



# Developers Survey 2019



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Data Science & Analysis | Data Storyteller | Business Intelligence | Controlling & Finance

Report built in December 2020



# OUTLINE

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

# EXECUTIVE SUMMARY

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This report was built to analyze a sample dataset from a survey conducted by Stack Overflow, a popular website for developers across the world.

This report communicates findings that could help new enthusiasts and experienced professionals on their careers.

The main topics are:

- Trends in languages and databases
- Demographics
- Tech gap between countries
- Gender gap in the developer job market

# INTRODUCTION

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- What are the trends in programming development?
- Purpose:
  - What are top programming languages in demand?
  - What are top databases in demand?
  - What skills will be required in the future?
- Audience: IT professionals and Human Resources

# METHODOLOGY

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- Dataset sources:
  - StackOverflow Survey 2019
  - GitHub Jobs postings
- Data Exploration, Cleaning and Normalizing
- Data Visualization
- Presentation

# RESULTS

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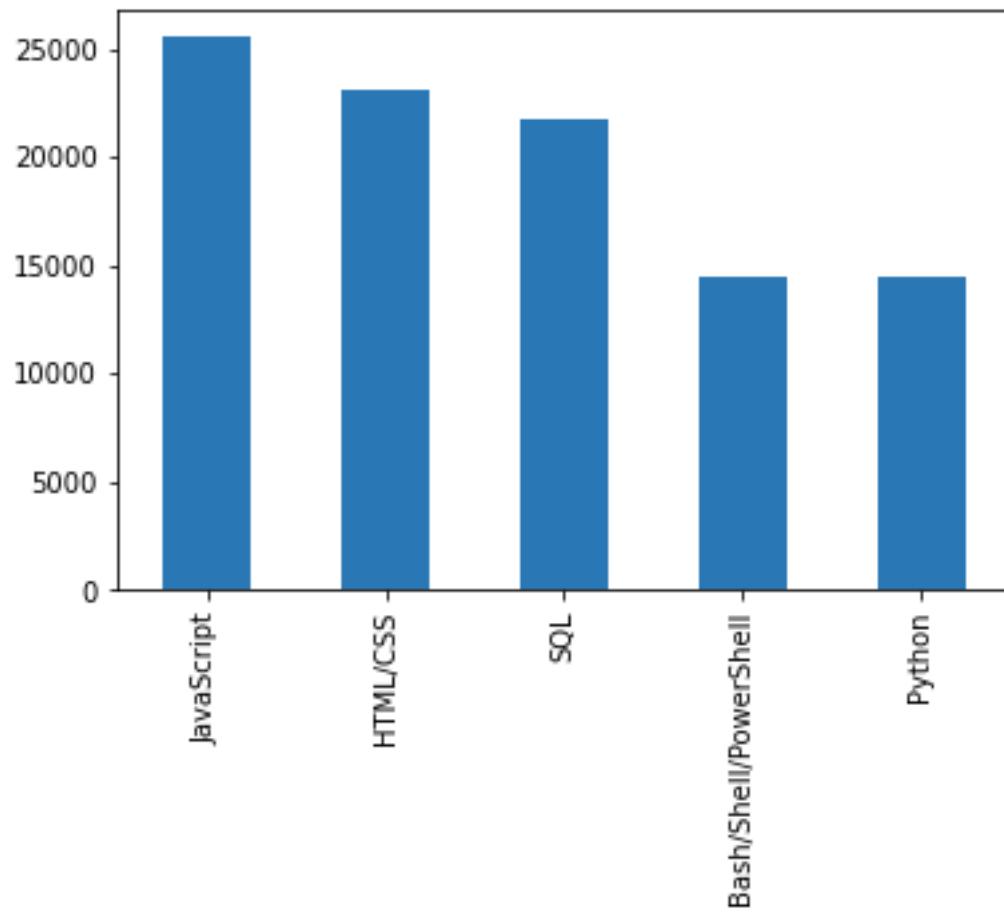
Results are based on the DataFrame below:

| Respondent | LanguageWorkedWith | LanguageDesireNextYear | DatabaseWorkedWith | DatabaseDesireNextYear | PlatformWorkedWith |
|------------|--------------------|------------------------|--------------------|------------------------|--------------------|
| 0          | 4                  | C                      | C                  | MySQL                  | MySQL              |
| 1          | 4                  | C++                    | C#                 | SQLite                 | SQLite             |
| 2          | 4                  | C#                     | JavaScript         | NaN                    | NaN                |
| 3          | 4                  | Python                 | SQL                | NaN                    | NaN                |
| 4          | 4                  | SQL                    | NaN                | NaN                    | NaN                |
| ...        | ...                | ...                    | ...                | ...                    | ...                |
| 74584      | 25142              | Go                     | Python             | NaN                    | NaN                |
| 74585      | 25142              | HTML/CSS               | R                  | NaN                    | NaN                |
| 74586      | 25142              | PHP                    | NaN                | NaN                    | NaN                |
| 74587      | 25142              | Python                 | NaN                | NaN                    | NaN                |
| 74588      | 25142              | R                      | NaN                | NaN                    | NaN                |

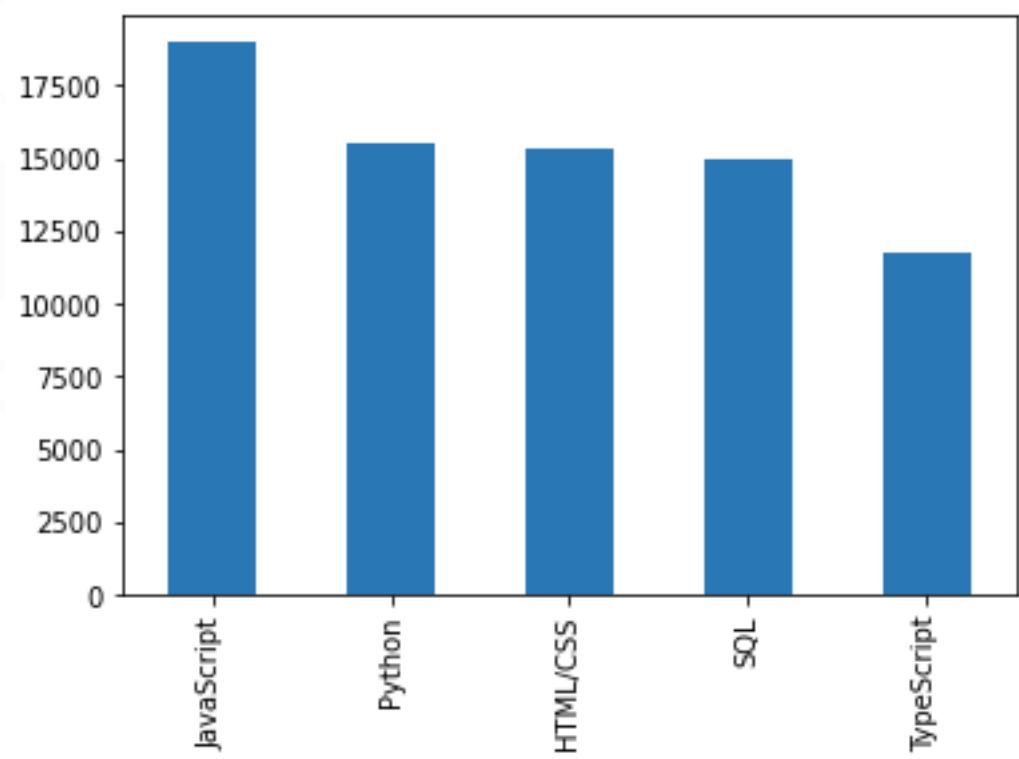
# PROGRAMMING LANGUAGE TRENDS

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Current Year



Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

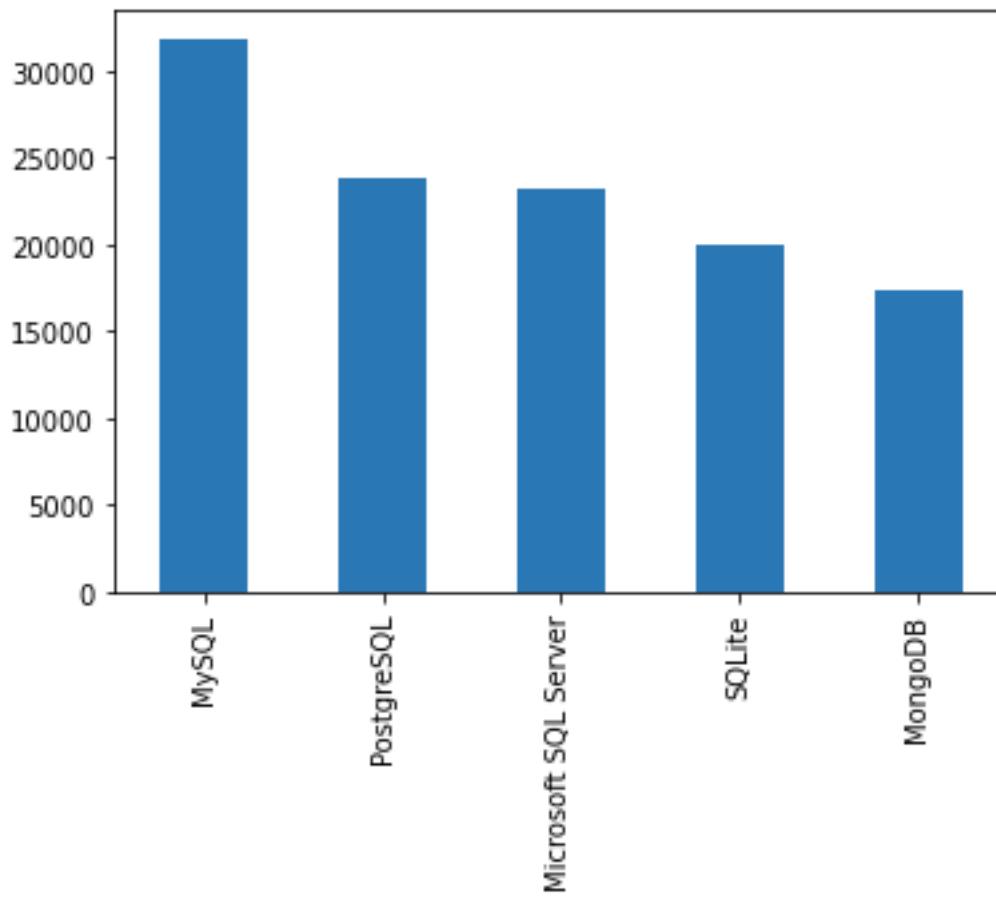
- Javascript, HTML/CSS, SQL are popular this year
- Python will become more popular next year
- PowerShell/Bash are not priorities for next year

## Implications

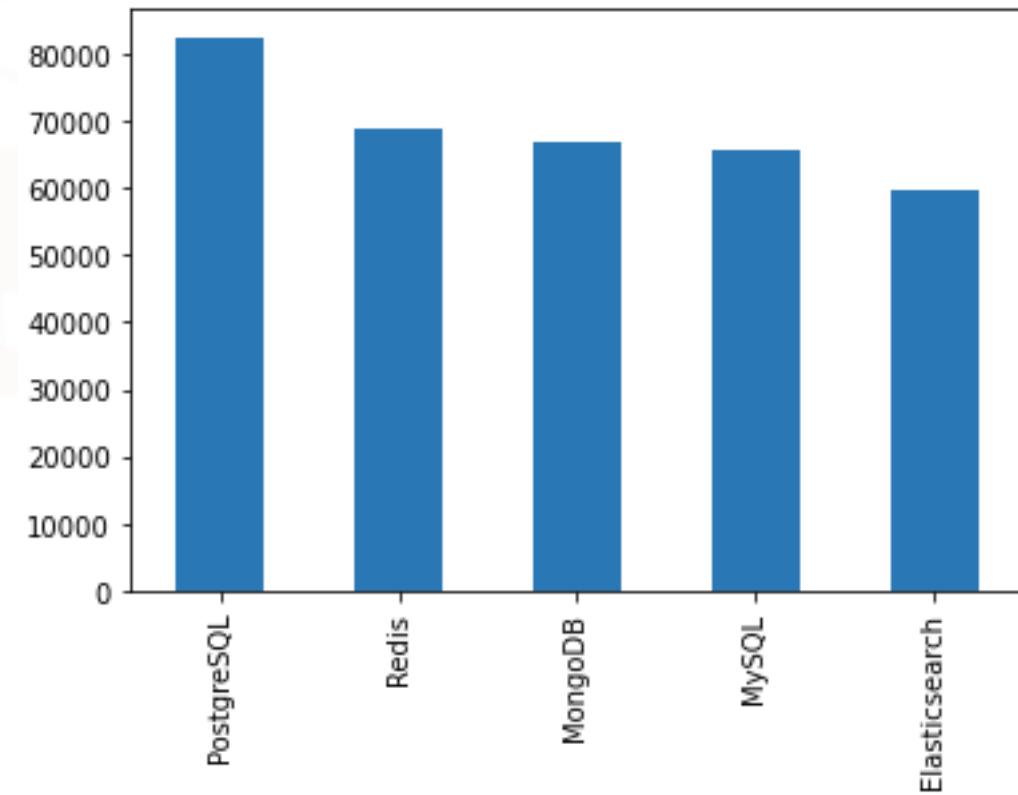
- Web Development still popular with Javascript and HTML/CSS
- Data related languages of SQL and Python have growing interests by developers
- Can Typescript replace Javascript in the future?

# DATABASE TRENDS

Current Year



Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

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## Findings

- MySQL and Microsoft SQL are most popular databases
- PostgreSQL and MongoDB are popular with growing desire among developers
- Redis and Elasticsearch are also with growing desire among developers

## Implications

- Open source databases are preferred in-company
- NoSQL databases will make an impact in the job market
- Redis support abstract data-types

# DASHBOARD

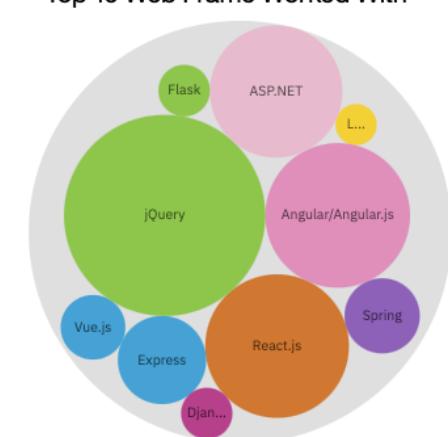
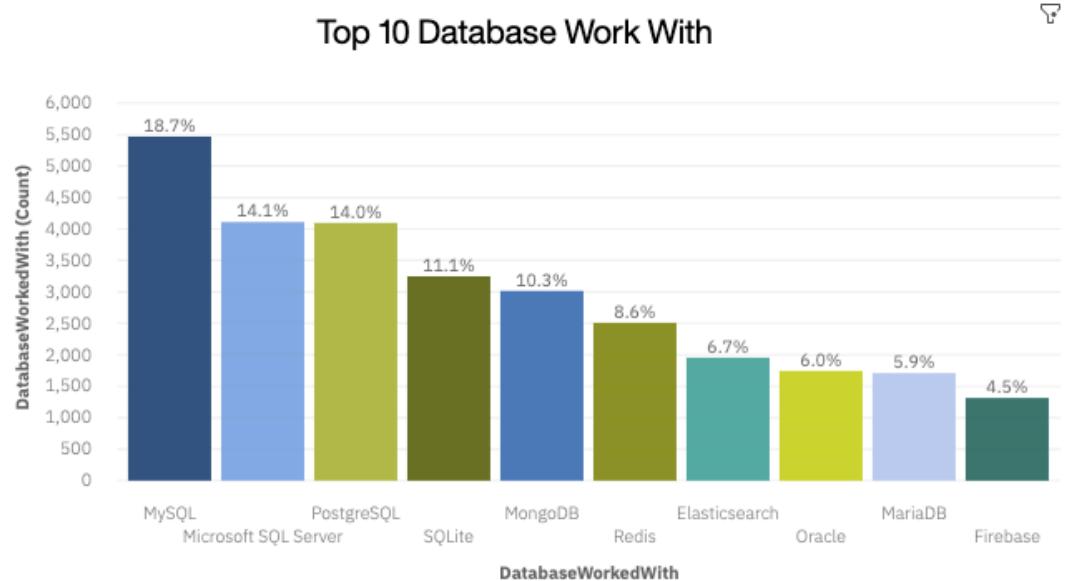
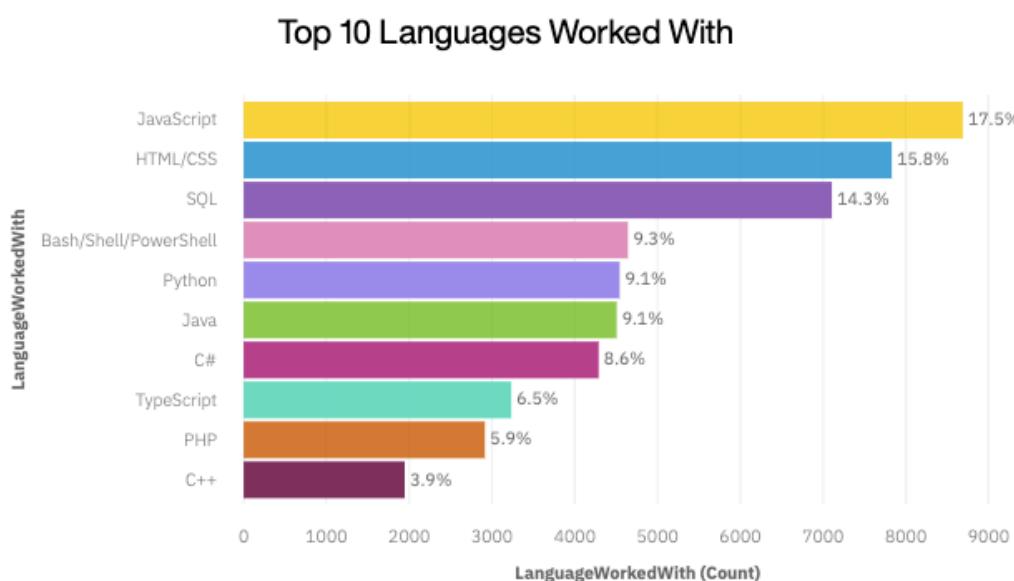
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The link for the Cognos Dashboard on Cloud:

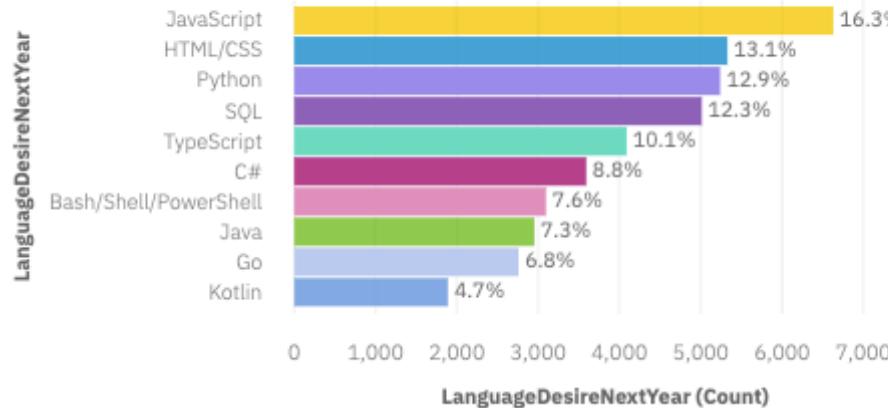
<https://dataplatform.cloud.ibm.com/dashboards/c0006621-8a35-4d08-ad6e-d445010db678/view/4739c17921b869de4ce5c4e4079c2b077c342559e7bb830a84877b495d612397a96c1a99c8264b58da430266f0ec165fc1>

# CURRENT TECHNOLOGY USAGE

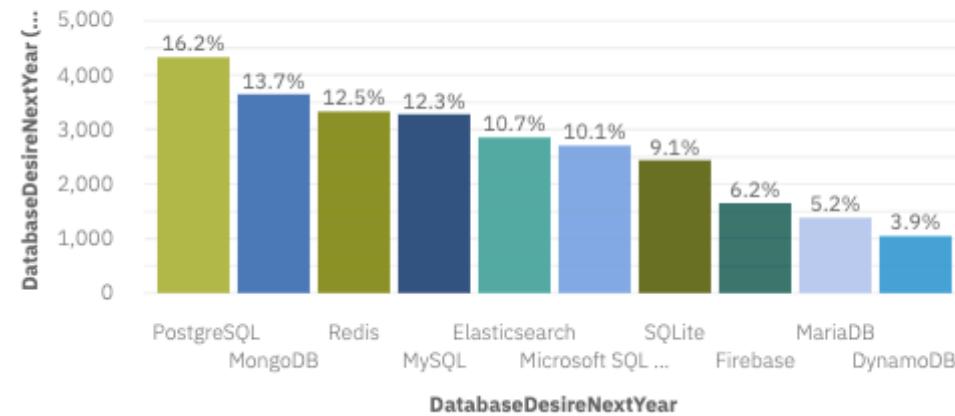


# FUTURE TECHNOLOGY TREND

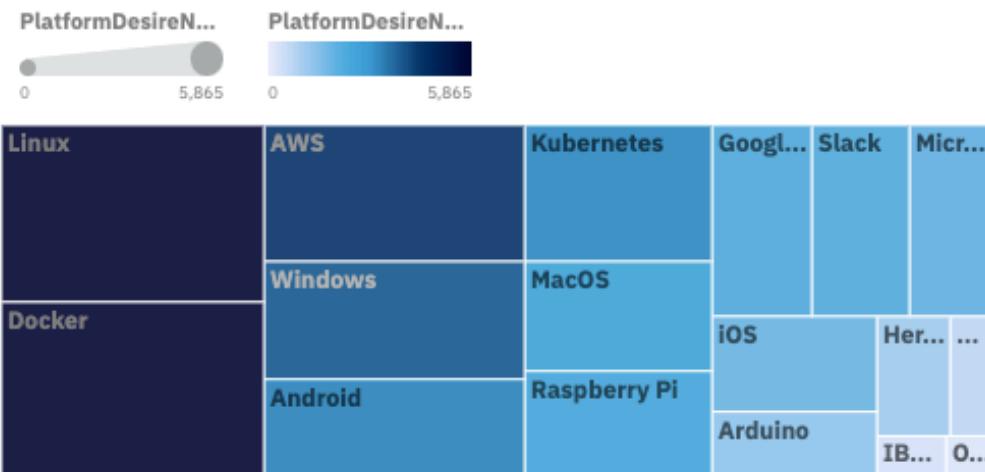
Top 10 Languages Desire to Learn



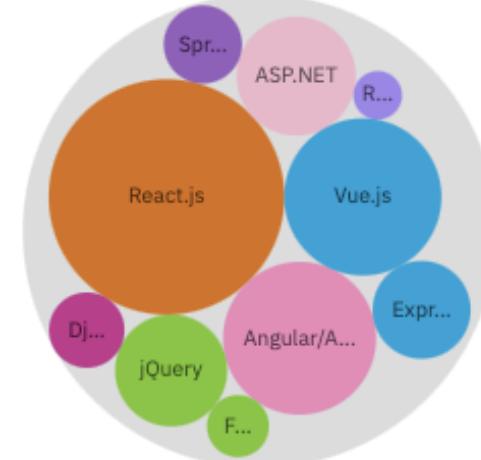
Top 10 Database Desire to Learn



Platform Desire to Learn



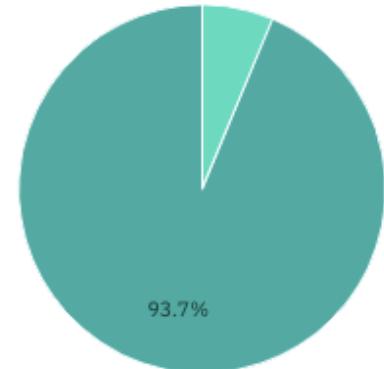
Top 10 Web Frame Desire to Learn



# DEMOGRAPHICS

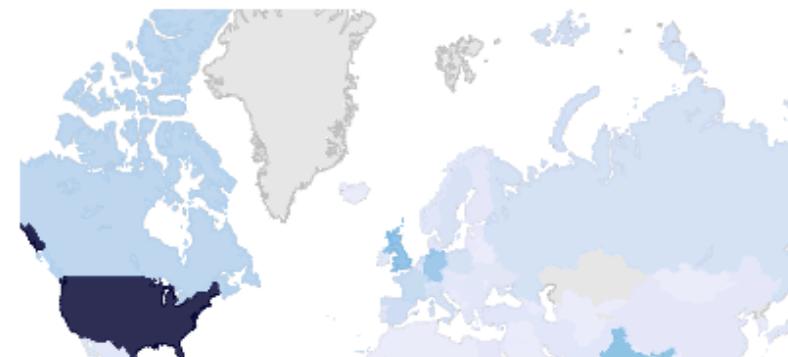
Respondent Classified by Gender

Gender  
Woman Man

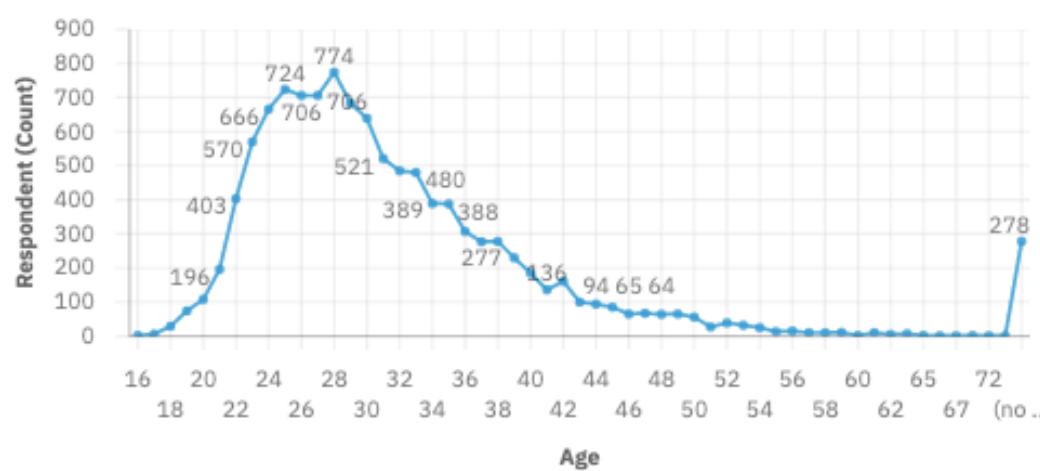


Respondent Count for Countries

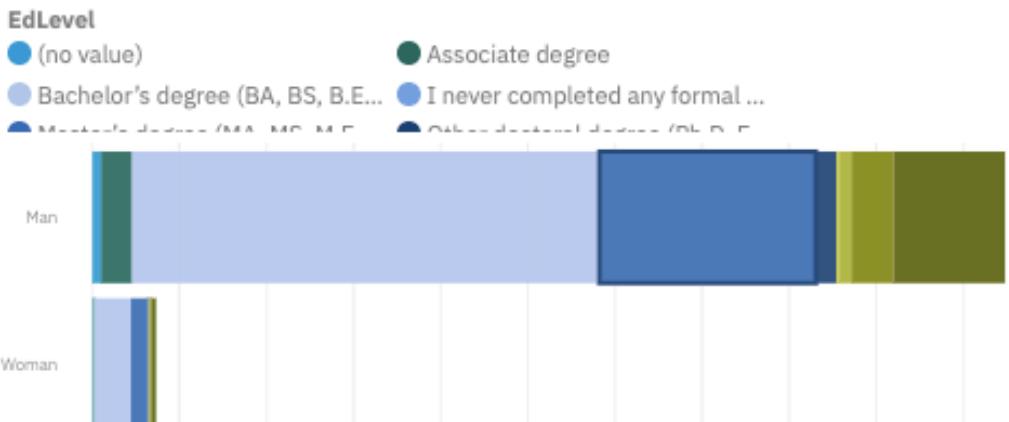
Respondent (Cou...  
1 3,058



Respondent count by age



Respondent Count by Gender, classified by Formal Education Level



# DISCUSSION

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- Actual technologies and trends for the future
- Inclusion of women on the job market
- Large gap between countries
- Eliminate age and education discrimination in employment

# OVERALL FINDINGS & IMPLICATIONS

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## Findings

- Fast changing in technologies
- Concentration on USA
- Gap in gender, age and educational levels

## Implications

- Companies need to adapt to fast changes to keep motivation and performance
- Choose wisely the changes to be made
- Spread technologies to more countries

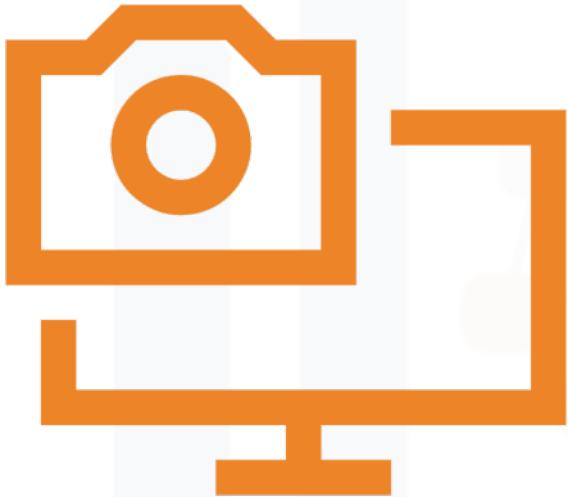
# CONCLUSION

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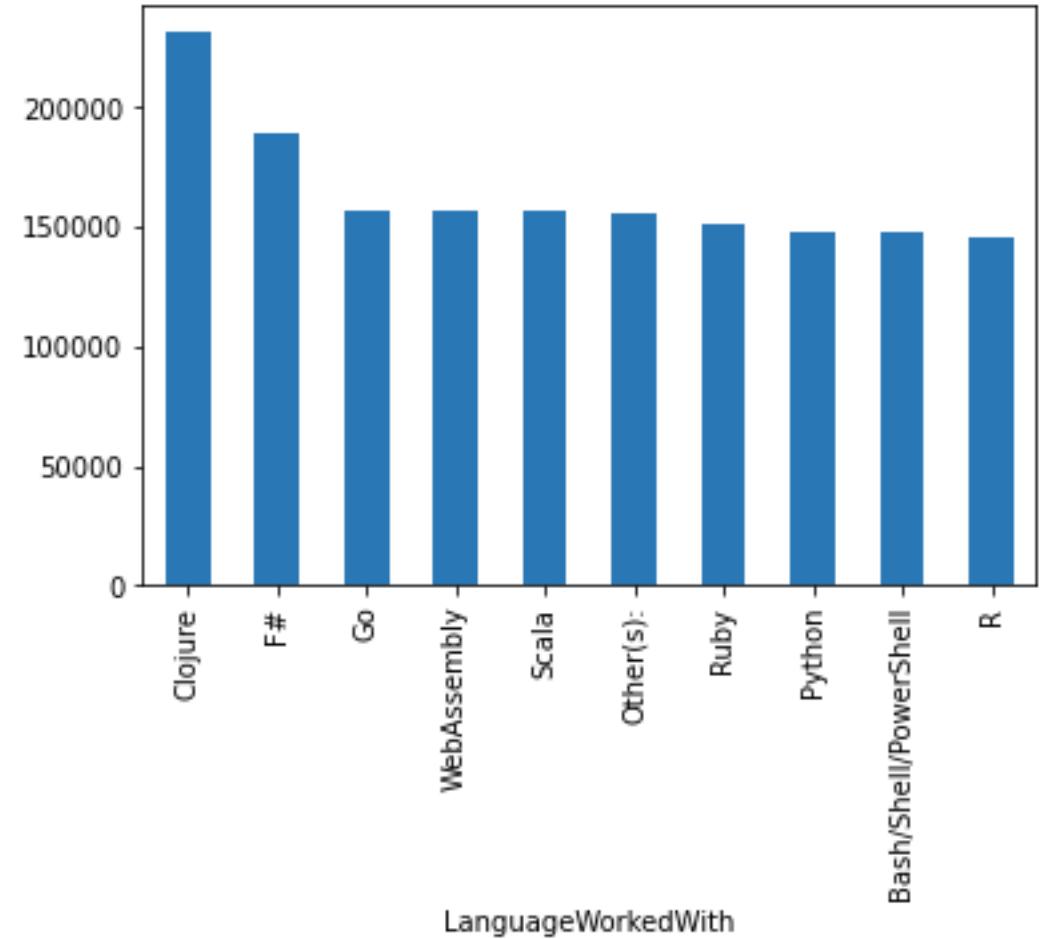


- Comparing actual languages and desire languages can help companies chose better products
- Understanding overall feelings can help professionals learn better tools
- High demand for women as companies search to reduce gap
- Future analysis to compare salaries of different current knowledge

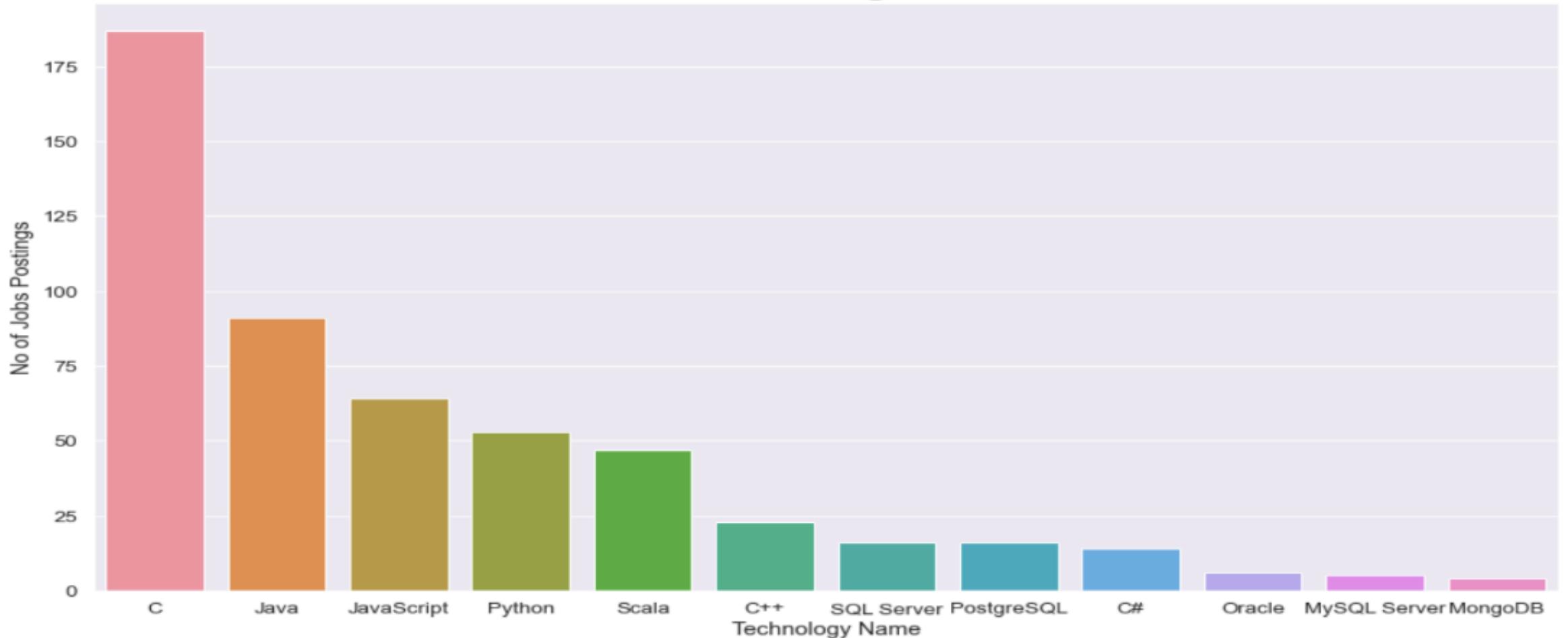
# APPENDIX



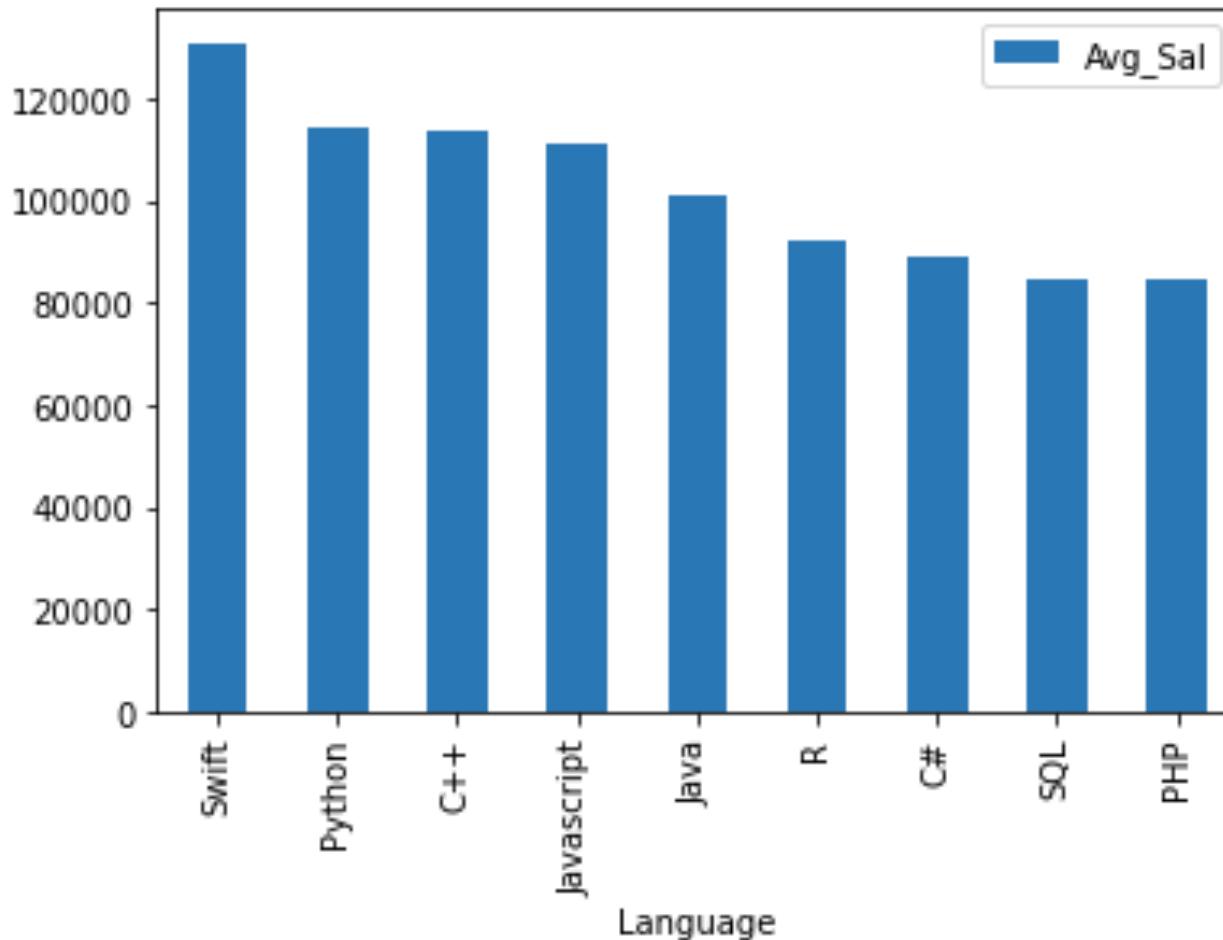
Interesting to analyze the average salary per technology used, as the top 10 has little attachment to highest desire to learn.



# GITHUB JOB POSTINGS



# POPULAR LANGUAGES



From: “popular-languages.csv” in Module 1