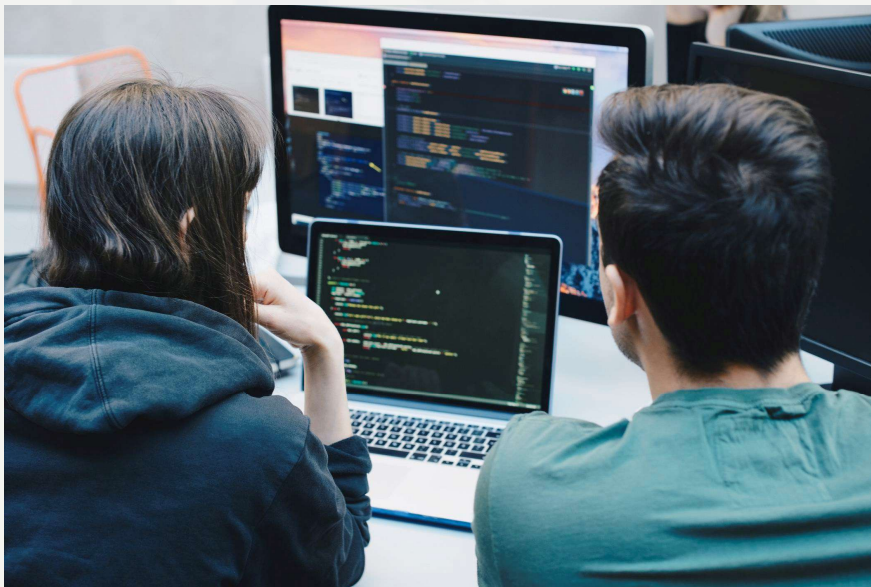


2019 TRENDS IN TECH SKILLS

Eline van den Boogaard

16 December 2024



OUTLINE

- Executive Summary
- Introduction
- Methodology
- Results
 - Programming Language Trends
 - Database Trends
 - Dashboard
- Discussion
 - Overall Findings & Implications
- Conclusion
- Appendix
 - Job Postings
 - Popular Languages

EXECUTIVE SUMMARY

This analysis finds the 2019 trends in programming languages and databases based on the Stack Overflow Developer Survey , which are:

- Javascript, HTML/CSS and Python are the top languages expected to be worked with in the upcoming year
- Much dynamics in the use of databases may lead MySQL to drop its nr 1 position and see PostgreSQL and MongoDB join the top

This goes with a reminder that technological trends change fast and locally the situation may be different.

INTRODUCTION

The main question of this presentation:

What are the 2019 trends in programming languages and databases?

- Which programming languages and databases are currently most worked with?
- Which programming languages and databases are desired by respondents to work with next year?
- Existing research (see appendix) showed that
 - In 2019 Employers in the US search for employees with knowledge of C
 - In a dataset of an unknown year respondents who use Swift have the highest annual average salary
- We analyzed this worldwide survey of 2019 to come to a totally different view

METHODOLOGY

We analyzed the results of the 2019* Stack Overflow Developer Survey. This included:

- A data-analysis on programming languages and databases worked with and desired to work with
- Further data-analysis on Platforms, Web Frames and Demographics
- Building a dashboard with visualizations that clarify the results and give insight in the population of respondents

* A dataset which is a subset from: <https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>

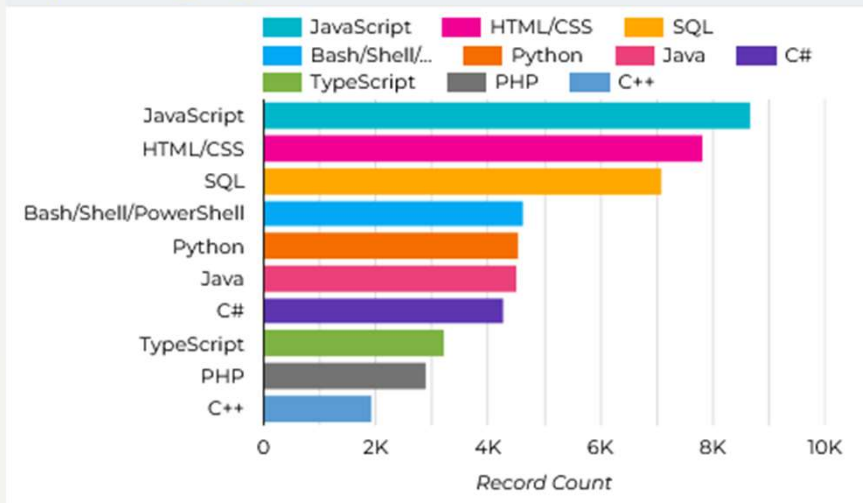
RESULTS



PROGRAMMING LANGUAGE TRENDS

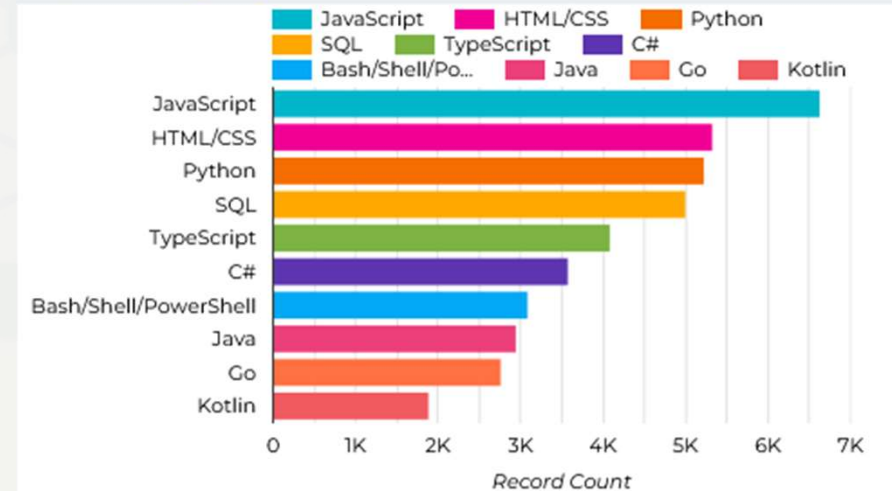
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript is the most used language this year and the most named as desired next year
- HTML/CSS is second in both rankings
- Python is the 5th language worked with, but takes 3rd place in desired next year

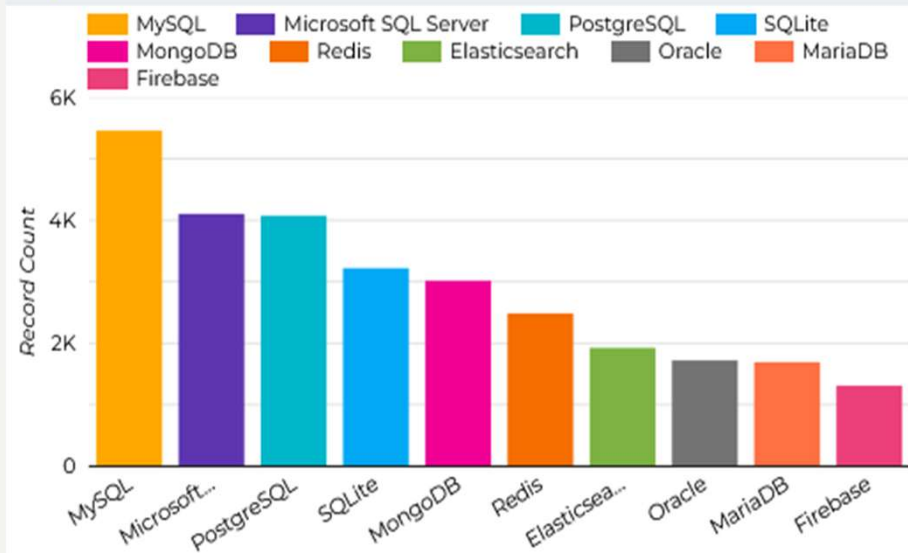
Implications

- Javascript and HTML/CSS are the most popular languages worked with, and this is expected to be the same for next year
- The use of Python is expected to rise in the future

DATABASE TRENDS

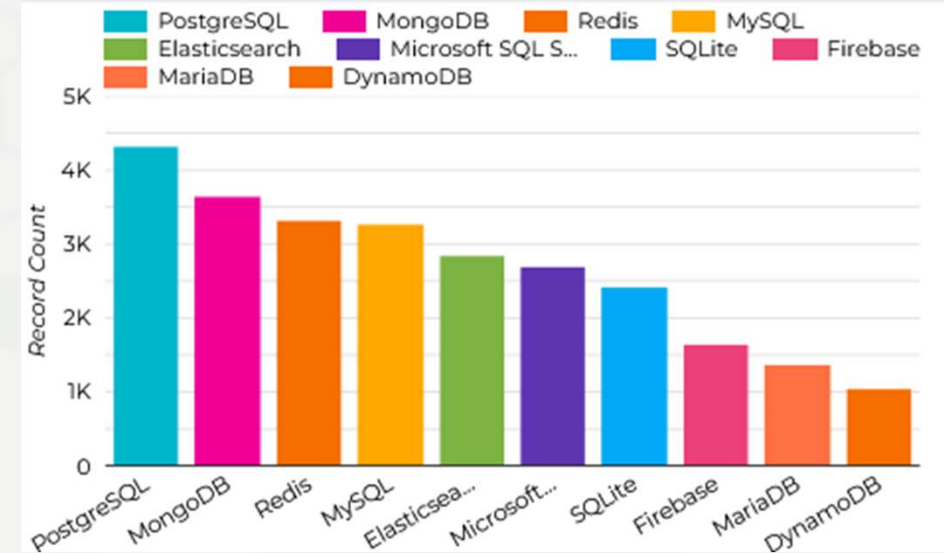
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the nr 1 database worked with this year
- PostgreSQL (1st) and MongoDB (2nd) are the databases most desired to work with next year
- MySQL is 4rd in most desired to work with next year

Implications

- There is a lot of dynamics in the database market. Changes are expected for next year
- PostgreSQL could become nr 1 in database worked with next year
- MongoDB is also rising and could overtake MySQL in position

DASHBOARD

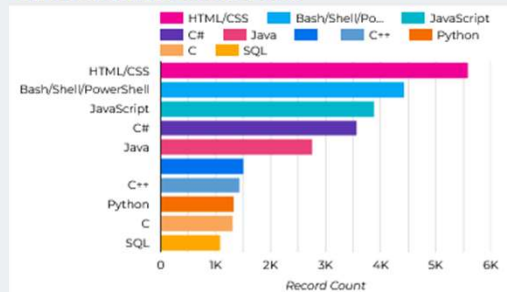
The link to the dashboard on github:

<https://github.com/ElinevdBoogaard/Elines-Capstone-Project-Data-Analysis-2-6/blob/6626b3b05788763772d7db808ee9fa04b5e03c67/Assignment%20Presenting%20a%20Dashboard%20module%206.pdf>

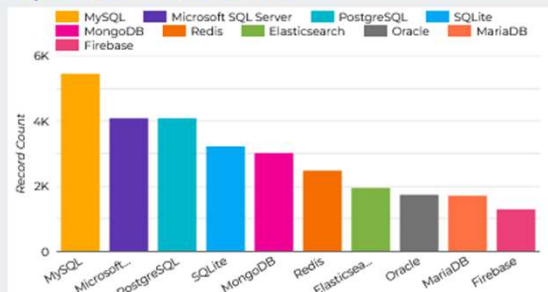
DASHBOARD TAB 1

Current Technology Usage

Top 10 Languages Worked With



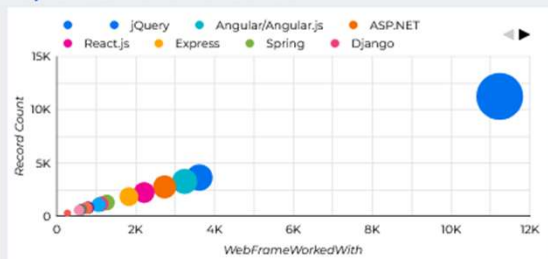
Top 10 Databases Worked With



Platform Worked With



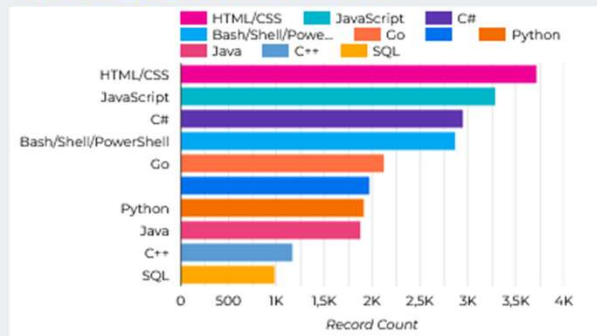
Top 10 Web Frame Worked With



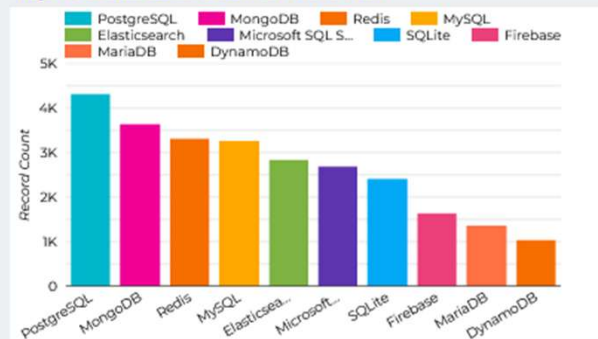
DASHBOARD TAB 2

Future Technology Trend

Top 10 Languages Desired Next Year



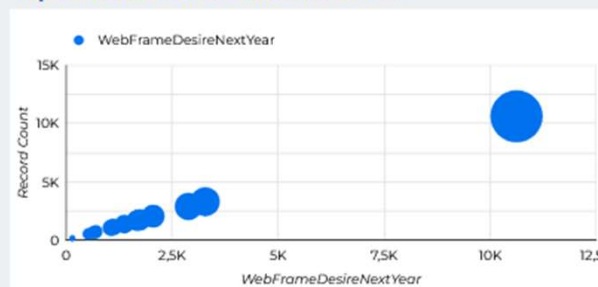
Top 10 Databases Desired Next Year



Platform Desired Next Year



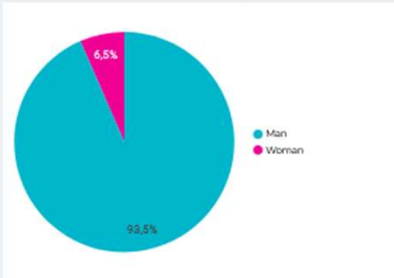
Top 10 Web Frame Desired Next Year



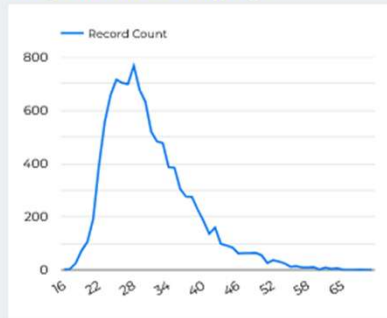
DASHBOARD TAB 3

Demographics

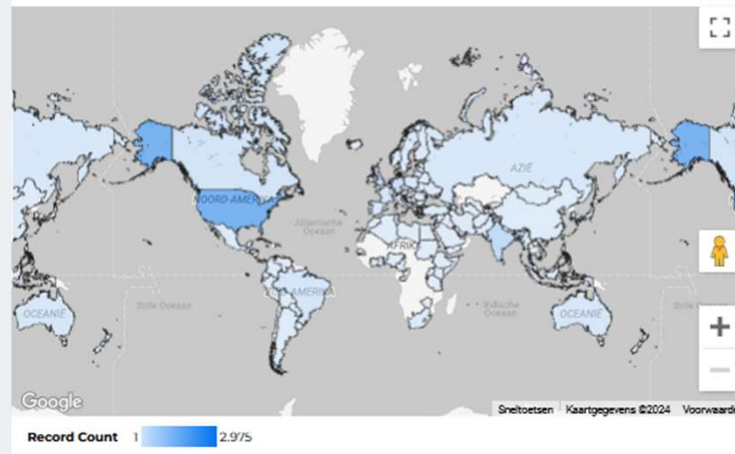
Respondent classified by Gender



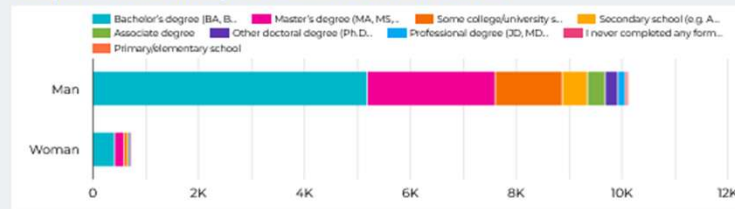
Respondent Count by Age



Respondent Count for Countries



Respondent Count by Education Level and Gender



DISCUSSION



OVERALL FINDINGS

What are the 2019 trends in programming languages and databases according to the respondents of this survey?

- Javascript and HTML/CSS are the programming languages currently most worked with and desired to work with next year
- Third in language desired next year is Python
- MySQL is the database currently most worked with
- PostgreSQL and MongoDB are the most desired databases to work with next year

IMPLICATIONS

Implications for 2020

- Programming languages Java and HTML are the most popular languages and expected to stay on top. The use of Python is expected to rise in the future
- If the respondents may decide changes are expected for the databases worked with next year. PostgreSQL may take top position, and MongoDB may join the higher ranks

THOUGHTS

The difference between the results of the Stack Overflow Developer Survey and other analyzed data (in appendix) could be explained by

- A dataset that was not representative
- Local results differ from worldwide results
- High dynamics. Tech preferences change fast.

This means that we should always look closely to the characteristics of the survey sample data. But also remind that trends in tech differ in time and place. This survey was held worldwide in 2019, so its outcomes were more relevant for general conclusions, but locally there may have been a different situation.

CONCLUSION

Our expectations for 2020 based on the Stack Overflow Developer Survey:

- Javascript, HTML/CSS and Python to be the top languages used in the upcoming year
- Much dynamics in the use of databases which may lead MySQL to drop its nr 1 position and see PostgreSQL and MongoDB join the top

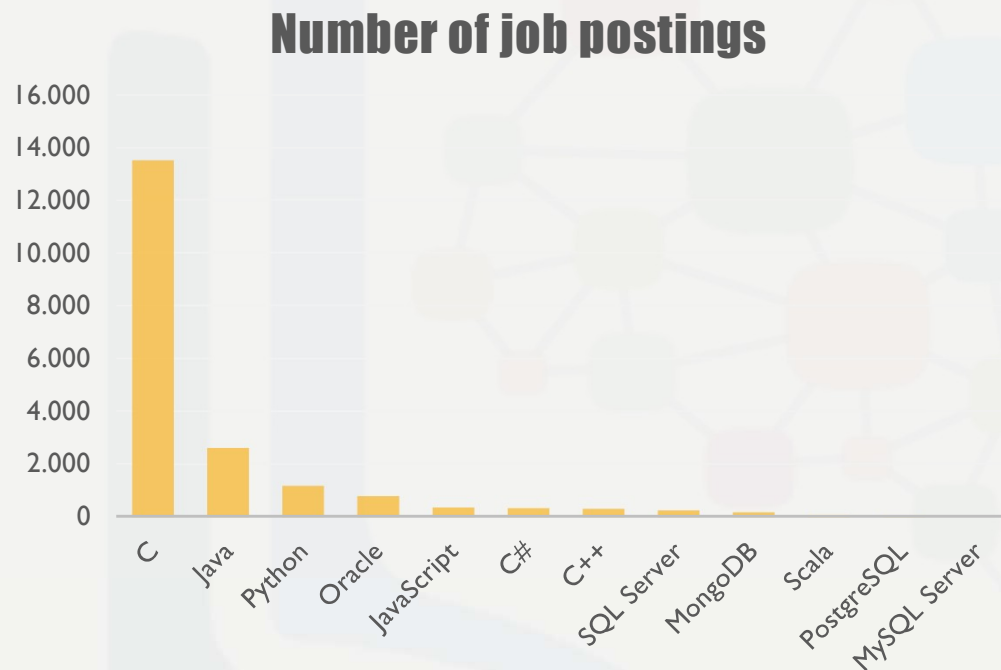
! But keep in mind that locally there may be other winners and tech is continually changing

APPENDIX

This appendix holds findings of other research held in the United States:

- The number of job postings for different technologies
- The annual average salary of respondents that work with popular programming languages

JOB POSTINGS

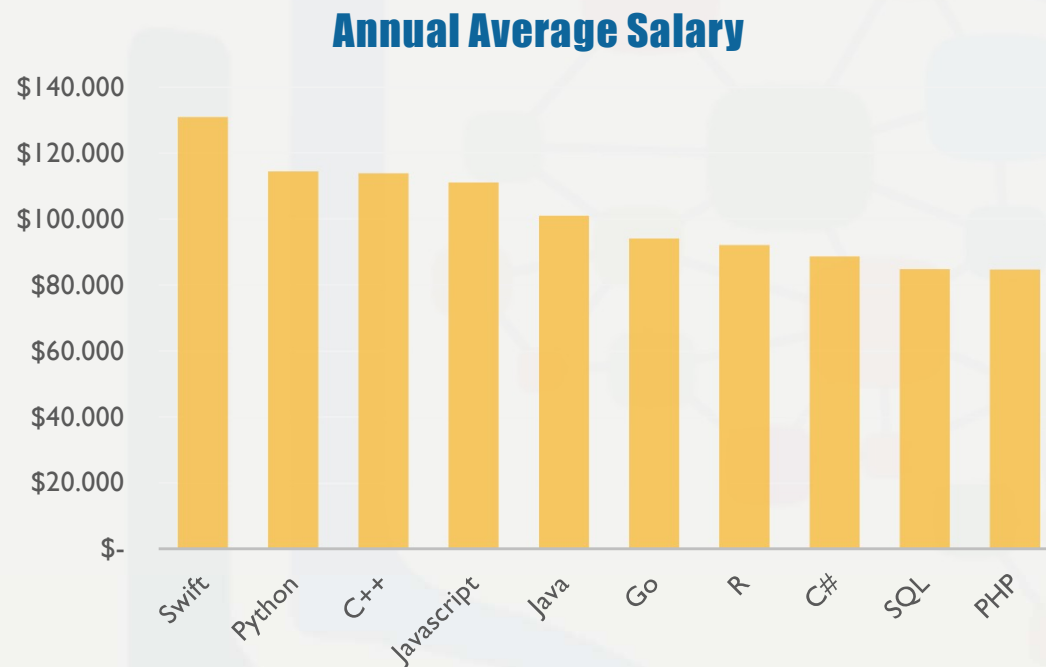


A dataset* gathered in the United States in 2019 on the number of job postings for different technologies

Here C was the technology most asked for by employers

* <https://www.kaggle.com/datasets/promptcloud/jobs-on-naukricom>

POPULAR LANGUAGES



A table* on the course site shows the annual average salary of respondents that work with popular programming languages. In an unknown year.

It shows that in this dataset Swift was the language which rendered the highest annual average salary

* https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html