



Future Skill Requirements for Developers

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August 21, 2024

OUTLINE



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EXECUTIVE SUMMARY



- JavaScript and HTML/CSS continue to be highly used and highly desired among developers, while the other programming languages are fluctuating between current usage and desire to be used.
- There is a lot of fluctuation between databases currently used and databases desired to be used by developers.
- What developers desire to use is not the same technologies that job postings are asking for
 - MongoDB and PostgreSQL are the exceptions

INTRODUCTION



- Identifying future skill requirements:
 - What are the top programming languages in demand?
 - What are the top database skills in demand?
 - What are the required skills for jobs?
 - What are the programming languages with the top annual salaries?

METHODOLOGY



- Data Sources:
 - https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html
 - <https://www.kaggle.com/promptcloud/jobs-on-naukricom>
 - A modified subset of:
<https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>
- Data Wrangling
- Exploratory Data Analytics
 - Distribution
 - Outliers
 - Correlation
- Data Visualization
- Dashboard

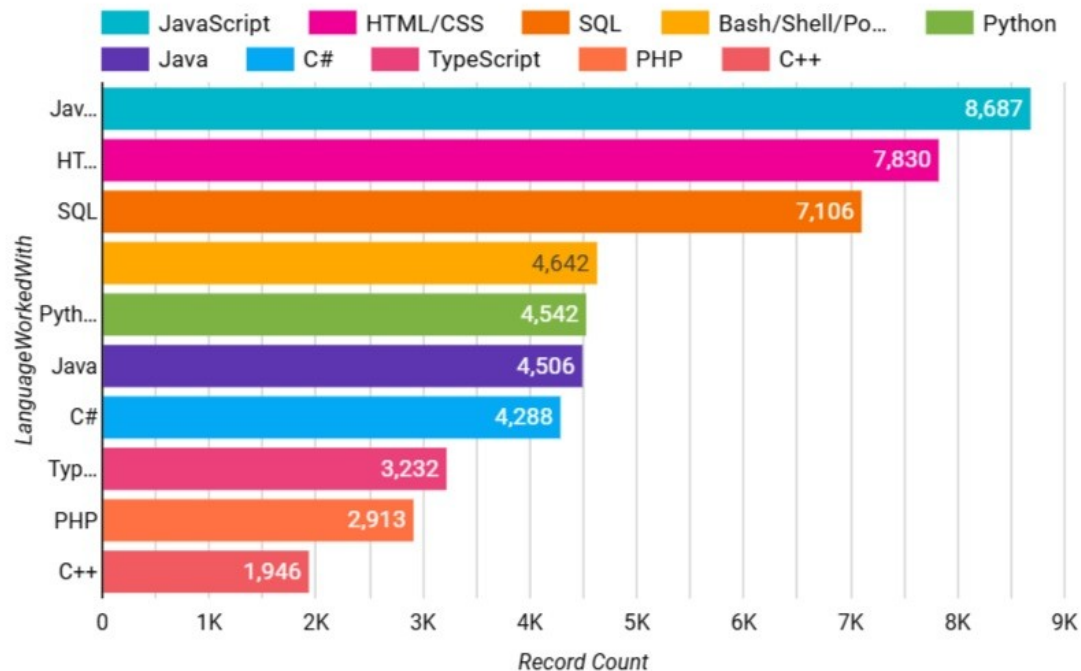
RESULTS

- Data Collection:
 - APIs
 - Webscraping
 - Surveys
- Organized in a variety of graphs for easy comparison
- Shows the Top 10 Programming Languages currently used by and desired by developers
- Shows the Top 10 Databases currently used by and desired by developers

PROGRAMMING LANGUAGE TRENDS

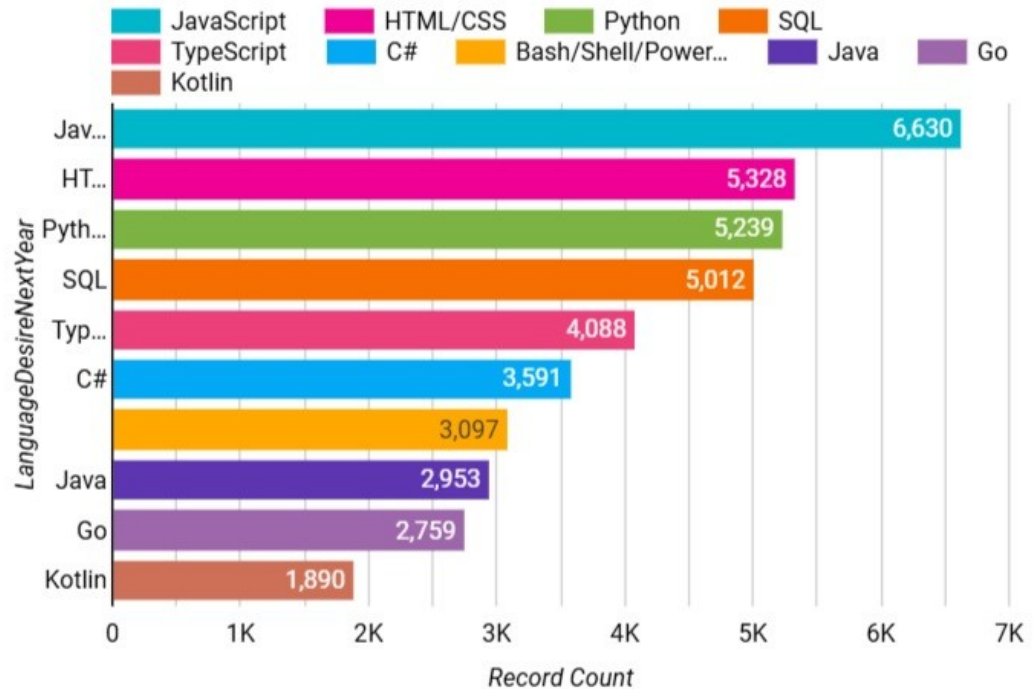
Current Year

Top 10 Programming Languages Worked With



Next Year

Top 10 Languages Desired for Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript and HTML/CSS are the most worked with and the most desired programming languages
- C++ and PHP are currently worked with, but not desired
- Kotlin and Go are desired, but not worked with.

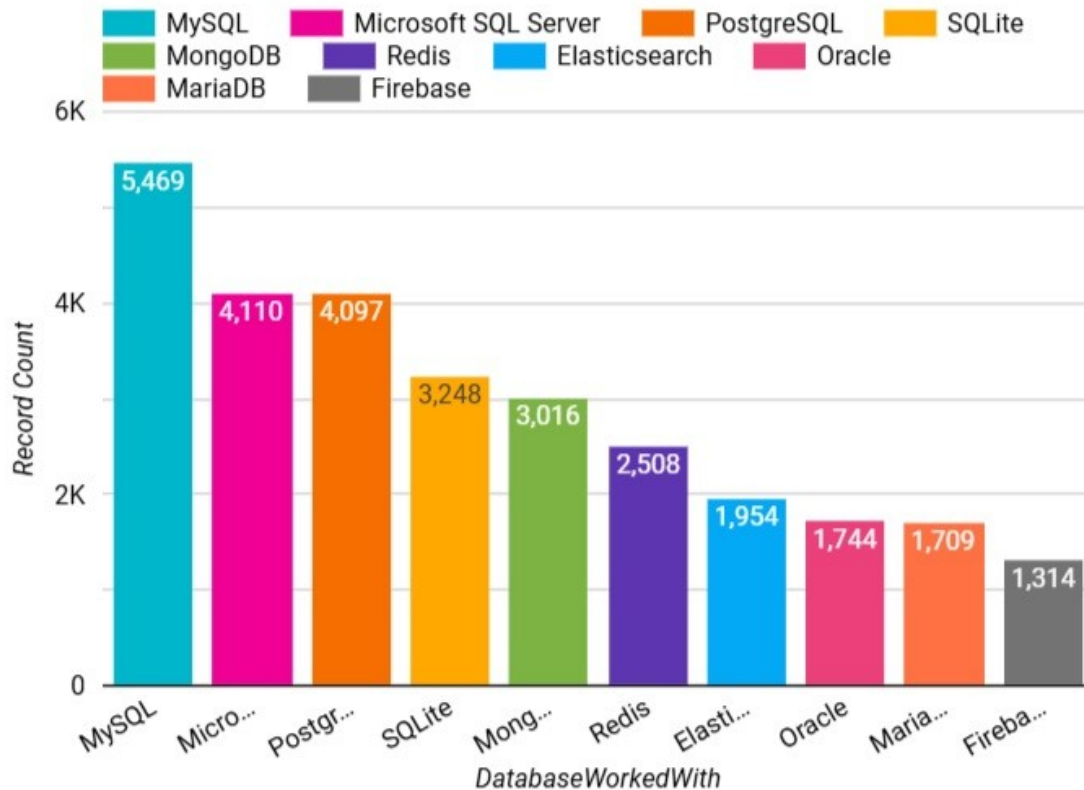
Implications

- JavaScript and HTML/CSS continue to be highly used in the field
- C++ and PHP is losing interested people in the future
- Kotlin and Go are gaining interest

DATABASE TRENDS

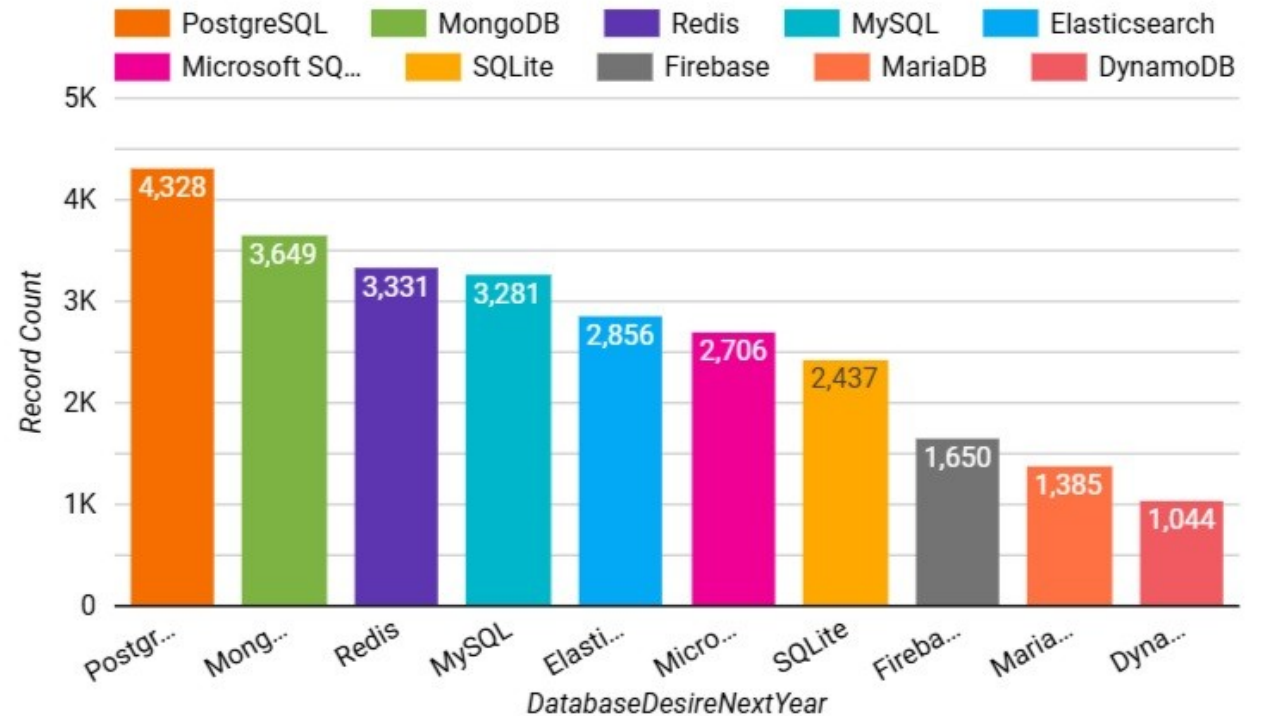
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired for Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySql and Microsoft SQL Server are currently very highly used, but drop a lot for the desired database
- PostgreSQL, MangoDB, Redis, Elasticsearch, and Firebase all increase from number of people currently using to number desiring it.
- Oracle is not in the top 10 desired listing.

Implications

- Interest in MySql and Microsoft SQL Server is decreasing.
- Interest in other databases is increasing
- Interest in Oracle is decreasing.

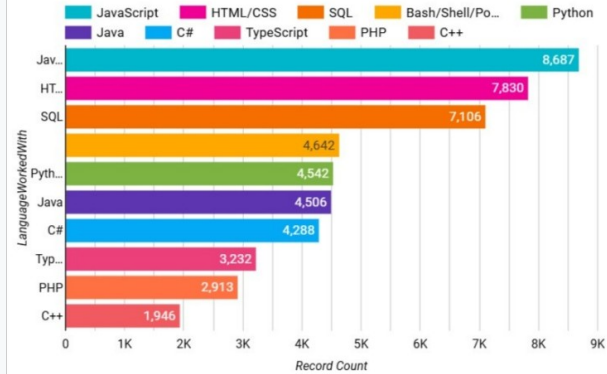
DASHBOARD



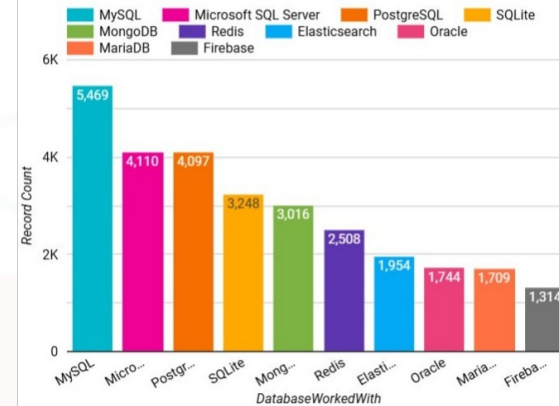
<https://github.com/mysticwolf57/IBM-Capstone-Dashboard>

Current Technology Usage

Top 10 Programming Languages Worked With



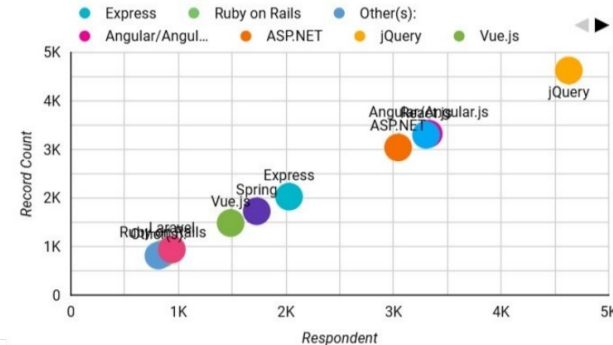
Top 10 Databases Worked With



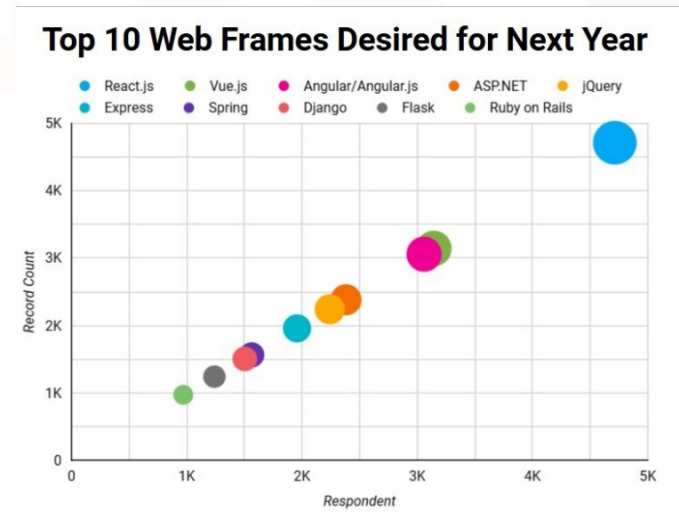
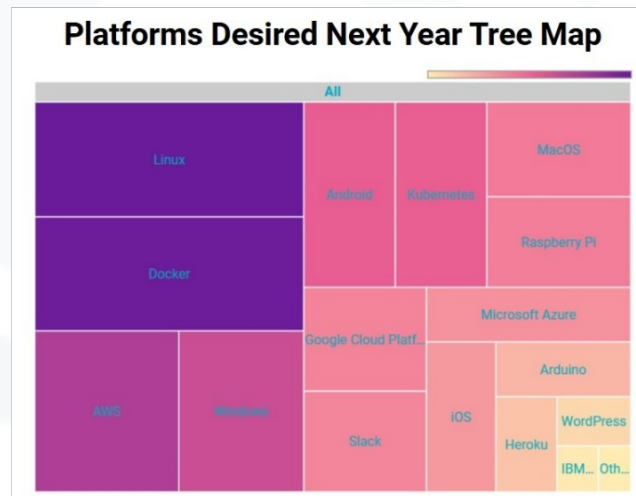
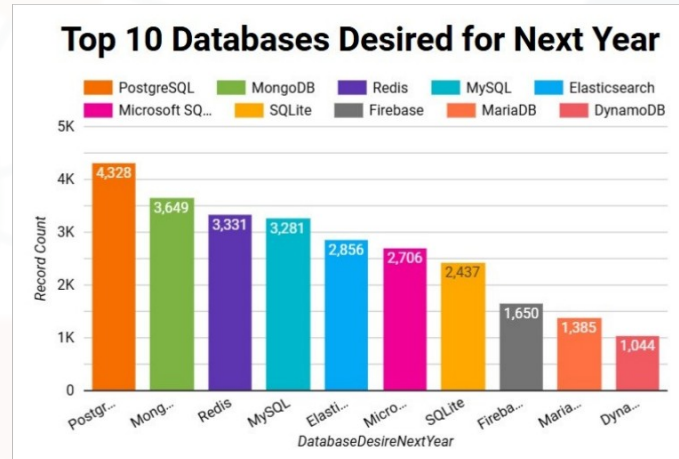
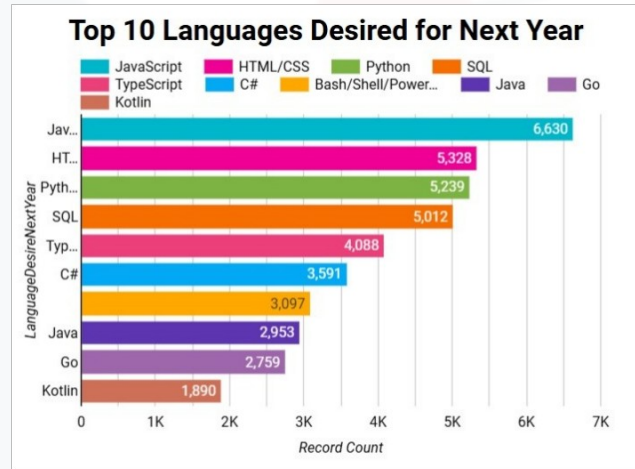
Platform Worked With by Record Count



Top 10 Web Frames Worked With

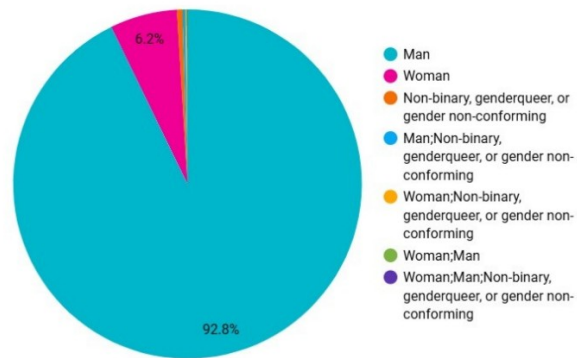


Future Technology Trend

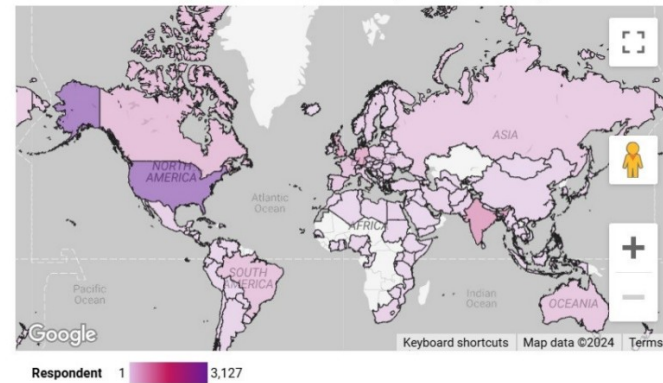


Demographics

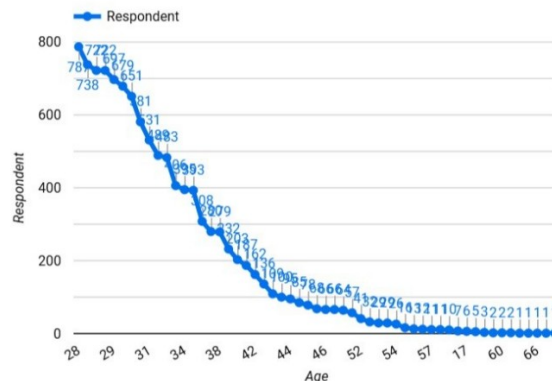
Respondents Classified by Gender



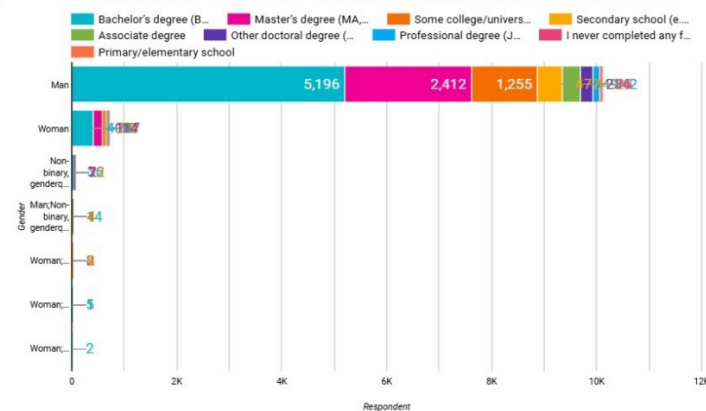
Respondent Count per Country



Number of Respondents and Their Ages



Respondent Count by Gender, Classified by Education Level



DISCUSSION



- Many of the developers are desiring programming languages or databases that do not have high annual salaries or as many job postings
 - This will make it harder for the the developers to find jobs
 - The exceptions are Mongo DB and PostgreSQL, which many developers desire in the next year and which have some of the higher number of job postings for databases.
 - The programming language with the highest average annual salary is not being used or desired by the developers that were surveyed.

OVERALL FINDINGS & IMPLICATIONS

Findings

- C and Java have the highest job postings
- Swift and Python have the highest average annual salaries
- Sql Server, Mongo DB, and PostgreSQL have the highest job postings

Implications

- Developers are not desiring to use C and Java, meaning these job postings are less likely to be filled
- Developers in the survey are not using Swift as much as other languages
- Developers are desiring to use some of the databases that are in demand for jobs.

CONCLUSION

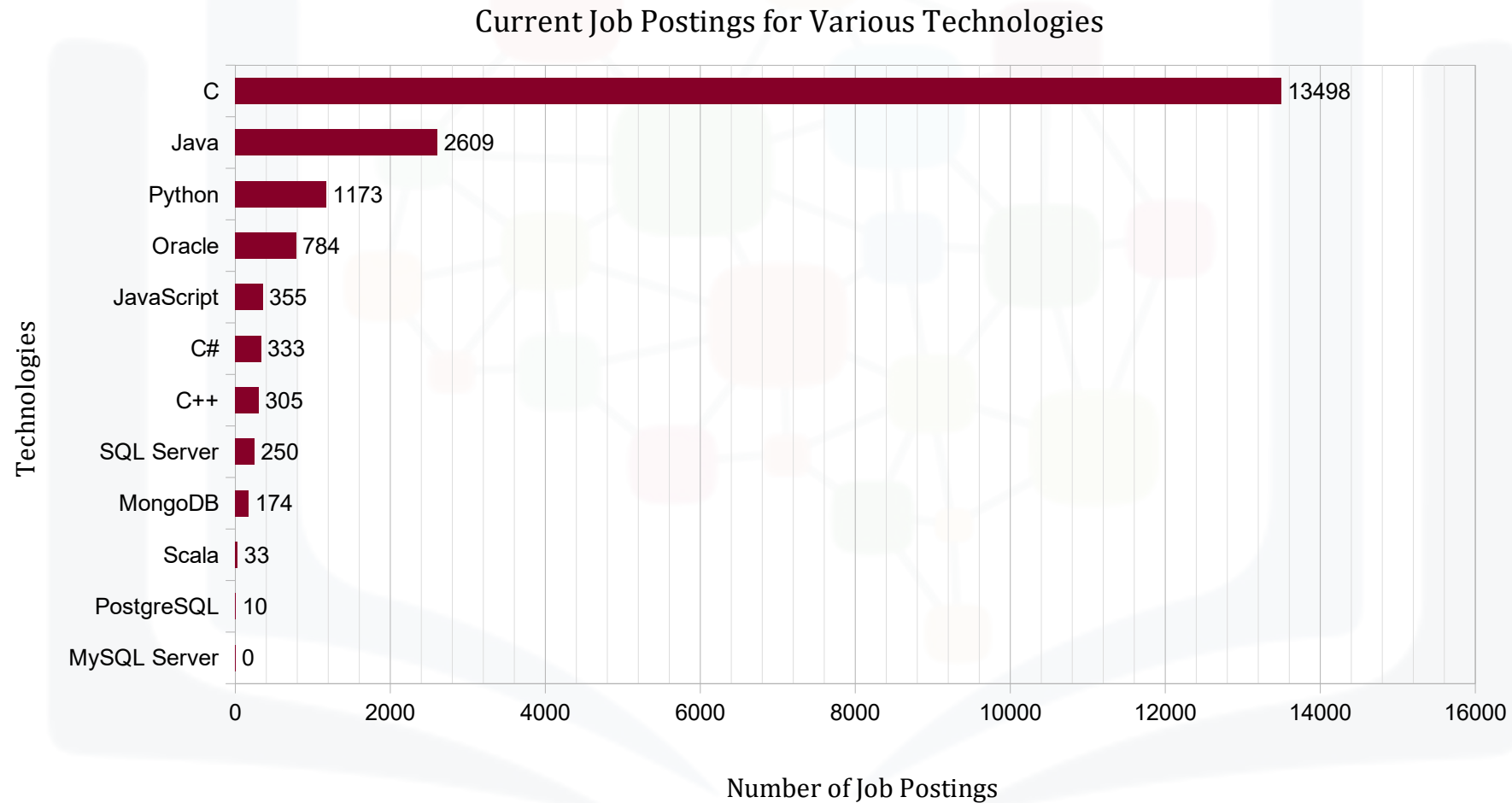
- The top programming languages for jobs postings are:
 - C, Java, Python, Oracle, JavaScript, C#, and C++
- The top programming languages desired by developers are:
 - JavaScript, HTML/CSS, Python, SQL, and TypeScript
- The top database skills for job postings are:
 - SQL Server, MongoDB, PostgreSQL, and MySQL
- The top database skills desired by developers are:
 - PostgreSQL, MongoDB, Redis, MySQL, and Elasticsearch
- The programming languages with the highest annual salary:
 - Swift, Python, C++, JavaScript, and Java



APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

