



# Stack Overflow Developer Survey Results - 2019

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# OUTLINE



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

# EXECUTIVE SUMMARY



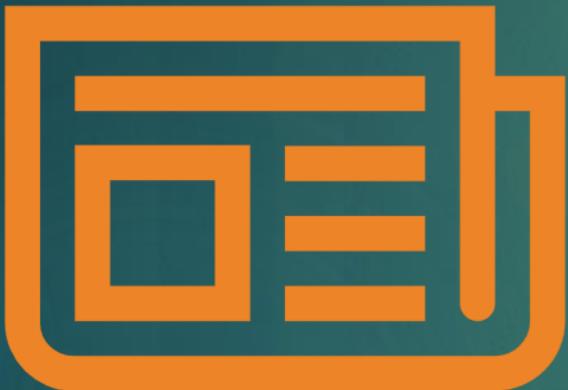
- ▶ Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- ▶ It is important to identify future skill requirements and trends to keep pace with changing technologies and remain competitive.
- ▶ This presentation will show current and future trends in Programming Languages, Databases, Platforms and Web Frames.
- ▶ Overall, the aim in identifying future skill requirements and trends is to help the firm make more informed data-driven hiring decisions.

# INTRODUCTION



- ▶ This presentation has been created for stakeholders and business decision makers within the global IT and business consulting services firm.
- ▶ The presentation will help identify future skill requirements in the global IT sector necessary for the firm to keep pace with changing technologies and remain competitive.
- ▶ Recommendations will be stated based on the analysis.

# METHODOLOGY



- ▶ Using a modified subset of the Stack Overflow dataset<sup>1</sup>, the data was wrangled in order to remove duplicates, impute missing values and normalize data.
- ▶ Next, the data underwent exploratory analysis in order to find the distribution of data, presence of outliers and determine the correlation between different columns in the dataset.
- ▶ The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of data.
- ▶ Finally, after downloading two files<sup>2</sup>, which are also a modified subset of the Stack Overflow dataset, Cognos Dashboard Embedded (CDE) was used to create the “Current Technology Usage”, “Future Technology Trends” and “Demographics” slides.

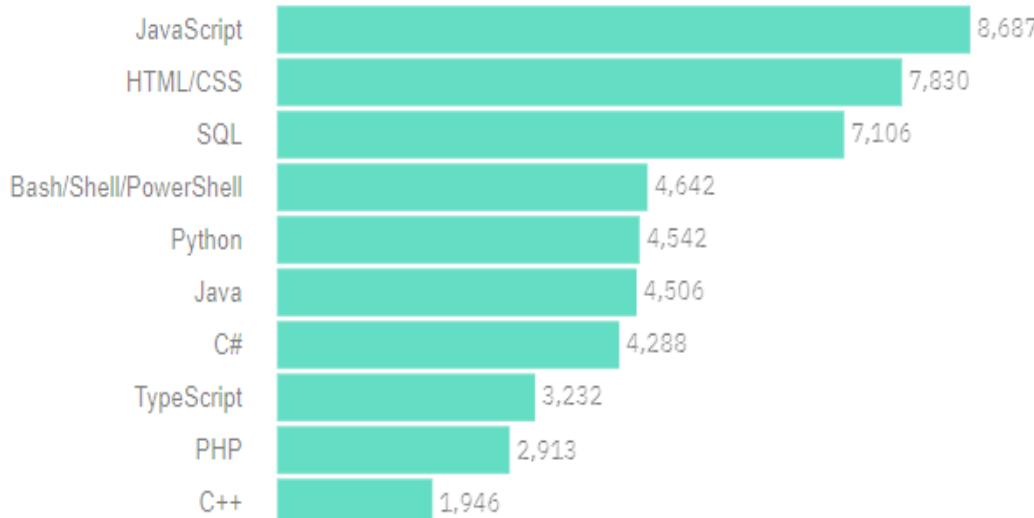
## Appendix

- ▶ To obtain average annual salaries web scraping was used to extract information from a website then saved to a csv file.

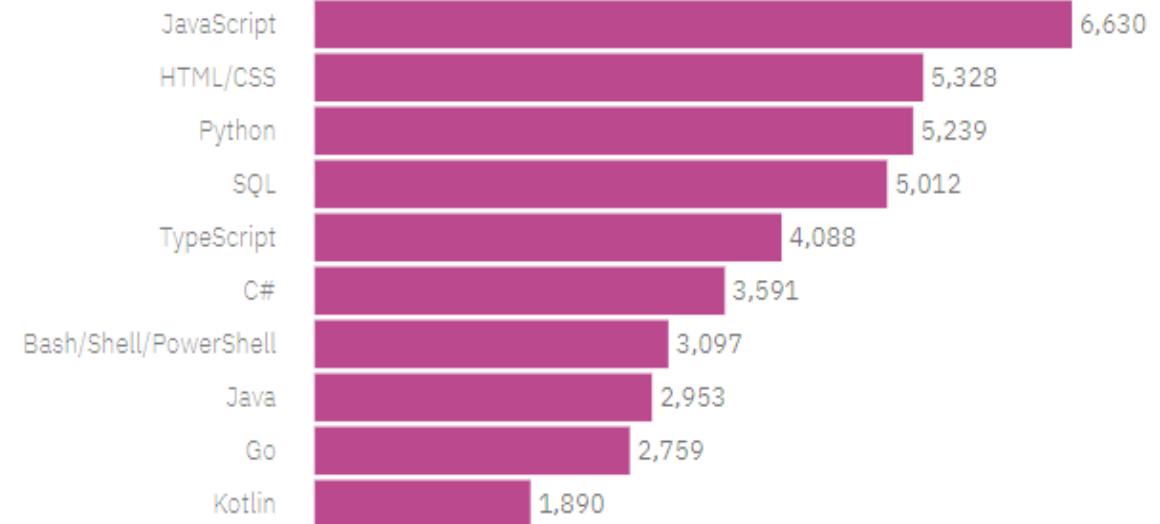
# RESULTS

# PROGRAMMING LANGUAGE TRENDS

Top 10 Language Worked With



Top 10 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

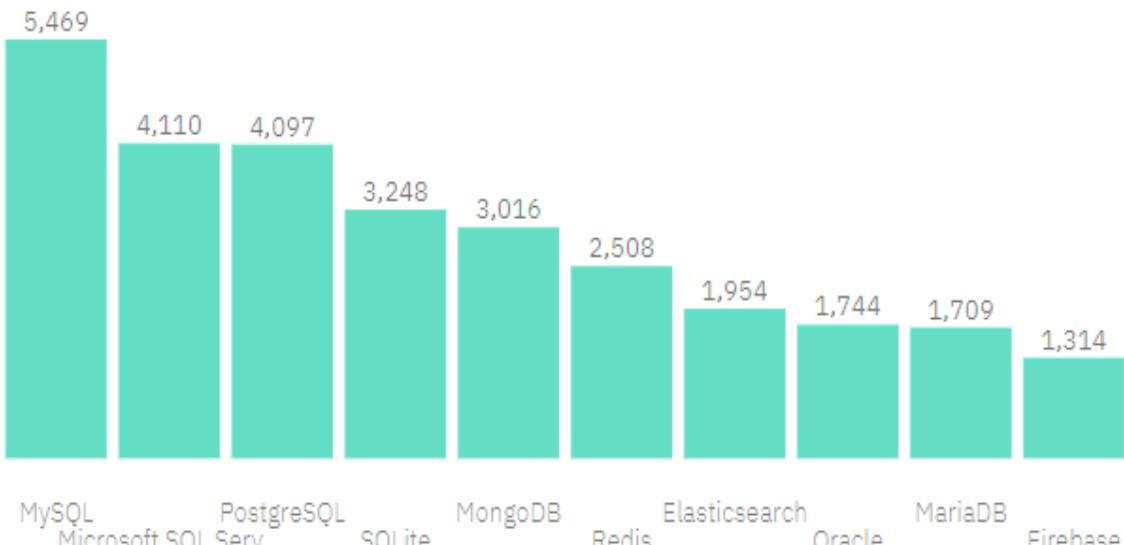
- ▶ JavaScript and HTML/CSS continue to be the top two most popular programming languages for this year end next.
- ▶ Python and Typescript have gained more interest for next year.
- ▶ Whereas interest in SQL and Bash/Shell/PowerShell has decreased.

## Implications

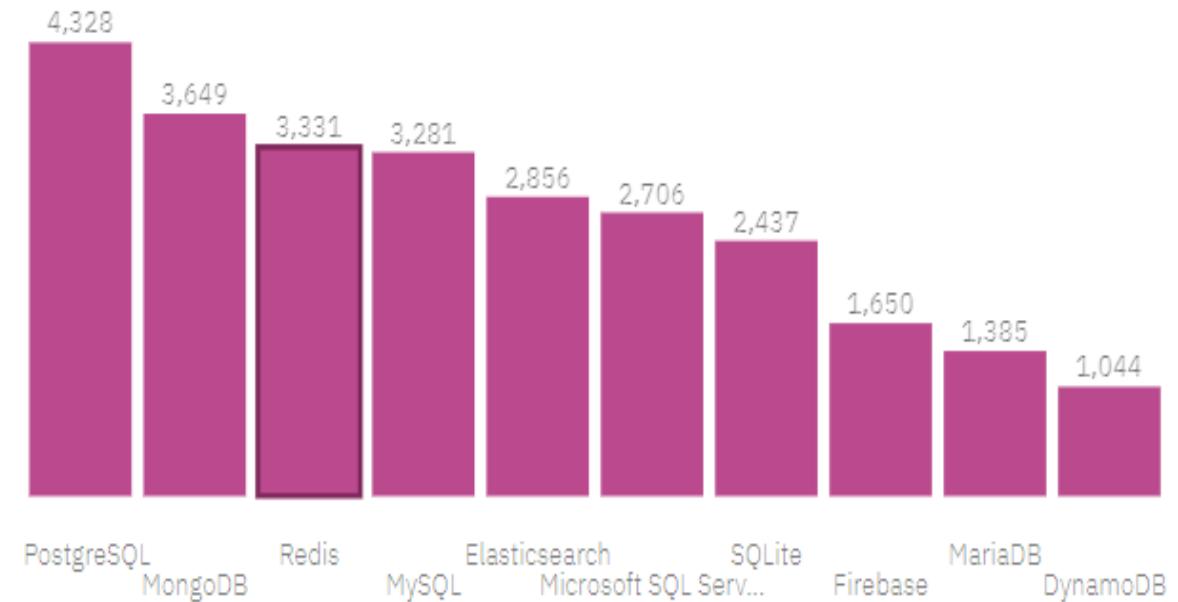
- ▶ Continue to employ a similar number of people skilled in JavaScript and HTML/CSS.
- ▶ Employ more people skilled in Python and Typescript.
- ▶ Employ less people skilled in SQL and Bash/Shell/PowerShell.

# DATABASE TRENDS

Top 10 Database Worked With



Top 10 Database Desire Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- ▶ Interest in MySQL, Microsoft SQL Server and SQLite has decreased for next year.
- ▶ Interest in PostgreSQL and MongoDB have increased compared to the current year.
- ▶ There is gained interest in Redis and Elasticsearch for next year.

## Implications

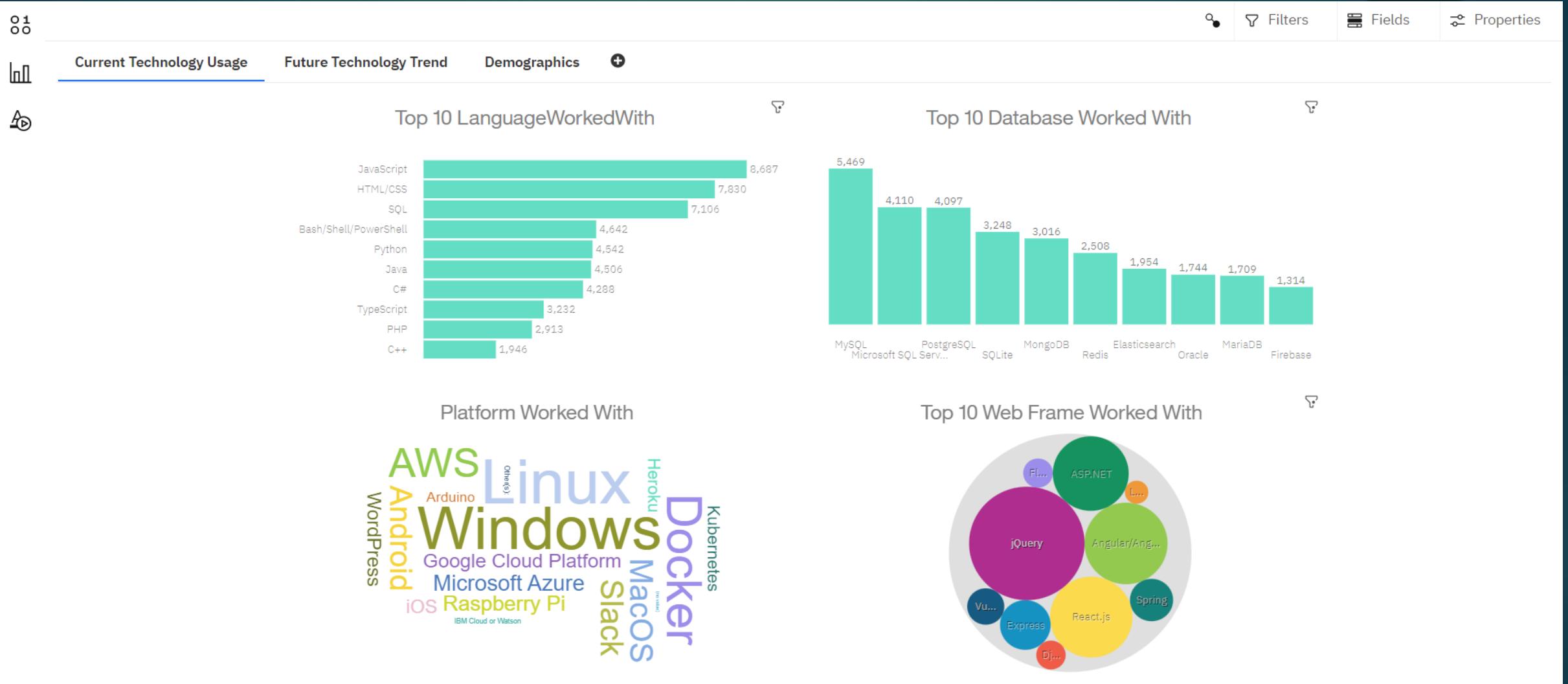
- ▶ Employ less people skilled in MySQL ,Microsoft SQL Server and SQLite.
- ▶ Employ more people skilled in PostgreSQL and MongoDB.
- ▶ Employ more people skilled in Redis and Elasticsearch.

# DASHBOARD



- ▶ Please Click [here](#) to view the Cognos dashboard

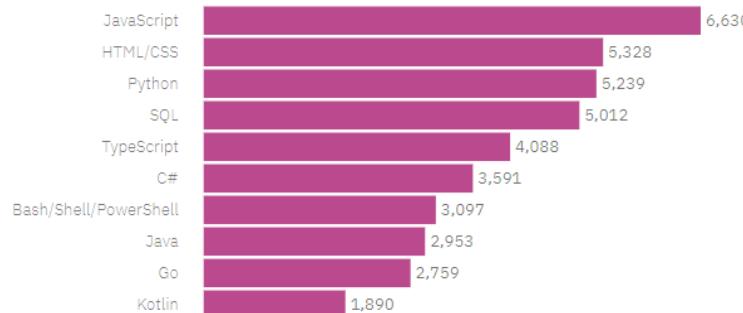
# DASHBOARD TAB 1



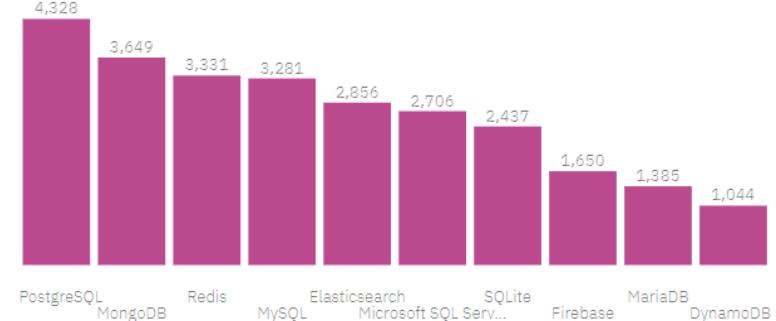
# DASHBOARD TAB 2

01  
00[Current Technology Usage](#)[Future Technology Trend](#)[Demographics](#)

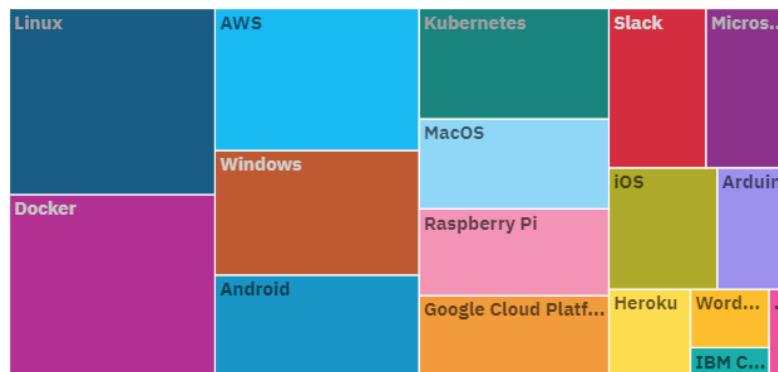
### Top 10 Language Desire Next Year



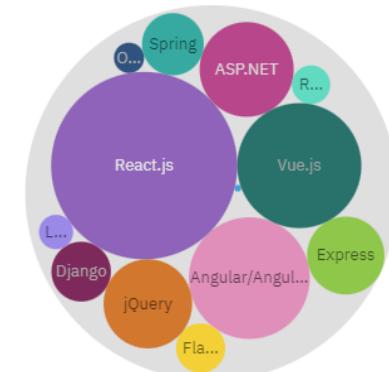
### Top 10 Database Desire Next Year



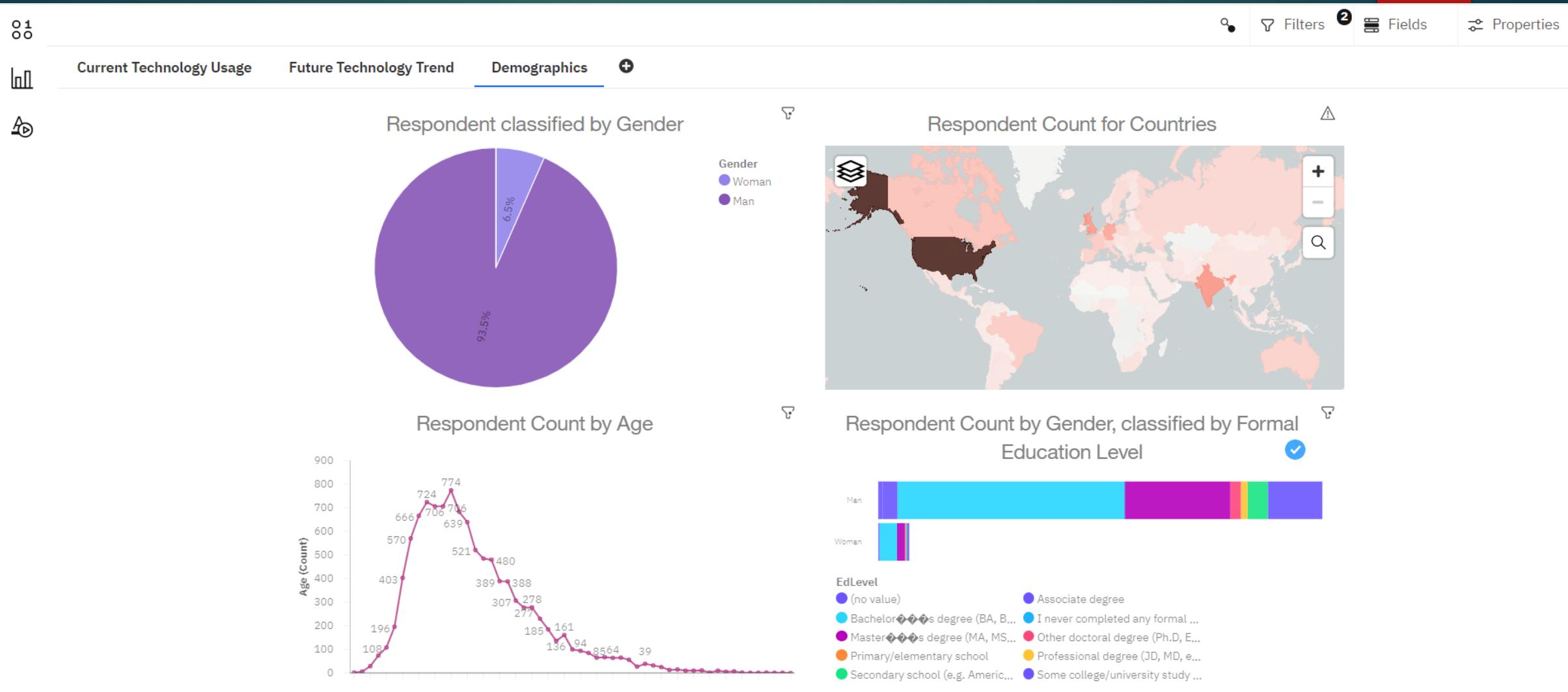
### Platform Desire Next Year.



### Top 10 Web Frame Desire Next Year



# DASHBOARD TAB 3



# DISCUSSION



# OVERALL FINDINGS & IMPLICATIONS

## Findings

- ▶ Programming Languages-Type Script is gaining significant interest and Python continues to grow as well.
- ▶ Databases – Redis , Elasticsearch , PostgreSQL and MongoDB are gaining more interest.
- ▶ Platforms-Interest Slack and Windows is dropping significantly.
- ▶ WebFrames-Vue.js is gaining substantial interest and React.js continues to grow as well.

## Implications

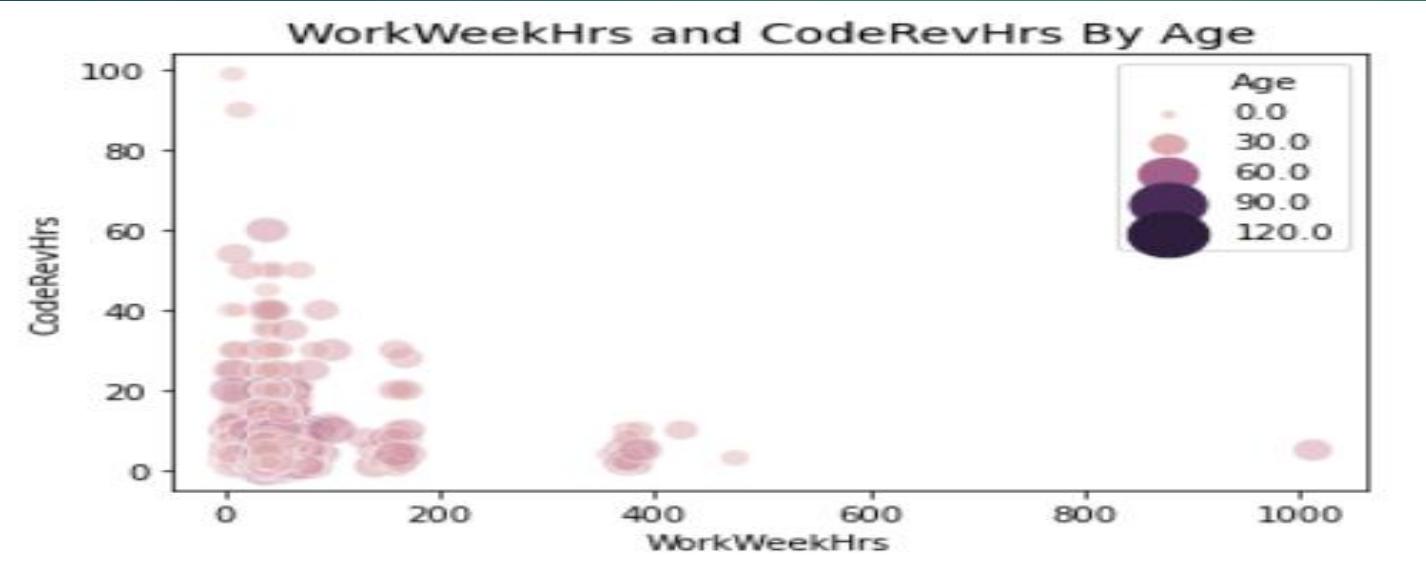
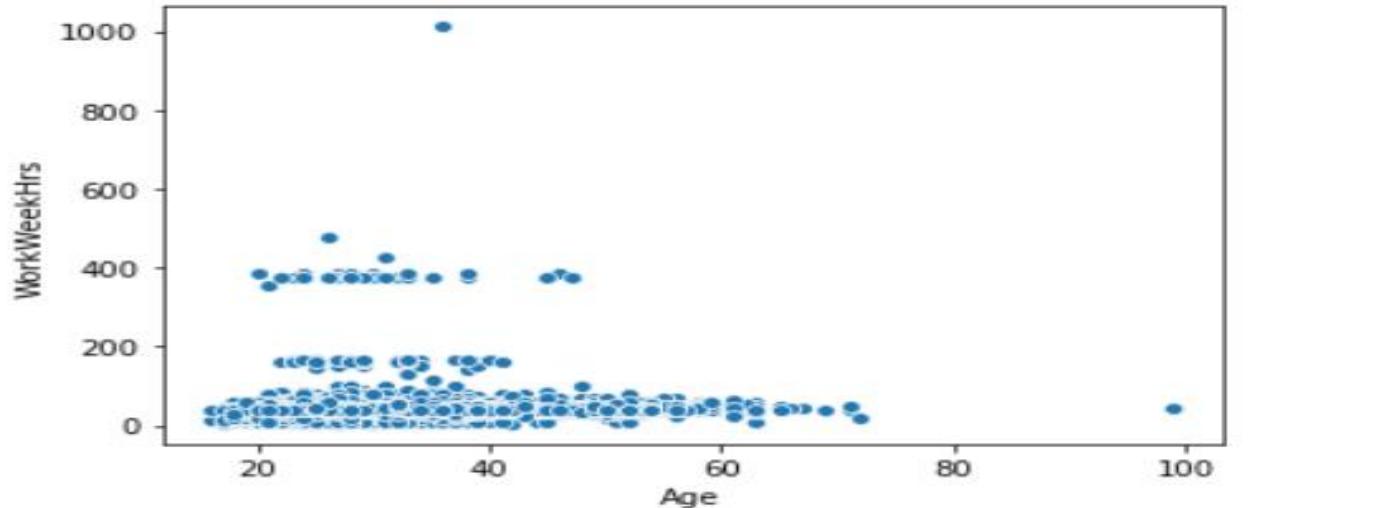
- ▶ Continue to staff enough JavaScript and HTML/CSS but employ more people skilled in Type Script and Python.
- ▶ Employ more people skilled in Redis , Elasticsearch , PostgreSQL and MongoDB.
- ▶ Continue to staff enough ASP.NET but employ more people skilled in Vue.js and React.js.
- ▶ Continue to staff enough Linux, employ more peoples killed in Docker, AWS and Android, but make reductions to Slack and Windows.

# CONCLUSION

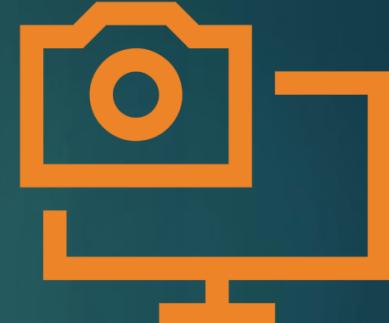
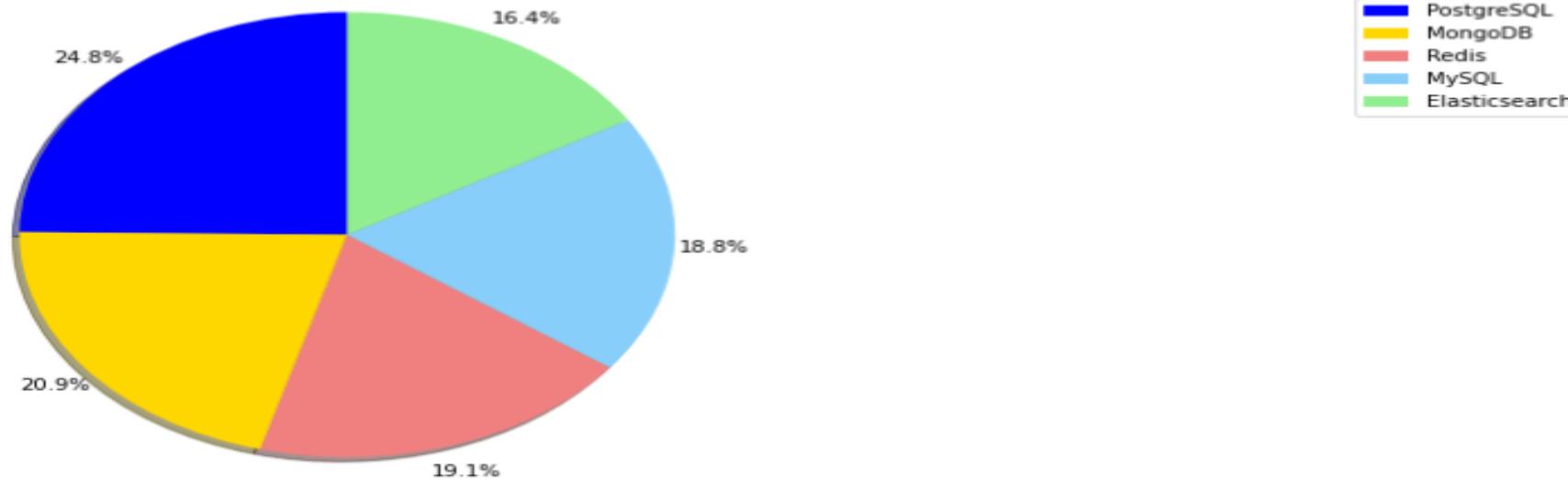


- ▶ Suggesting periodic online training workshops for employees to open the way for self-learning
- ▶ Allocate a portion of the budget to improve the skills of already workers.
- ▶ Preparing training and capacity building workshops for workers in this field
- ▶ Orientation towards the most common software to improve competition in the labor market

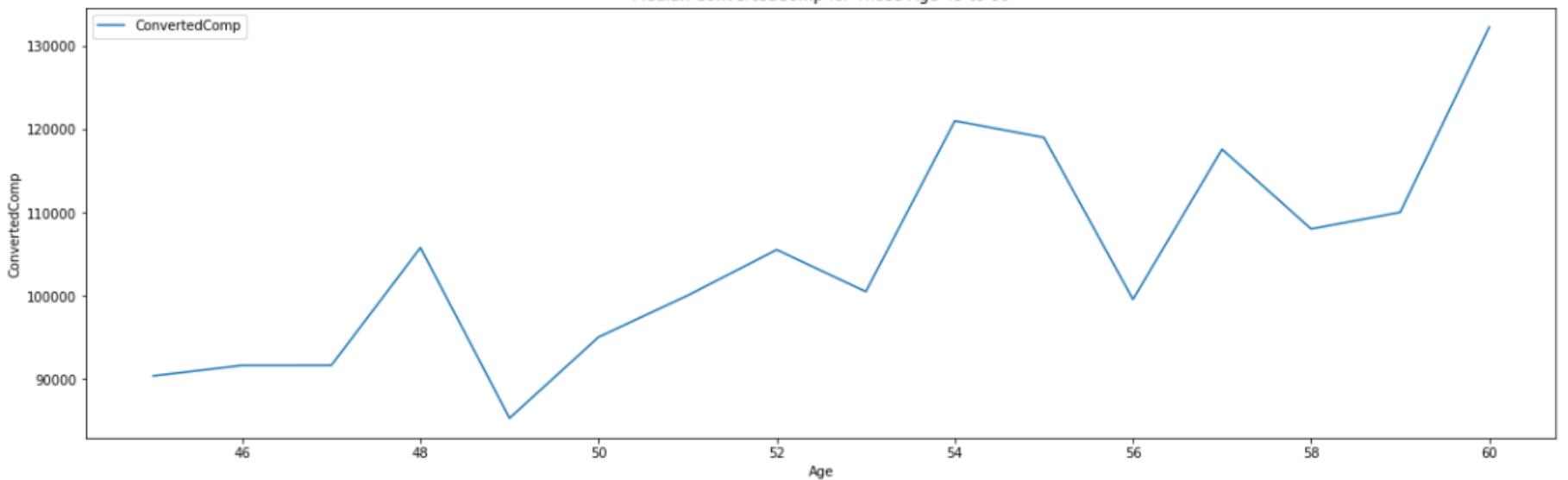
# APPENDIX



### Top 5 Databases Respondents Wish To Learn

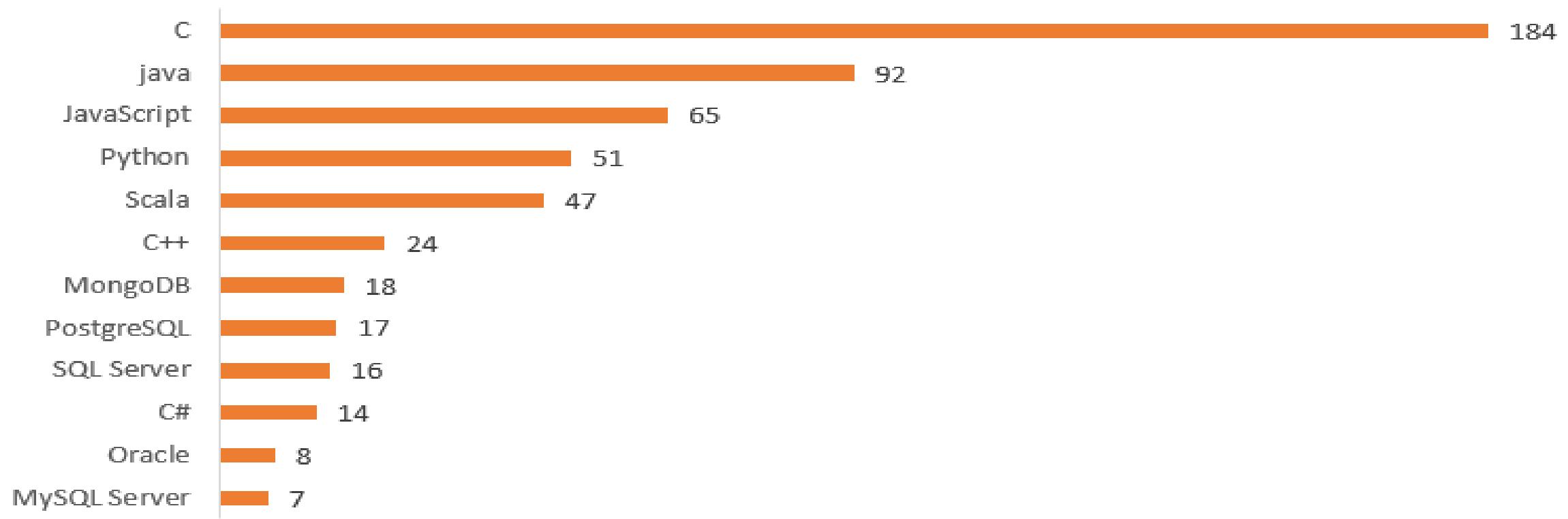


### Median ConvertedComp for Those Age 45 to 60



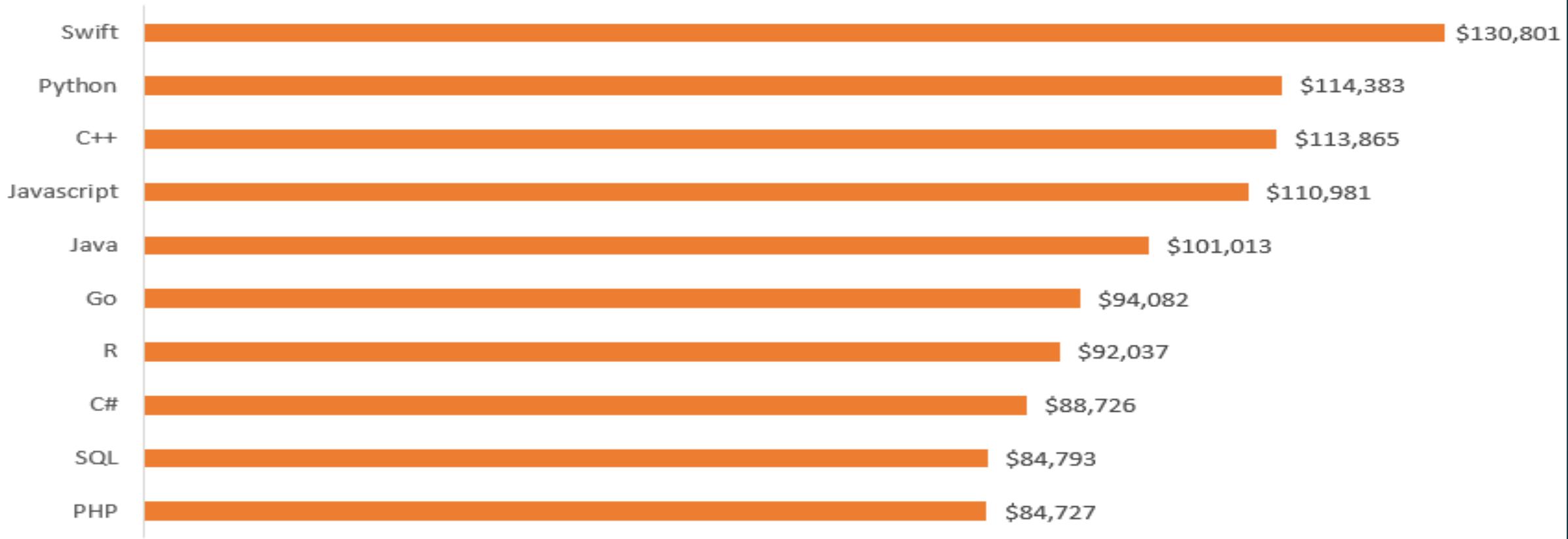
# JOB POSTINGS

## GITHUB JOB POSTINGS



# POPULAR LANGUAGES

## POPULAR LANGUAGES



# RESOURCE

1. <https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/>
2. *m5\_survey\_data\_demographics.csv and m5\_survey\_data\_technologies\_normalised.csv*
3. <https://jobs.github.com/api>
4. *github-job-postings.xlsx*
5. [IBM Cloud Pak for Data](#)