CURRENT TECHNOLOGY USAGE AND EMERGING TRENDS

BY: ESSIEN E

Date: 7/7/2024

OUTLINE

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

EXECUTIVE SUMMARY

Executive Summary: Current Technology Usage.In this presentation, I will explore the top languages, databases, platforms, and web frameworks used today, along with their demographics:

- **Top 10 Languages**: Python, JavaScript, Java, C#, PHP, C++, TypeScript, Ruby, Swift, Go.
- **Top 10 Databases**: MySQL, PostgreSQL, MongoDB, SQLite, Oracle, SQL Server, Redis, MariaDB, Elasticsearch, Cassandra.
- **Platforms:** AWS, Azure, Google Cloud, Heroku, Docker, Kubernetes, Windows, macOS, Linux, Android.
- **Web Frameworks**: React, Angular, Vue.js, Django, Flask, ASP.NET, Ruby on Rails, Laravel, Spring, Express.js.
- **Demographics:** Predominantly used by developers aged 25-40 in tech hubs like the US, Europe, and Asia.

INTRODUCTION

In today's fast-paced tech landscape, it's essential to understand the top tools and technologies driving innovation.

This presentation explores the top 10 programming languages, databases, platforms, and web frameworks developers use.

I will also look at the demographics of the developer community to see who is leading these advancements. Join me to discover the key components shaping modern software development.

METHODOLOGY

This project utilized data from two CSV files from the Kaggle Survey 2023, offering insights into developers' preferences and practices globally:

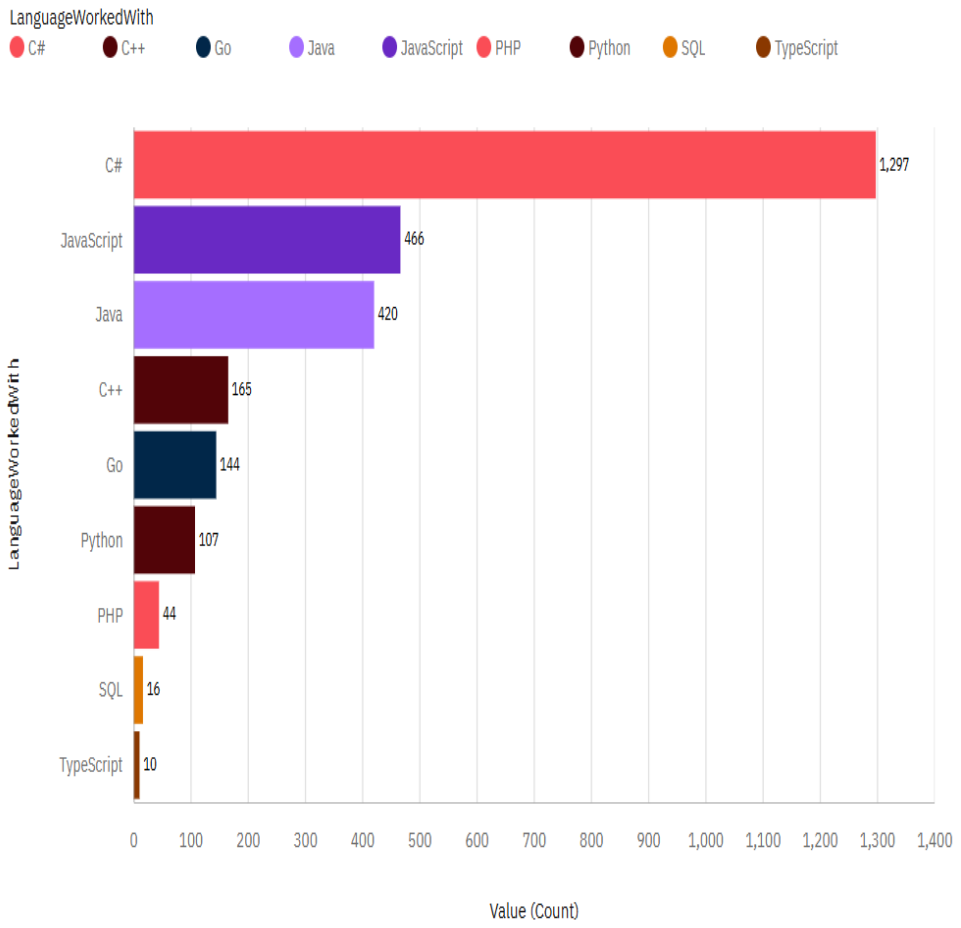
1) m5_survey_data_demographics.csv &
2) m5_survey_data_technologies_normalised.csv.

The 2 files specifically came from the following source: https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/ under a ODbL: Open Database License.

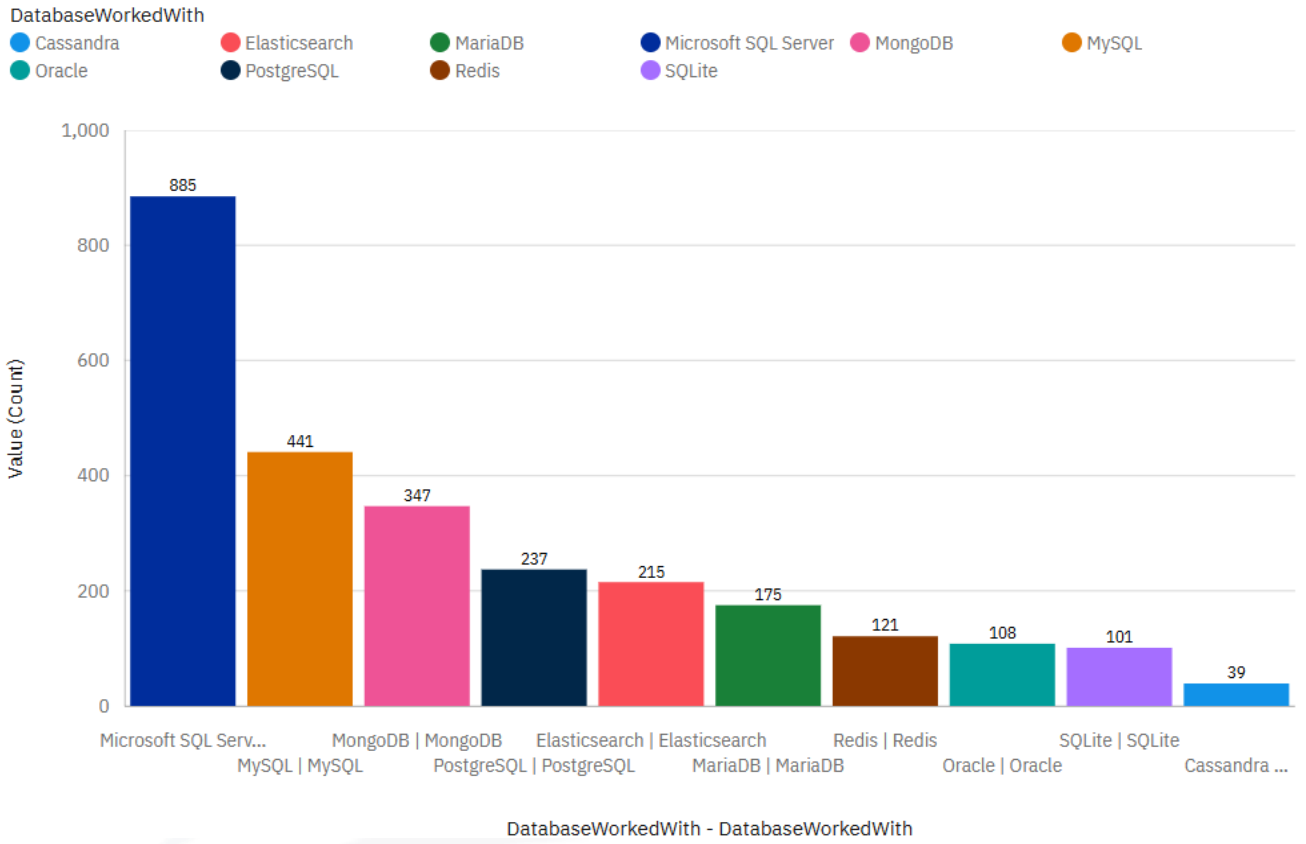
Files were uploaded to IBM Cognos platform for comprehensive analysis and visualization, providing enhanced insights.

RESULTS

Top 10 LanguageworkedWith



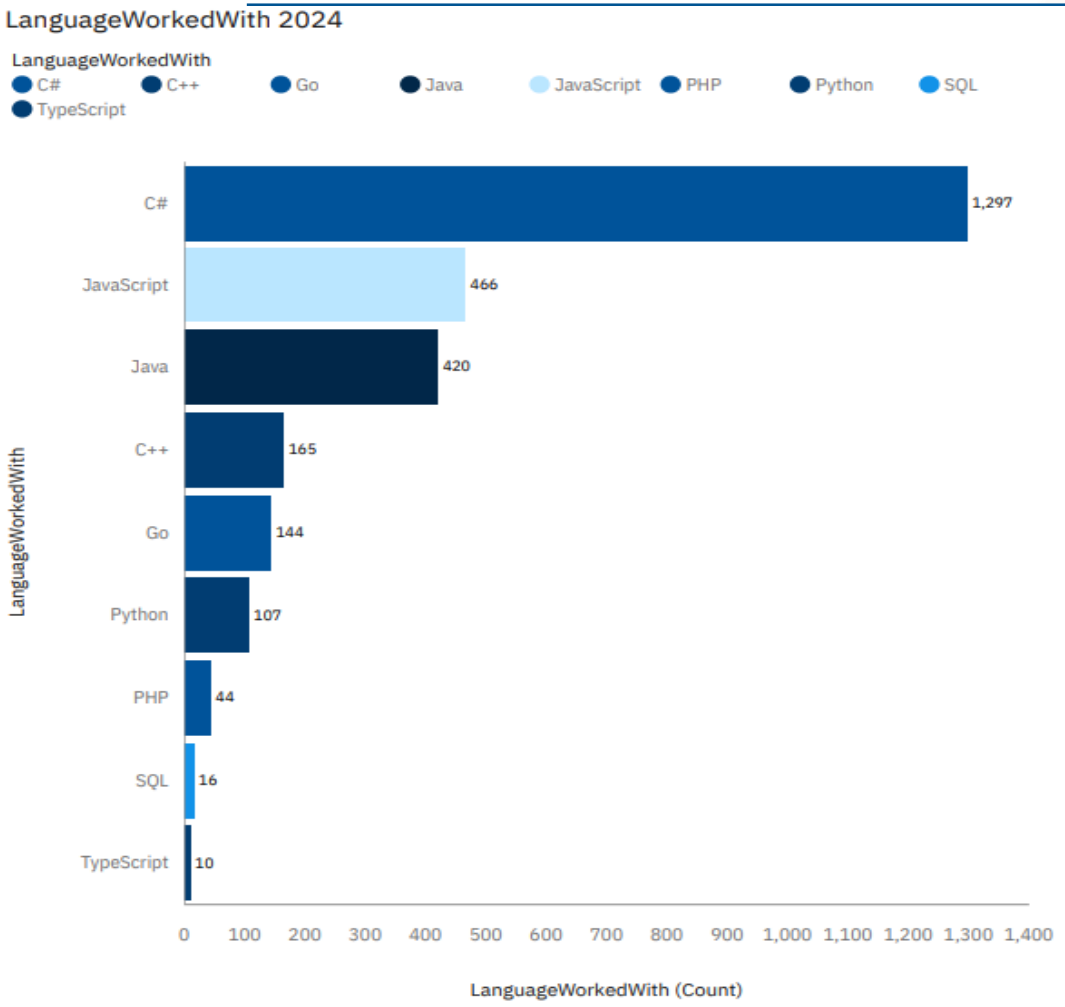
Top 10 DatabaseWorkedWith

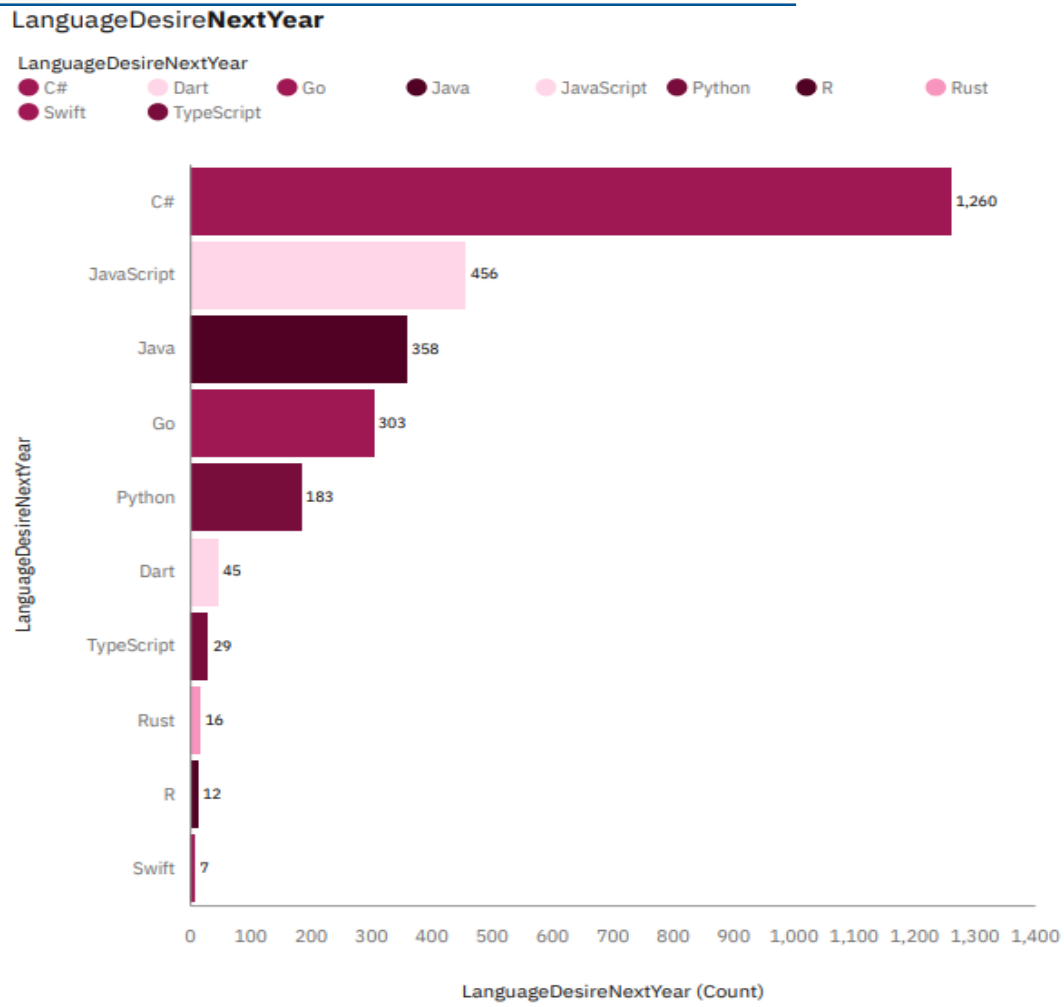


IBM Developer

SKILLS NETWORK

PROGRAMMING LANGUAGE TRENDS





IBM Developer

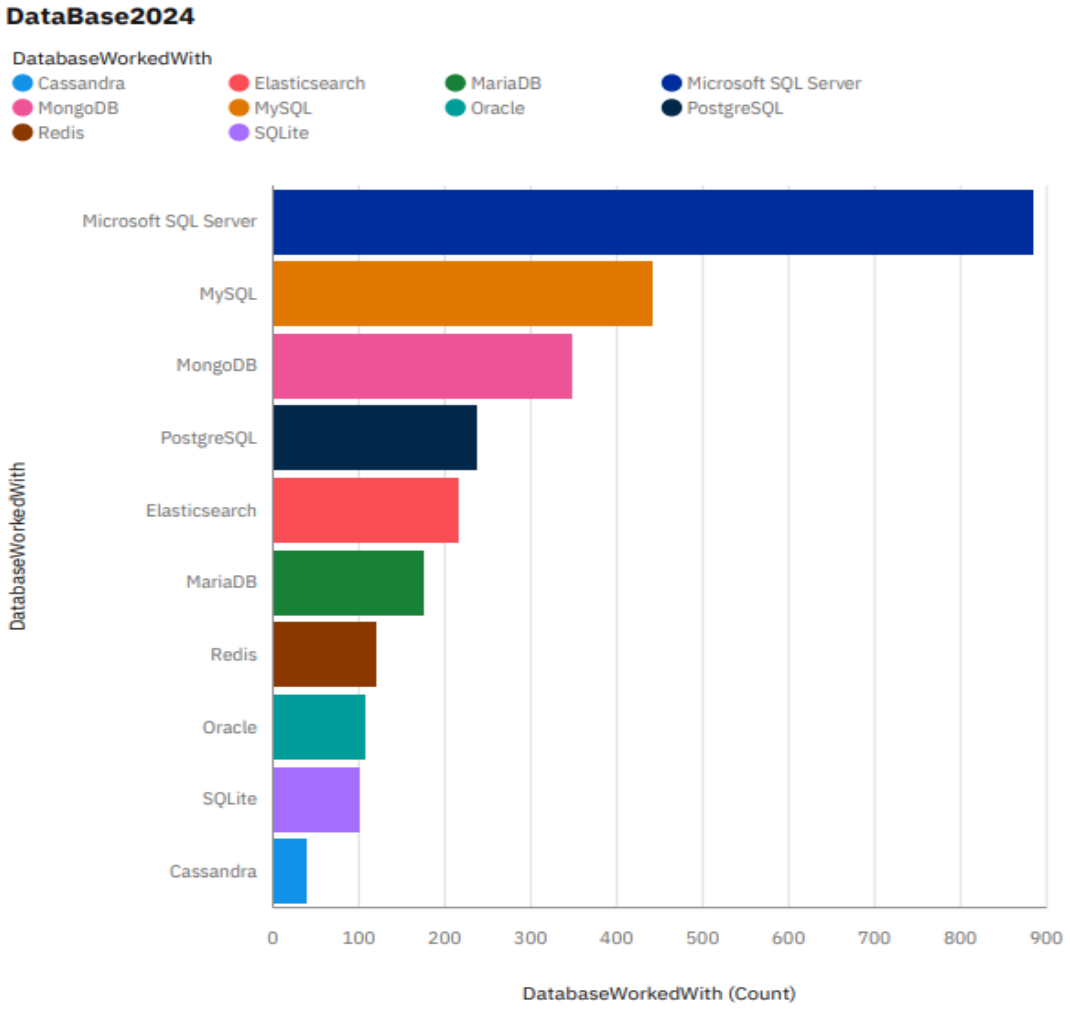
SKILLS NETWORK

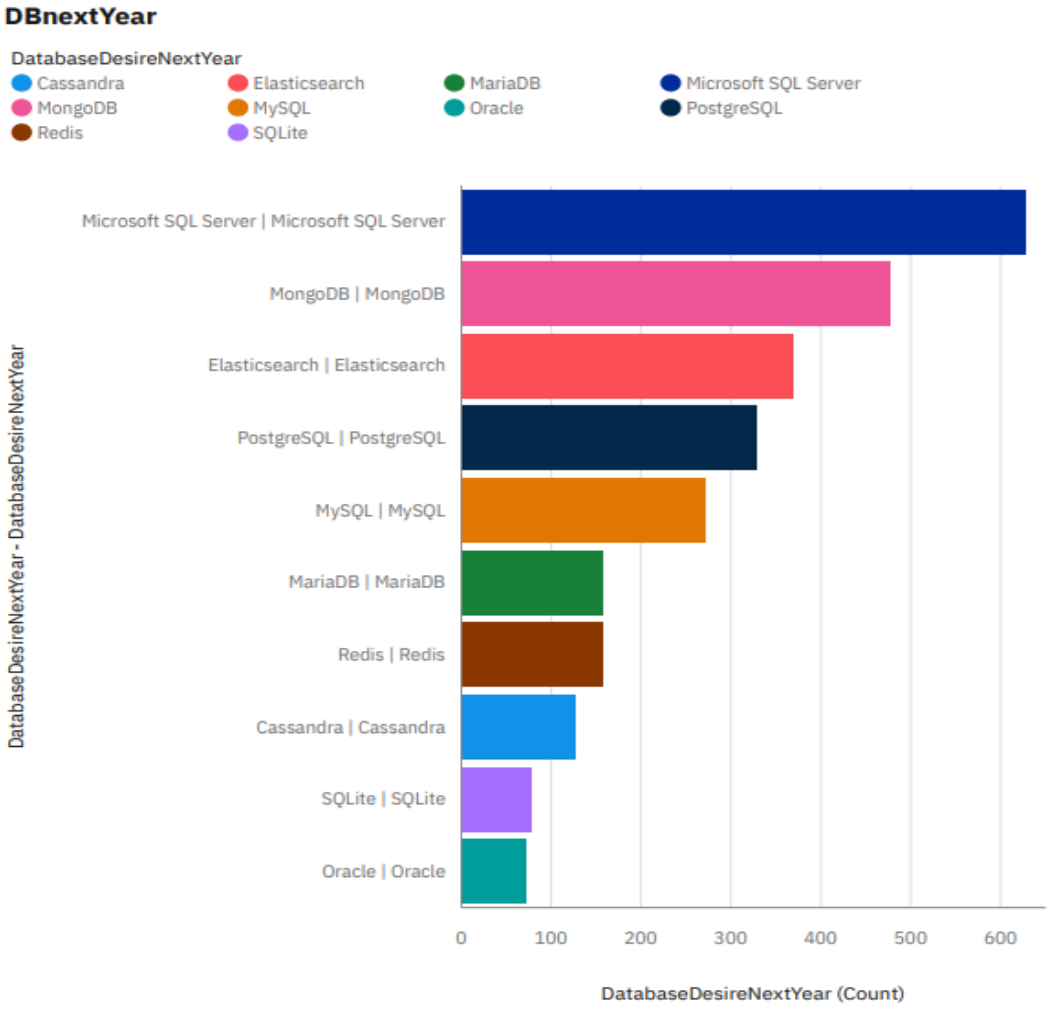
PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

- **C#, HTML/CSS, and JavaScript:** Key for web and app development, emphasizing user interface functionality.
- **Python and SQL:** Essential for data-driven applications and analytics, driving innovation in AI and data science.
- **TypeScript and Java:** Vital for scalable and maintainable software solutions across platforms.
- **C++, Ruby, and Bash/Shell:** Critical for performance optimization, automation, and system-level scripting in diverse tech environments.

- These trends signify a global move towards integrated, data-centric software solutions with scalable, innovative development frameworks.

DATABASE TRENDS





IBM Developer

SKILLS NETWORK

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Microsoft SQL Server and PostgreSQL: Preferred for enterprise-level data management, ensuring reliability and scalability.

MongoDB and MySQL: Essential for versatile, scalable database solutions supporting modern applications and analytics.

Redis, DynamoDB, Firebase, and MariaDB: Increasingly adopted for real-time data processing, cloud-native applications, and robust scalability.

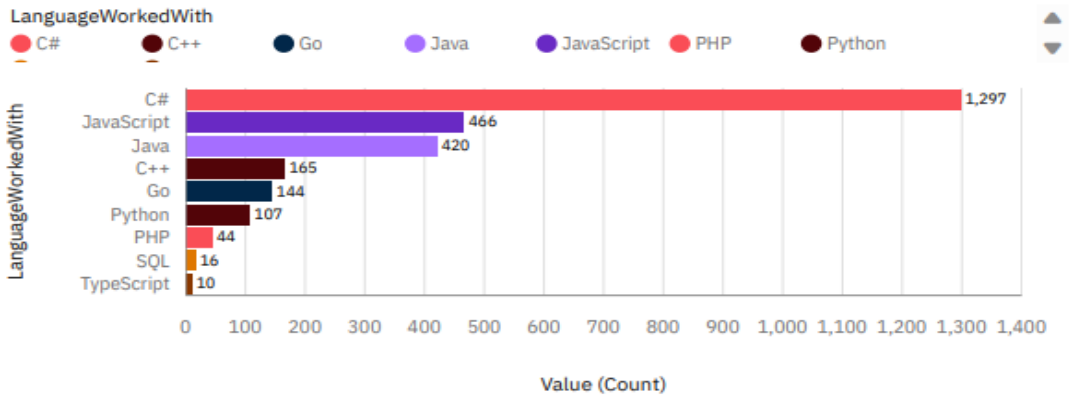
These trends underscore a diverse landscape where organizations prioritize flexible, scalable databases for varied application needs and data-intensive operations.

DASHBOARD

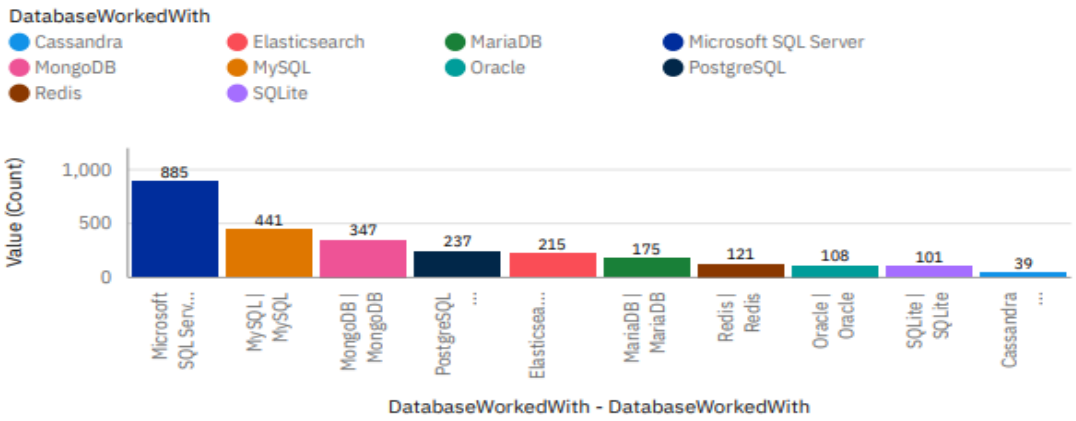
https://github.com/benn880/Project1

DASHBOARD TAB 1 *Current Technology Usage*

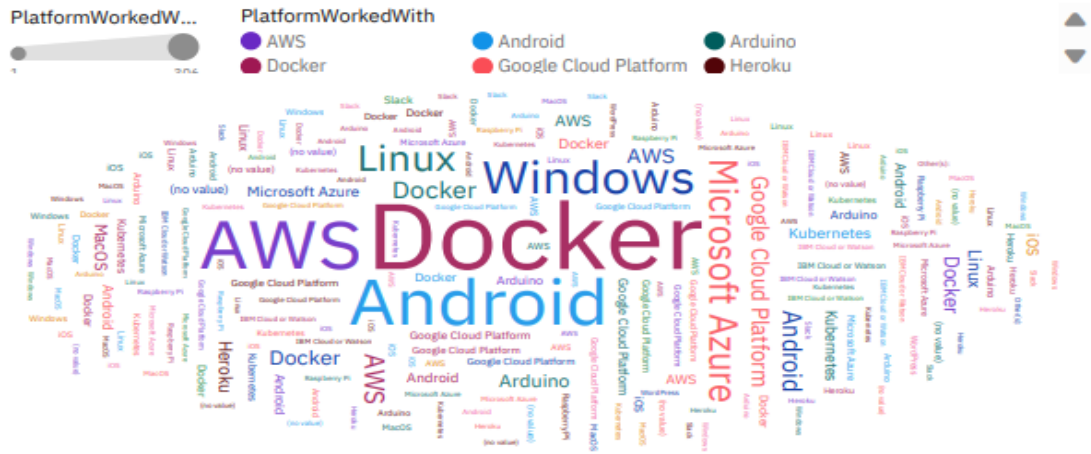
Top 10 LanguageworkedWith



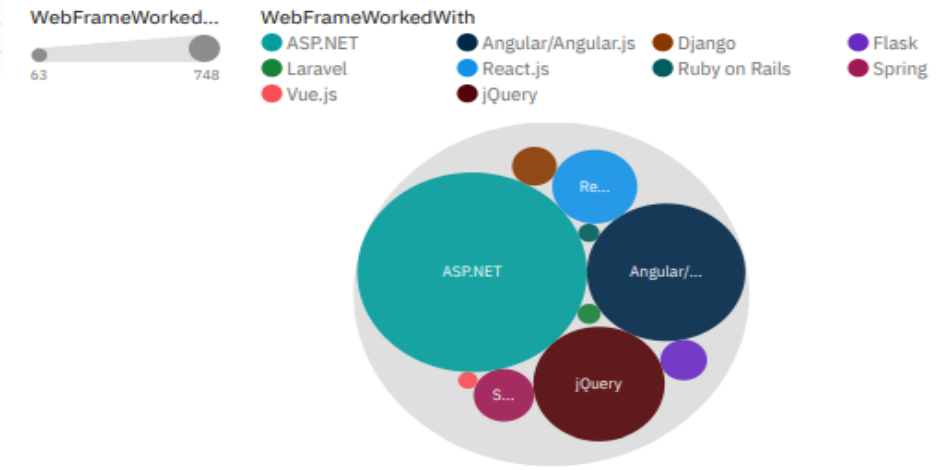
Top 10 DatabaseWorkedWith



WordCloud:PlatformWorkedWith



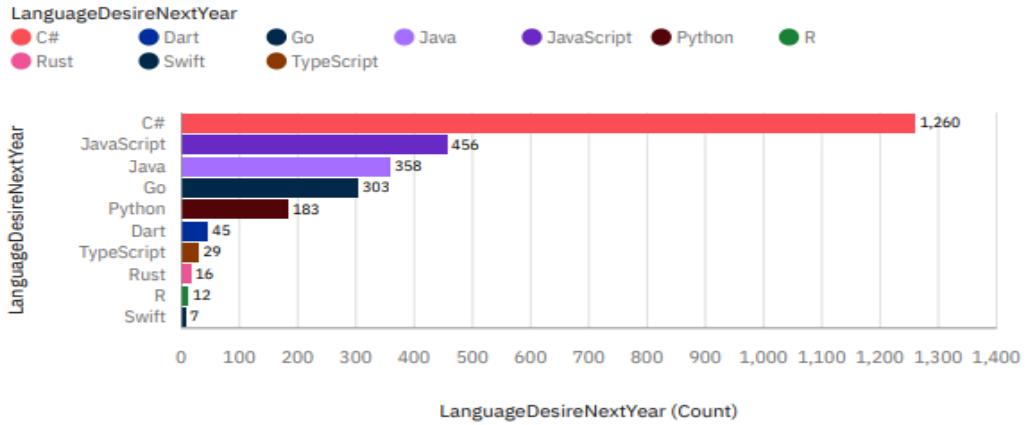
HierarchyChart: Top 10 WebFrameWorkedWith



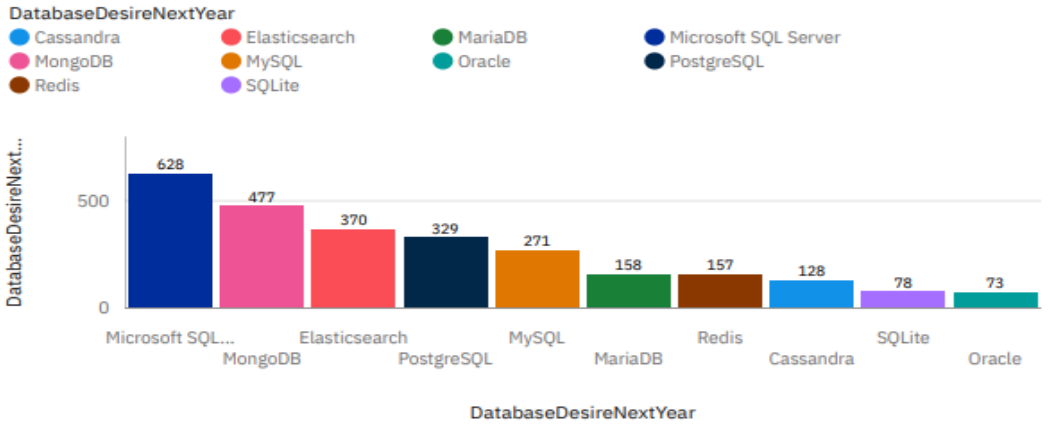
DASHBOARD TAB 2 *Future Technology Trend*

Future Technology Trend

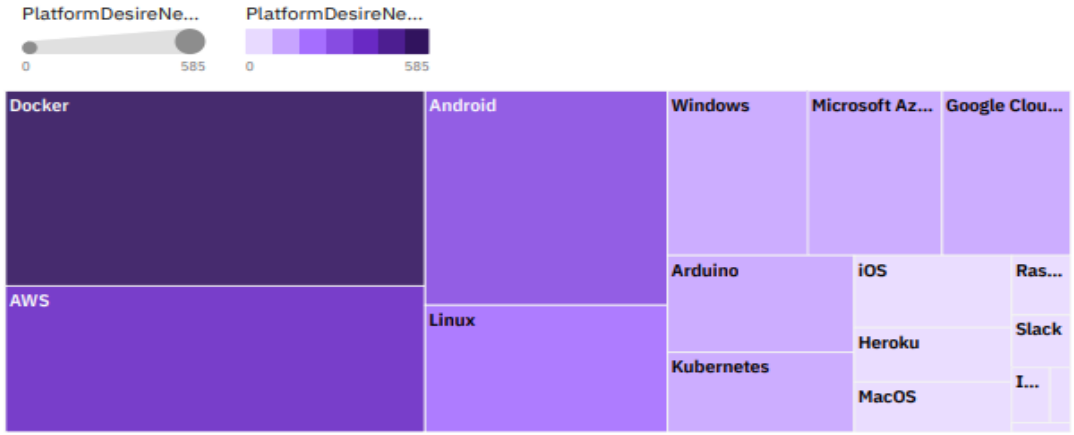
Top 10 LanguageDesireNextYear



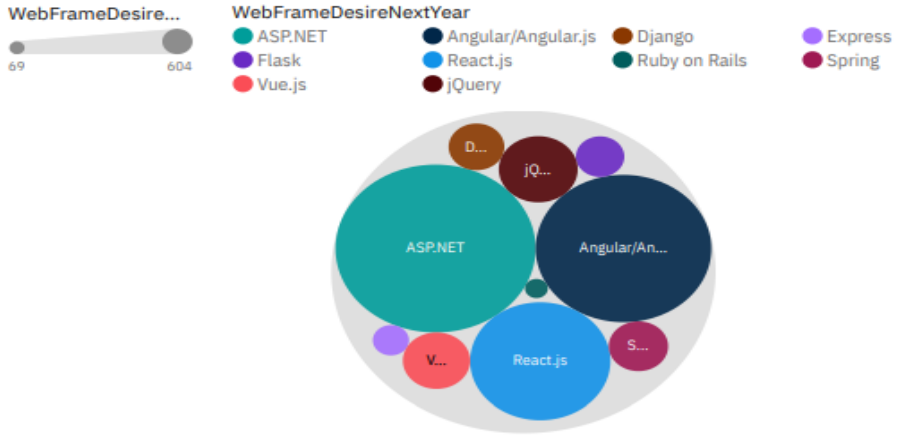
Top 10 DatabaseDesireNextYear



HierarchyColoredChart of PlatformDesireNextYear



Top 10 WebFrameDesireNextYear



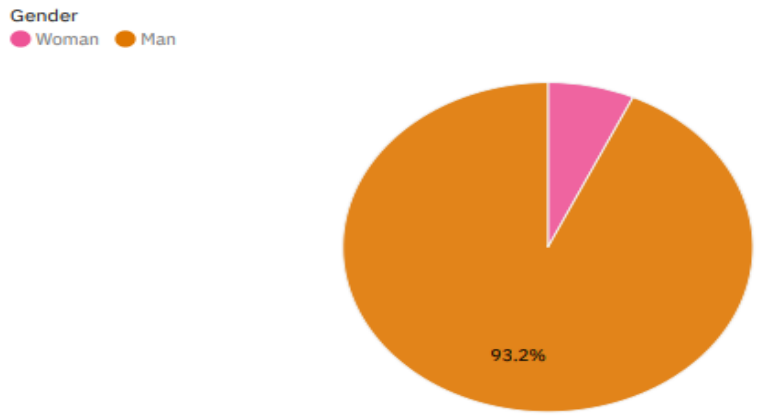
IBM Developer

SKILLS NETWORK

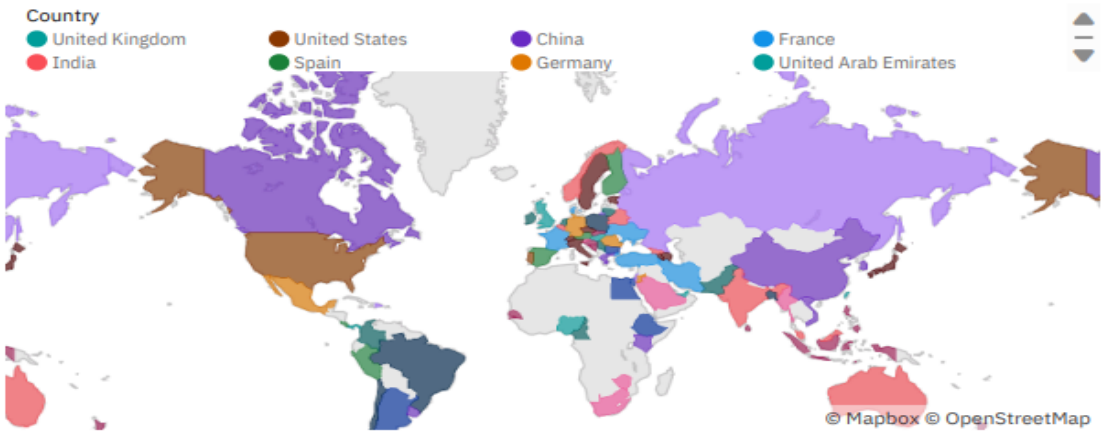
DASHBOARD TAB 3 *Demographics*

Demographics

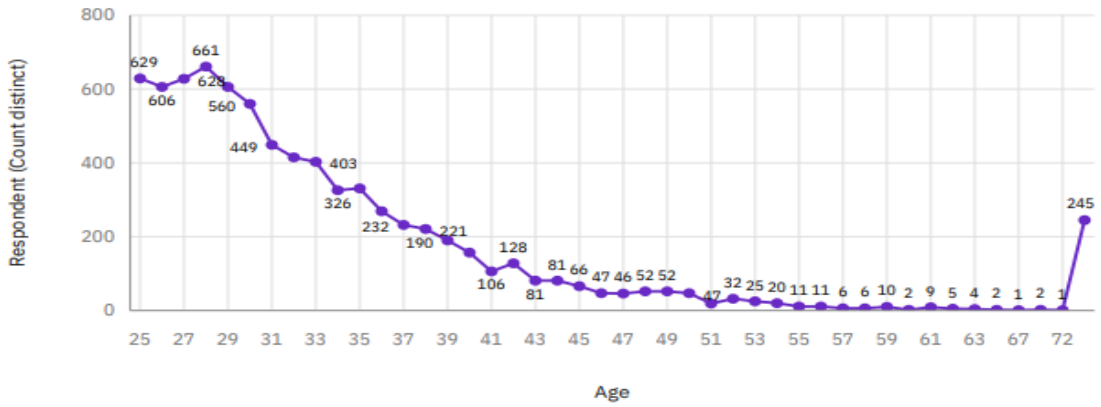
PieChartOfGender



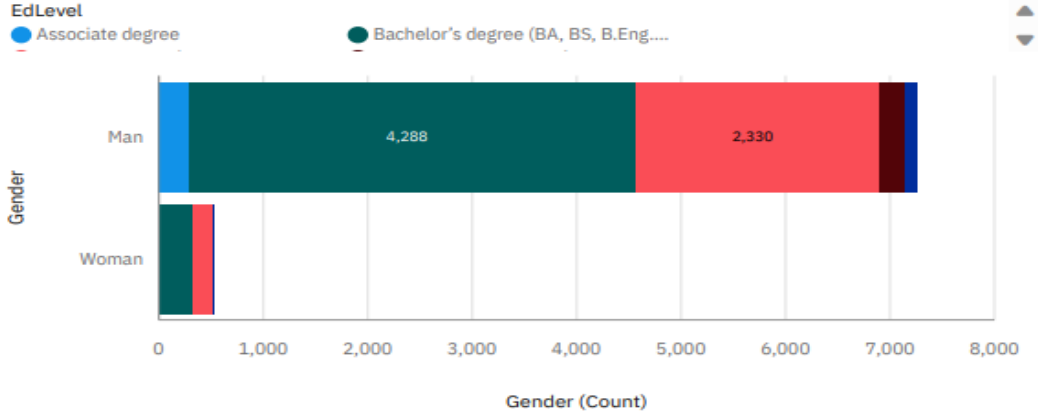
MapChartRespondentRegions



LineChartAge



StackedBarGenderEduLevel



DISCUSSION

The findings and implications of the top 10 programming languages and databases highlight the value of versatility.

Mastering multiple languages and databases can significantly enhance an individual's skill set and career prospects.

Embracing diverse technologies ensures adaptability and competitive advantage in the evolving tech landscape.

OVERALL FINDINGS & IMPLICATIONS

Very diverse programming languages: This Reflects varied application needs and developer preferences.

Versatile databases : This tends to meet diverse application and workload requirements effectively.

These essential technologies will drive innovation and operational efficiency globally.

CONCLUSION

Top 10 Languages: Python and JavaScript lead in versatility and widespread adoption.

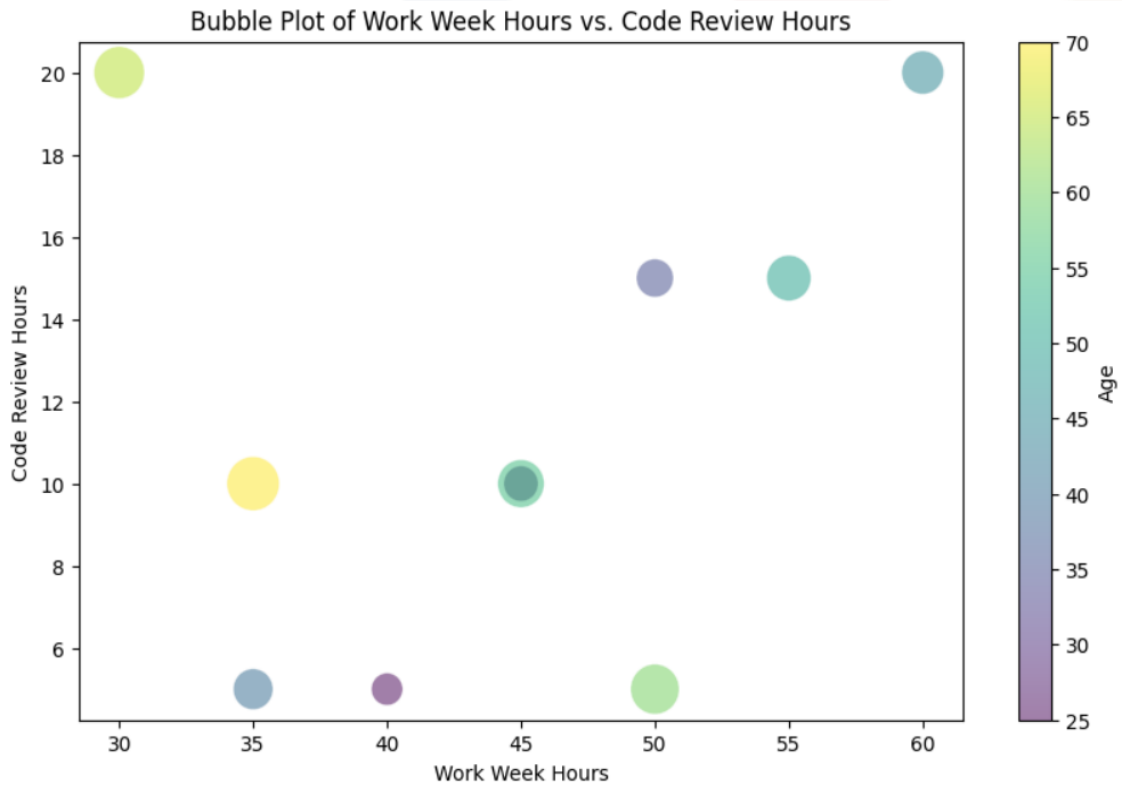
Top 10 Databases: MySQL and PostgreSQL remain favorites due to their reliability and performance.

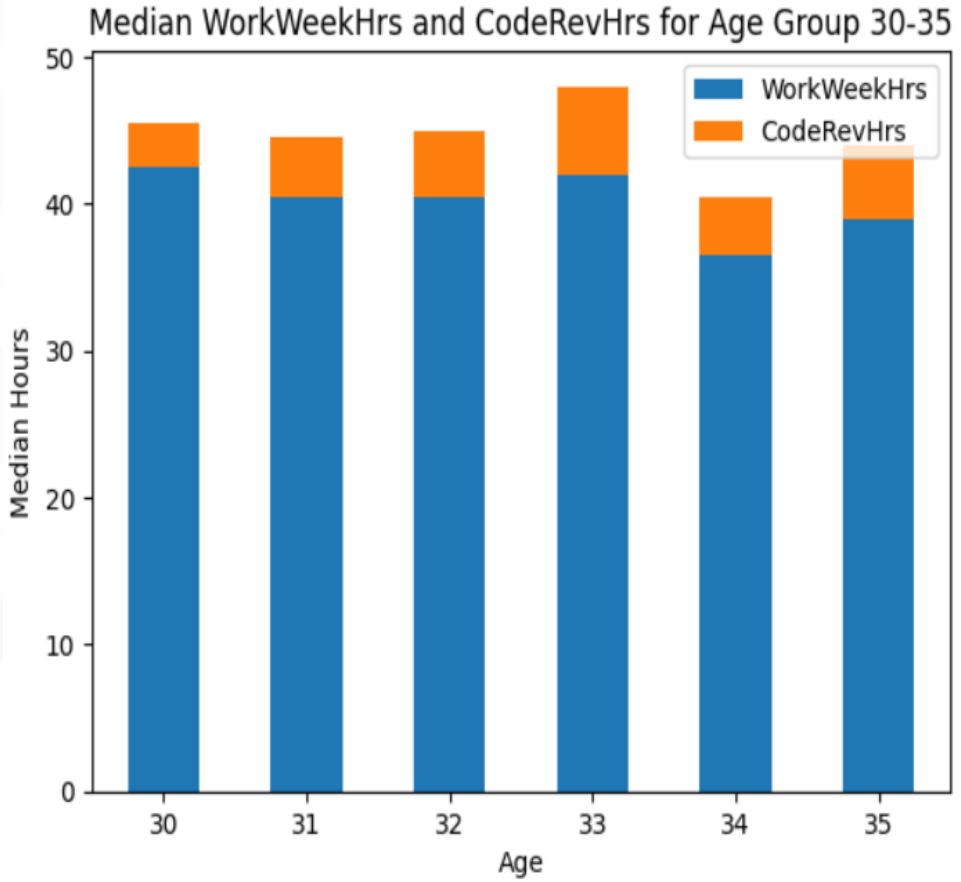
Platforms: AWS and Azure dominate, offering robust cloud solutions for diverse needs.

Web Frameworks: React and Angular are preferred for their flexibility and strong community support.

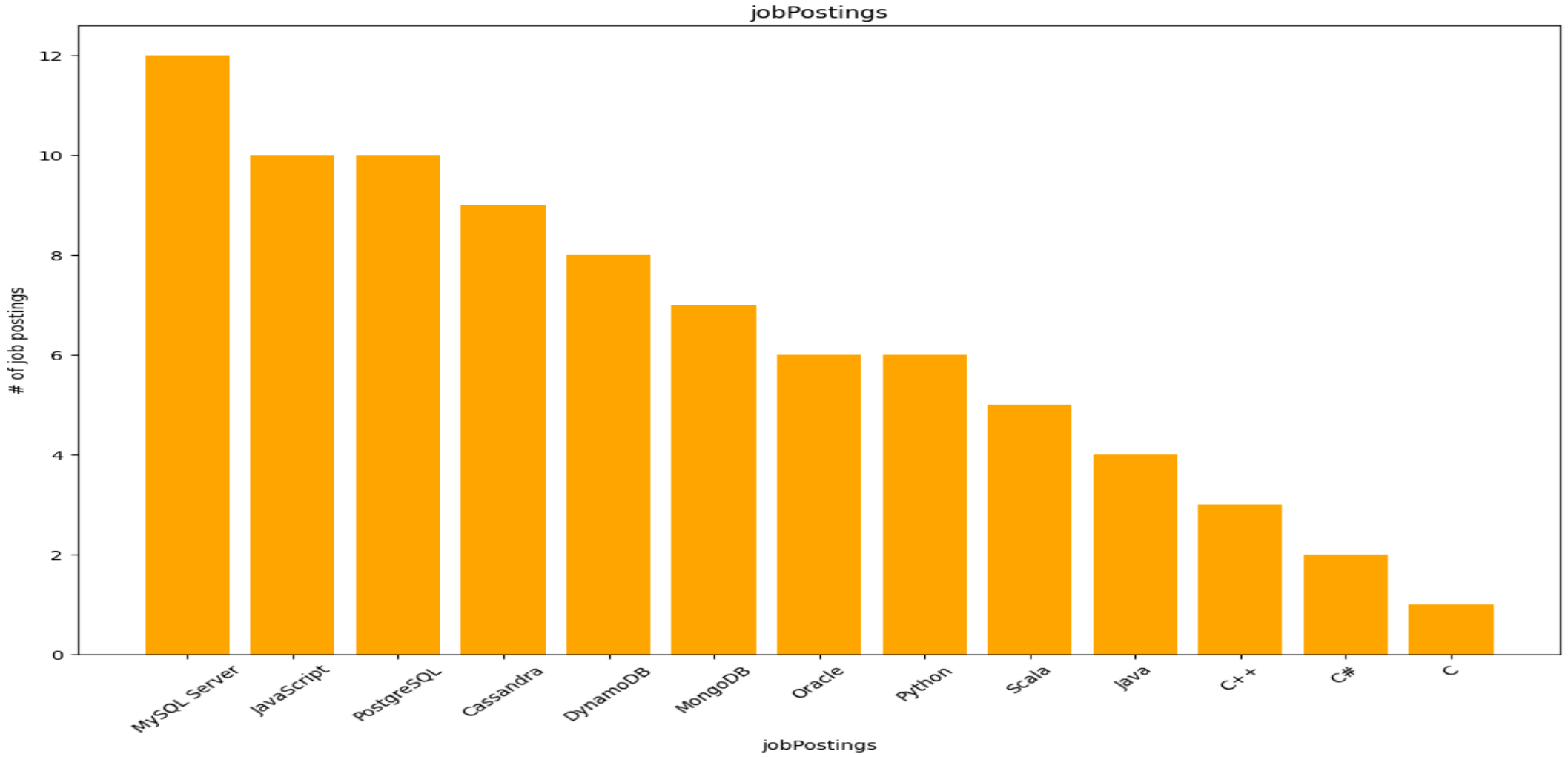
Demographics: Predominantly used by developers aged 25-40 in tech hubs across the US, Europe, and Asia, driving innovation and adoption trends.

APPENDIX

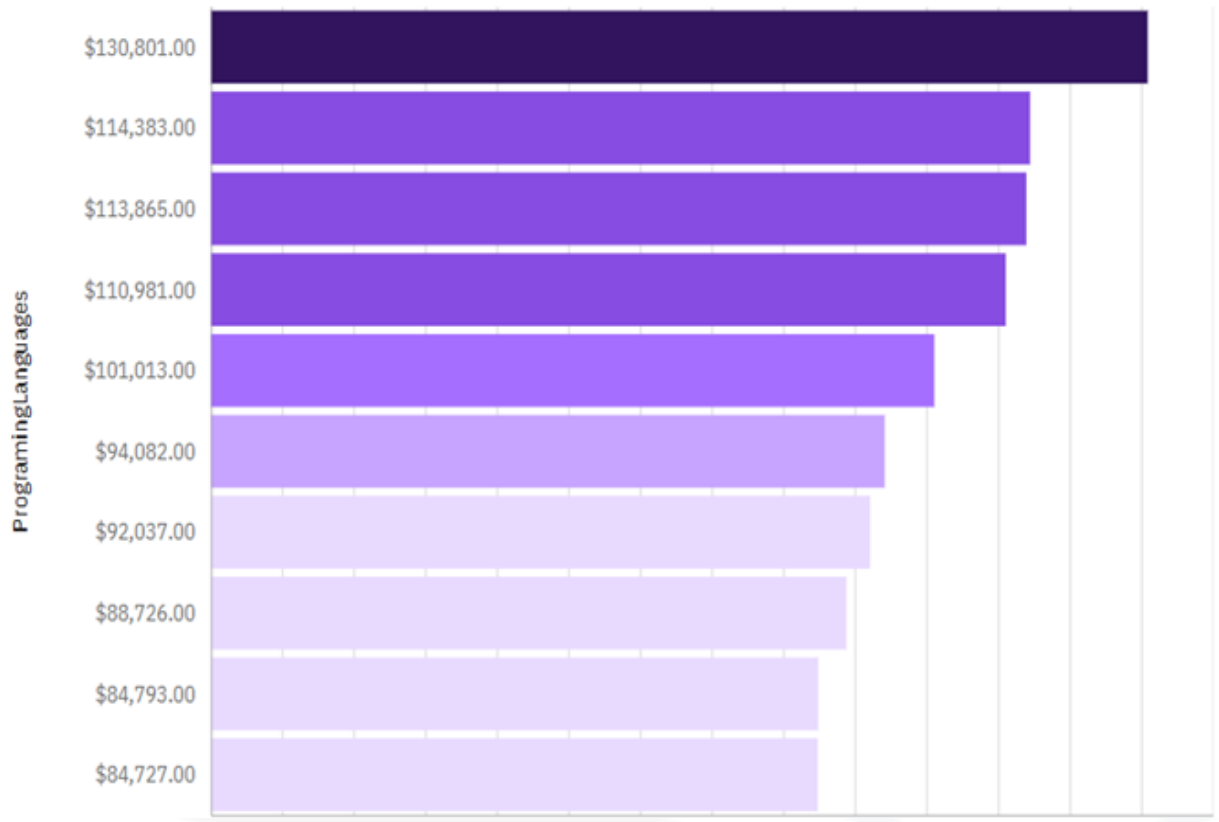

Bubble Plot of Work Week Hours vs. Code Review Hours
Code Review Hours
Work Week Hours
Age
20
18
16
14
12
10
8
6
30
35
40
45
50
55
60
70
65
60
55
50
45
40
35
30
25


Median WorkWeekHrs and CodeRevHrs for Age Group 30-35
WorkWeekHrs
CodeRevHrs
Median Hours
Age
50
40
30
20
10
0
30
31
32
33
34
35

JOB POSTINGS



POPULAR LANGUAGES



Programming Language	Salary
Swift	$130,801.00
Python	$114,383.00
C++	$113,865.00
Java script	$110,981.00
Java	$101,013.00
Go	$94,082.00
R	$92,037.00
C#	$88,726.00
SQL	$84,793.00
PHP	$84,727.00

Thank you