



# Developer Insights on Current and Future Technologies

Megan Pearson

January 27, 2023

# OUTLINE

---



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

# EXECUTIVE SUMMARY

---



- In order to keep pace with changing technologies and remain competitive, organizations should regularly analyze data to help identify future skill requirements.
- This presentation will provide insight on current and future trends regarding programming languages, databases, platforms, and webframes using survey data.
- We will also analyze the demographic information of survey respondents.
- This analysis will assist the firm in making data-driven decisions when it comes to hiring and budgeting.

# INTRODUCTION

---



This presentation will identify trends from this year's report on emerging skills. The evaluation can be used to assist with hiring and determining the usefulness of various technologies within the company.

- What are the top programming languages in demand?
- What are the top database skills in demand?
- What are the most popular IDEs?
- What can we learn about future skill requirements?

# METHODOLOGY

---



- Stack Overflow, a popular website for developers, conducted an online survey of worldwide software professionals. The 2019 survey data was later open sourced by Stack Overflow.
- This data was collected via various methods such as web scraping and accessing APIs.
- The data was then cleaned and analyzed to identify the distribution of data, pinpoint and remove outliers, and identify correlations between features in the data.
- Various visualization methods were then used to compare data, show the relationships between the data, and highlight the distribution of data.
- Cognos Dashboard Embedded (CDE) was used to show insights on current technology use, future trends, and demographic information on survey participants.

# RESULTS

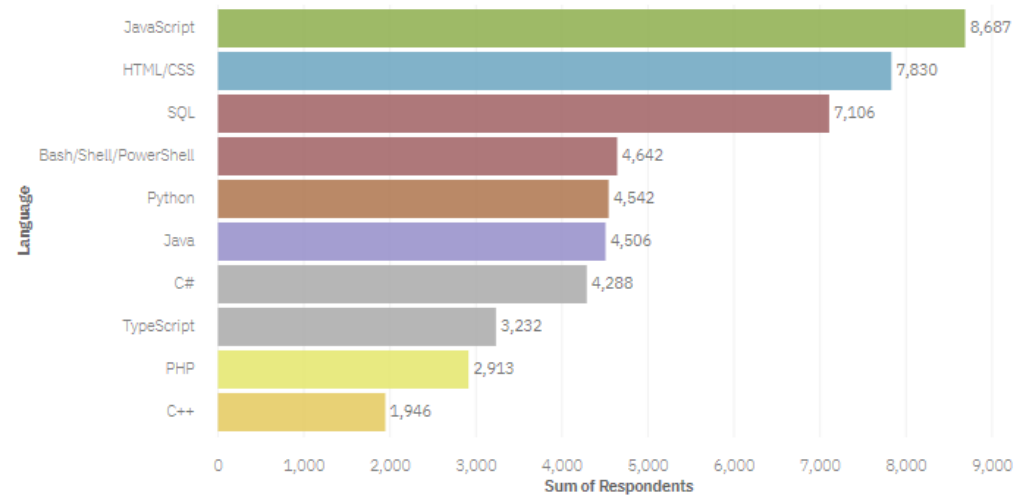
---



# PROGRAMMING LANGUAGE TRENDS

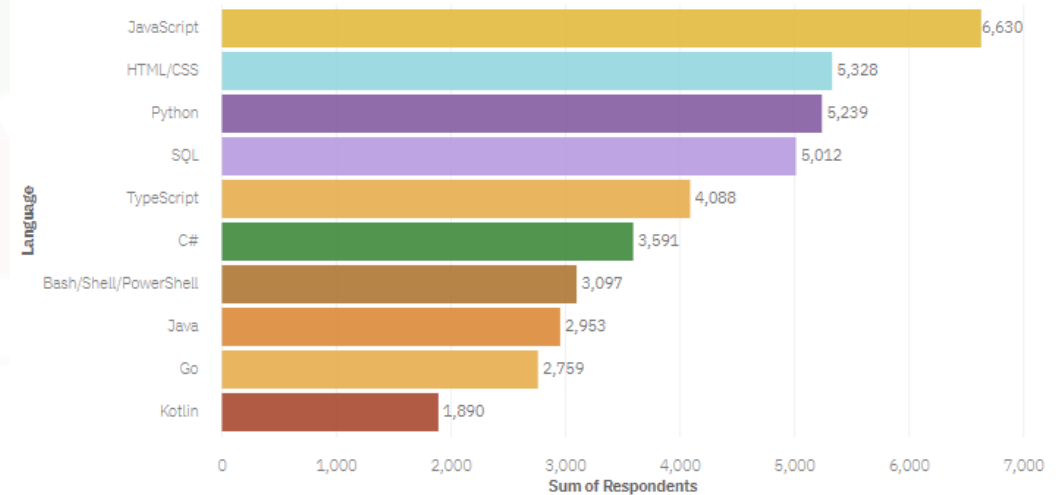
## This Year

Top 10 Languages Preferred by Developers



## Next Year

Top 10 Languages Developers Want to Use



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

---

## Findings

- For both this year and the next, JavaScript and HTML/CSS continue to be the most preferred languages among developers.
- Python and Typescript are becoming more popular languages.
- Developer interest in SQL has decreased slightly, whereas interest in Bash/Shell/Powershell has decreased significantly.

## Implications

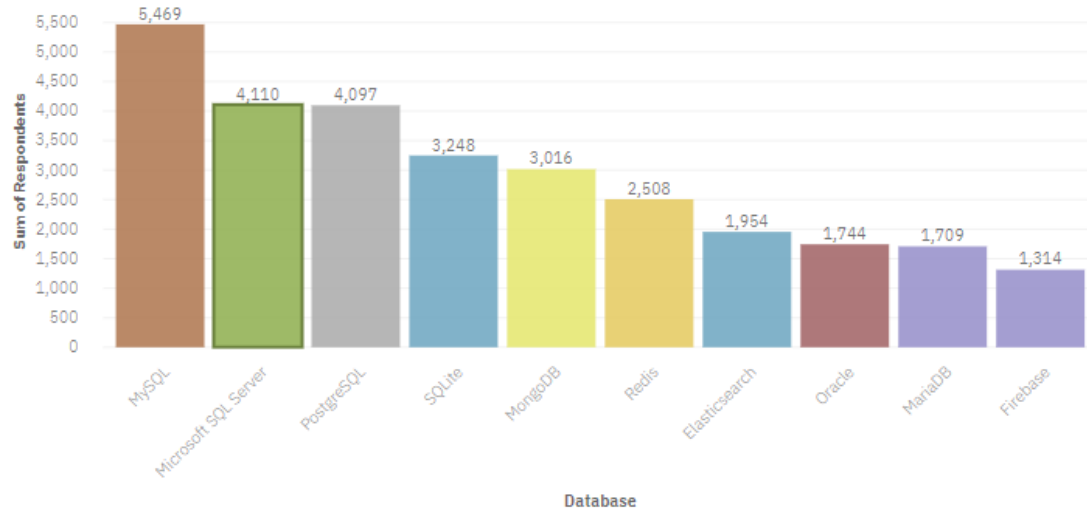
- Continue to employ a similar number of developers proficient in Javascript and HTML/CSS.
- Consider hiring more developers skilled in Python and Typescript.
- Though SQL is still a popular language among developers, careful consideration should be given when hiring for this skill.
  - Hiring for Bash/Shell/Powershell developers should be done only on an as-needed basis.



# DATABASE TRENDS

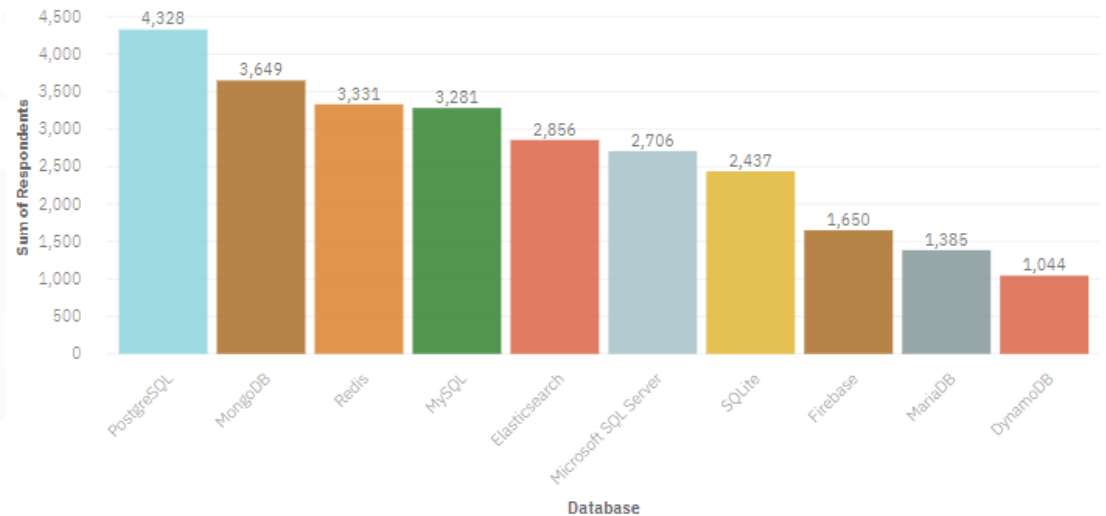
## Current Year

Top 10 Databases Preferred by Developers



## Next Year

Top 10 Databases Developers Want to Use



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

---

## Findings

- SQL databases remain some of the most popular among developers, though there is a noticeable decrease in interest in MySQL and Microsoft SQL Server for the coming year.
  - There is, however, a slight increase in interest for PostgreSQL.
- There is increased interest in MongoDB and Redis for the upcoming year.
- Oracle is the only preferred database that did not transfer to the next year, having been replaced by DynamoDB among the Top 10 favorites.

## Implications

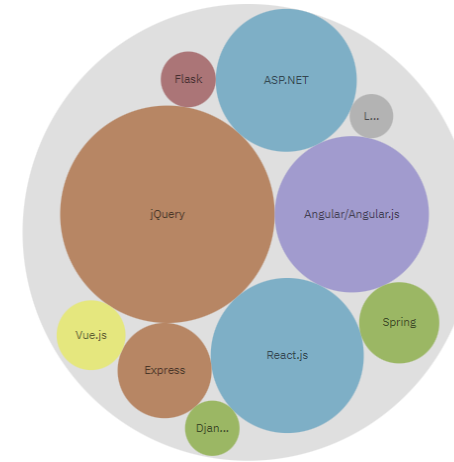
- SQL skills are still highly desirable, though this varies by database.
  - Increase hiring for those skilled in PostgreSQL, and consider scaling back on hiring for those skilled in MySQL and Microsoft SQL Server.
- Consider hiring more individuals skilled in MongoDB, Redis and DynamoDB.
- Hiring for Oracle should be done on an as-needed basis.

# WebFrame and Platform TRENDS

Popular Platforms

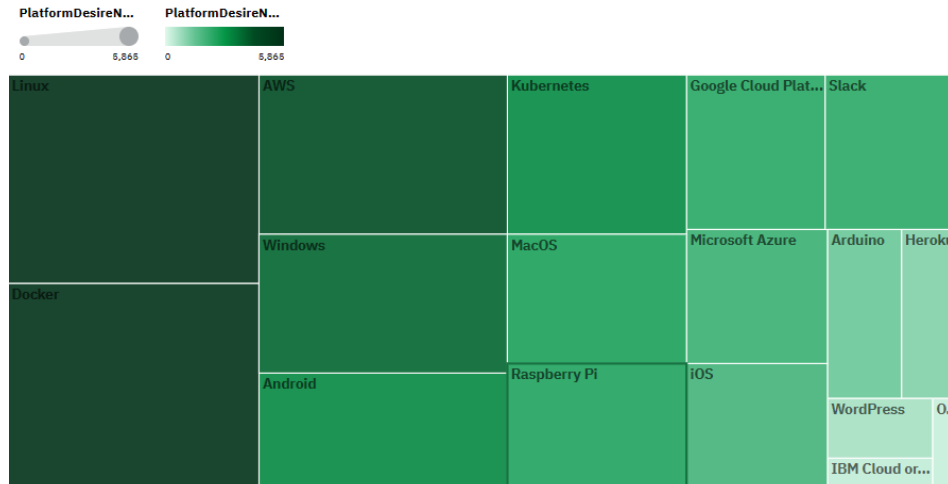


Top 10 Web Frames Preferred by Developers

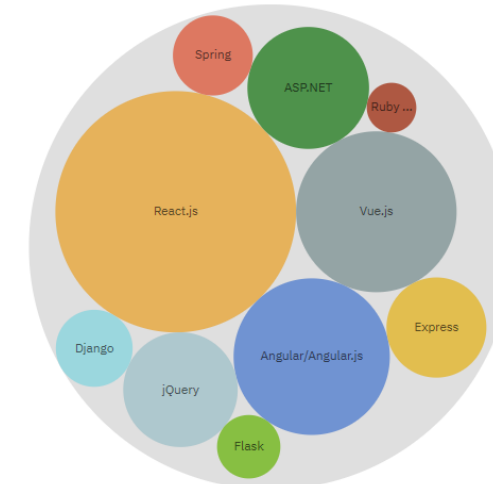


Next Year

Platforms Developers Want to Use



Top 10 Web Frames Developers Want to Use



# WEBFRAME AND PLATFORM TRENDS - FINDINGS & IMPLICATIONS

---

## Findings

- Linux remains a popular platform, while Windows will decrease in popularity slightly over the next year.
- There is increased interest in the WebFrame React.JS for the upcoming year, with a noticeable decrease in interest for jQuery.

## Implications

- Consider hiring more individuals familiar with Linux.
- Hiring for jQuery should be done on an as-needed basis.

# DASHBOARD

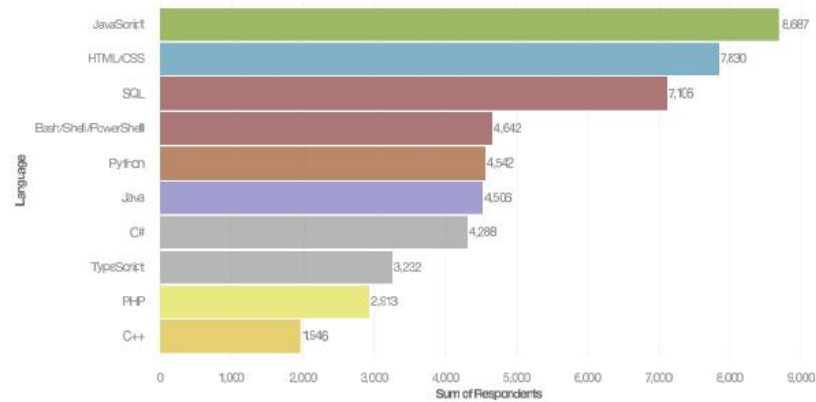
---



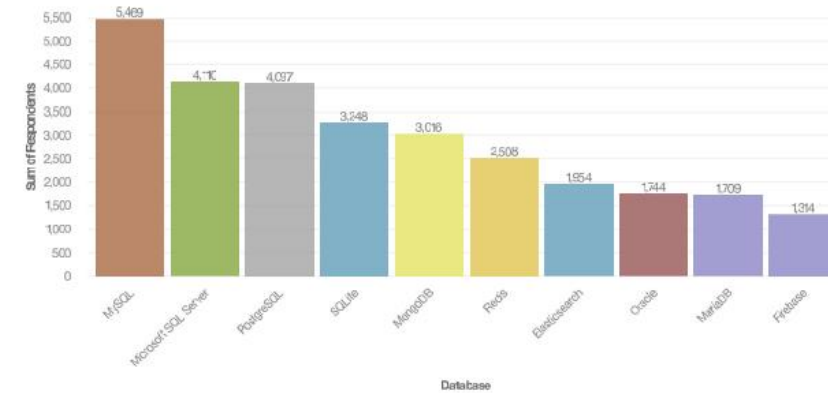
[Technologies Dashboard](#)

# DASHBOARD TAB 1 – Current Technology Usage

Top 10 Languages Preferred by Developers



Top 10 Databases Preferred by Developers



Popular Platforms

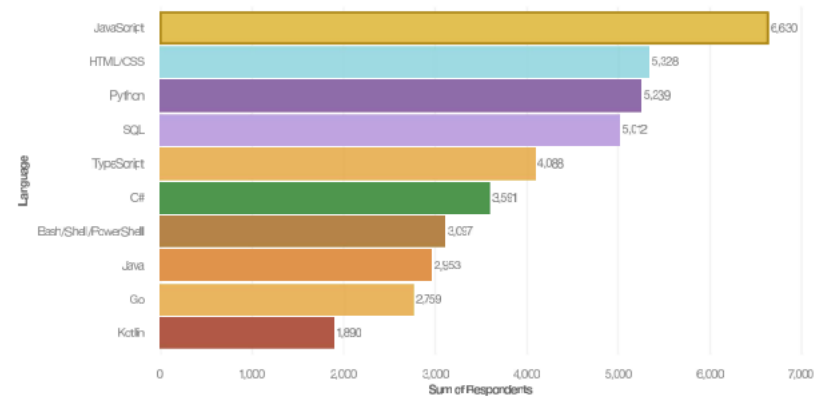


Top 10 Web Frames Preferred by Developers

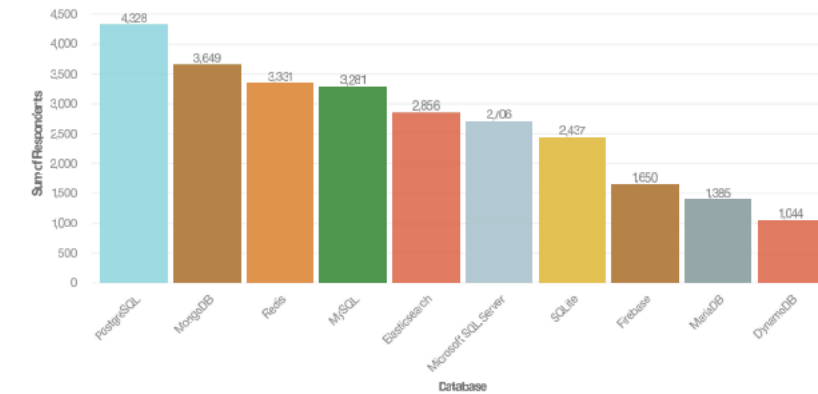


# DASHBOARD TAB 2 – Future Technology Trends

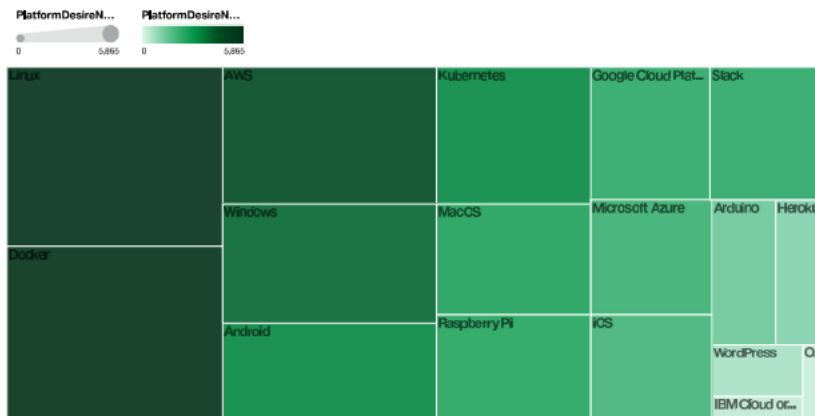
Top 10 Languages Developers Want to Use



Top 10 Databases Developers Want to Use



Platforms Developers Want to Use



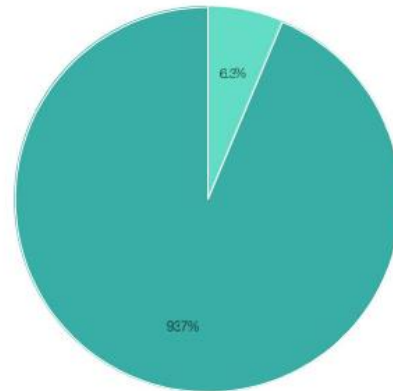
Top 10 Web Frames Developers Want to Use



# DASHBOARD TAB 3 - Demographics

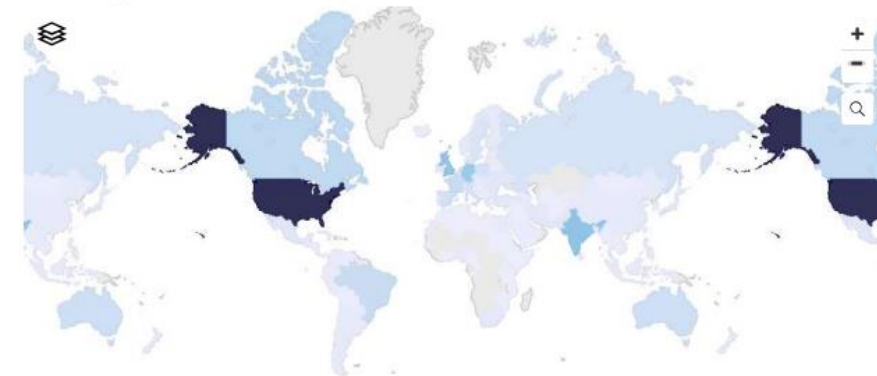
Gender of Survey Respondents

Gender  
Woman Man

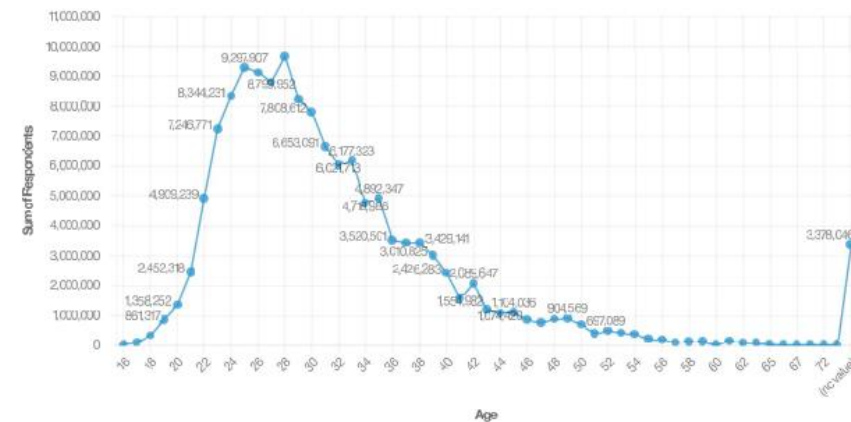


Respondent Count by Country

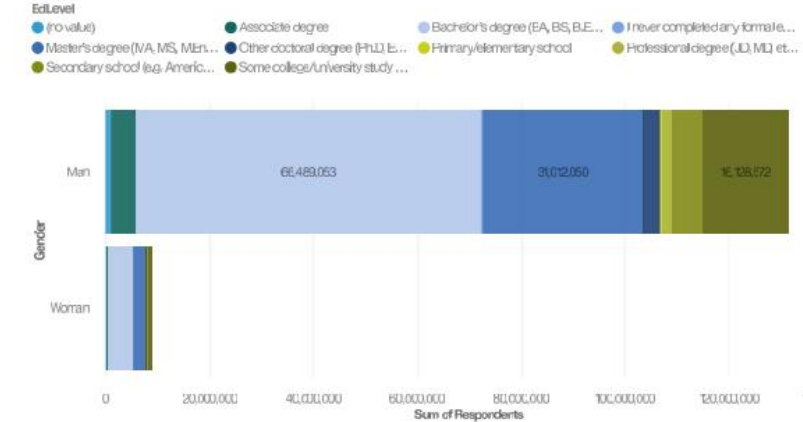
Respondent (Sum)  
825 3,10,233



Respondent Count by Age



Formal Education Level of Respondents by Gender





# DISCUSSION

---

- 
- Current and Future trends
  - Demographic Disparities

# OVERALL FINDINGS & IMPLICATIONS

---

## Findings

- Languages – JavaScript and HTML/CSS remain popular, while Python and TypeScript are gaining in popularity.
- Databases - SQL databases remain popular, though this varies among individual databases. MongoDB, DynamoDB and Redis should be noted as upcoming databases among developers.
- Demographics – There is a significant disparity between the number of male and female developers within the industry.
  - There is also a noticeable age disparity, as the age of survey respondents peaks at 28 and then trends downward.

## Implications

- Continue to seek developers skilled in Javascript, HTML/CSS, Python and TypeScript.
- Evaluate the firm's need for those proficient in SQL-based databases prior to hiring.
- Measures should be taken to narrow the large gap between the number of male and female developers in the industry.
- Determine if age is a factor consciously used when making hiring decisions.

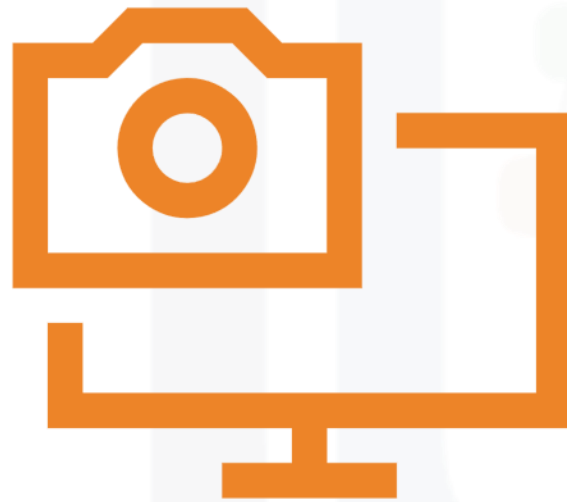
# CONCLUSION

---

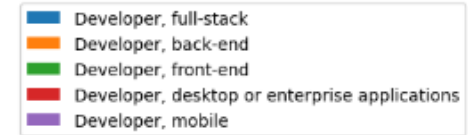
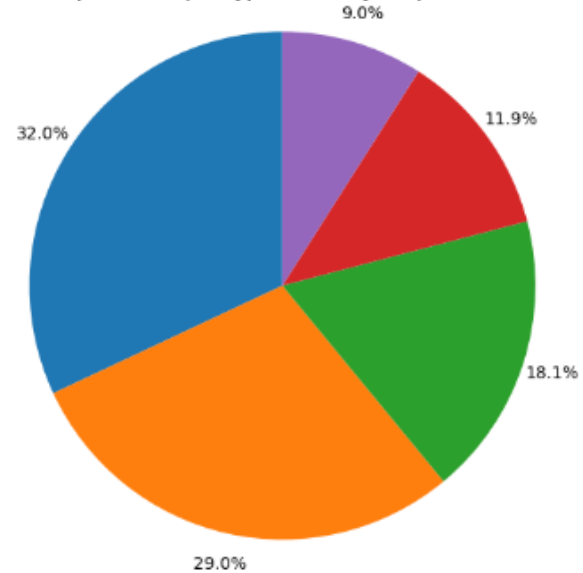


- When hiring new employees, consider what expertise is missing from your current workforce.
- Prior to hiring, determine if upskilling current staff makes sense for your organization.
- Evaluate what skills are needed and make adjustments for skills that are no longer needed.
- Implement systems to ensure that qualified female developers are given equal opportunities when it comes to hiring.

# APPENDIX



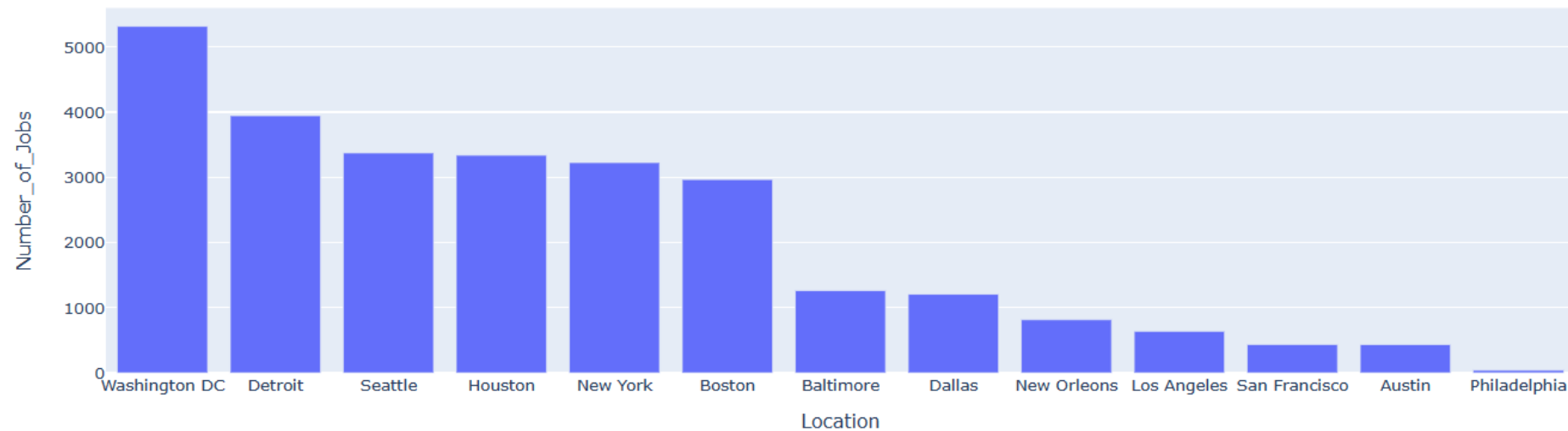
Top 5 Developer Type of Survey Respondents



# JOB POSTINGS

---

Number of Jobs per Location



# POPULAR LANGUAGES

