



Insights and Trends From Stack Overflow Survey Data 2019

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OUTLINE



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EXECUTIVE SUMMARY



This report presents a concise view of the analysis carried out on the Stack Overflow Survey Data of 2019, identifying the following:

- Current trends in the IT industry especially as it relates to the skills and tools being used.
- Emerging trends were also identified, with a particularly significant increase in the desired use of Python and TypeScript.
- Certain aspects of the IT industry require active intervention such as the disparities related to gender and the average age of the individuals with these skills.

The information contained in this report was compiled to inform decision-making at the management level as well as for policy advocacy initiatives for a more sustainable industry-wide impact.

INTRODUCTION

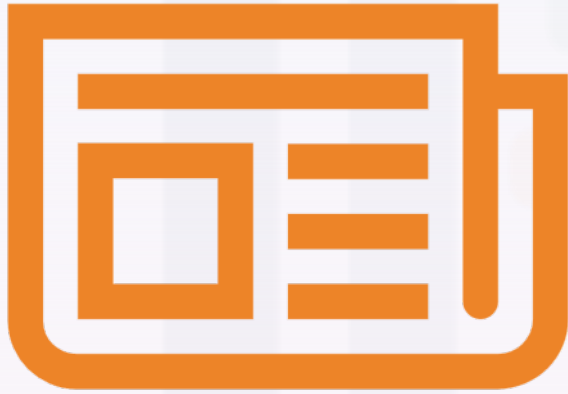


The goal of this analysis was to analyze data in identifying future skill requirements

Some of the questions this report answers include:

- What are the top programming languages and databases being used currently?
- What are the emerging skills the organization needs to focus on in order to better serve our clients?
- What are the popular IDEs?

METHODOLOGY



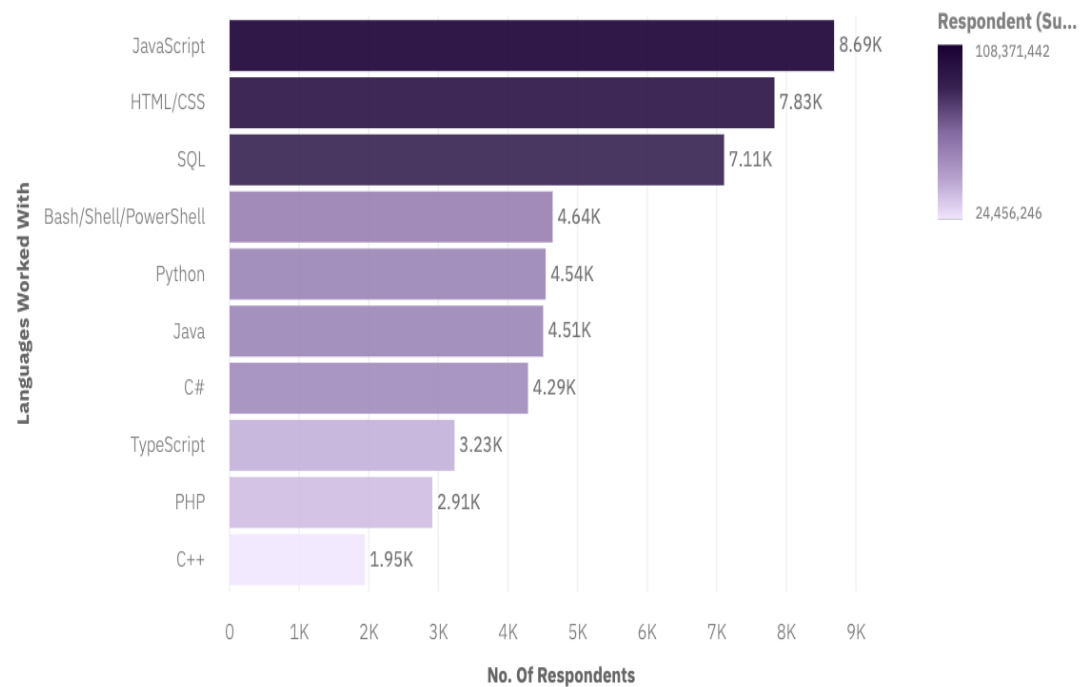
- **Data Collection Sources**
 - GitHub Jobs API
 - Training Portal
 - Stack Overflow Developers Survey Data 2019
- **Data Exploration using Python**
- **Data Cleaning**
- **Data Visualization**
 - Charts using Python and Excel
 - Dashboard using IBM Cognos Analytics

RESULTS

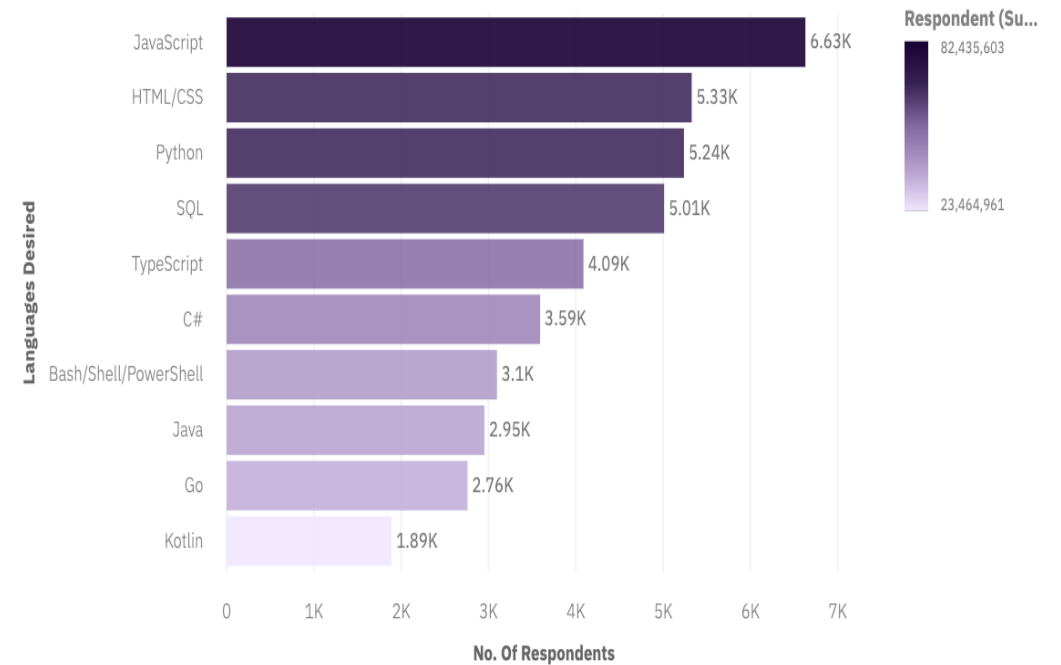
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PROGRAMMING LANGUAGE TRENDS

Top 10 Languages Worked With



Top 10 Languages Desired By The Respondents For Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

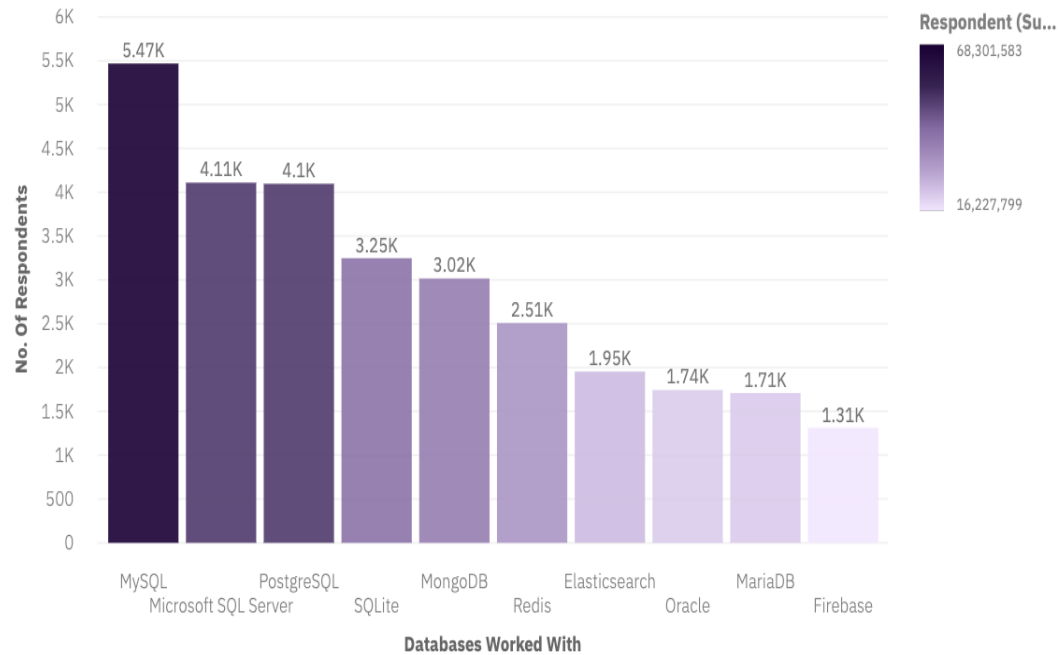
- Currently, JavaScript, HTML/CSS, and SQL are the top 3 languages being utilized.
- Python and TypeScript seem to be a lot more desired for the next year by more respondents than are currently using them.
- Go and Kotlin replace PHP and C++ next year among the top-ranking languages

Implications

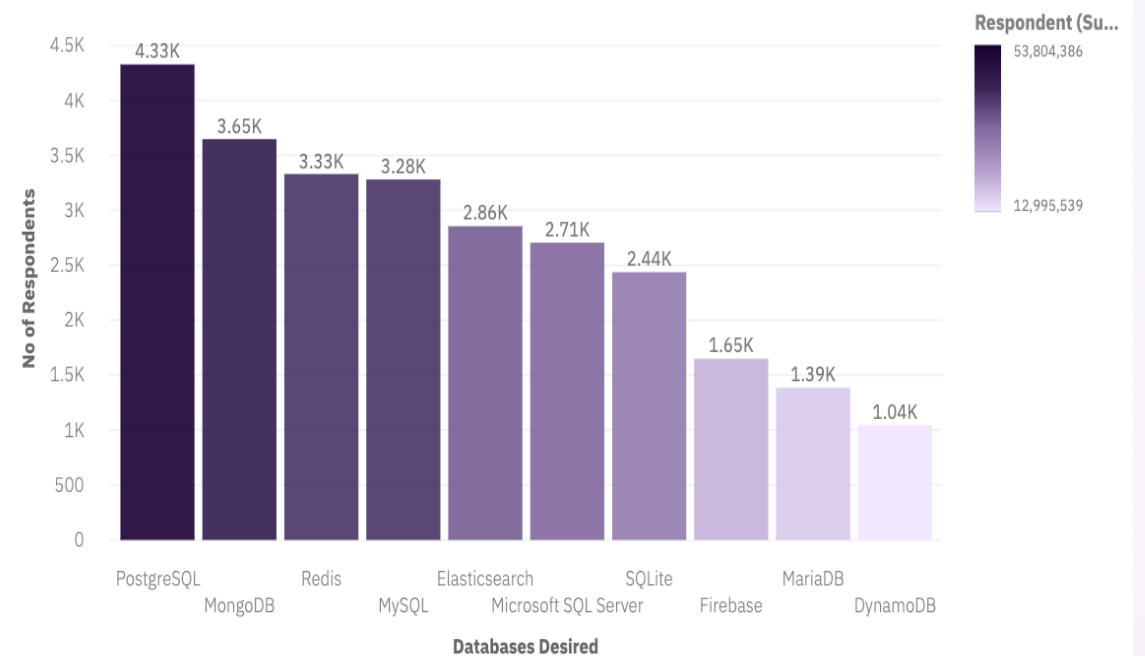
- JavaScript, HTML/CSS remain relevant languages and should not be Python is becoming even more important, especially with the advent of Artificial Intelligence and Machine Learning
- More hiring and training focus should be on Python and TypeScript
- With the growing trend on Go and Kotlin, it will be beneficial to also begin channeling more efforts into building resources and support for these languages and reducing the resources that go to PHP and C++ which appear to be in less demand in the next year.

DATABASE TRENDS

Top 10 Databases Worked With



Top 10 Databases Desired By The Respondents For Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, Microsoft Server, and PostgreSQL are the top databases being used currently by the respondents
- PostgreSQL, MongoDB, and Redis move up to be the top 3 most desired databases in the coming year.
- Dynamo DB gains a spot among the top 10 most desired while Oracle appears to be a lot less preferred for next year.

Implications

- There is a need for firms to recognize the rising interest in NoSQL databases in the management of non-relational data
- Recognizable move towards open-source database programs by the respondents.
- To keep up with industry trends, firms need to ensure they are hiring and training their employees in order to maintain the competencies that set them ahead in the IT industry

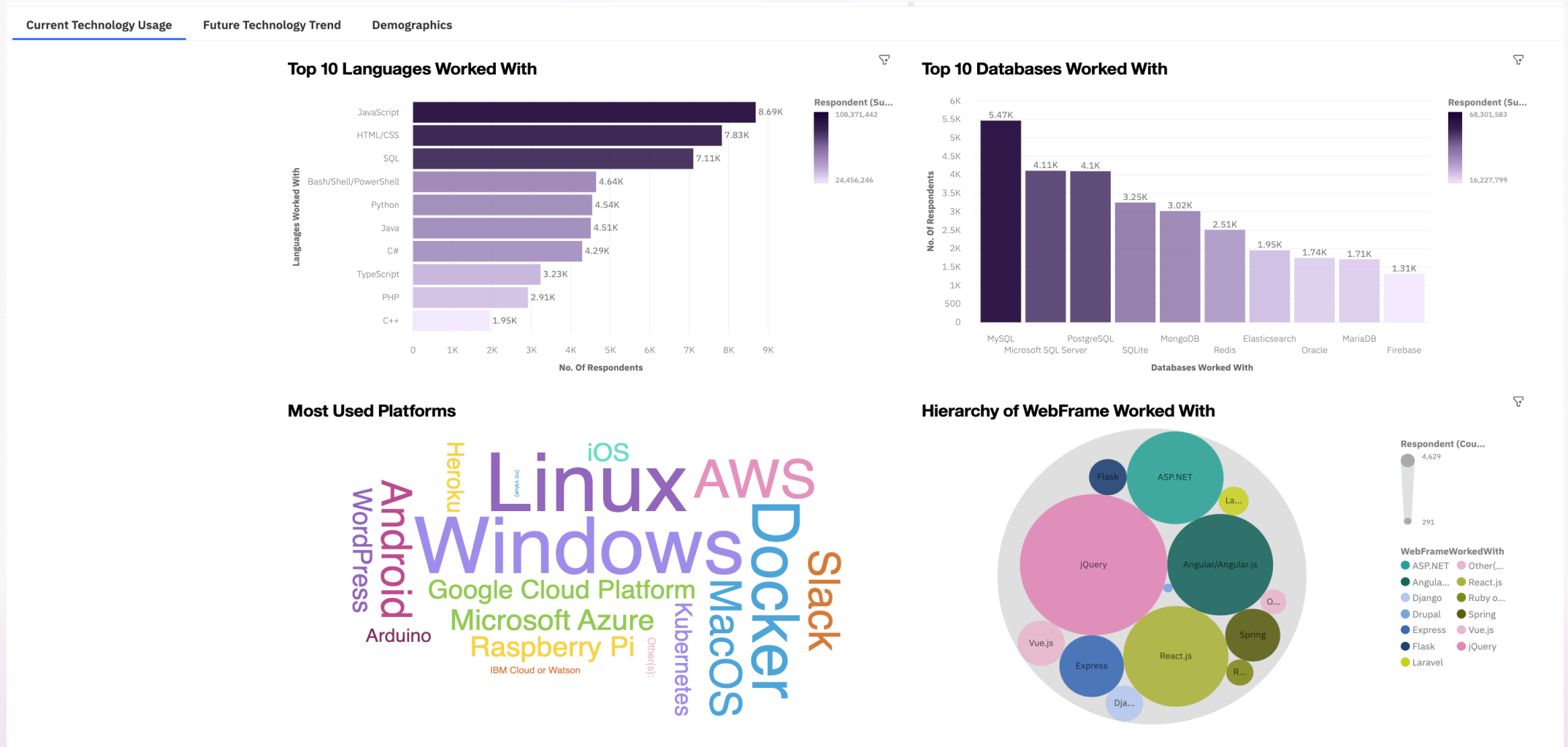
DASHBOARD



Visualization of the analysis was presented in a dashboard containing three (3) tabs – **Current technology usage**, **Future technology trend**, and **Demographics**. This dashboard can be viewed using the link below:

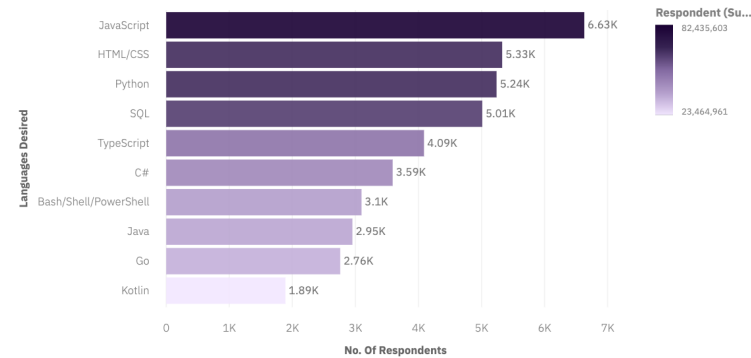
[View interactive dashboard](#)

DASHBOARD TAB 1

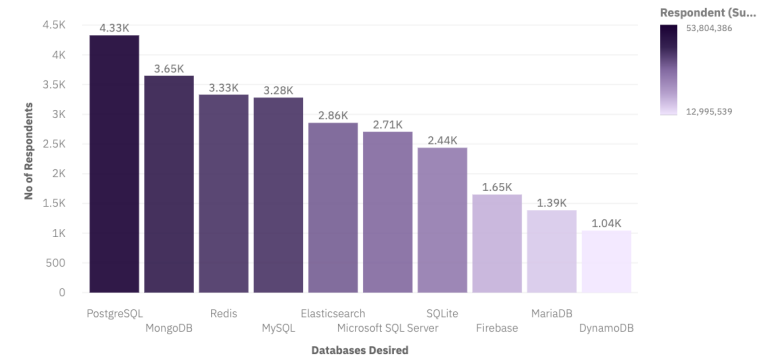


DASHBOARD TAB 2

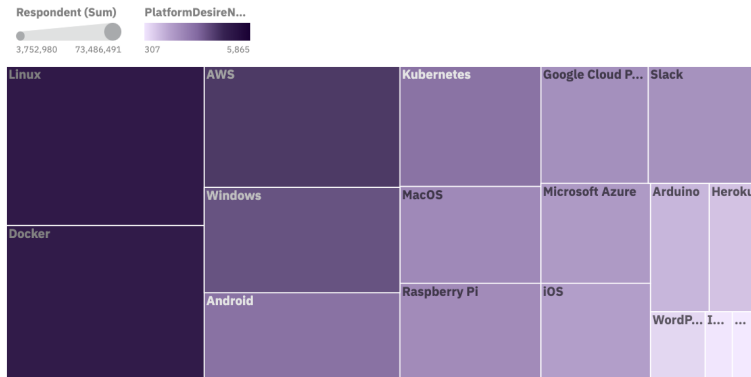
Top 10 Languages Desired By The Respondents For Next Year



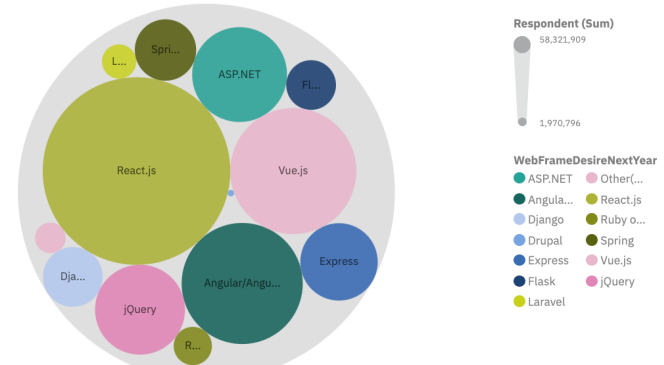
Top 10 Databases Desired By The Respondents For Next Year



Proportion of Platforms Desired For Next Year



Top 10 Web Frames Desired For Next Year



DASHBOARD TAB 3

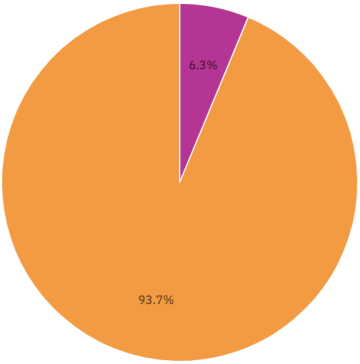
Current Technology Usage

Future Technology Trend

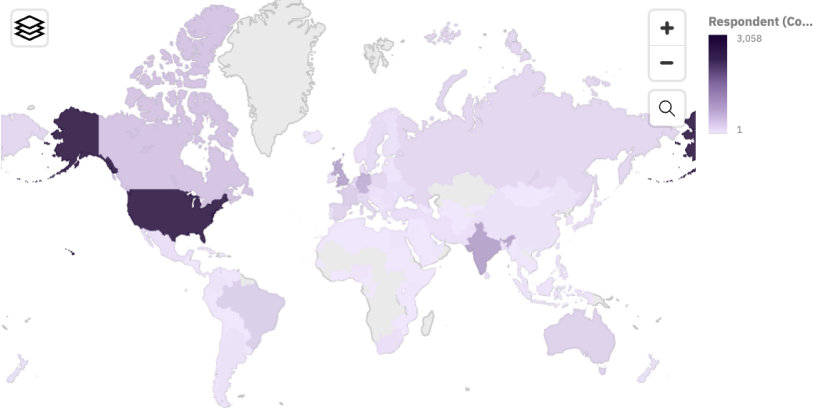
Demographics

Gender Distribution Amongst Respondents

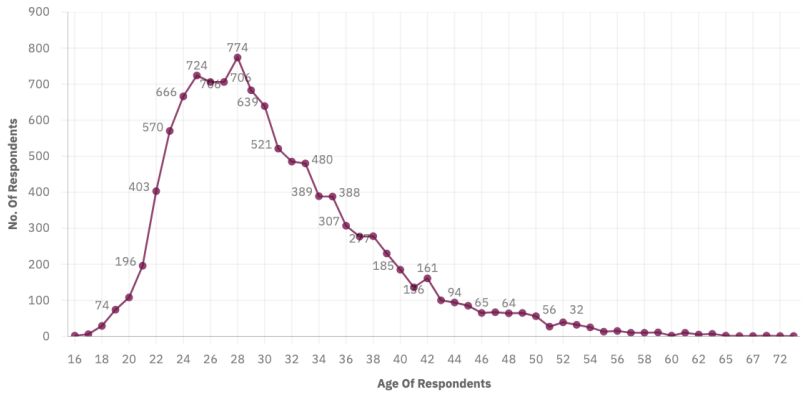
Gender
Woman Man



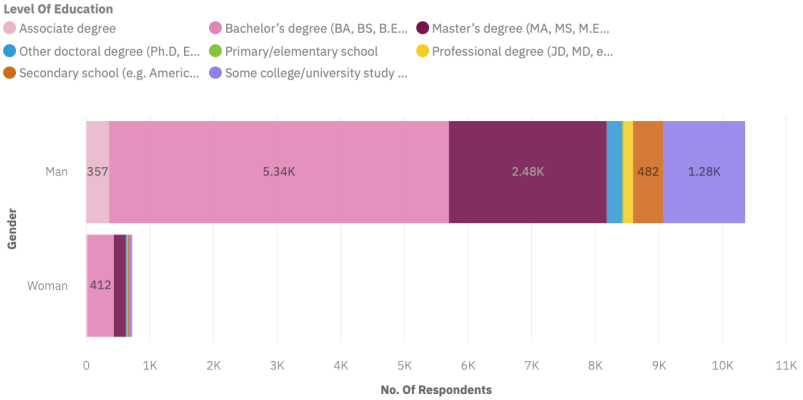
Geographical Distribution Of Respondents



Age Distribution Of The Respondents



Distribution Of Formal Education Levels By Gender



DISCUSSION



- This analysis was instrumental in identifying emerging trends based on the responses received.
- The emerging trends observed will require intentional efforts to ensure that the firm is moving with the industry's changes.
- One major observation is the gender distribution among the respondents. There was a clear gender disparity with females only making up about 6.5% of the entire sample size.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Rising interest in Python.
- A significant concentration of respondents were in the United States and India.
- Significant disparities in gender and level of formal education, favoring men over women.

Implications

- As stipulated, there are emerging trends in the IT industry firms need to plan towards.
- Deliberate efforts need to be made on the part of the firms to employ skilled individuals as well as support the upskilling of existing staff.
- To actively reduce the observed disparities, policies need to be put in place to enhance female empowerment in the IT industry, taking into consideration females from all social-economic levels of society.

CONCLUSION



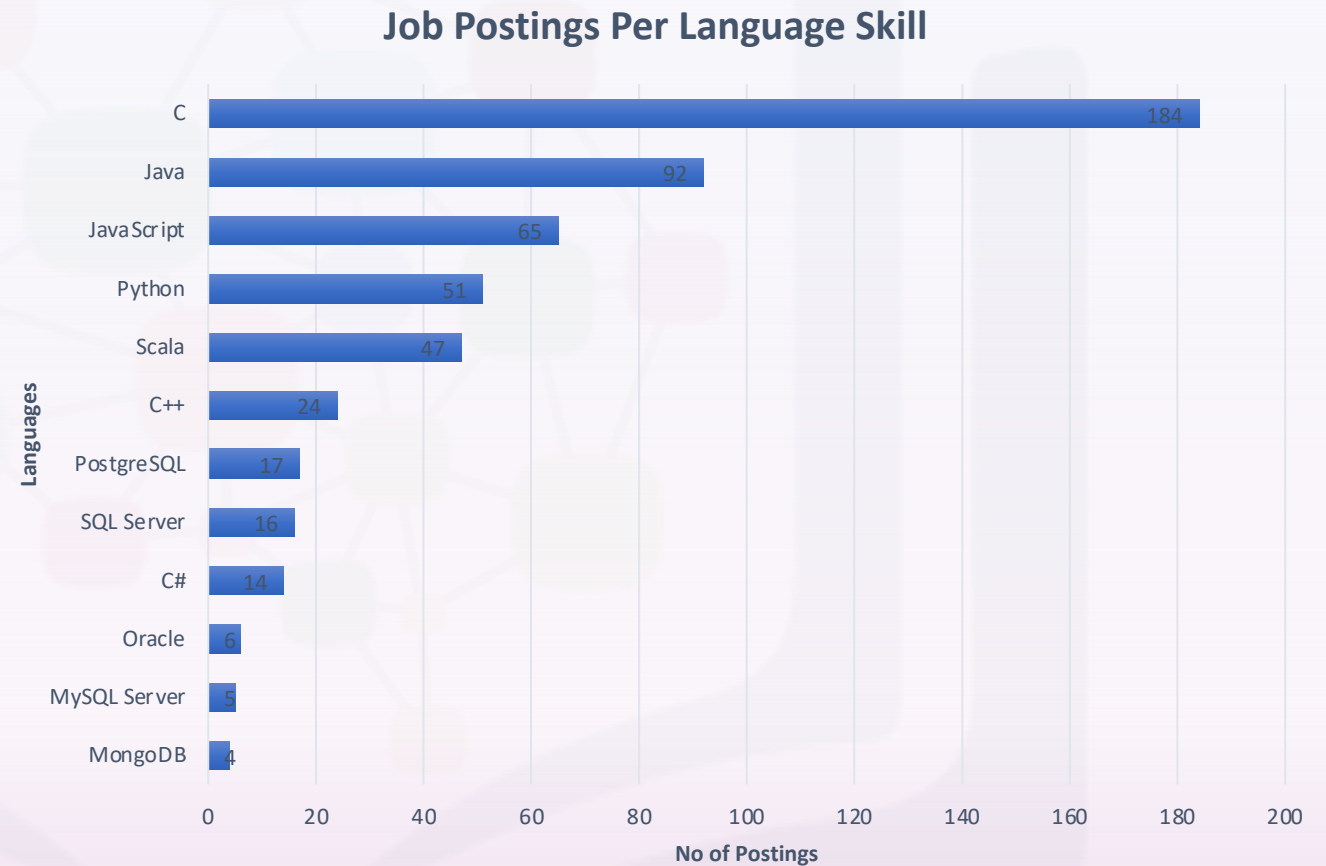
- There is a clear shift in the languages and databases at the center of the IT industry's activities.
- More attention needs to be paid to gender representation and more diversity within the IT industry.
- Current hiring moves and training content need to immediately start to cater to the emerging trends highlighted to enable continued relevance for the firm.
- Prospective developers can take a cue from the insights contained in the report to aid them make relevant upskilling moves.

APPENDIX

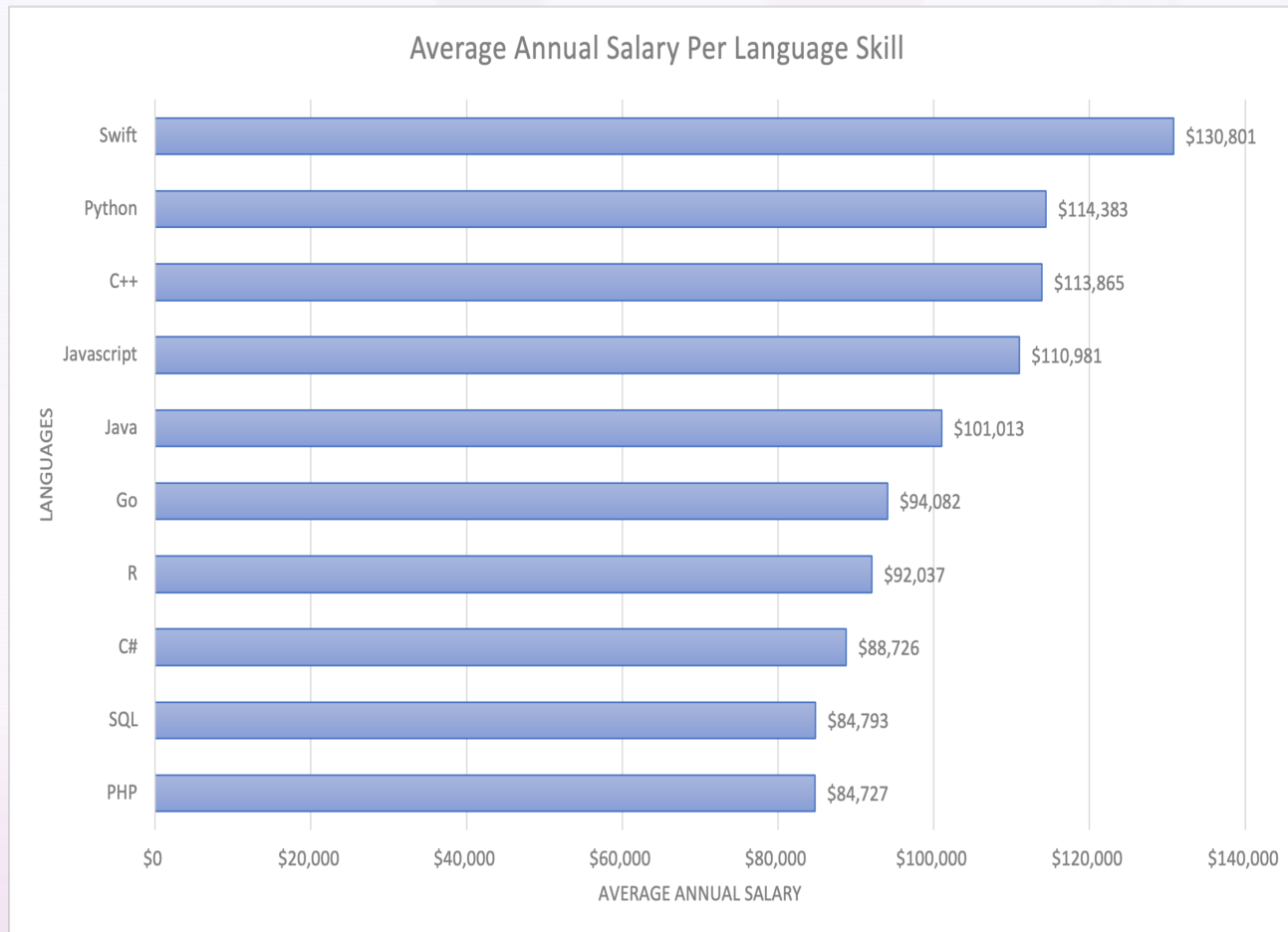


JOB POSTINGS

- C had the highest number of job postings amongst the languages, with Java and JavaScript following less by almost half that number.
- MongoDB, MySQL Server, and Oracle had the least number of job postings.



POPULAR LANGUAGES



- Swift and Python appear to be the languages with the 2 highest paying annual salaries in the IT industry
- C++ though ranking high in salary may likely experience a slight change in the near future since it falls in rank amongst the most desired skills for next year
- PHP ranks as the least paid annually.