



Technology Trend & Analysis

WONG CHI YANN

21 Sept 2024

OUTLINE



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

EXECUTIVE SUMMARY



- Trends and distribution of the programming languages, databases and platform based on the respondent counts
- Trends were analyzed based on 3 factors:
 - Current Technology Usage
 - Future Technology Usage
 - Demographics
- Classification on gender and formal education level based on respondent counts

INTRODUCTION



- About
 - Analyze the trends in software development
- Purpose
 - Identify the future skills requirements
 - Identify top demanding programming language
 - Identify top demanding database skills
 - Identify popular IDEs
- Audience
 - Human Resource
 - IT Head

METHODOLOGY

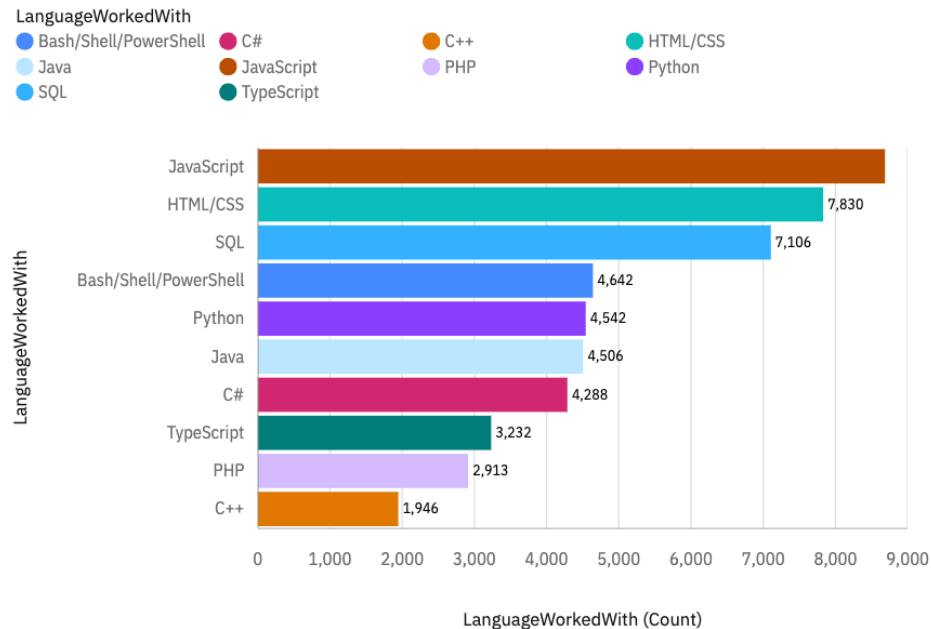


- Data Collection
 - Stack Overflow Developer 2019 Survey
 - Github Job Postings
 - Programming Languages Annual Salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization

PROGRAMMING LANGUAGE TRENDS

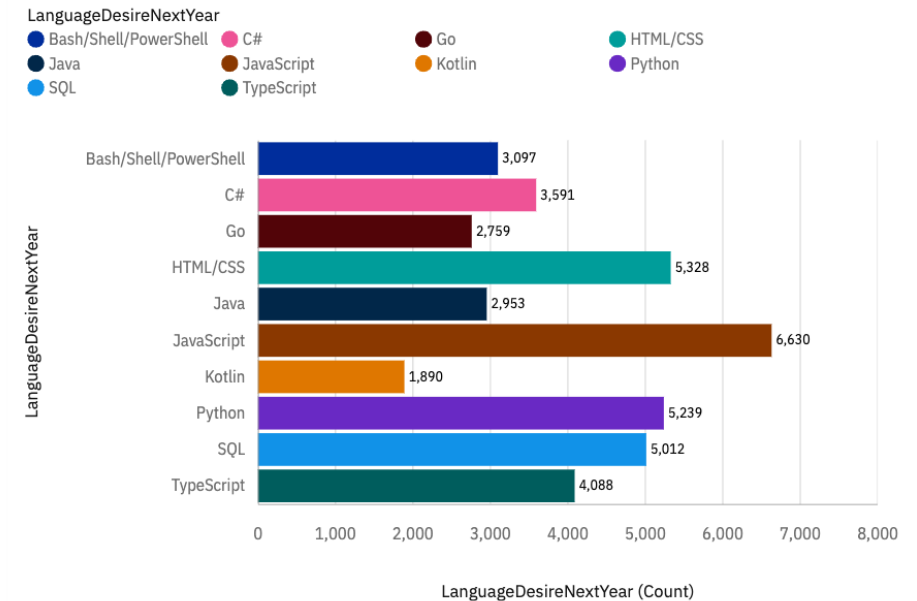
Current Year

TOP 10 Programming Languages Worked With



Next Year

TOP 10 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Java Script is top trending language
- Python and TypeScript are becoming popular
- HTML/CSS and SQL still has a great portion in language usage trend

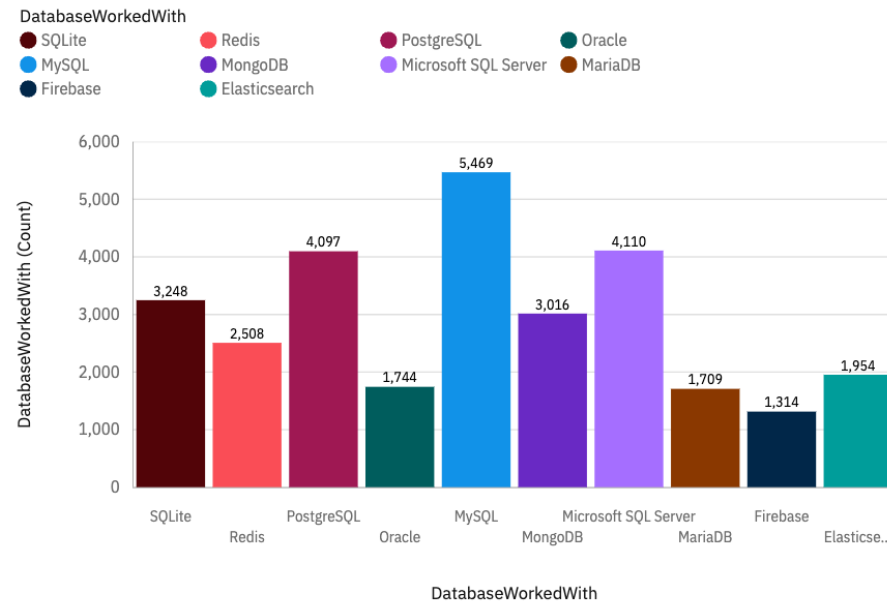
Implications

- Web developments and Web developers are still in high demands
- Java Script and TypeScript are crucial to learn for developers
- Python is new trending language, especially popular in AI fields

DATABASE TRENDS

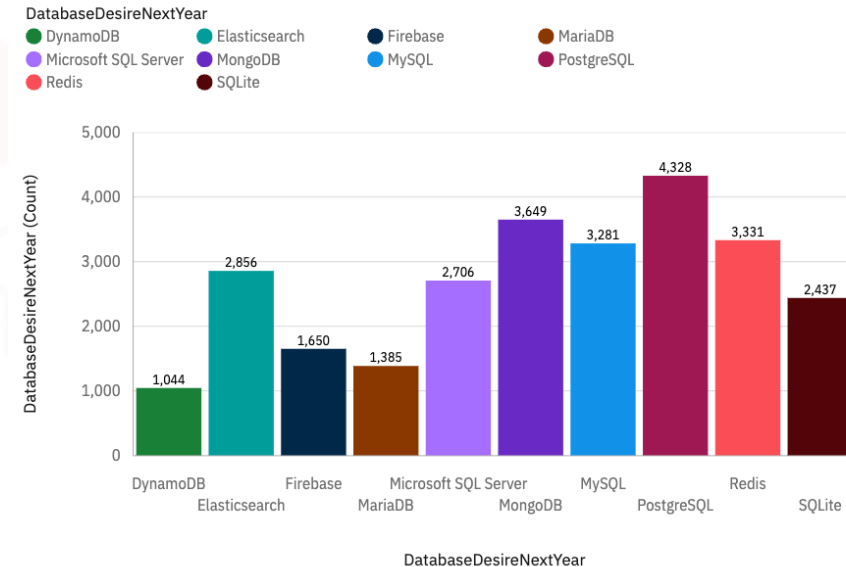
Current Year

TOP 10 Database Worked With



Next Year

TOP 10 Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most popular database
- There are still a lot of companies using Microsoft SQL Server
- MongoDB and Redis are the most favorable NoSQL database

Implications

- Open-source databases like MySQL are still preferable
- Software development and Big Data technology still requires SQL
- NoSQL databases will make an impact for relational databases

DASHBOARD

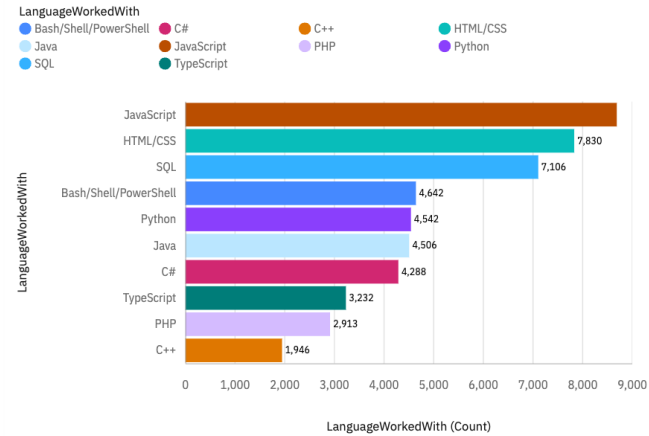


[https://github.com/chiyannw/cyannw/blob/main/Capstone
%20Project_Part%20A.pdf](https://github.com/chiyannw/cyannw/blob/main/Capstone%20Project_Part%20A.pdf)

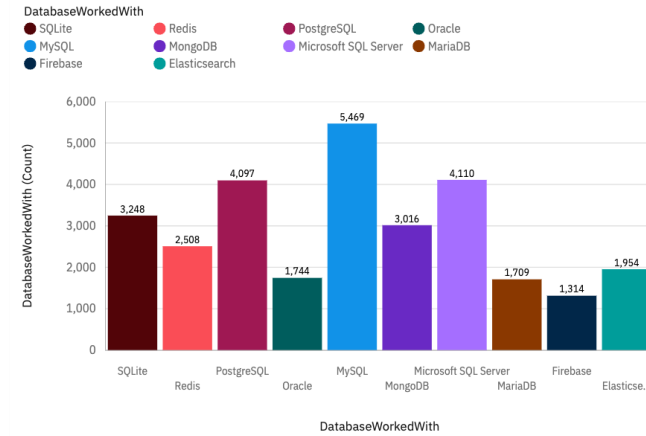
CURRENT TECHNOLOGY USAGE DASHBOARD

Current Technology Usage

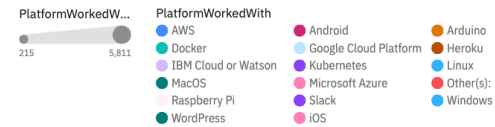
TOP 10 Programming Languages Worked With



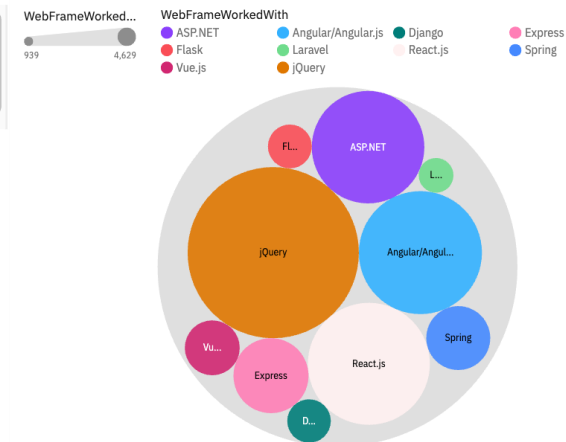
TOP 10 Database Worked With



Platform Worked With



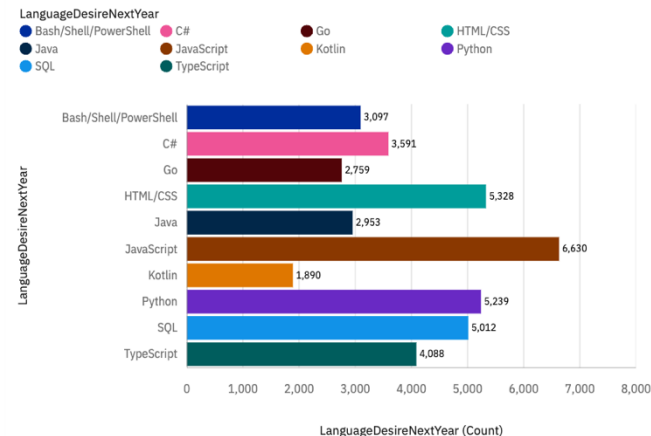
TOP 10 Web Frame Worked With



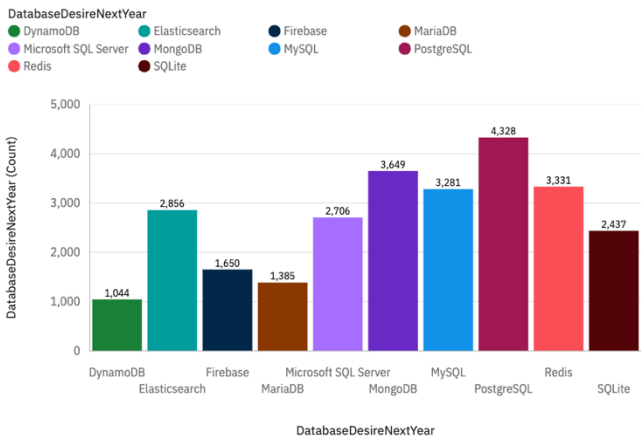
FUTURE TECHNOLOGY USAGE DASHBOARD

Future Technology Trend

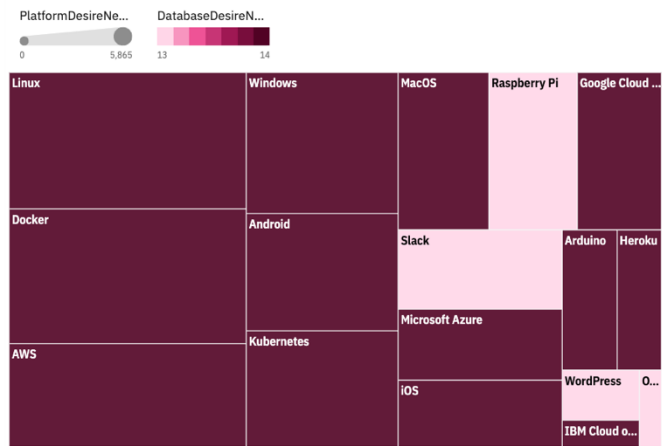
TOP 10 Language Desire Next Year



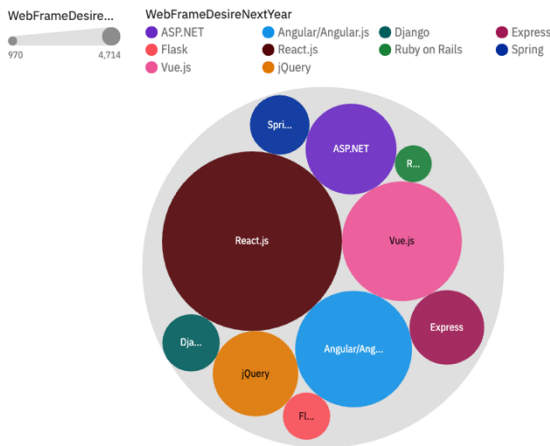
TOP 10 Database Desire Next Year



Platform Desire Next Year



TOP 10 Web Frame Desire Next Year

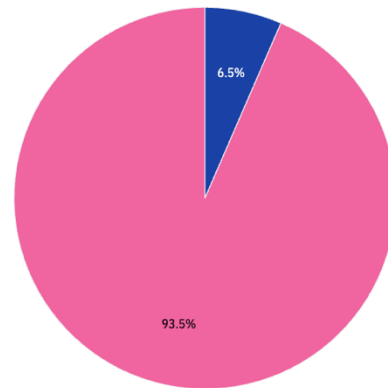


DEMOGRAPHICS DASHBOARD

Demographics

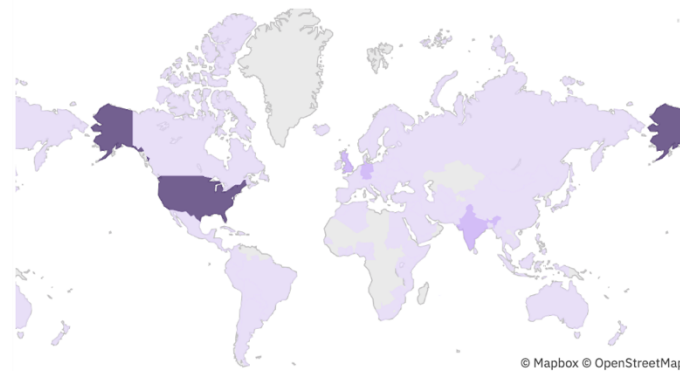
Respondent Count by Gender

Gender
● Woman ● Man

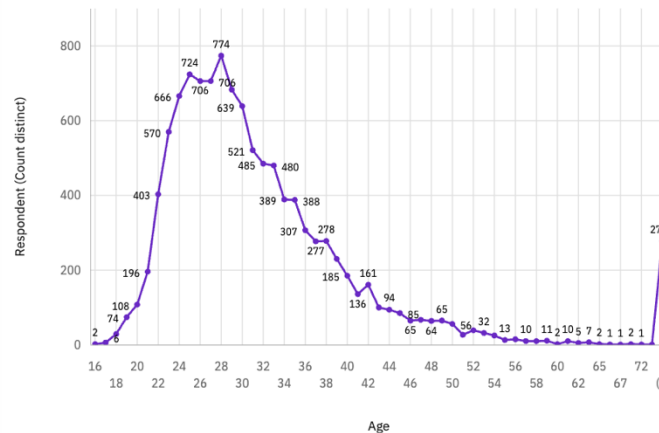


Respondent Count by Country

Respondent (Cou...
1 3,058

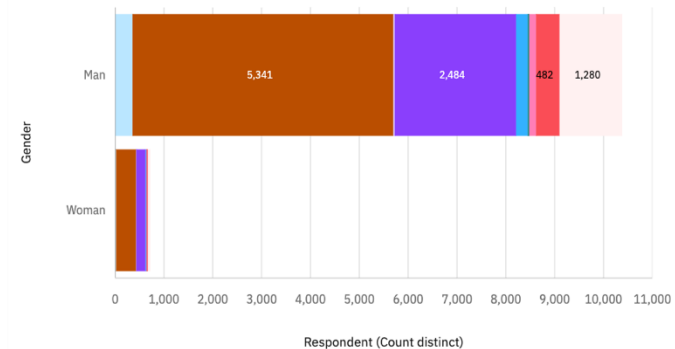


Respondent Count by Age



Respondent Count by Gender And Formal Education Level

EdLevel
● Associate degree ● Bachelor's degree (BA, BS, B.Eng....
● Master's degree (MA, MS, M.Eng., etc.) ● Other doctoral degree (Ph.D., Ed.D., etc.)
● Professional degree (JD, MD, etc.) ● Secondary school (e.g. American ...
● I never completed any formal edu...
● Primary/elementary school
● Some college/university study wit...



DISCUSSION



- Technology Usage Trend Now and Future
- Gender, Age and Education Discrimination in IT Industry

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology trends change every year
- USA is the top technology country
- There are extreme gender and age discrimination
- Docker and AWS are the most popular platform

Implications

- Programmers should always follow the latest technology trends
- More countries should have equal chance exposed to new technology
- Gender and Age should not be one of the concerns or benefits of employment

CONCLUSION



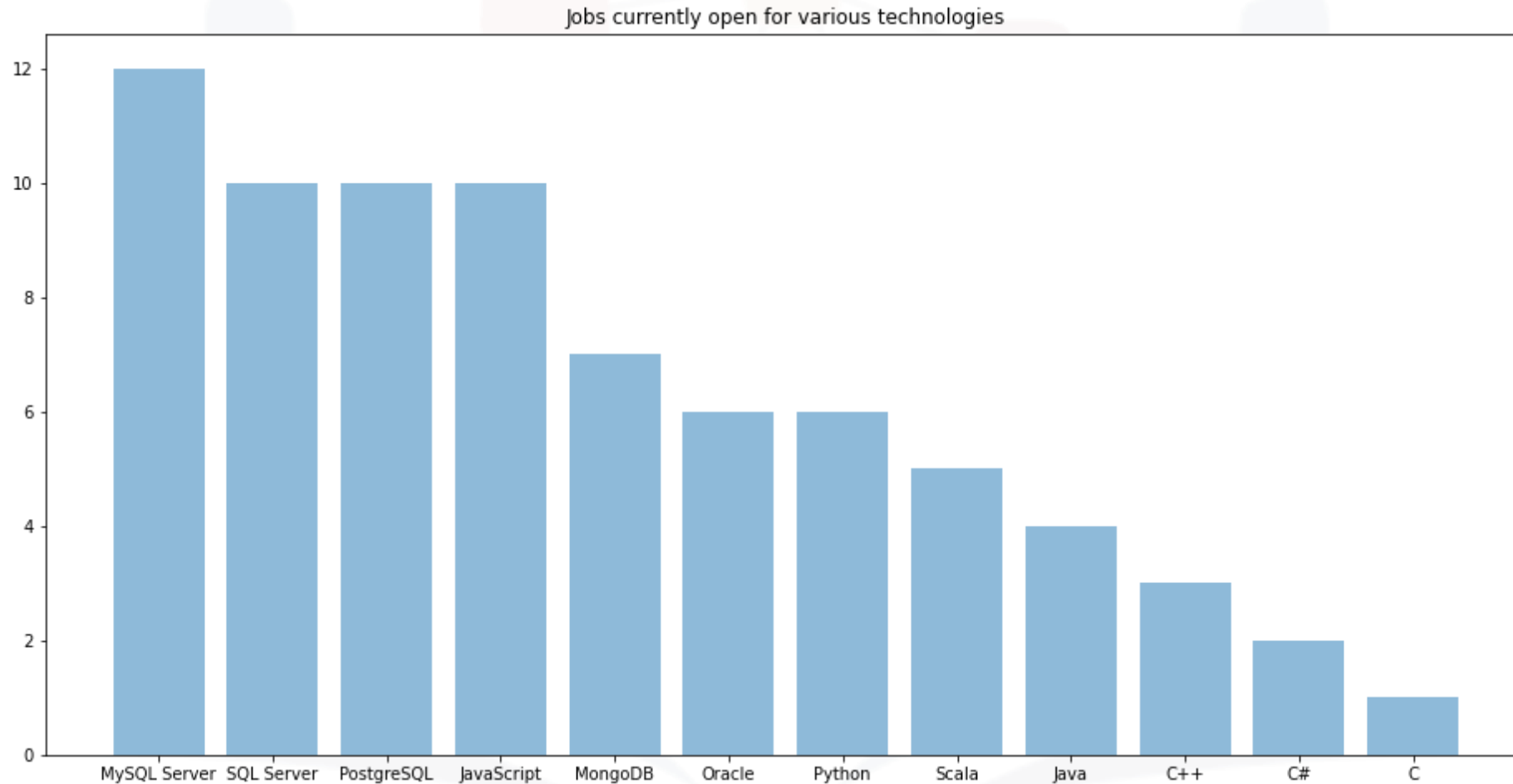
- Technology Trends
- Programming Languages, Database, Platform and Webframe Trends
- Demographic Trends
- Gender and Education

APPENDIX



- IBM Cognos Dashboard Embedded (CDE) provides users with data discovery capabilities to visually explore and interact with their data to identify the key insights for improving data driven decisions.

JOB POSTINGS



POPULAR LANGUAGES

