



The 2019 Stack Overflow Developer Survey

Tadija Tadic
August 11, 2024

OUTLINE



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

EXECUTIVE SUMMARY



- Data contextualization and analysis goal
- Methodology description
 - Data gathering
 - Data analysis
 - Data visualizations
- Results presentation supported with graphs and trends
- Discussion of overall findings and implications regarding the results previously exposed
- Final conclusions of the carried-out research

INTRODUCTION



- The Stack Overflow's annual Developer Survey is **the largest and most comprehensive survey of people who code** around the world
- **Nearly 90,000 developers** took the survey (during 2018)
- **Note:** the results don't represent everyone in the developer community evenly
- Developers told: **how they learn** and level up, **which tools** they're using, and **what they want**
- The 2019'Survey focuses on the **technology & database current usage** and **future trends**

METHODOLOGY



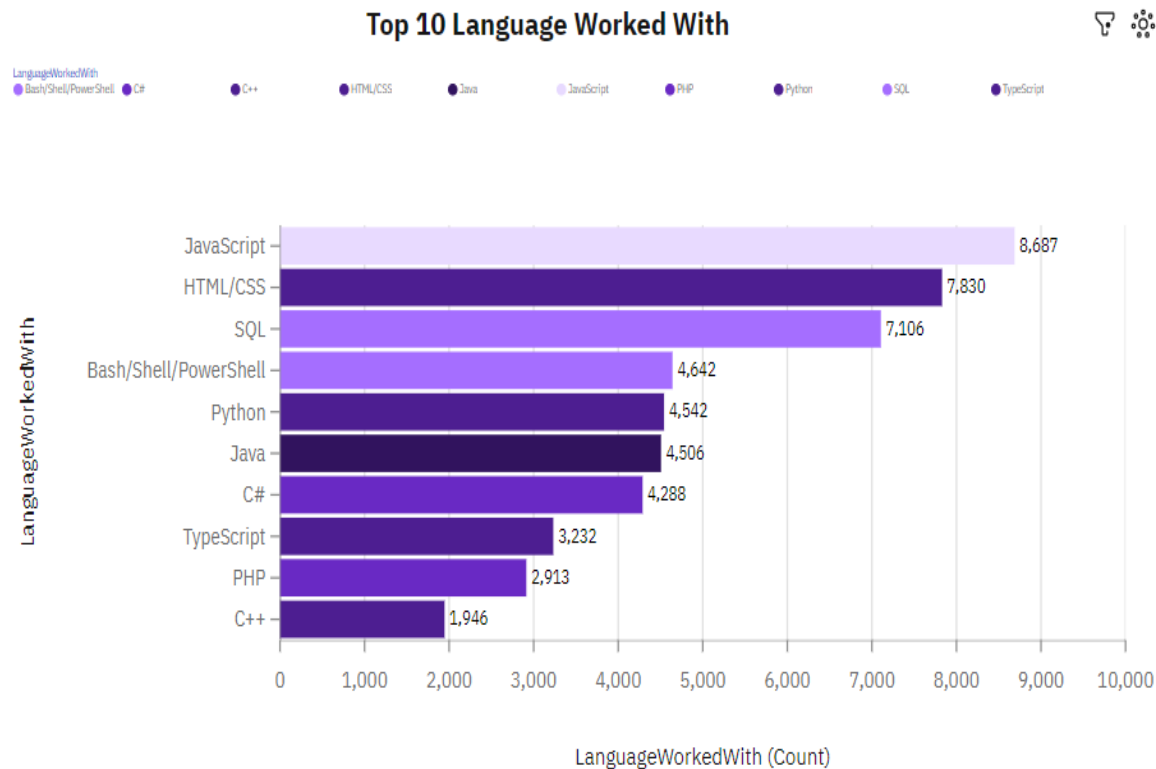
- **Collecting & exploring survey data:**
 - Web Scraping
 - APIs
 - Request library
- **Data Wrangling**
- **Exploratory data analysis**
 - Analyzing data distribution
 - Handling outliers
 - Correlations
- **Data Visualization**
 - Highlight distribution of data, relationships, the composition and comparison of data
- **Exploratory data analysis**

RESULTS

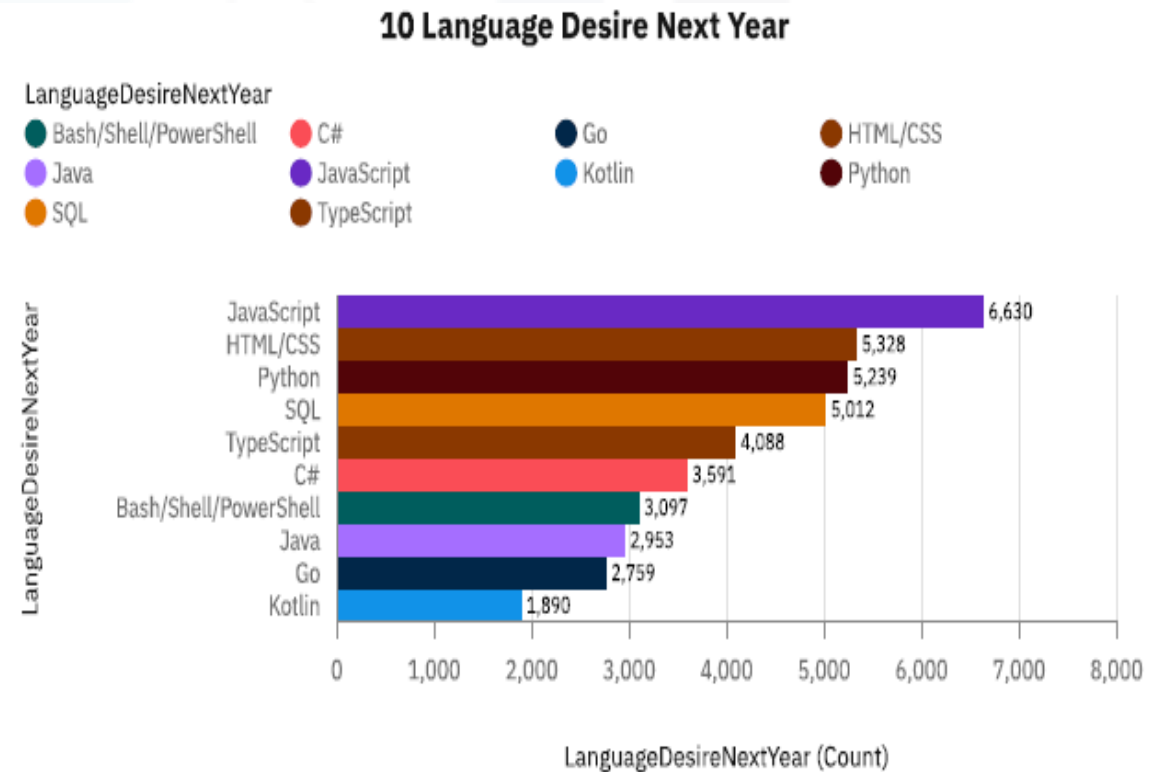


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript remained the most popular programming language
- Python continued its rise in popularity, surpassing SQL
- TypeScript saw significant growth in 2019

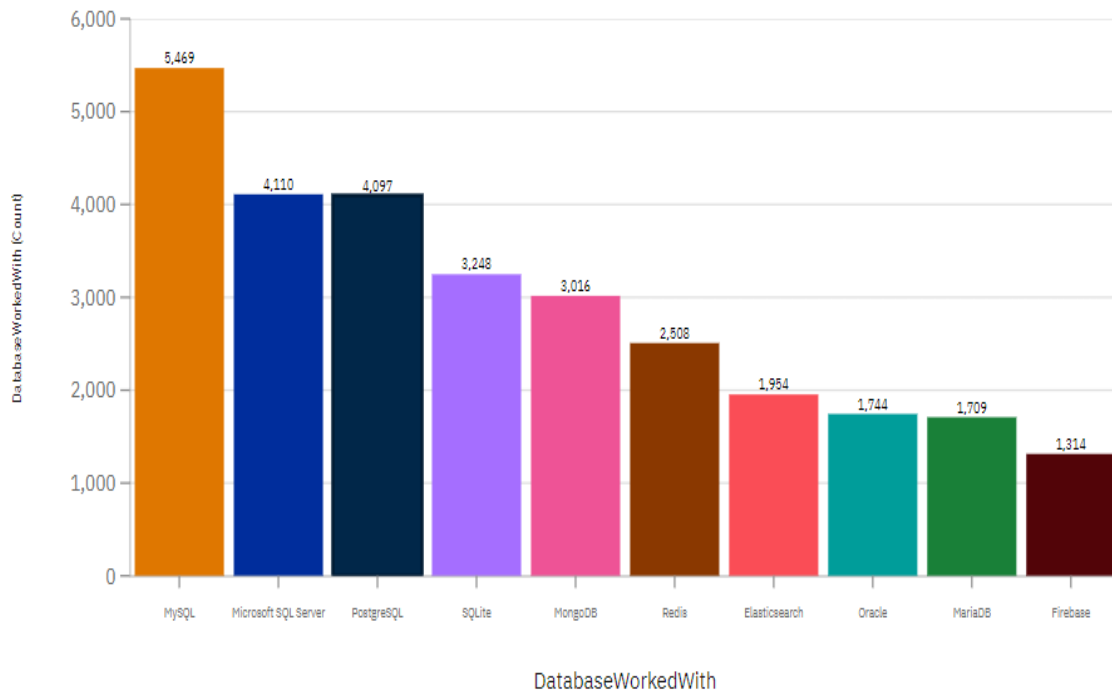
Implications

- Possible migration from JavaScript to TypeScript in future
- Further increase in popularity of Python and Bash/Shell/Power Shell

DATABASE TRENDS

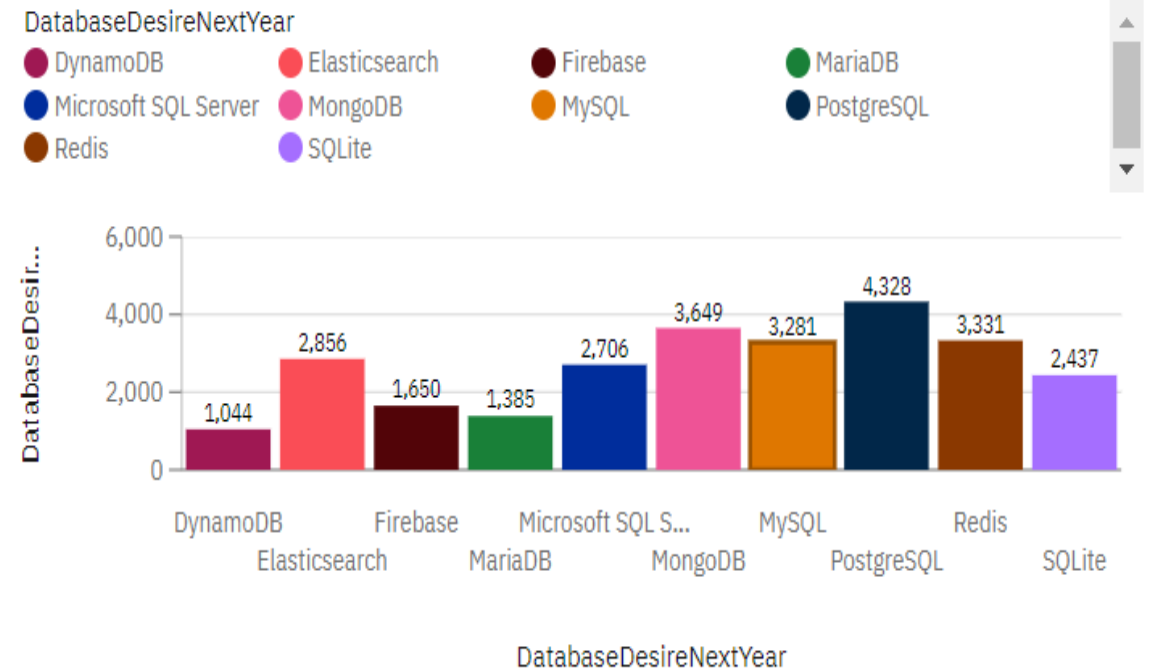
Current Year

Top 10 Database Worked With



Next Year

Top 10 Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL became the most popular database in 2019
- MongoDB became more popular in 2019
- Elasticsearch saw increasing growth

Implications

- MySQL and Microsoft SQL Server are losing its market share
- PostgreSQL and MongoDB are supplanting the MySQL and Microsoft SQL Server

DASHBOARD



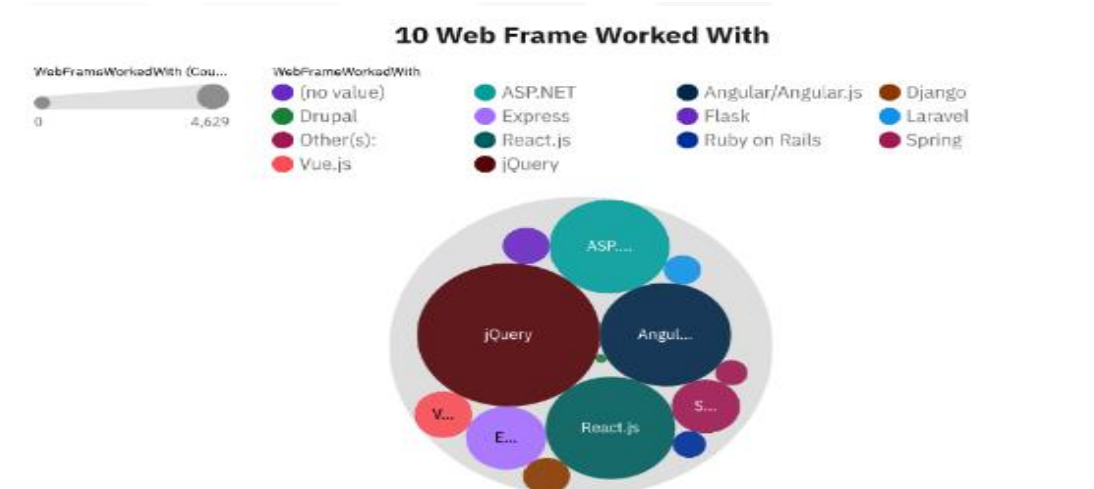
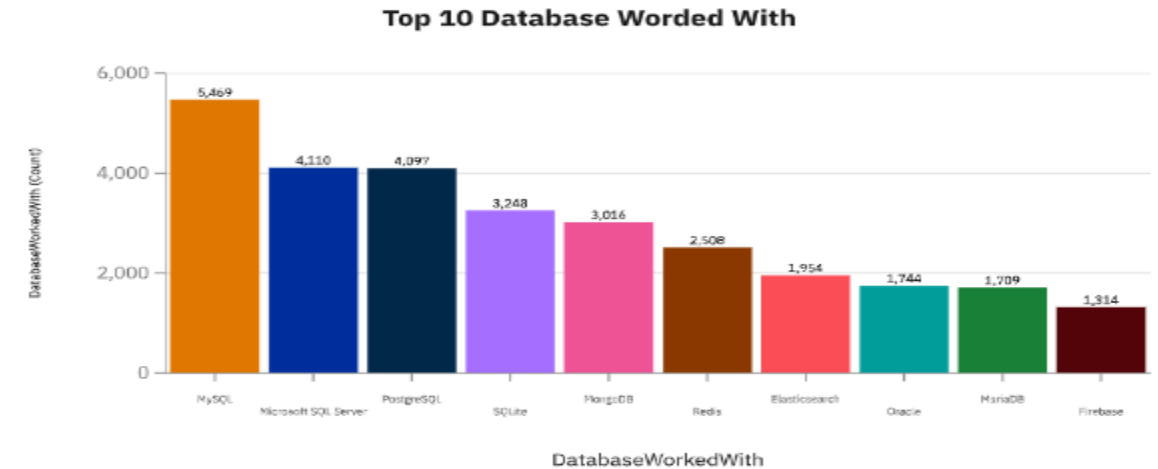
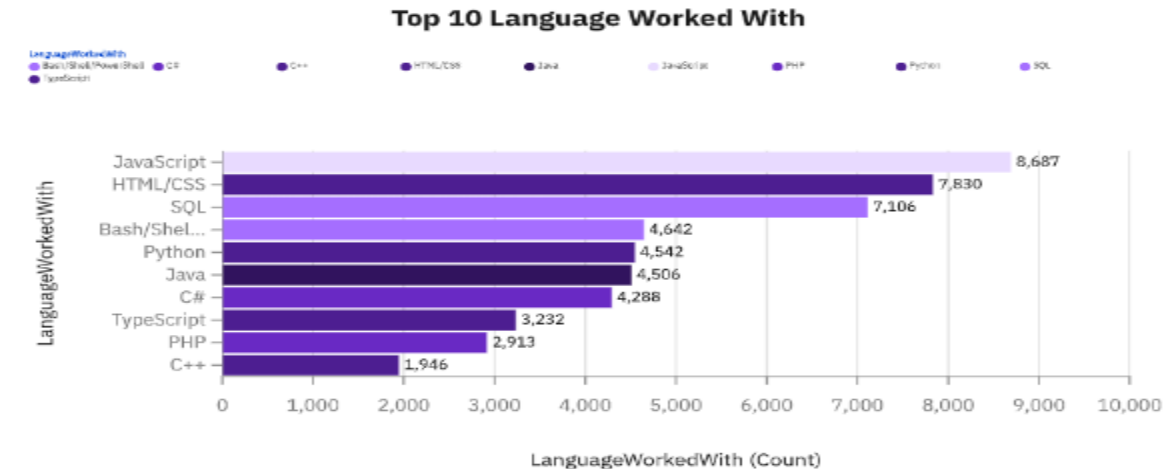
https://github.com/Tasimirac/Coursera-Data_analyst/blob/main/Current%20Technology%20Usage.pdf

https://github.com/Tasimirac/Coursera-Data_analyst/blob/main/Future%20Technology%20Trend.pdf

https://github.com/Tasimirac/Coursera-Data_analyst/blob/main/Demographics.pdf

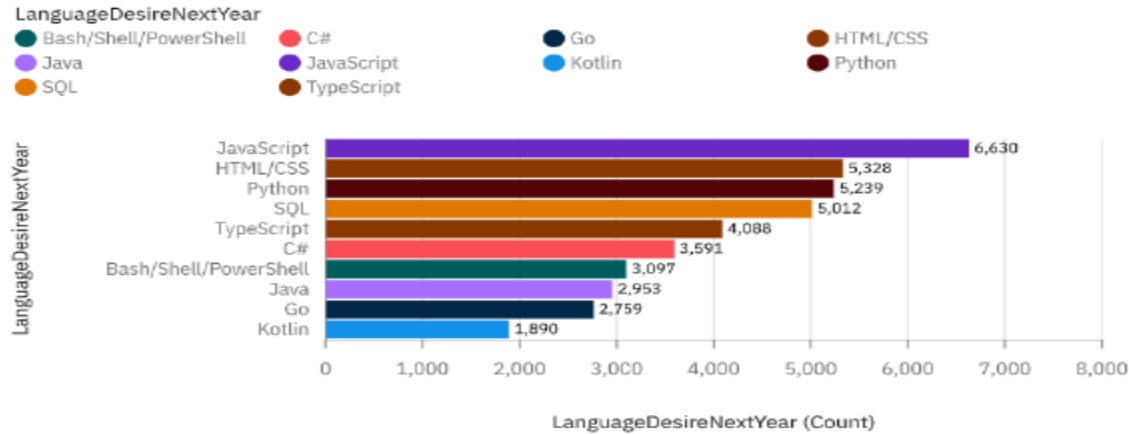
CURRENT TECHNOLOGY USAGE

Current Technology Usage

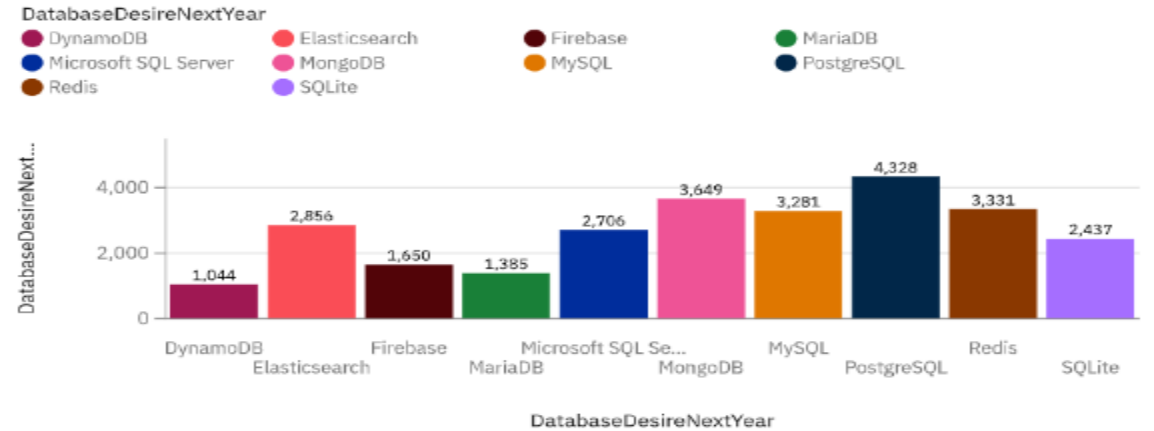


FUTURE TECHNOLOGY USAGE

10 Language Desire Next Year



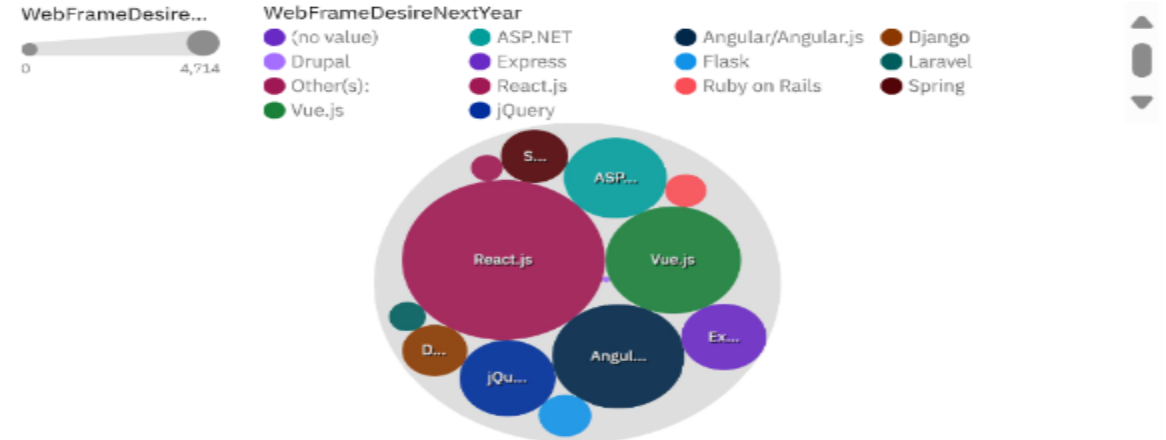
Top 10 Database Desire Next Year



Platform Desire Next Year



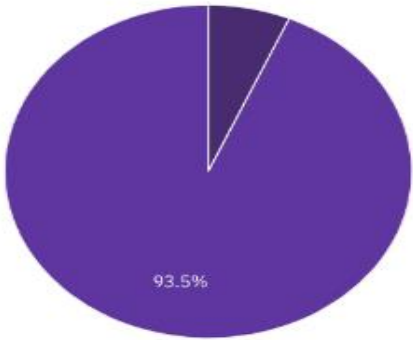
Top 10 Web Frame Desire Next Year



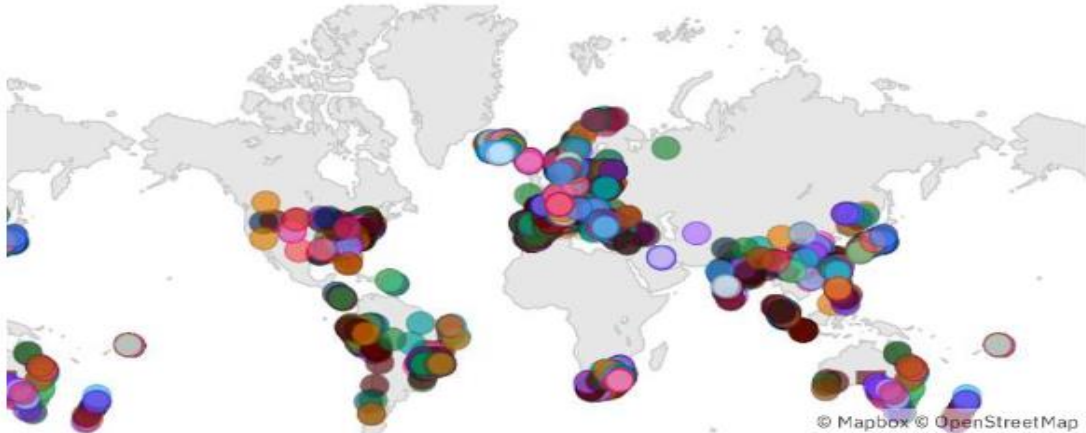
DEMOGRAPHICS

Respondent classified by Gender

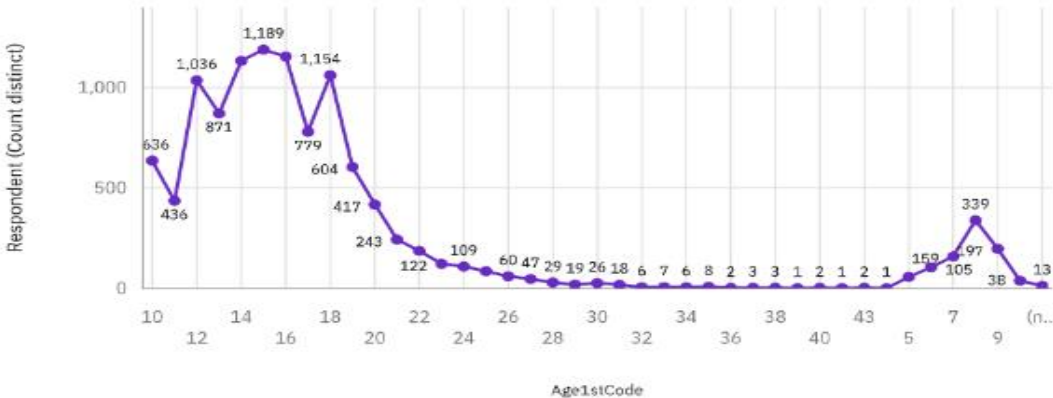
Gender
● Woman
● Man



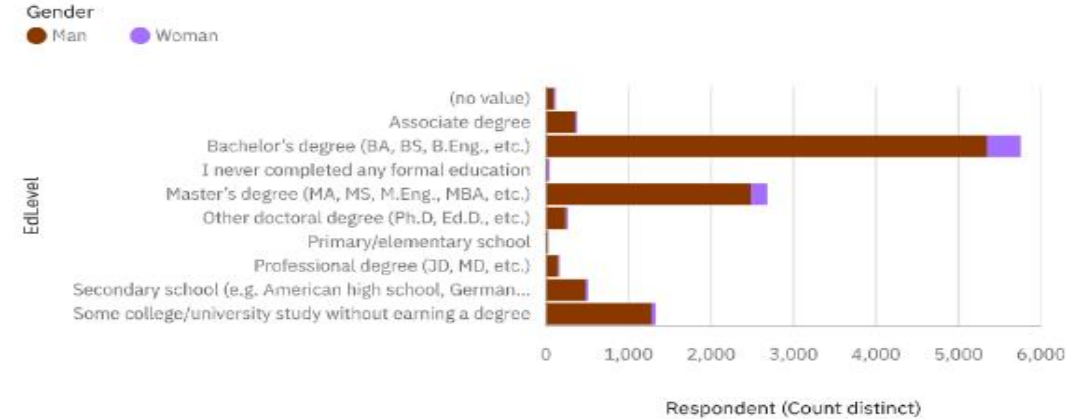
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION



OVERALL FINDINGS & IMPLICATIONS

Findings

- **JavaScript** remained the most commonly used programming language
- The majority of developers were **male**
- DevOps specialists and site reliability engineers were **among the highest-paid roles**

Implications

- Growing preference for languages that are easy to learn (Python)
- Significant differences in salaries across regions highlight the need for a more global approach to compensation
- Efforts to support underrepresented groups (due to gender disparity) could lead to a more balanced and innovative workforce.

CONCLUSION

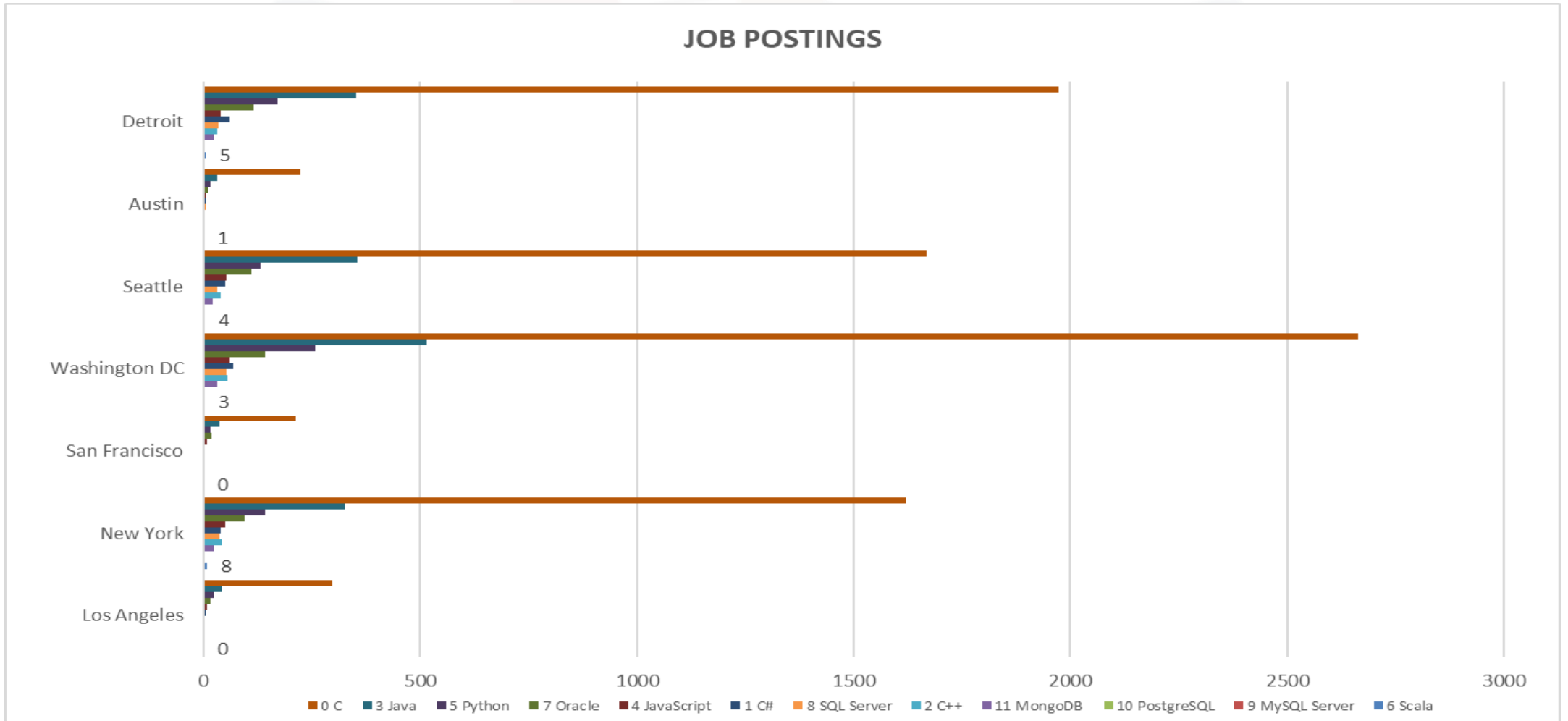


- Developers are people with very marked characteristics
- A good idea of popularity trends of different tools, platforms and languages can be obtained
- There is a job to be done to spread accessibility of this labor market to countries in development

APPENDIX



JOB POSTINGS



POPULAR LANGUAGES

