



stack **overflow**

DEVELOPER SURVEY **2019**

Analysis by Florent Charlier - August 2024

TABLE OF CONTENTS



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

EXECUTIVE SUMMARY



- Find insights to explain the current situation and trends for 2020.
- Focus on programming languages and databases.
- Give an idea of Platforms and Webframes.
- Analyze the panel of people who make up this study, by gender, level of education and location.

INTRODUCTION



The aim of this analysis is to give a quick overview of the current market, and to look at the trends emerging for 2020.

The analysis is largely based on a subset of a study carried out by stack overflow on 90,000 developers.

Note: This randomised subset contains around 11,000 responses of the original data set. Any conclusions you draw after analyzing this subset may not reflect the real world scenario.

METHODOLOGY



- Data Collection
 - Stack Overflow Survey Dataset (IBM Cloud, .csv)
 - GitHub Jobs API (kaggle, .json)
 - Webscrapping (IBM Cloud)
- Data Wrangling
- Exploratory Data Analysis
 - Distribution
 - Outliers
- Data Visualization
- Dashboard Creation

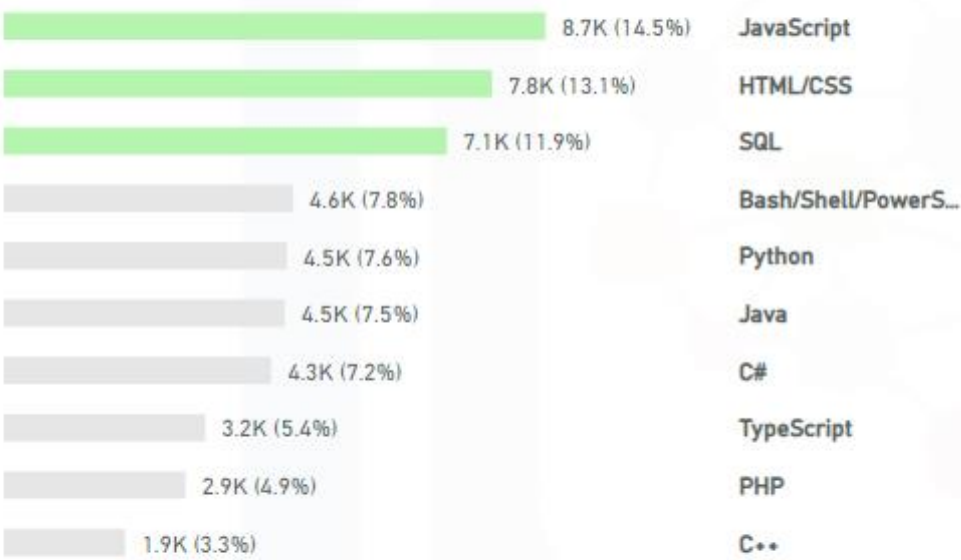
RESULTS



PROGRAMMING LANGUAGE TRENDS

Top 10 Languages with which Respondents work

Counts the number of occurrences indicated by Respondents (multiple choice allowed)



49.7K

Top10 Occurences

59.0K

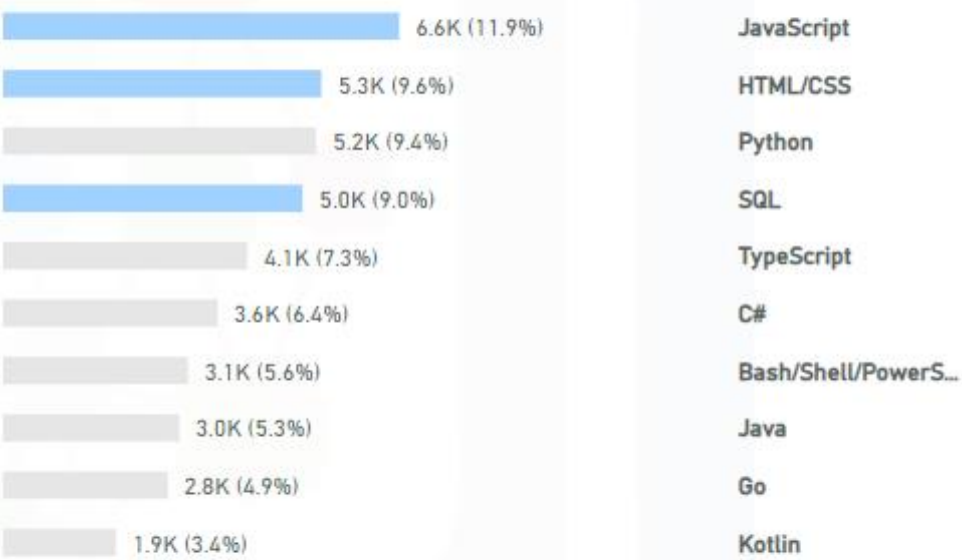
Total Valid Occurences

27

Language References

Top 10 Languages for Next Year (learn or improve)

Counts the number of occurrences indicated by Respondents (multiple choice allowed)



40.6K

Top 10 Occurences

54.9K

Total Valid Occurences

27

Language References

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript and HTML/CSS are at the top of the list, and remain so for 2020.
- Python, Typescript, Go and Kotlin are gaining in popularity.
- Bash/Shell, PHP and C++ are losing popularity.
- Note that fewer languages are entered by respondents for 2020 than for 2019.

Implications

- Javascript has a bright future with a large community (Job Postings 5th - AAS 4th).
- Python is attracting more and more dev from all horizons (Job postings 3rd - AAS 2nd).
- Languages that are said to be complicated or have a smaller community are increasingly being abandoned in favor of others that are more high-level programming languages.

DATABASE TRENDS

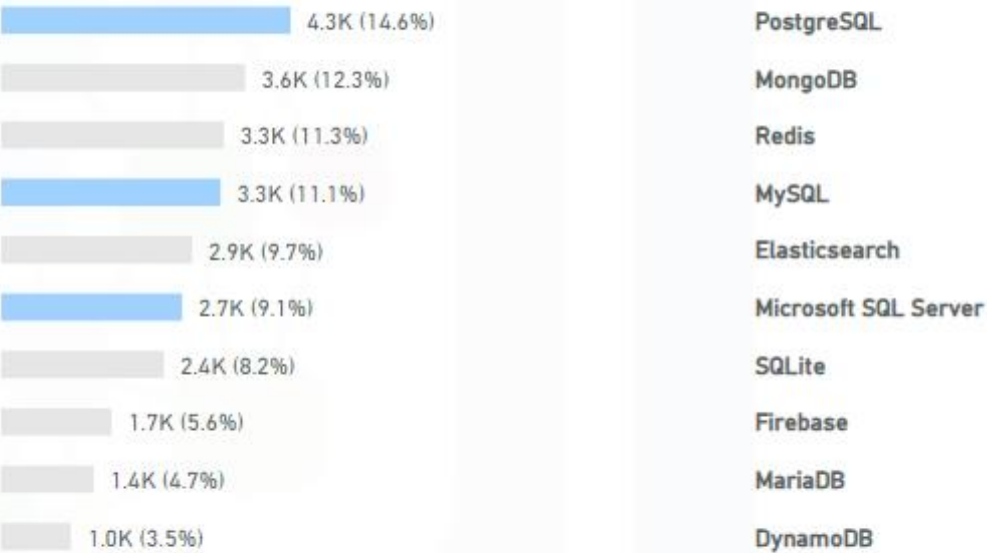
Top 10 Databases with which Respondents work

Counts the number of occurrences indicated by Respondents (multiple choice allowed)



Top 10 Databases for Next Year (learn or improve)

Counts the number of occurrences indicated by Respondents (multiple choice allowed)



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

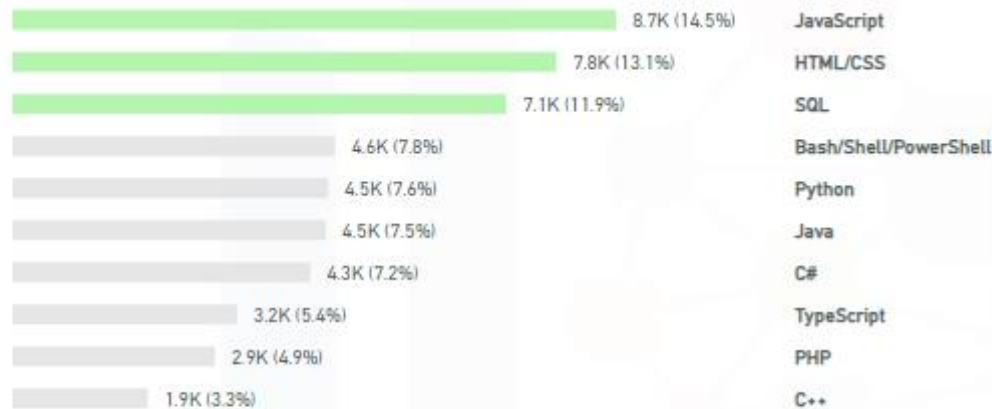
- PostgreSQL is consolidating its appeal, while the first 2 are seeing their interest wane in the face of more flexible competitors.
- Databases with better support for big data, not just structured data, are gaining in popularity.

Implications

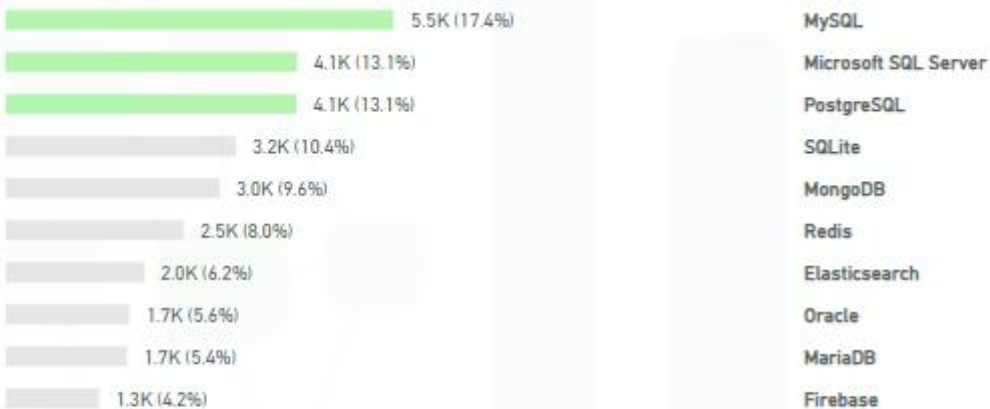
- The volume of data continues to grow. Added to this is the increasingly sophisticated analysis of semi-structured/unstructured data.

CURRENT TECHNOLOGY TREND

Top 10 Languages with which Respondents work



Top 10 Databases with which Respondents work



Platform with which Respondents work

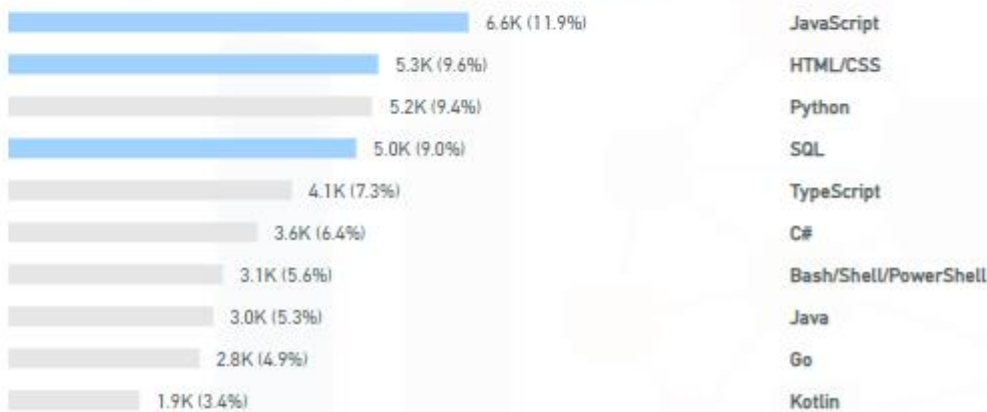


Top 10 WebFrame with which Respondents work

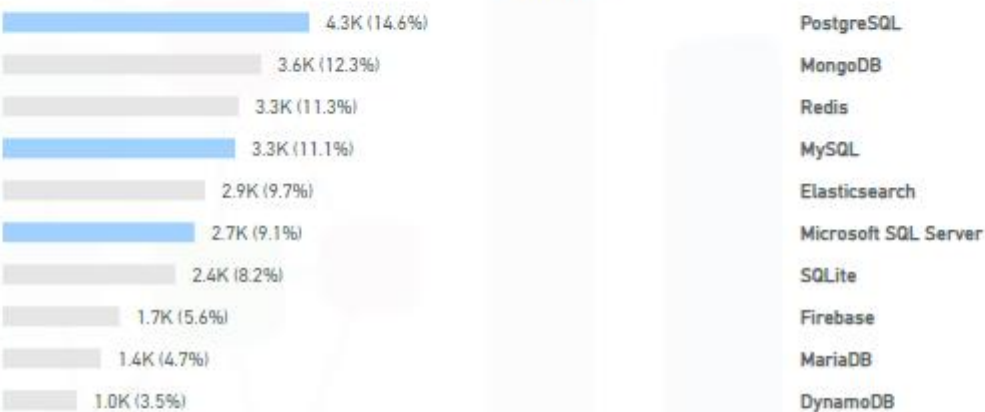


FUTURE TECHNOLOGY TREND

Top 10 Languages for Next Year (learn or improve)



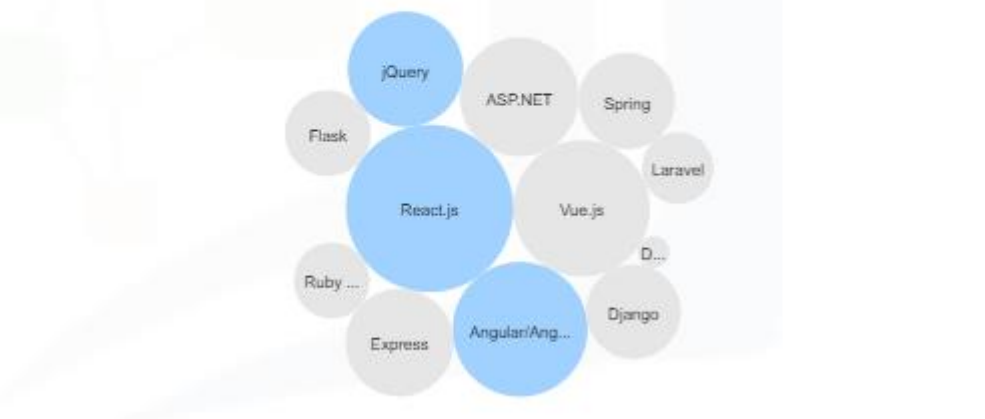
Top 10 Databases for Next Year (learn or improve)



Platform for Next Year (learn or improve)

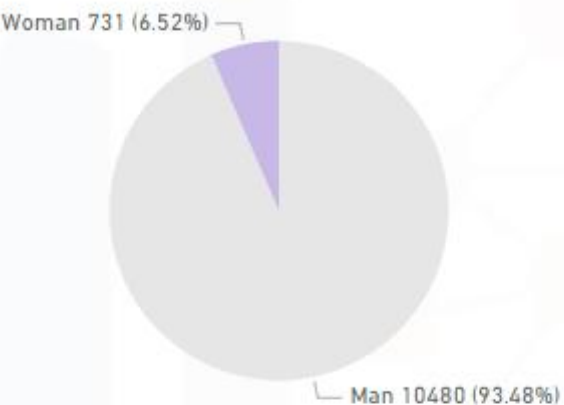


Top 10 WebFramefor Next Year (learn or improve)



DEMOGRAPHICS

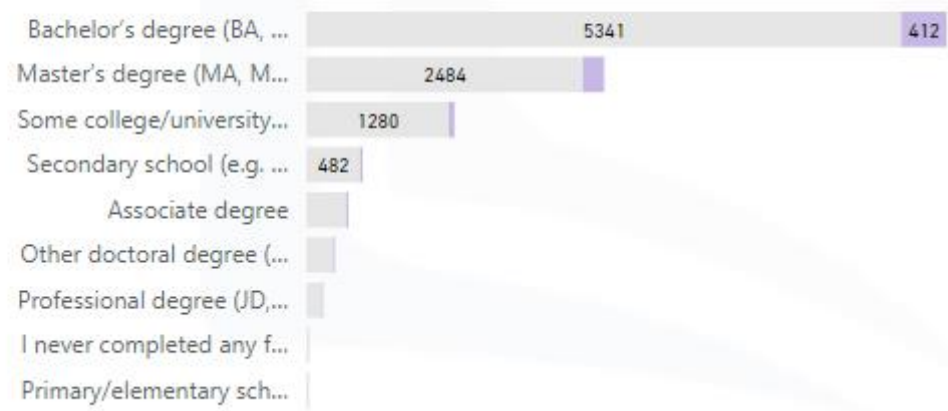
Number of Respondents by Gender



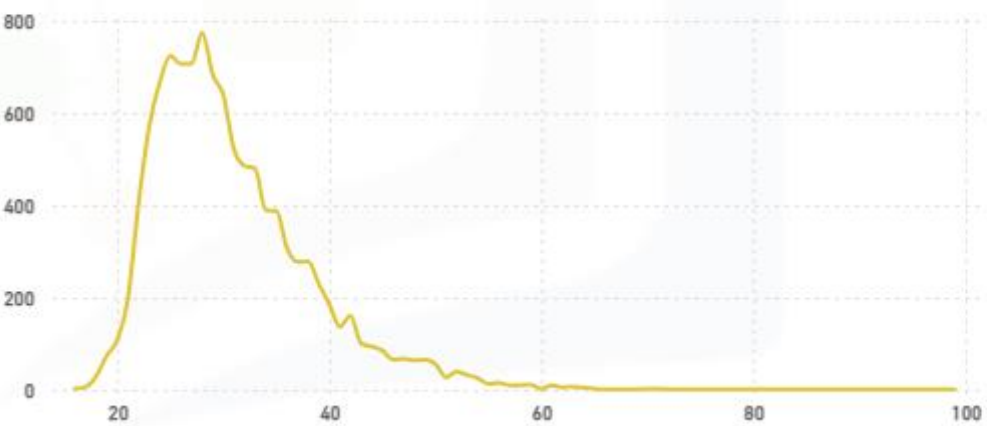
Number of Respondents per Country



Number of Respondents by Education Level and Gender



Number of Respondents by Age



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- The sector is dynamic and competitive. Interest in certain components can change from one year to the next, making it difficult for companies and developers to make projections. However, some remain stable.
- The majority of respondents are men between 20 and 40, with a relatively high level of education, and based mostly in the USA, and to a lesser extent in India, Germany and the UK. Although the panel is small, this gives a fairly accurate representation of the sector.

Implications

- It's important to remain alert to changes in the sector's components. It's important to bear in mind that the sector, while evolving, has a certain inertia. It takes time to get trained and operational. Salaries have to take into account a number of parameters, including market enthusiasm and saturation.
- In view of the very low proportion of women in the sector, it would be interesting to promote it in order to further develop the various communities.

CONCLUSION



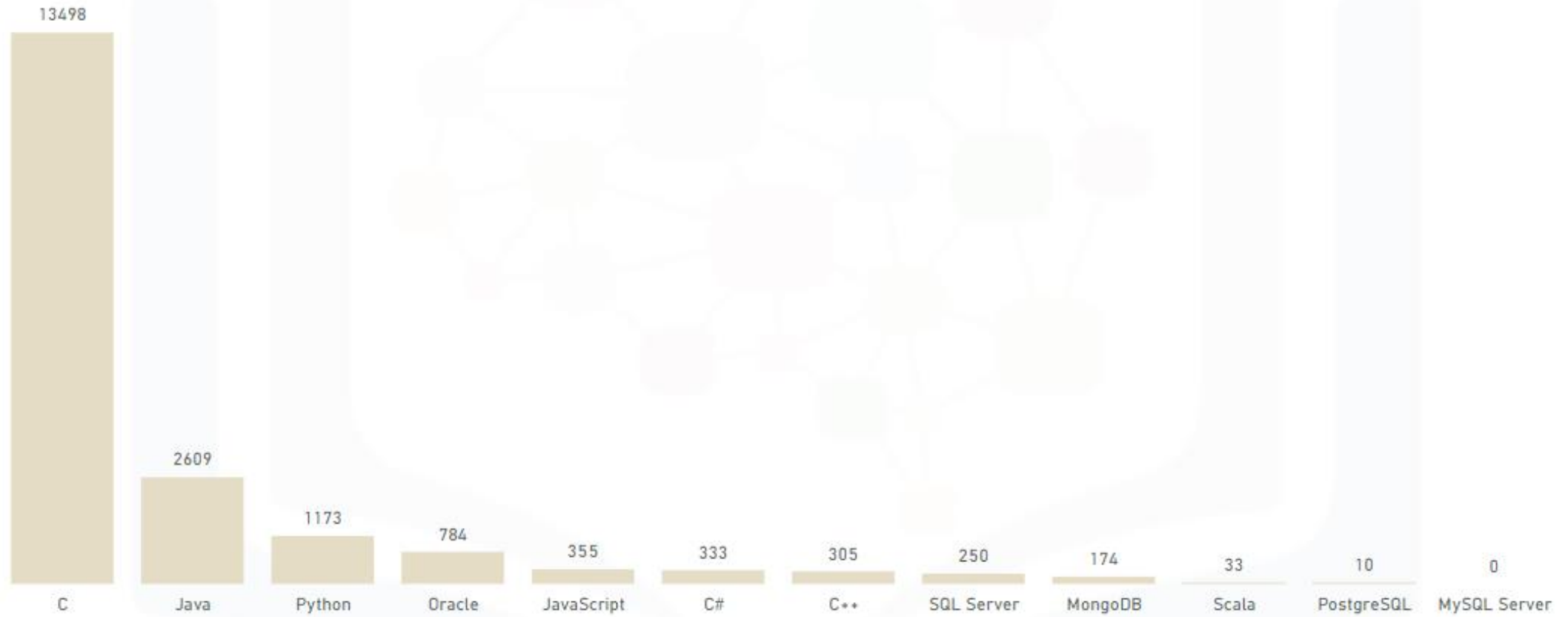
- Evolutive and competitive sector.
- Innovative, flexible components with a strong community are gaining ground.
- A majority of young, male respondents from developed countries.

APPENDIX



JOB POSTINGS

Number of Jobs by Technologies



POPULAR LANGUAGES

Average Annual Salary by Technologies

