

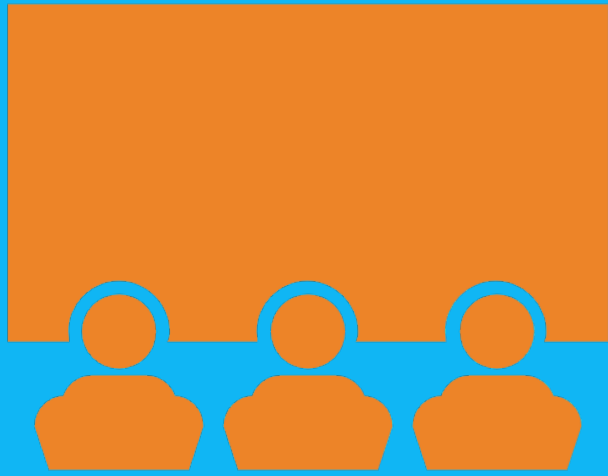


# Analysis of The Stack Overflow Developer Survey 2019

Fernando Herrera Garza

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## Executive Summary



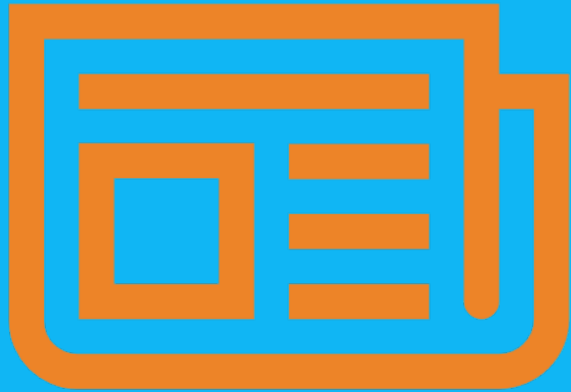
- JavaScript peaks as the most used programming language.
- MySQL is the most used database management system.
  - People that use MySQL program the most in HTML/CSS and JS.
  - Users of MySQL also work with Docker and Linux the most.
  - These users work mainly on jQuery and React frameworks.
- JavaScript is the most desired language to be learned.
- PostgreSQL is the most desired DBMS to be learned.
- Among the respondents that identified either as a man or woman, only 6.5% identified as a woman.

## Introduction



- **Stack Overflow** is the most popular website for posting threads regarding coding questions and issues, for programmers around the world to share their experience and knowledge to help solve these doubts, share advice, etc. In 2019 they held a survey for their users, in order know more about them and the technologies they use and are willing to use in the future. Given the reach and popularity of this website around the world, a considerable number of responses were obtained, giving us very meaningful insights regarding the developer population around the world.

## Methodology



- The survey was shared to the users for them to answer and the results were securely stored.
- The results were shared with this team through RESTful API's and directly as .csv files for extraction and visualization.
- Through Python scripts, the data was extracted through HTTP requests, for visualization through the Matplotlib and Seaborn libraries.
- The csv files of the results were uploaded to Watson Studio for the design of concise dashboards using Cognos Analytics.

## Results



The survey was answered by **11,398** programmers around **135** different countries. From these, **11,211** identified either as a man or a woman, from which only 6.5% identified as woman.

**JavaScript** peaked as the most used programming language among the users, with **8,687** respondents.

Regarding databases, **MySQL** showed to be the most used database management system among the respondents, with **5,469** respondents saying they work with it. Among these respondents, HTML/CSS and JS were the most popular languages. The most popular platforms used by them were Docker and Linux, while jQuery and React were the most popular frameworks.

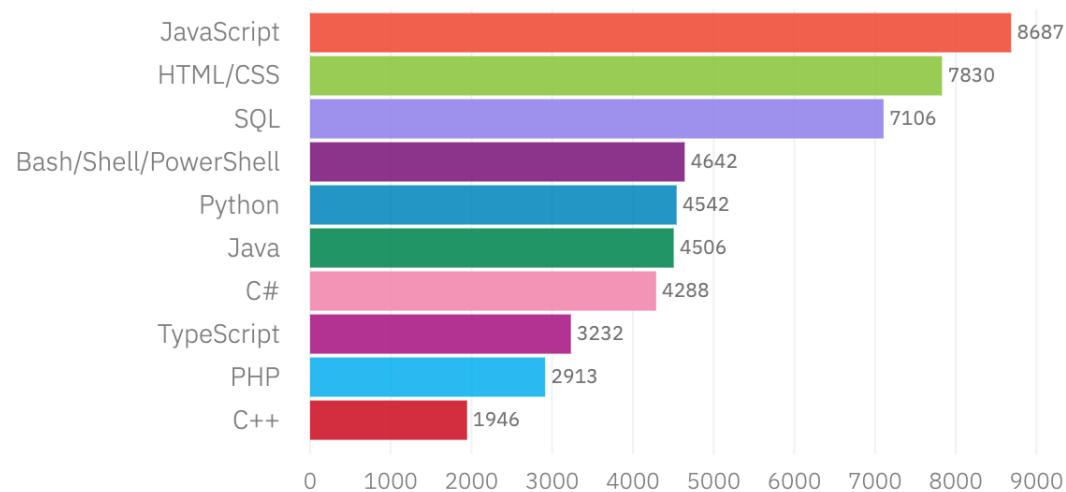
**JavaScript** showed to be the most desired language to be learned next year by the respondents, while **PostgreSQL** was the most desired DBMS to be learned.



# PROGRAMMING LANGUAGE TRENDS

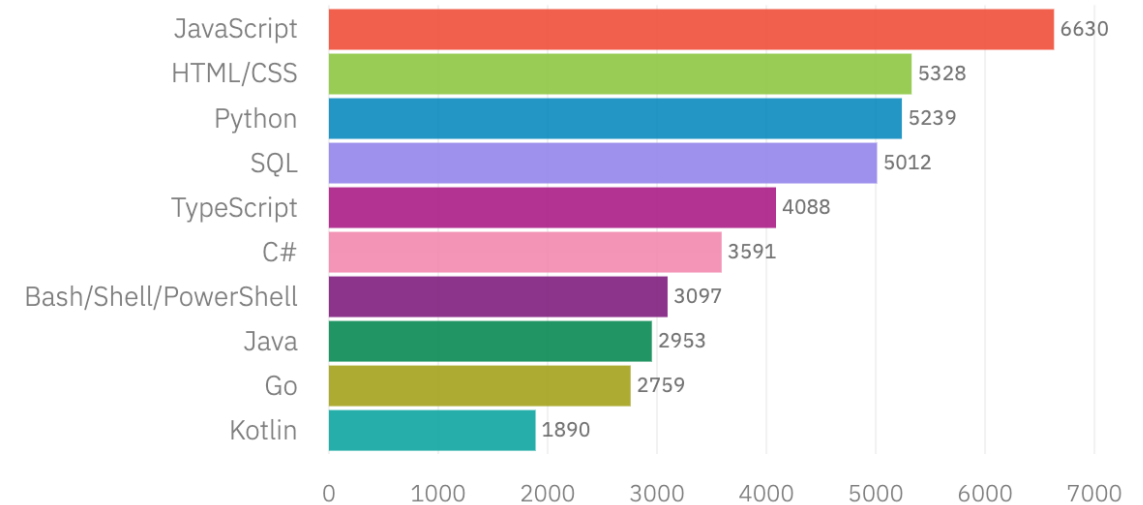
## Current Year

Top Languages Worked With



## Next Year

Top Languages Desired to Learn Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- **JS, HTML** and **CSS** were the most used and the most popular to be learned next year.
- A significant amount of people reported to use **JS** as well as interest in learning it next year.
- **C++** was the least used language, and it did not make it to the Top 10 languages desired to learn.

## Implications

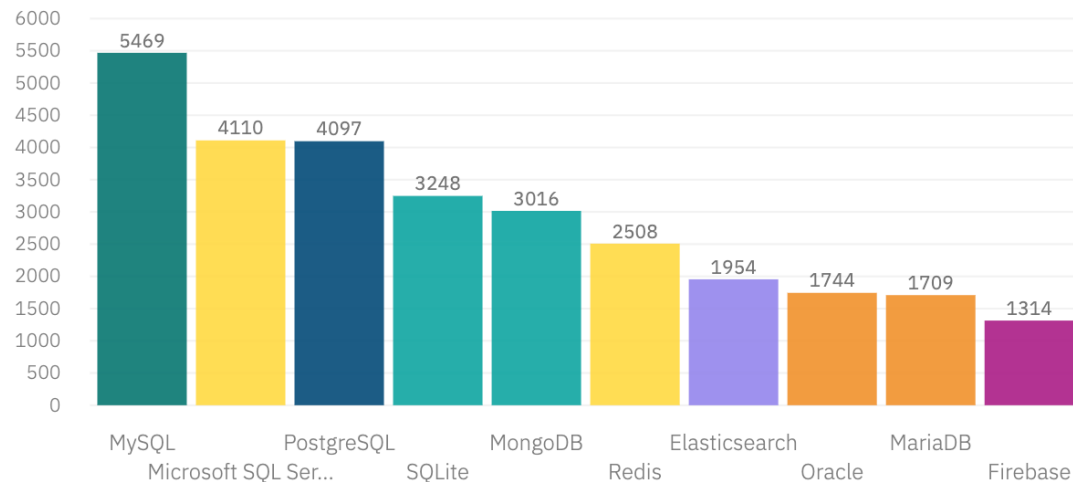
- Web development is the most popular programming profession and will continue being.
- People that already use **JS** identify ways in which they can keep learning more about it.
- **C++** might be close to obsolescence, with other languages to the rise.



# DATABASE TRENDS

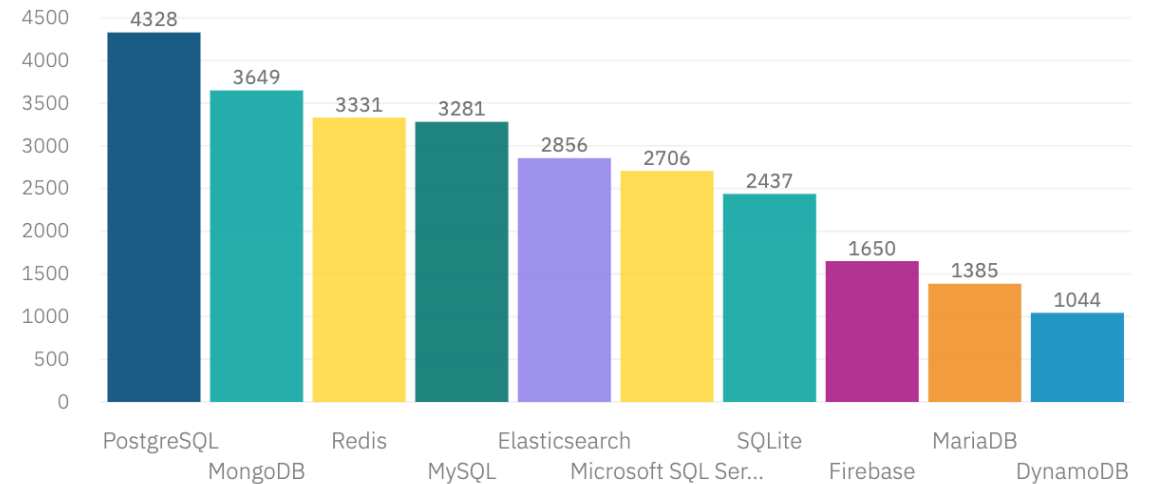
## Current Year

Top Databases Worked With



## Next Year

Top Databases Desired to Learn Next Year



# DB TRENDS - FINDINGS & IMPLICATIONS

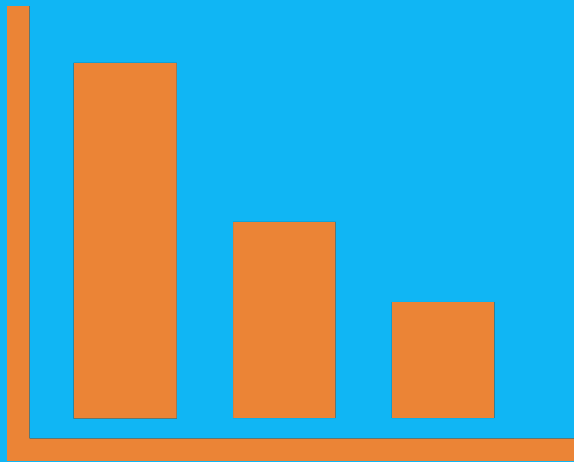
## Findings

- **MySQL** was declared to be used by the half of the respondents.
- **PostgreSQL** was the most popular DBDS to be learned next year.
- **MongoDB** was the 5<sup>th</sup> most used DBMS but showed to be the 2<sup>rd</sup> most popular to be learned, even above MySQL.

## Implications

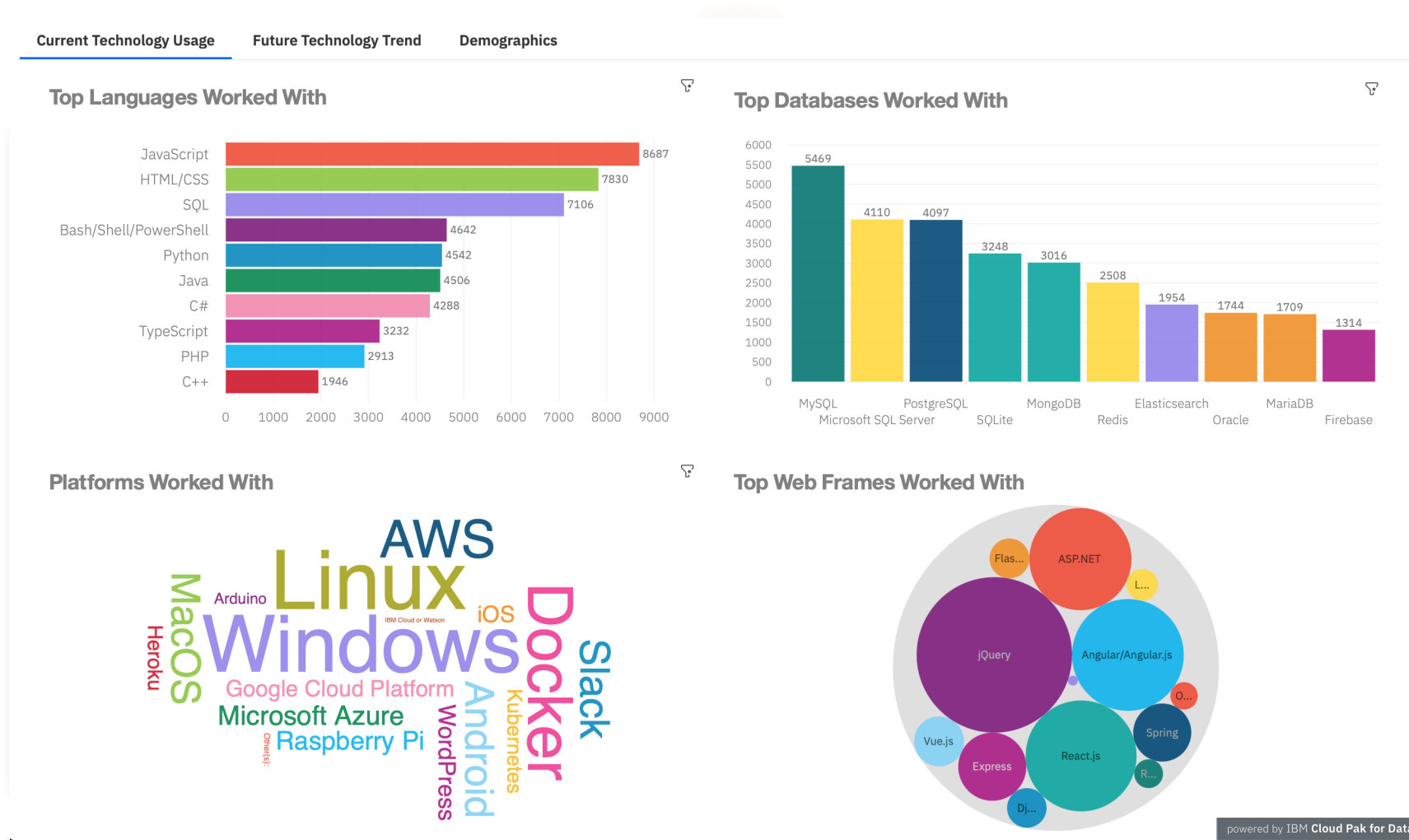
- This DBMS should remain highly used and supported.
- PostgreSQL might become the most popular and supported DBMS in the near future.
- No-SQL languages might keep becoming more and more popular soon, like MongoDB and **Redis**

## Dashboard

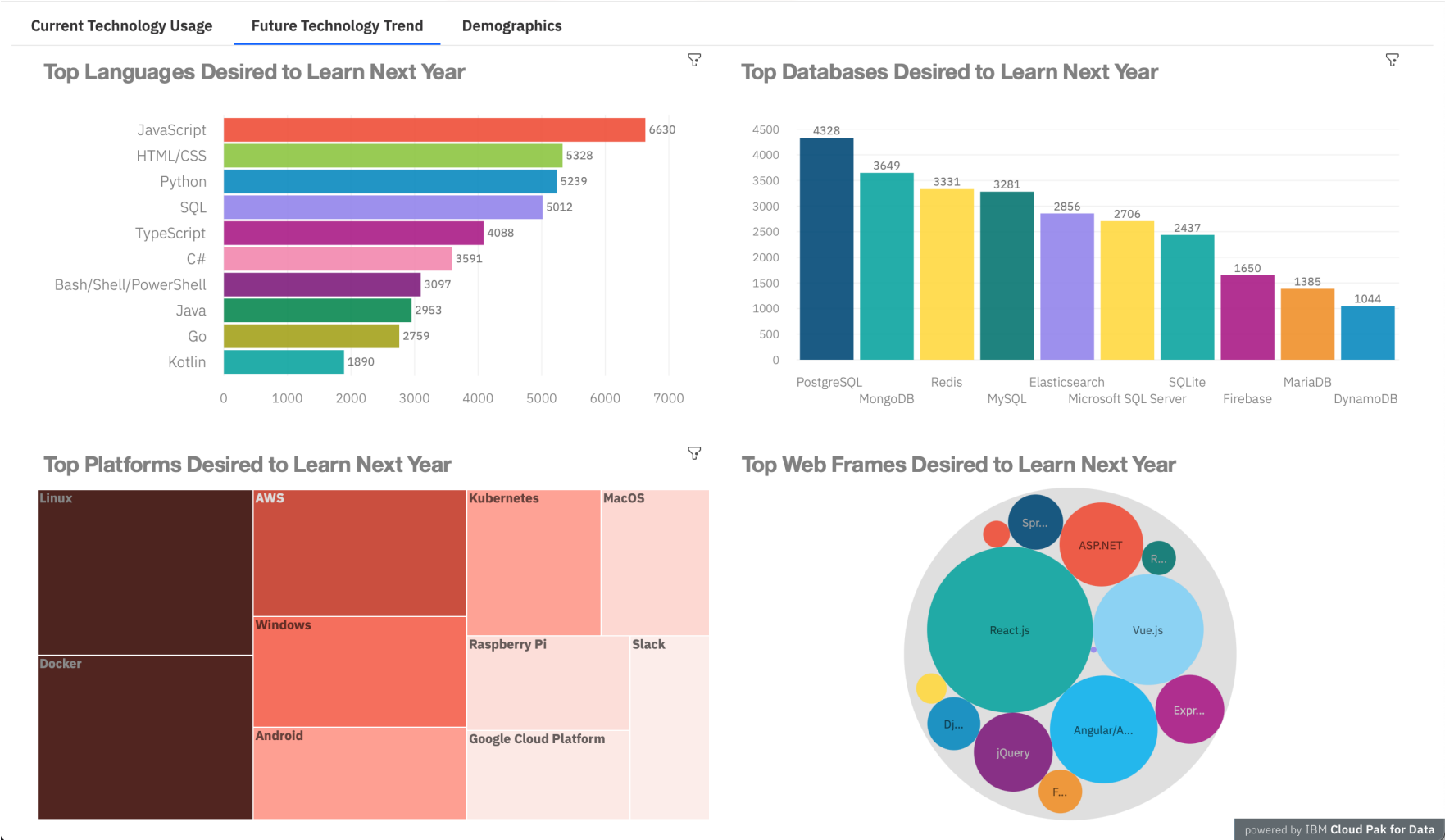


**<https://eu-de.dataplatform.cloud.ibm.com/dashboards/9d5cbc58-5b2c-41a7-a367-88812d220535/view/7b1ba1291e902d9752dcb5e4079825027536275fe6bb8706d6837b490f672497f03a4094c8284e5ad8180d30f0b8105ac8>**

# DASHBOARD TAB 1



# DASHBOARD TAB 2



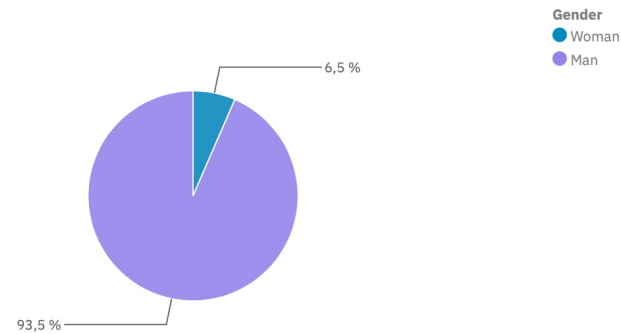
# DASHBOARD TAB 3

Current Technology Usage

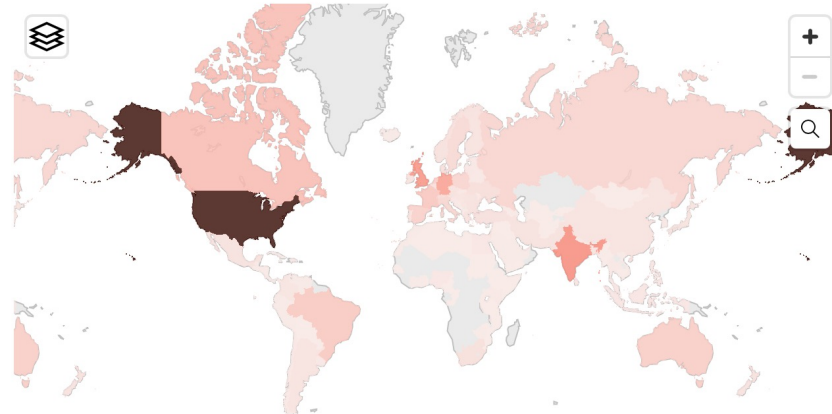
Future Technology Trend

Demographics

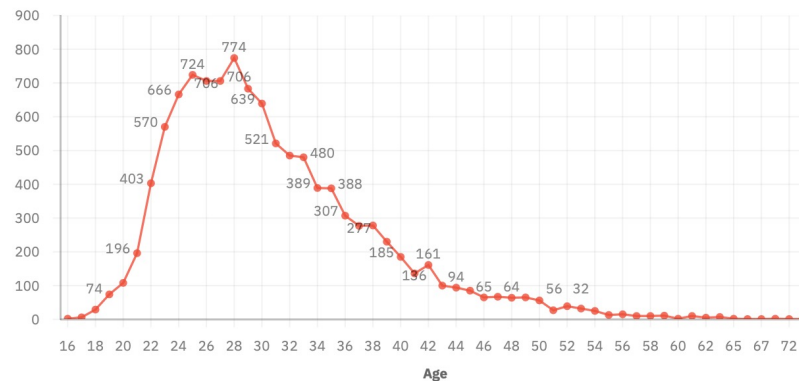
### Respondent Gender Distribution (Man and Woman)



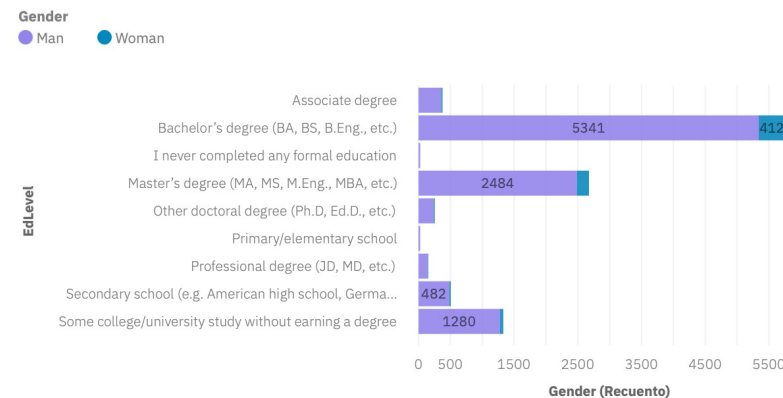
### Respondent Country Distribution



### Respondent Age Distribution



### Gender by Education Level



powered by IBM Cloud Pak for Data



# DISCUSSION



- Overall, web development shows to be the most popular branch of programming, with languages such as **JS**, **HTML**, and **CSS** currently being the most popular and the most wanted to be learned. We can also see that a significant number of developers declared that they are interested in learning **Python** next year, being this a language with multiple purposes, including web development. Regarding DBMS's, we can see that **MySQL** still dominates after many years, but people show interest in other alternatives such a **PostgreSQL**. Both systems have a very broad community with constant updates and support, but PostgreSQL might become the most popular SQL DB soon. Nevertheless, when it comes to No-SQL, options like **MongoDB** and **Redis** are gaining more and more popularity, with even more people declaring having interest on learning it next year than MySQL.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- **JS, HTML** and **CSS** to keep dominating the development world.
- Many users declare to use **JS** and that they wish to learn more **JS** next year.
- More people declared wanting to learn **MongoDB** and **Redis** than **MySQL** next year.

## Implications

- Web development is the main branch of development in Stack Overflow users (at least).
- **JS** is a very versatile language and it evolves as the Frameworks built on it do.
- **No-SQL** databases are becoming more and more popular, they might dominate in the future.

## Conclusion

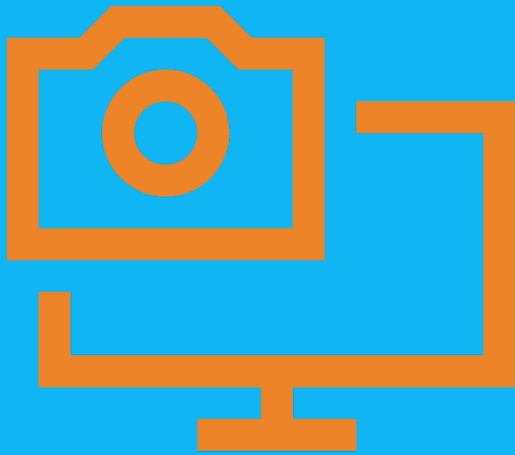


From Stack Overflow users:

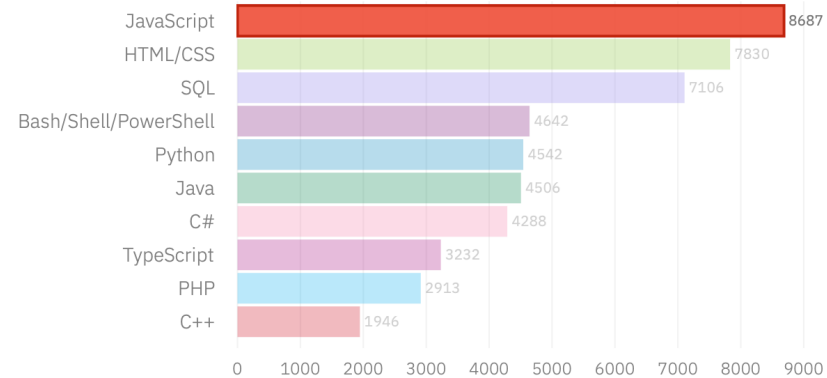
- **JavaScript** is the most popular programming language and web development is the most popular development branch.
- **PostgreSQL** might become more popular than MySQL in the future.
- No-SQL DBMS's are becoming more popular and might be used as much as SQL DB's in the future.
- From the ones identifying as man or woman, majority identify as a man.

## Most popular databases in JavaScript users only:

### Appendix



Top Languages Worked With



Top Databases Worked With

