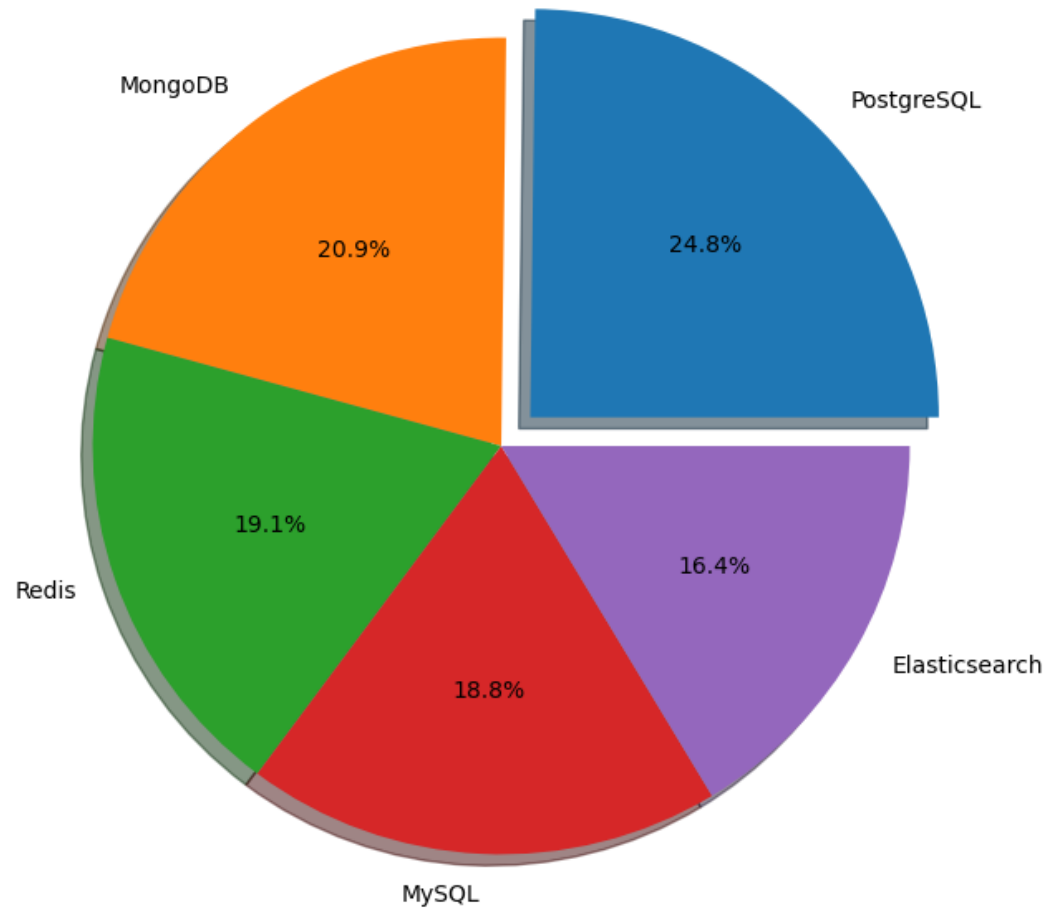
CONCLUSION

Our analysis highlights the dynamic nature of programming language and database preferences, emphasizing the importance of adaptability and innovation in the software development landscape. From JavaScript's continued dominance to the emergence of TypeScript and Python's rapid growth, alongside the shifting database preferences towards solutions like PostgreSQL and MongoDB, these trends underscore the need for developers and businesses to stay agile and embrace emerging technologies to remain competitive.
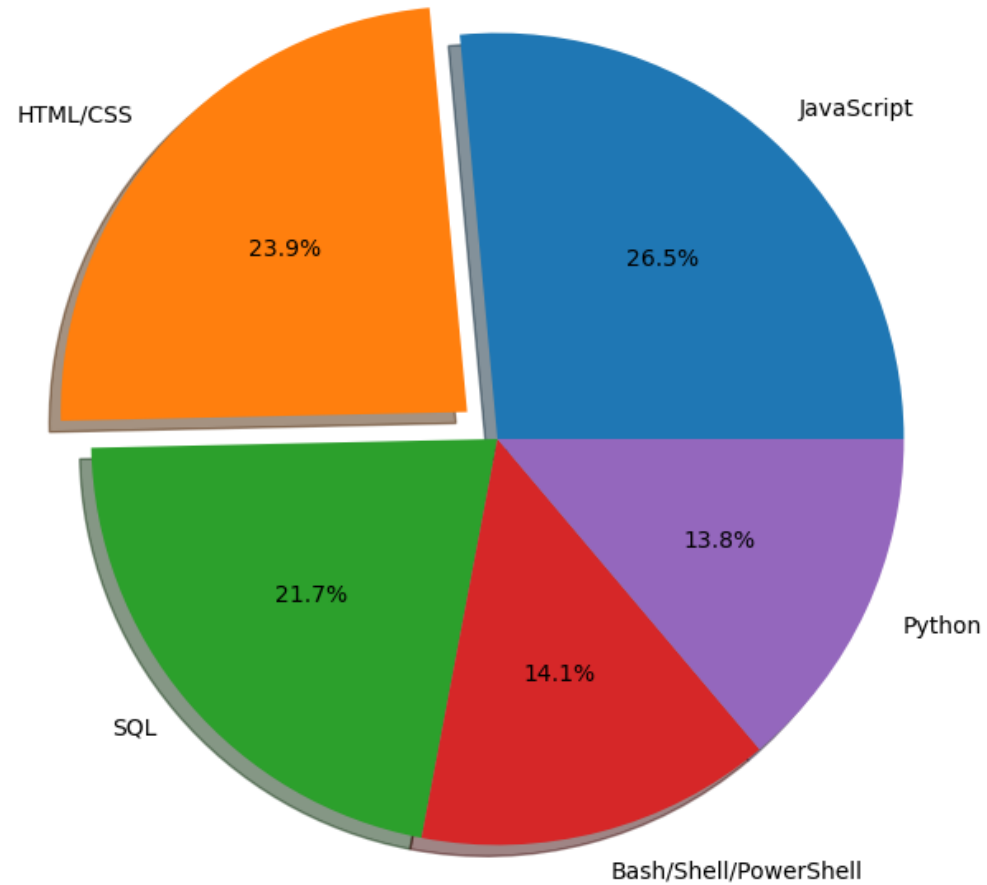
APPENDIX

Top 5 databases that respondents wish to learn next year

APPENDIX

Respondents indicating that they currently work with 'SQL'

APPENDIX

JOB POSTINGS

Average Annual Salary

Language	Salary
Swift	130801
Python	114383
C++	113865
Javascript	110981
Java	101013
Go	94082
R	92037
C#	88726
SQL	84793
PHP	84727
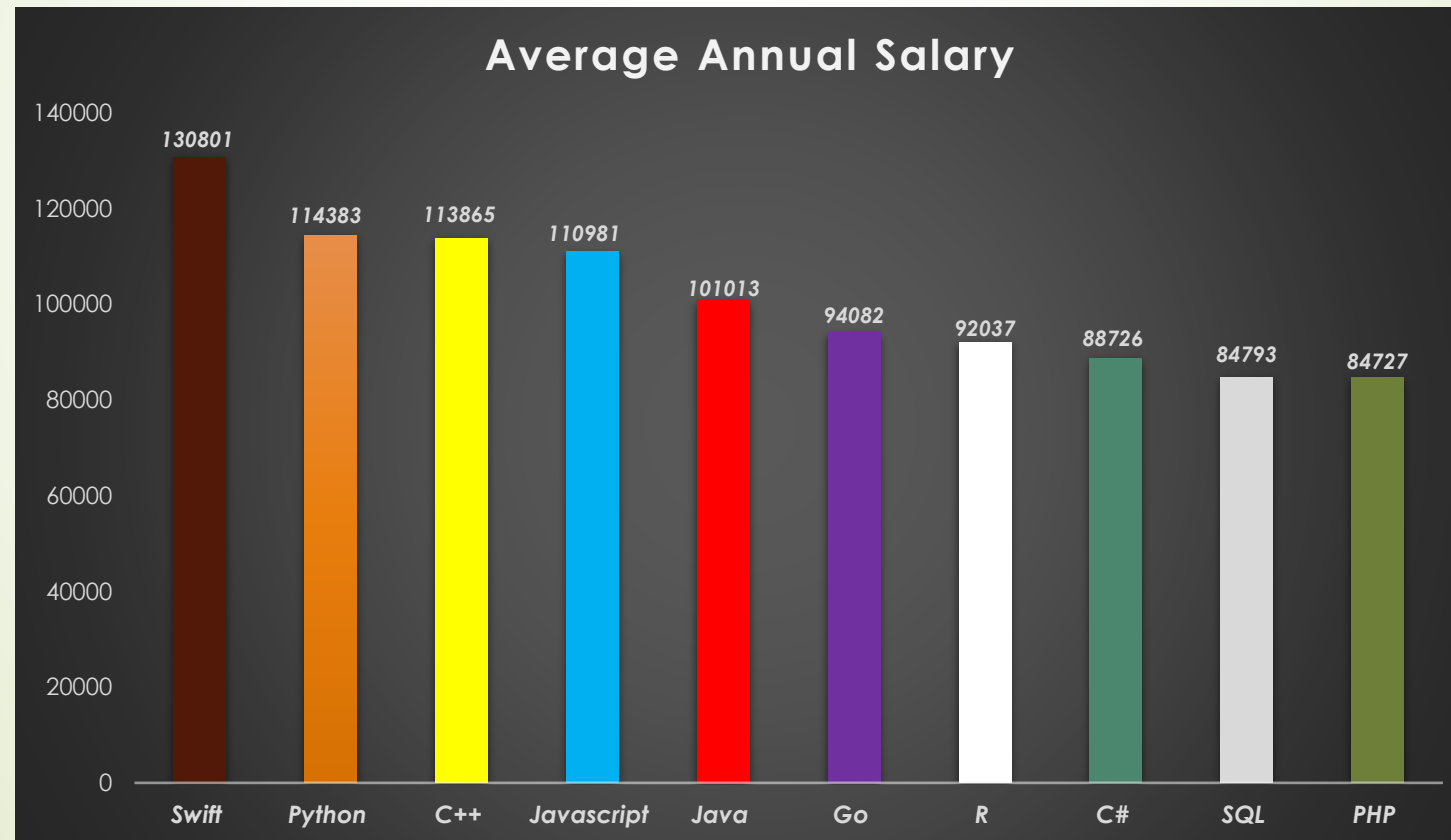
APPENDIX

POPULAR LANGUAGES

Average Annual Salary

Language	Salary
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