STACK OVERFLOW DEVELOPER SURVEY 2024

Josue Isaac Soto Odriozola

23/05/2025

Skills Network

IBM

OUTLINE

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

Skills Network

EXECUTIVE SUMMARY

- The present work analyse the survey from Stack Overflow with the goal of identify the most demanded technologies and trends in the community who code.

- Bringing the information together with dashboard showing current technologies, future trends and demographics.

- In the end, can observe than PostgreSQL and Javascript are the tool most demanded and desired BD and language. For other side the demographics are concentred (68.6%) in a range of 25 to 44 years old.

- Professions related to these tools are highly profitable since among the most popular languages the average annual salary is between 84,700 and 113,000 dollars.
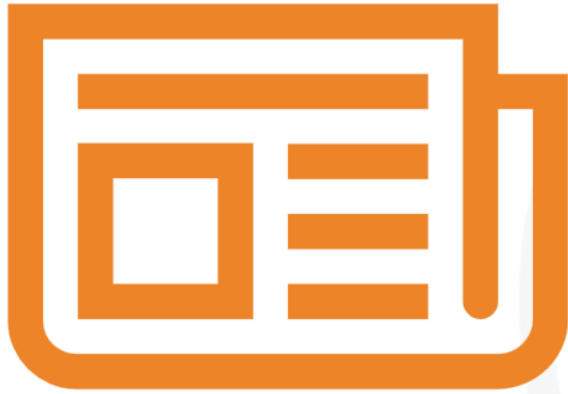
INTRODUCTION

- Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code aroud the world.

- Results don't represent everyone in the developer community evenly.

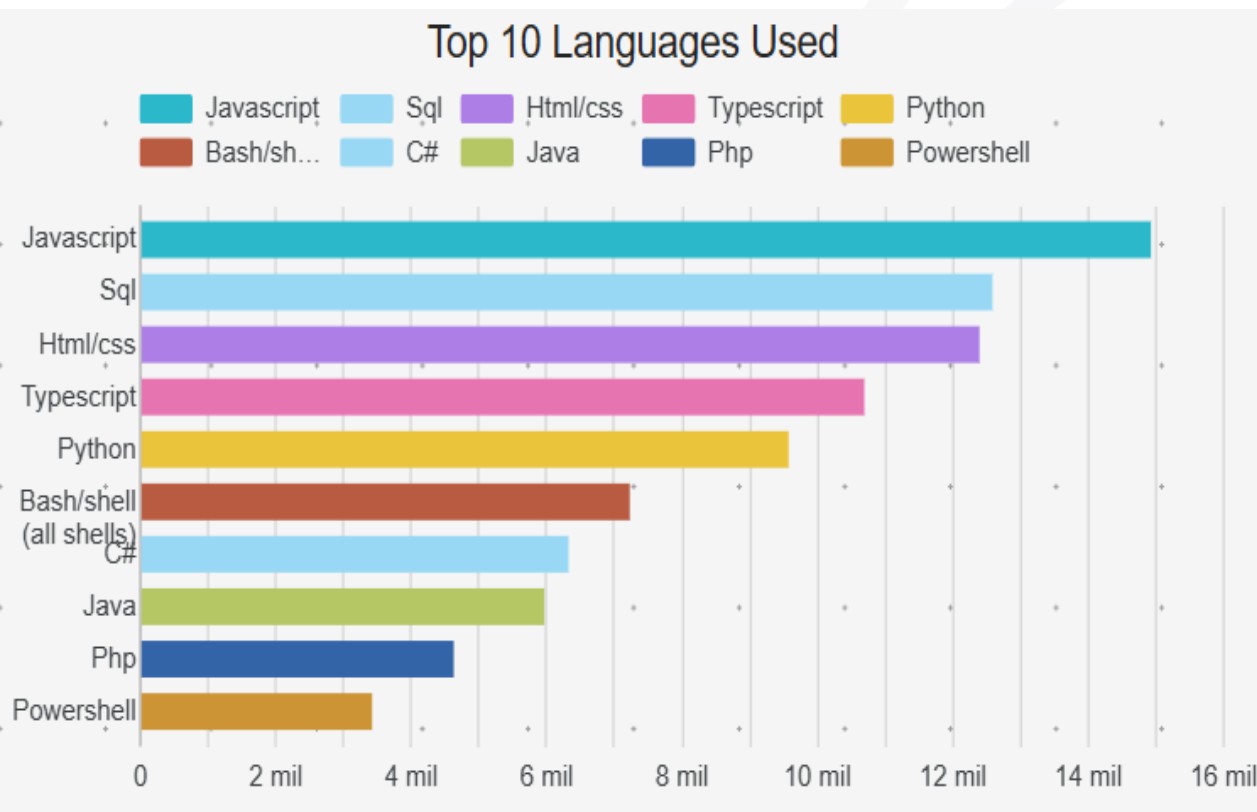- Trends to predict where the developers are doing.

METHODOLOGY

- Collect survey data and explore its content

- Data Wrangling

- Exploratory data analysis

- Data visualization
  - Relationships, composition and comparison of data
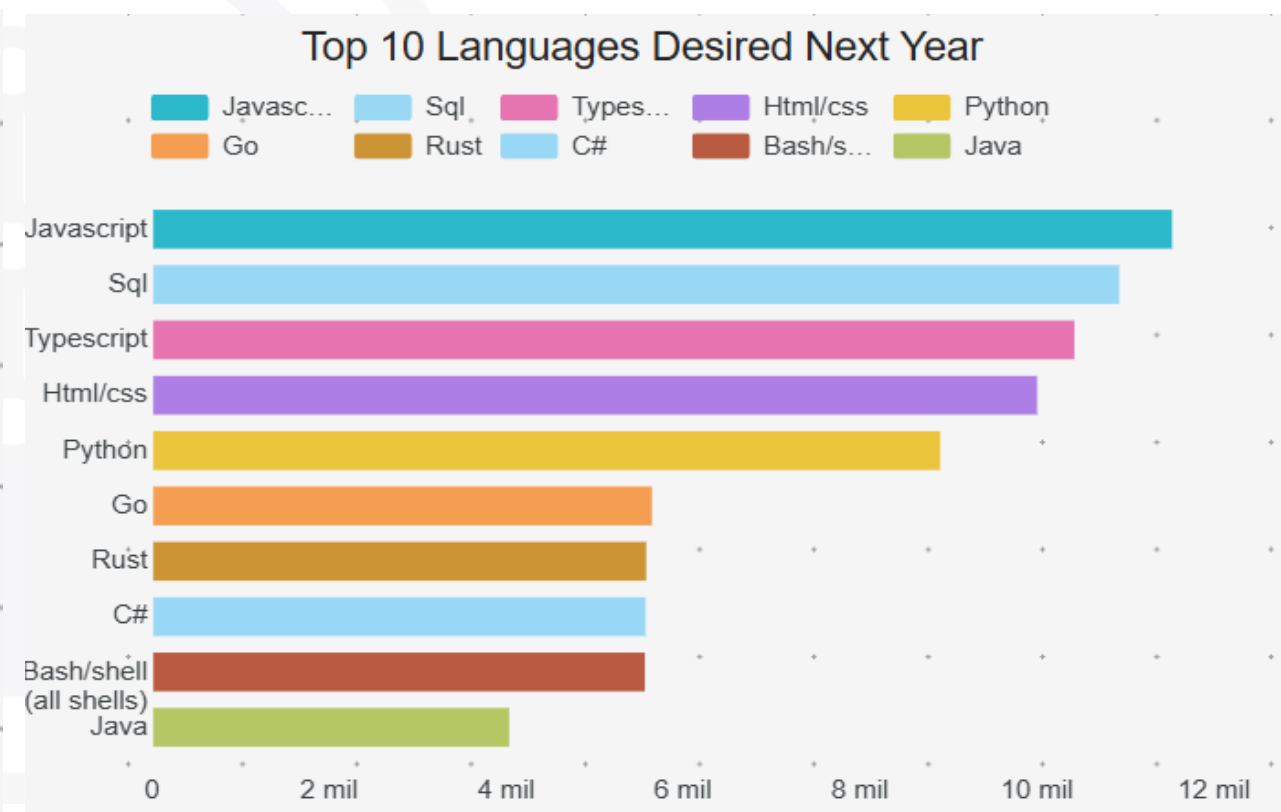 - Dashboards

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript and SQL are currently the most used languages as well as the most desired to work with.

- Likewise, the difference in current use vs desired between Javascript (1) and SQL (2) is significant.

- The most used languages today are not exactly the same as the most desired ones.

Implications

- Interest in using Javascript and SQL remains.

- It may be that those who already use one or both languages are interested in some other language other than Javascript and SQL, but this interest will not necessarily be lost.

- It may be that those who already use one or more languages are interested in a different or new language.

Skills Network

IBM

DATABASE TRENDS

Current Year
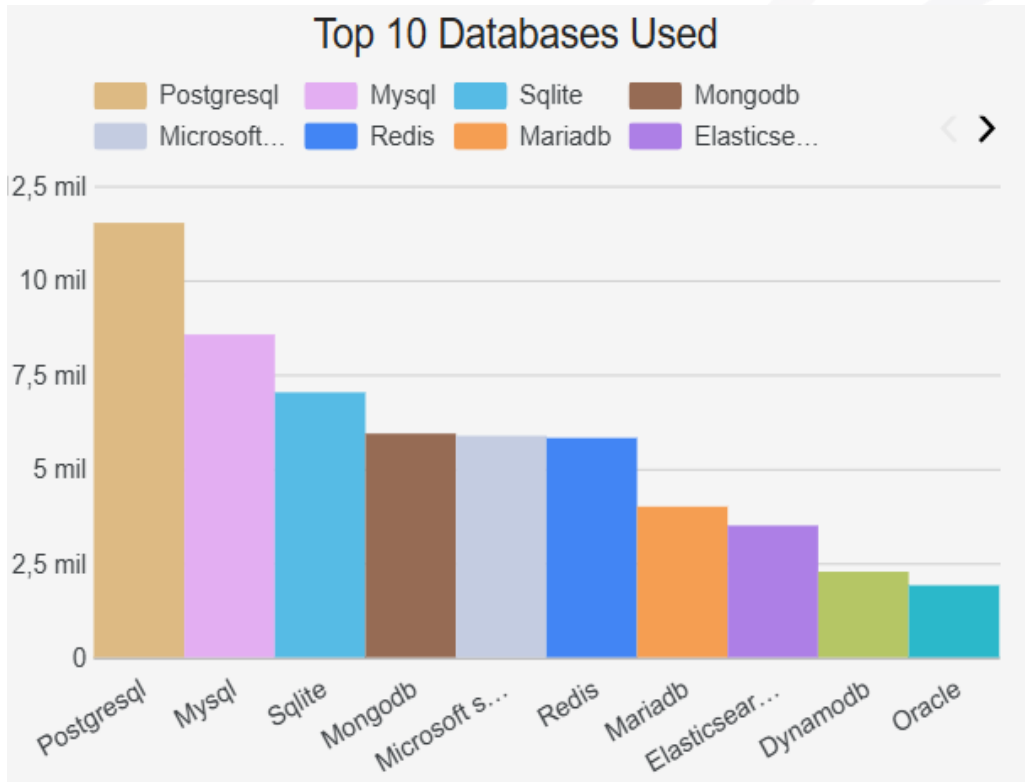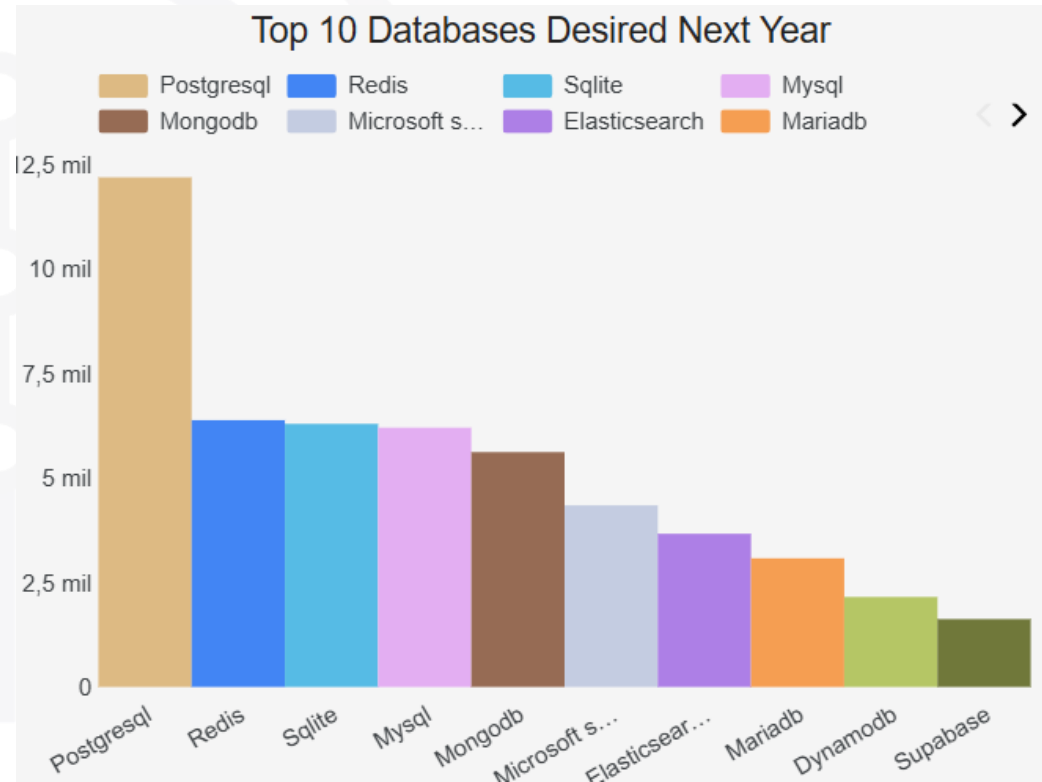
Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgreSQL remains the most popular database in terms of both current use and desire to work with.

- Currently, the top three databases are very well defined. However, as for the trend for next year, the interest from 2nd to 4th place is practically the same.

- The top most used data usage is practically the same currently vs. the trend for next year
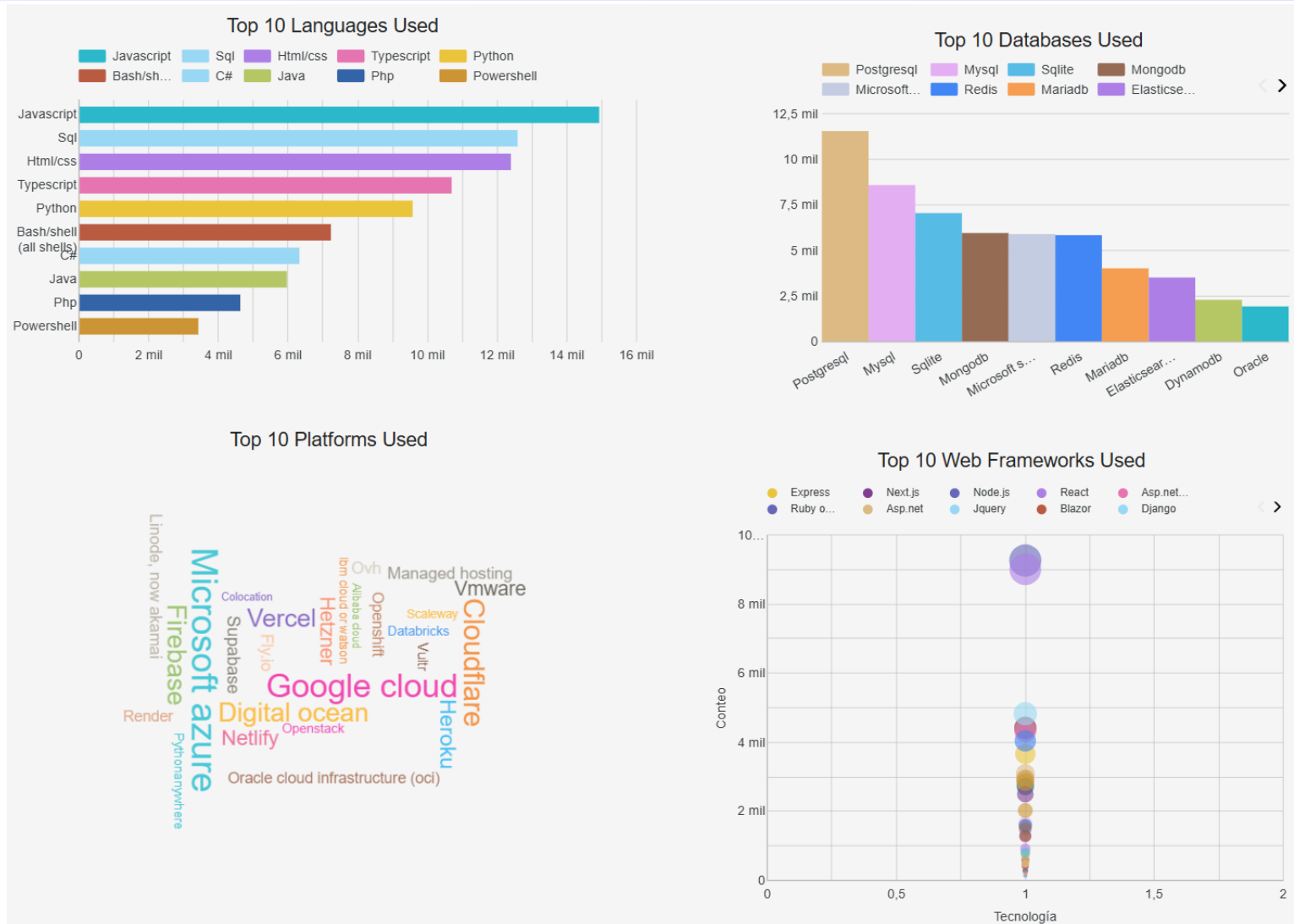
Implications

- There is a significant tendency towards the use of PostgreSQL.

- There is diversity in the trend regarding which databases to use next year.

- This may imply consistency in the use of database technologies.

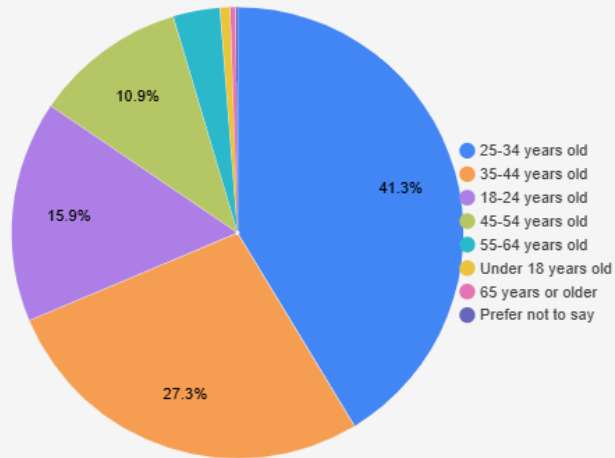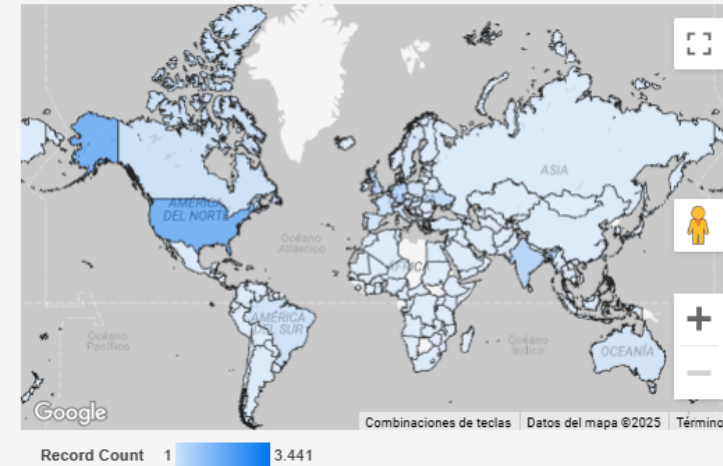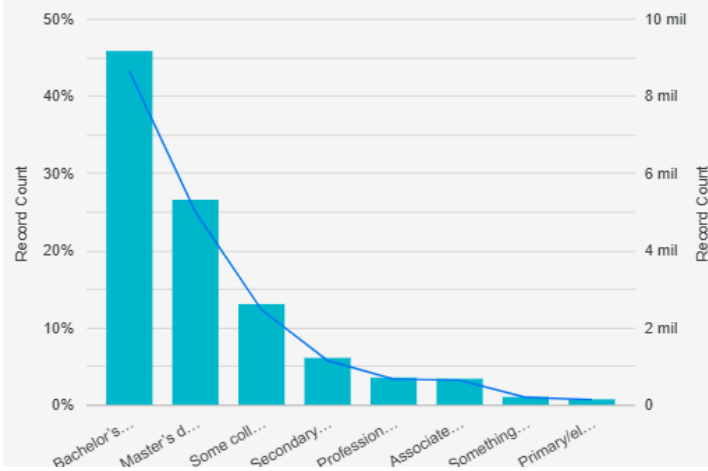# DASHBOARD

CURRENT TECHNOLOGY USAGE

Top 10 Languages Used

Legend: Javascript, Sql, Html/css, Typescript, Python, Bash/sh..., C#, Java, Php, Powershell

- Javascript
- Sql
- Html/css
- Typescript
- Python
- Bash/shell (all shells)
- C#
- Java
- Php
- Powershell

(x-axis: 0, 2 mil, 4 mil, 6 mil, 8 mil, 10 mil, 12 mil, 14 mil, 16 mil)

Top 10 Databases Used

Legend: Postgresql, Mysql, Sqlite, Mongodb, Microsoft..., Redis, Mariadb, Elasticse...

(y-axis: 0, 2,5 mil, 5 mil, 7,5 mil, 10 mil, 12,5 mil)
(x-axis: Postgresql, Mysql, Sqlite, Mongodb, Microsoft s..., Redis, Mariadb, Elasticsear..., Dynamodb, Oracle)

Top 10 Platforms Used

Linode, now akamai, Microsoft azure, Firebase, Supabase, Fly.io, Vercel, Hetzner, Colocation, Openshift, Ovh, Ibm cloud or watson, Alibaba cloud, Managed hosting, Vmware, Scaleway, Databricks, Vultr, Cloudflare, Heroku, Render, Google cloud, Digital ocean, Netlify, Openstack, Pythonanywhere, Oracle cloud infrastructure (oci)

Top 10 Web Frameworks Used

Legend: Express, Next.js, Node.js, React, Asp.net..., Ruby o..., Asp.net, Jquery, Blazor, Django

(y-axis: Conteo — 0, 2 mil, 4 mil, 6 mil, 8 mil, 10...)
(x-axis: Tecnología — 0, 0,5, 1, 1,5, 2)

FUTURE TECHNOLOGY TREND

Skills Network

DEMOGRAPHICS
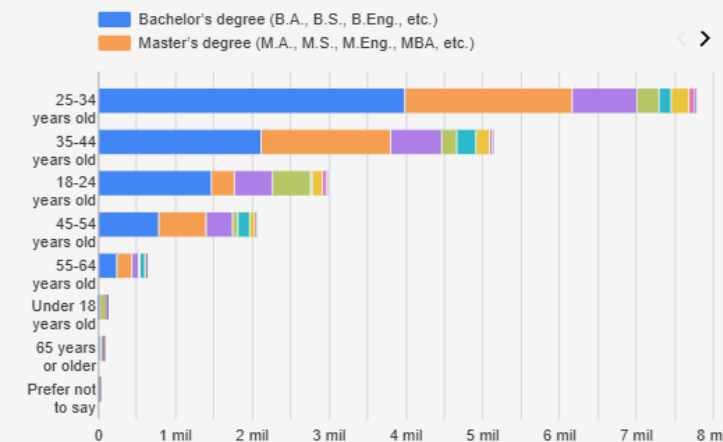
DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Most of the respondents are between the ages of 25 and 34 (41.3%), and have a university degree (45.7%).

- The usage trend in languages changes significantly, while in databases usage remains practically the same.

- The countries with the largest number of representatives in the survey are the USA, India and Germany.

Implications

- Almost 50% of people who code have a university degree and are between 25 and 34 years old.

- There is dynamism between the use of programming languages, but not in the use of databases.

- There is a higher concentration of people who code in these countries compared to the rest of the world.

Skills Network

IBM

CONCLUSION

- Javascript and PostgreSQL are positioned as the programming and database languages

- The most desired web platform to work on is Amazon Web Service (AWS)

- As for web framework, React remains the most interesting option.

- There is dynamism between the use of programming languages, but not in the use of databases.

- This is just an idea of how the developer community is doing, as it does not represent the entire community.
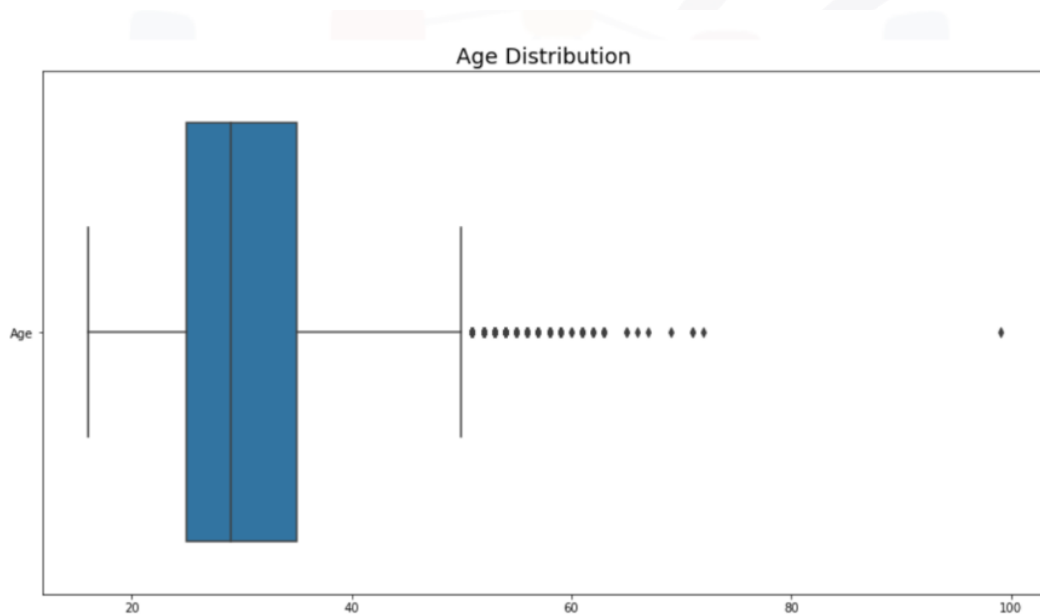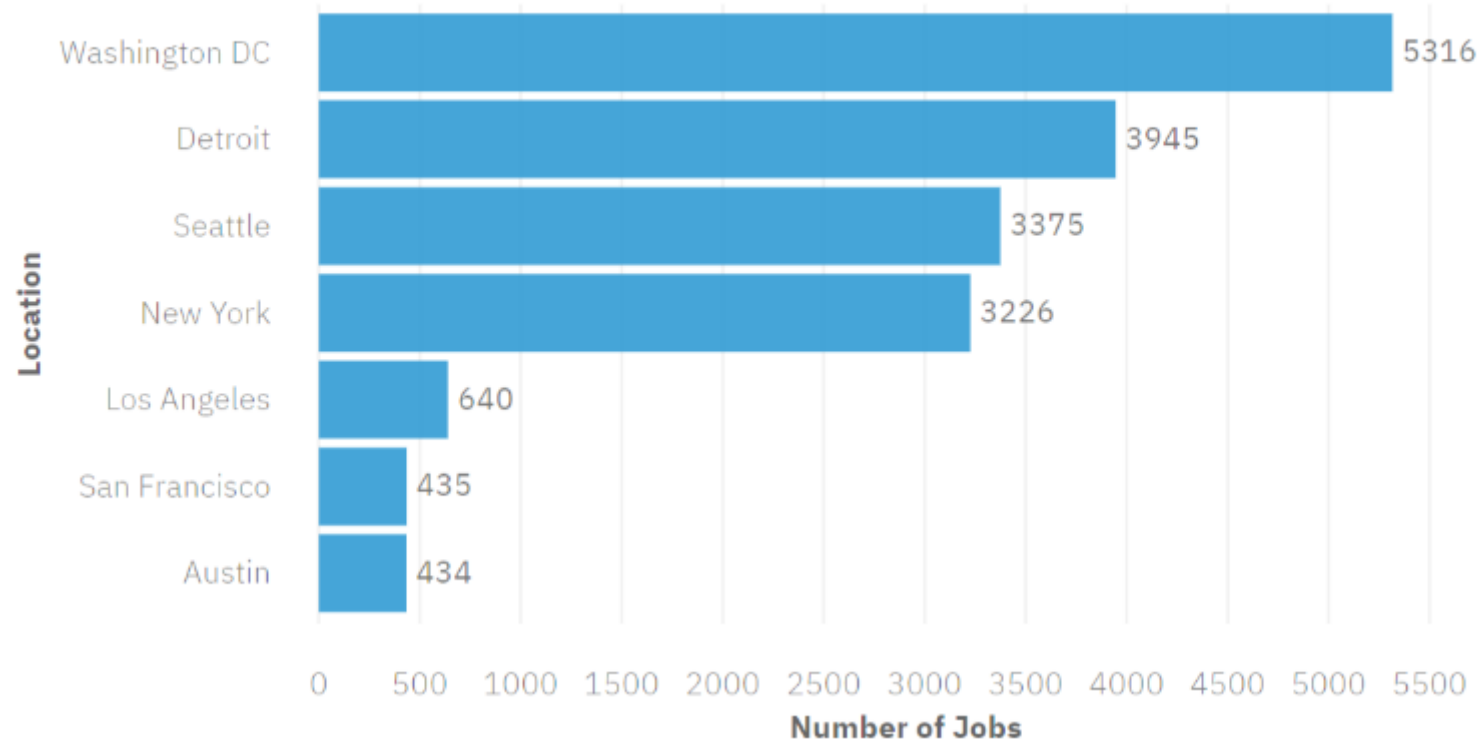
APPENDIX

- You can check this in detail in the following link:

  https://github.com/JosueOdriozola/Cousera/blob/84a72d5311b3d757271d38f097107479029623cc/Proyecto_final_Josue_Soto.pdf

AGE DISTRIBUTION BOXPLOT

Age Distribution

JOB POSTINGS

POPULAR LANGUAGES

Bar chart of Average Annual Salary by Language:

Language	Average Annual Salary
Swift	130.801
Python	114.383
C++	113.865
Javascript	110.981
Java	101.013
Go	94.082
R	92.037
C#	88.726
SQL	84.793
PHP	84.727