



Capstone Project

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OUTLINE



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EXECUTIVE SUMMARY

Key Findings

Current Technology Usage:

- **JavaScript and HTML/CSS:** Remain the dominant languages, reflecting their versatility in web development.
- **Web Framework Trends:** Angular and React continue to be dominant, with newer frameworks like Svelte and Vue.js gaining traction.
- **Database Preference:** MySQL, PostgreSQL, and Microsoft SQL Server are popular choices for database management.

Future Technology Trends:

- **Web Framework Trends:** React and Angular are likely to maintain their dominance, but newer frameworks may gain market share.
- **Database Trends:** PostgreSQL, Redis, and Elasticsearch are emerging as preferred databases for specific use cases.
- **Language Preferences:** JavaScript, HTML/CSS, and Python remain popular, with TypeScript gaining momentum.

Demographics:

- **Educational Background:** Respondents have diverse educational backgrounds, ranging from high school to doctoral degrees.
- **Gender Diversity:** The dataset shows 93.5% male respondents indicating gender imbalance of the dataset.



INTRODUCTION

This analysis delves into the current landscape of technology usage among developers, revealing key trends that inform our understanding of both present practices and future directions. The "Current Technology Usage" dashboard highlights the enduring dominance of JavaScript and HTML/CSS, along with the continued preference for relational databases such as MySQL and PostgreSQL. A significant shift towards cloud-based solutions, particularly AWS and Google Cloud, underscores the evolving infrastructure landscape. Meanwhile, frameworks like Angular and React remain essential for building modern applications.

Looking forward, the "Future Technology Trends" dashboard identifies emerging technologies and preferences, including a growing interest in TypeScript and databases like PostgreSQL and Redis. The "Demographics" dashboard further enriches our analysis by showcasing the diverse backgrounds of respondents, particularly the strong representation of men in the field. As we explore these insights, we should consider: How can organisations leverage these trends for strategic technology adoption? What skills should be prioritized in development initiatives? And how can we better understand and engage our diverse audience?

METHODOLOGY



The methodology behind this analysis involved aggregating data from two comprehensive survey findings focused on demographics and technology usage among developers. Each survey was designed to capture a wide range of responses, ensuring a diverse representation across different age groups, educational backgrounds, and geographical locations. The surveys included targeted questions about the respondents' familiarity and usage of various programming languages, frameworks, and databases.

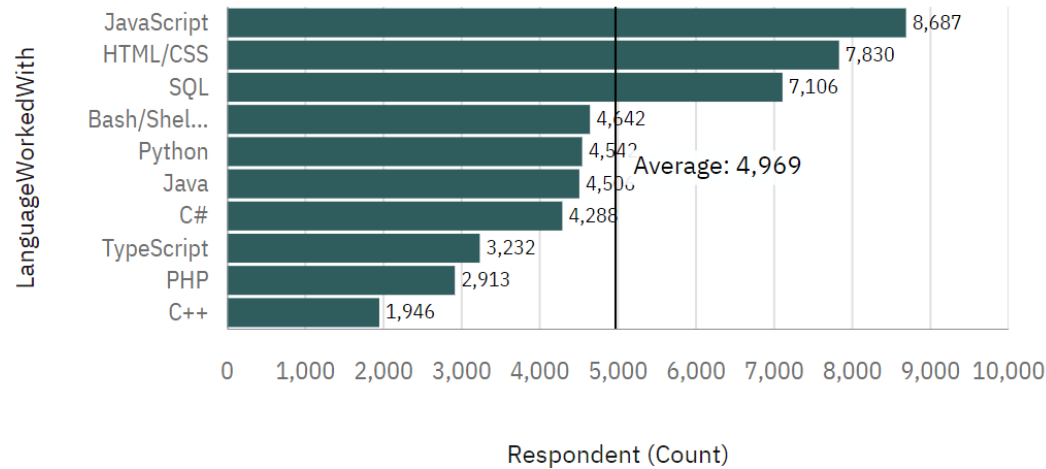
Data collection was performed using online platforms to maximise reach and encourage participation. Respondents were prompted to provide insights on their technology preferences and demographic information, resulting in a rich dataset that reflects current trends in the development community. The surveys were carefully structured to yield quantitative data for analysis, facilitating comparisons and trend identification.

Moving forward, the collected data will be utilised to inform technology strategy and skill development initiatives within organisations. A detailed analysis will identify key trends that can guide training programs and recruitment strategies. Additionally, the insights will support targeted marketing efforts and enhance understanding of the developer landscape, allowing organizations to stay ahead of technological advancements and effectively engage their audience.

PROGRAMMING LANGUAGE TRENDS

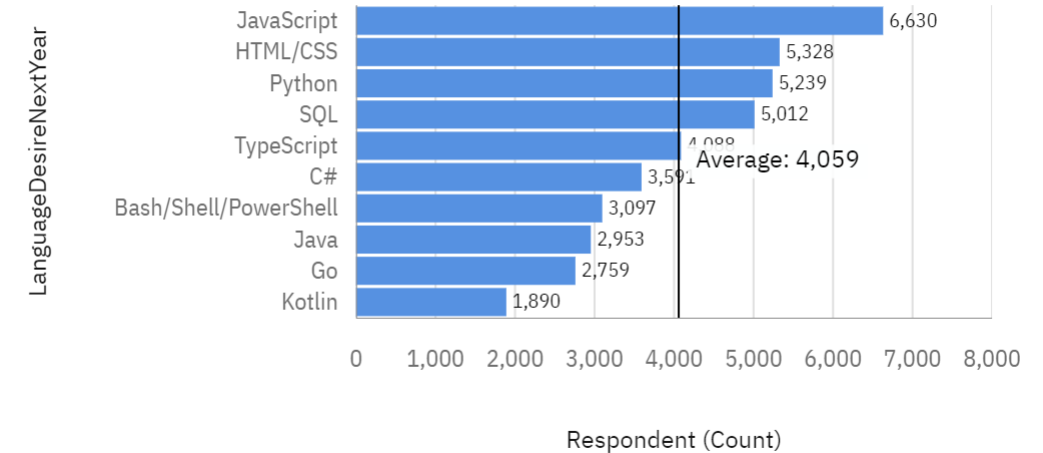
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desire next year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

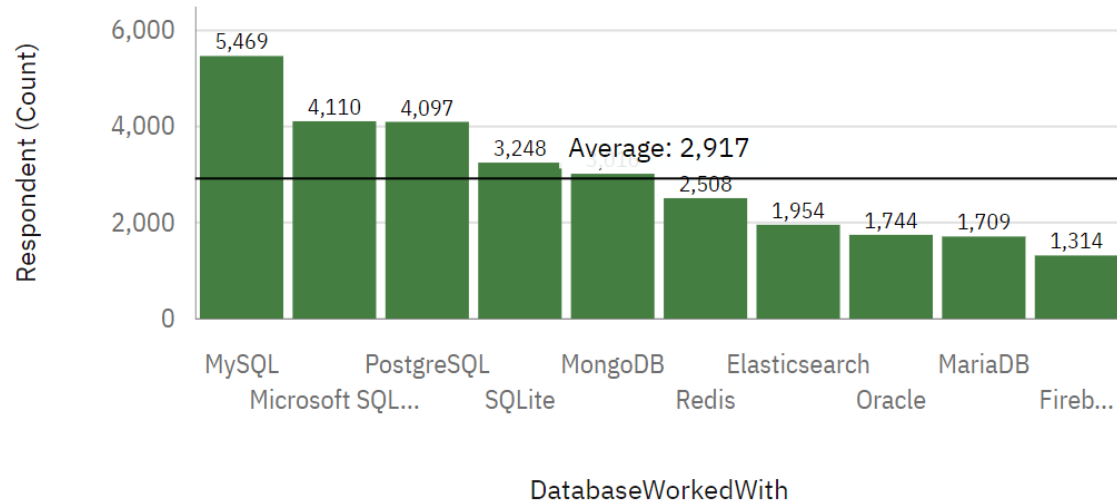
- 1) Dominance of JavaScript and HTML/CSS:** JavaScript and HTML/CSS remain essential in web development.
- 2) Rise of TypeScript:** TypeScript is gaining popularity for its safety and maintainability.
- 3) Interest in Python:** Python continues to be a preferred language, especially for data science.

Implications:

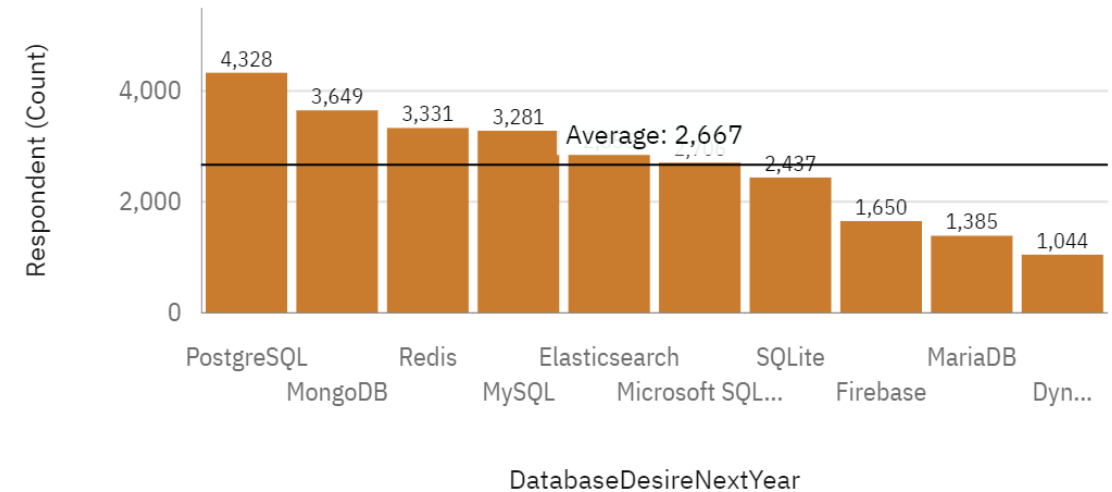
- 1) JavaScript and HTML/CSS Training:** Invest in skill development programs focused on JavaScript and HTML/CSS to strengthen web development capabilities.
- 2) TypeScript Integration:** Include TypeScript in training initiatives to improve code quality and maintainability in new projects.
- 3) Python Investment:** Enhance training resources for Python to equip teams for data analytics and machine learning applications, ensuring competitiveness in emerging tech areas.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- 1) Widespread Use of Relational Databases:** MySQL, PostgreSQL, and Microsoft SQL Server are the most used relational databases.
- 2) Emergence of NoSQL Databases:** Redis and Elasticsearch are gaining popularity for flexible data handling.
- 3) Preference for PostgreSQL:** PostgreSQL is increasingly favoured for its advanced features and capabilities.

Implications

- 1) Training in Relational Databases:** Organizations should continue to focus on training for MySQL and PostgreSQL to maintain proficiency in traditional database management.
- 2) Adoption of NoSQL Solutions:** Consider incorporating Redis and Elasticsearch into projects where flexible data structures and fast querying are beneficial, enabling more robust data management.
- 3) Focus on PostgreSQL Expertise:** Invest in specialized training for PostgreSQL to leverage its advanced features, enhancing data handling and performance in applications.

DASHBOARD

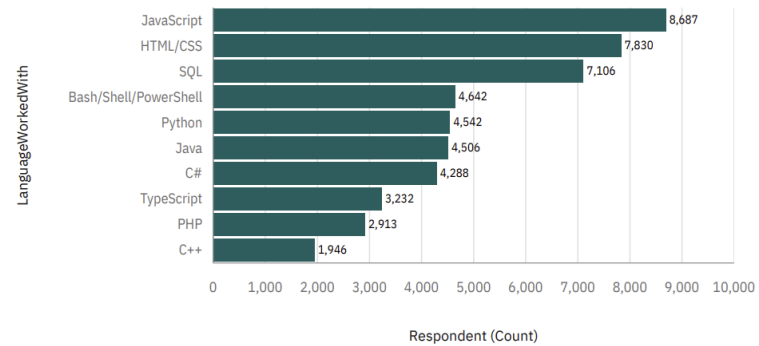


<https://github.com/dhruvshetty05/Data-Visualisation-with-IBM-Cognos/blob/main/Data%20Visualisation%20with%20IBM%20Cognos.pdf>

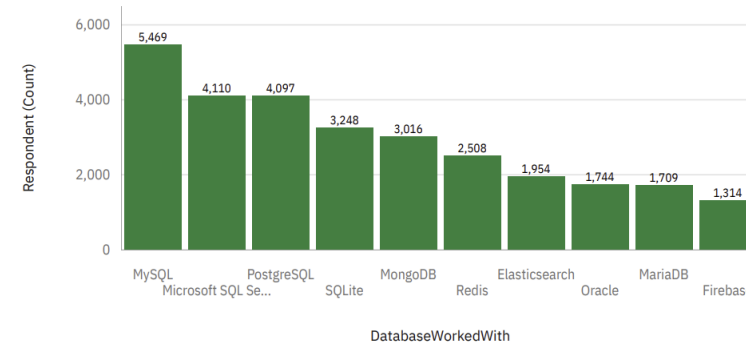
RESULTS (Current Technology Usage)

Current Technology Usage

Top 10 Languages Worked With



1 Top 10 Databases Worked With



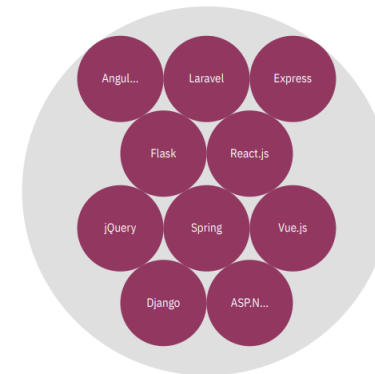
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PlatformWorkedWith



Top 10 Webframe worked with

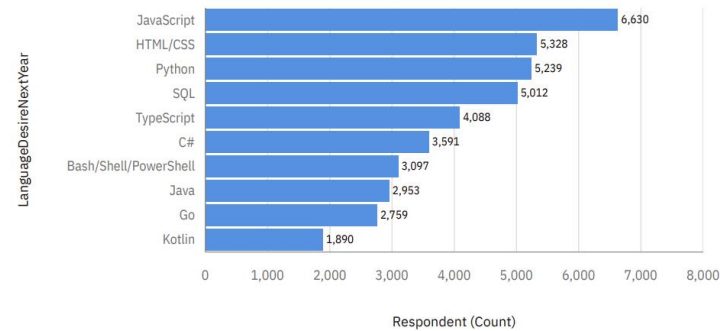
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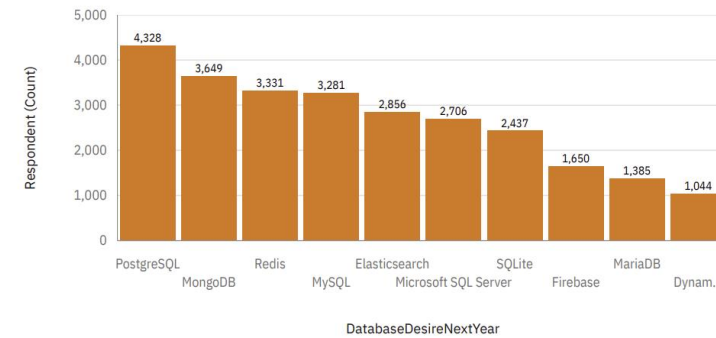
RESULTS (Future Technology Trend)

Future Technology Trend

Top 10 Languages Desire next year

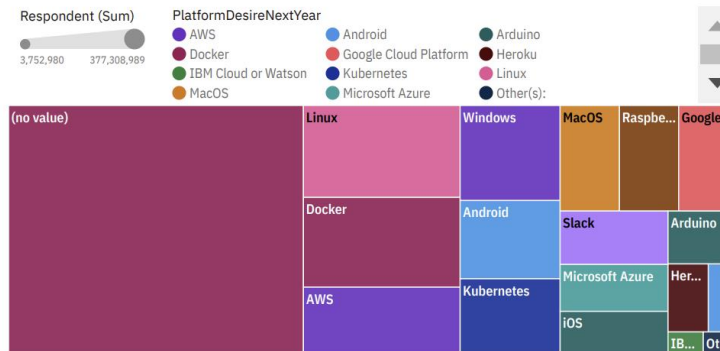


4 Top 10 Databases Desire next year

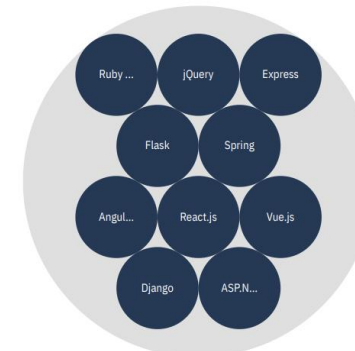


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PlatformDesireNextYear hierarchy



Top 10 WebFrameDesireNextYear



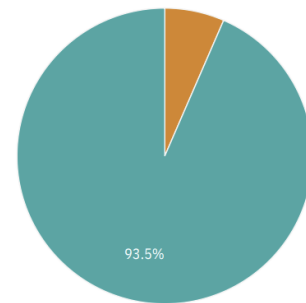
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RESULTS (Demographics)

Demographics

Respondent by Gender

Gender
● Woman ● Man

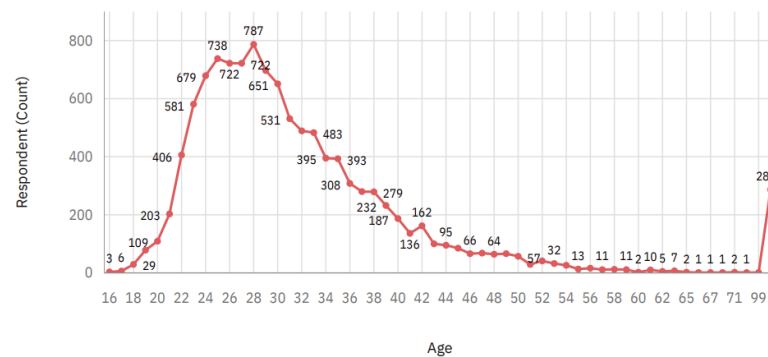


7 Respondent for Country regions

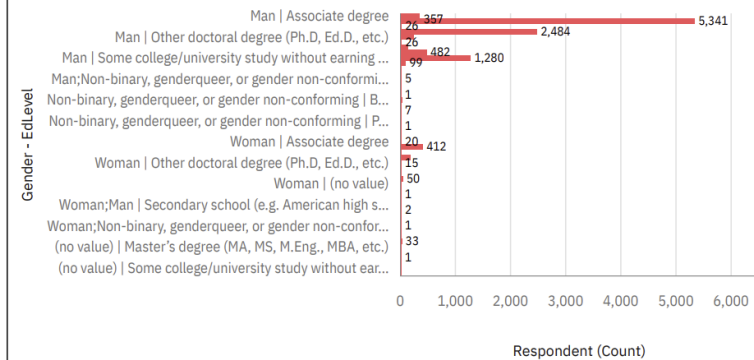
Respondent (Count)



Respondent by Age



Respondent by Gender and Formal EdLevel



OVERALL FINDINGS & IMPLICATIONS

Findings

1) Relational Databases Dominate: MySQL, PostgreSQL, and Microsoft SQL Server are the most widely used relational databases, indicating a strong preference for traditional data management solutions in "Current Technology Usage."

2) Growing Popularity of TypeScript: In "Future Technology Trends," TypeScript is gaining momentum, suggesting a shift towards more robust and type-safe programming practices among developers.

3) Diverse Developer Demographics: The demographics show a significant representation of men and a wide age range, emphasizing the importance of diversity and inclusion in the tech industry.

Implications

1) Focus on Relational Database Training: Organizations should prioritize training in relational databases like MySQL and PostgreSQL to maintain effective data management and analysis capabilities.

2) Incorporate TypeScript in Skill Development: Companies should integrate TypeScript into their development training programs to enhance code quality and support modern programming practices.

3) Promote Diversity and Inclusion Initiatives: Understanding the diverse demographics of developers can guide organizations in creating targeted initiatives that promote inclusion and attract a broader talent pool in tech.

CONCLUSION



- **Importance of Core Technologies:** Continuous investment in JavaScript and HTML/CSS training is essential for web development.
- **Adoption of Modern Practices:** Organizations should embrace cloud solutions and TypeScript to stay current with industry trends.
- **Fostering Diversity:** Promoting an inclusive environment is crucial to leveraging diverse perspectives in the tech workforce.
- **Proactive Strategic Planning:** Staying informed about emerging technologies will help organizations remain competitive in a rapidly evolving landscape.