

STACK OVERFLOW DEVELOPER SURVEY 2019 PRESENTATION



JUSTIN HO

9 JAN 2023

OUTLINE



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

EXECUTIVE SUMMARY



- As the world economy continuously evolves on a uptrend trajectory, an insatiable necessity for relevant IT skills is required to keep abreast with global demand.
- For business enterprises to remain competitive, the importance to identify future skill requirements are needed to keep pace with current technological trends.
- This presentation will facilitate the current and future trends for programming languages, databases, platforms and web frames
- This presentation will feature illustrious and useful visualizations to enable stakeholders to make key decisions.

INTRODUCTION



- This presentation will expound its findings to parties of interest such as workers currently in the IT industry, graduating students from various fields of study, potential job seekers as well as business owners.
- By identifying the top key IT skills, the recommended outcome from this data analysis will enable all stakeholders to arrive at a better decision in pursuing and employing skills of relevance.

METHODOLOGY



- Raw data was obtained from the Stack Overflow Developer Survey (2019) and the job postings data was obtained from a JSON url provided by IBM cloud.
- The final dataset was complete after implementation of cleaning processes such as data munging to remove errors and inaccuracies.
- Exploratory analysis of this dataset ensued upon various visualizations for data distributions and determination of correlation from corresponding dataset columns.
- To create the featured illustrious dashboard, two modified files that formed a subset of the original dataset were processed with IBM Cognos Analytics.

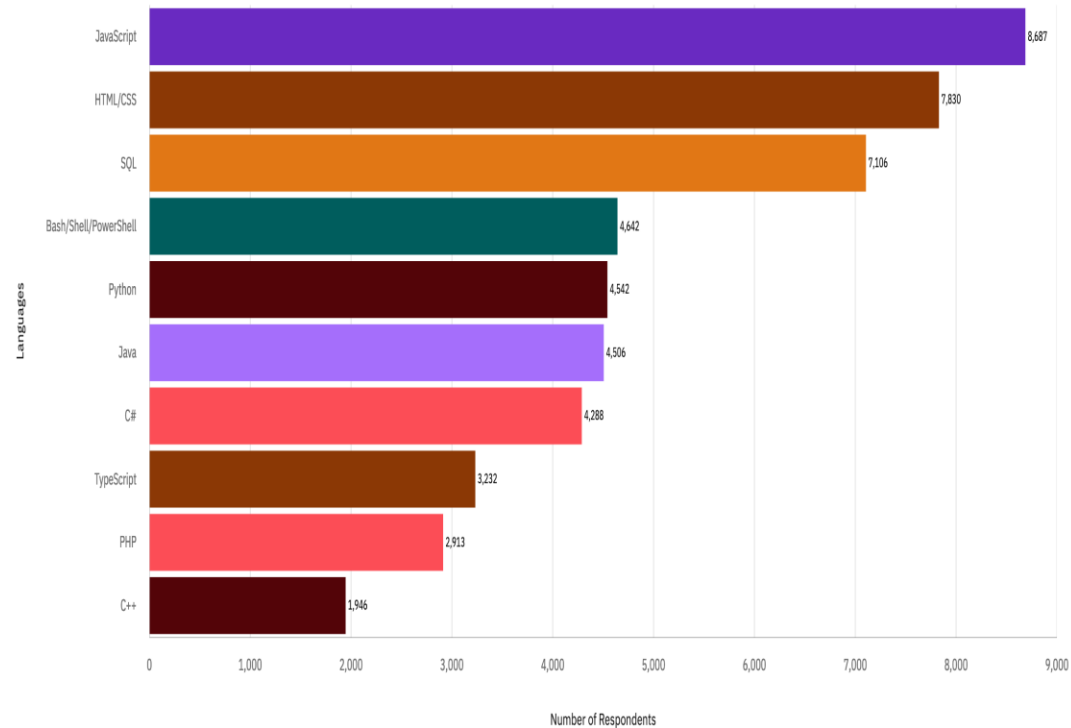
RESULTS

- Findings as shown for the following :
 - Programming language trend
 - Database trend
 - Platform trend
 - Web frame trend

PROGRAMMING LANGUAGE TRENDS

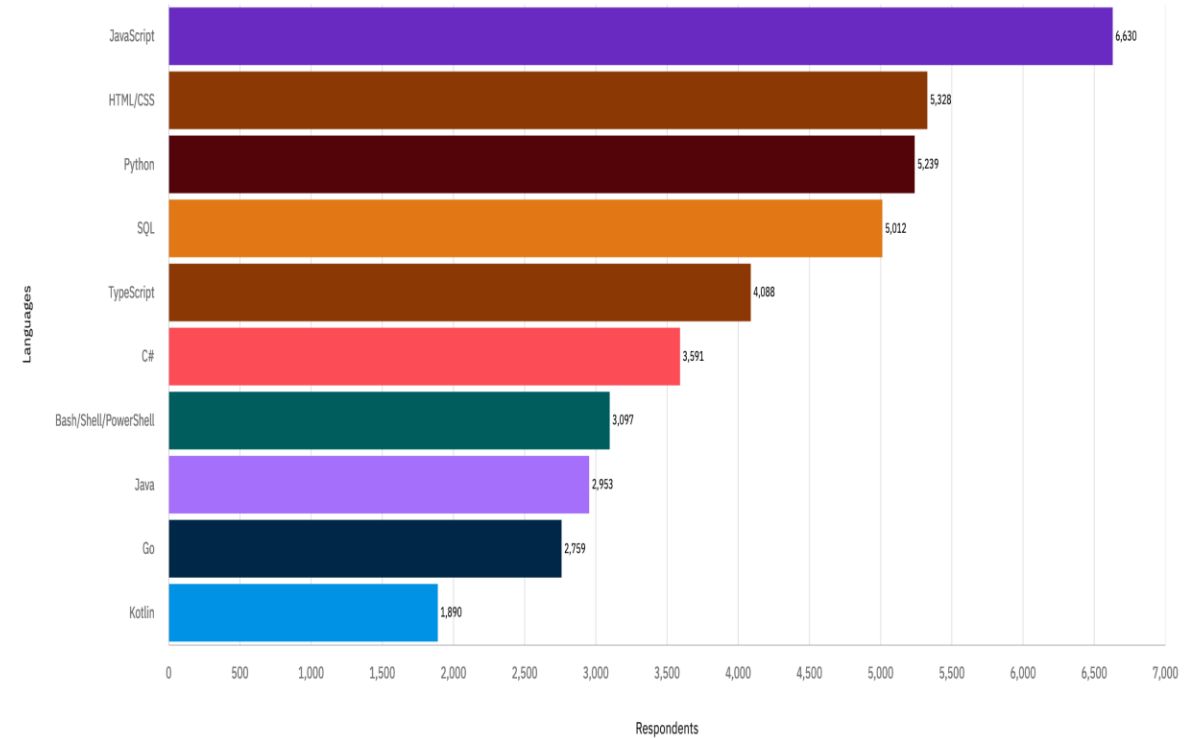
Current Year

Top 10 Languages Worked With



Next Year

Top 10 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript and HTML/CSS are the top 2 languages for current and future trends.
- The popularity for Python is set to match SQL in 3rd and 4th place respectively in the future.
- A decrease in popularity for Bash/Shell/PowerShell.
- C++ and PHP is relegated from the Top 10 languages.

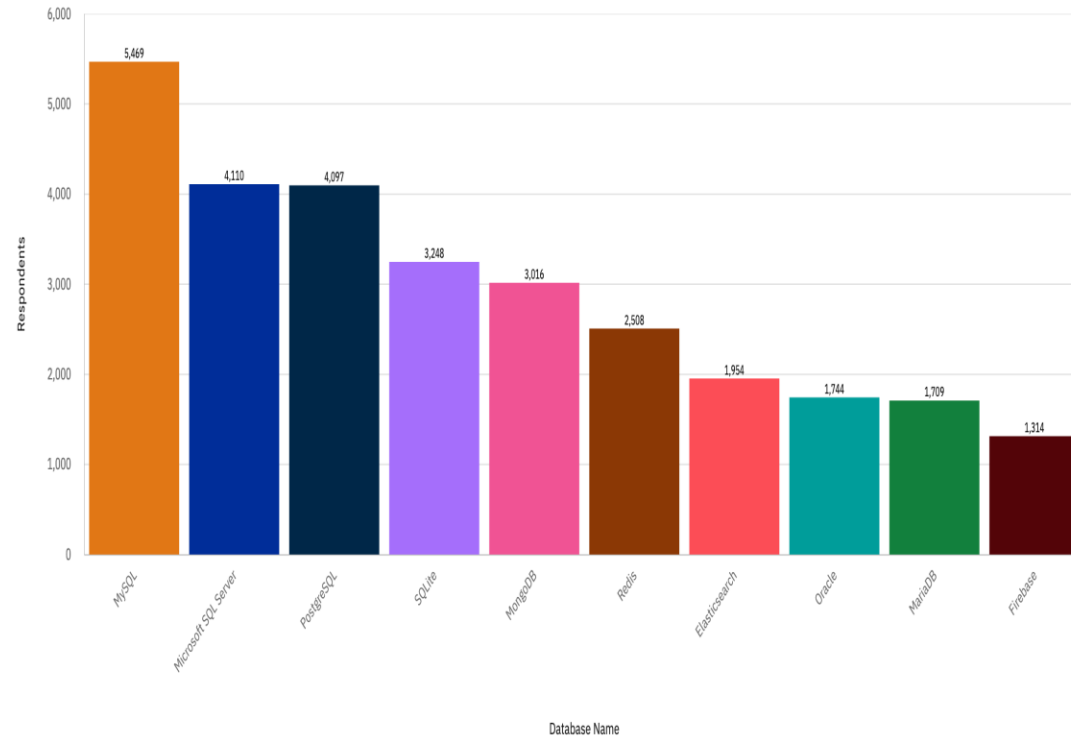
Implications

- Continuous demand and job employment relevance for Javascript and HTML/CSS.
- Ensued demand for job employment in Python and SQL as the dominant trend.
- A cutback in employment for skills in C++ and PHP.
- A cutback in employment for skills in Bash/Shell/PowerShell.

DATABASE TRENDS

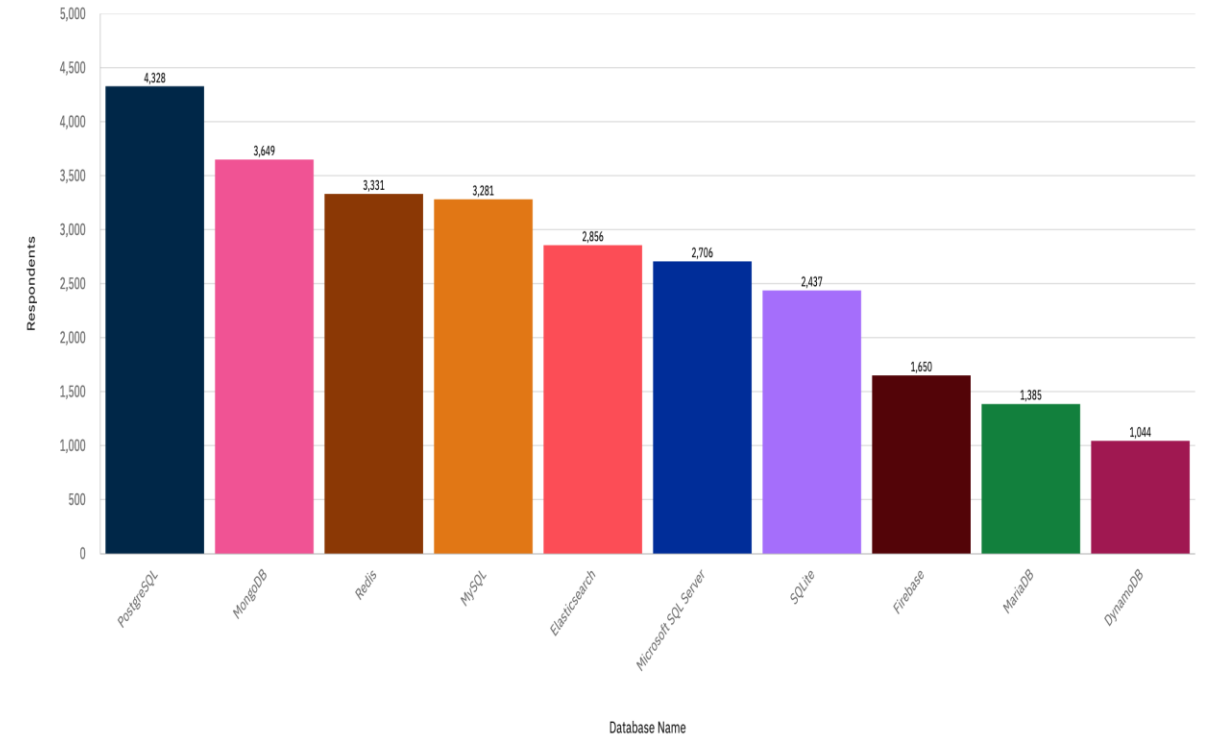
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Interest in PostgreSQL, MongoDB and Redis show dominance in the future.
- Highlights diminishing interest in Microsoft SQL Server and MySQL in the coming year.
- ElasticSearch gets a nice boost in interest in the following year.
- A once dominant Oracle does not make the Top 10 list in the following year.

Implications

- Open sourced databases to remain prolific and dominant in the future.
- NoSQL non-relational databases like ElasticSearch retains a foothold among other top relational databases.
- More employment opportunities especially in PostgreSQL, MongoDB and ElasticSearch.
- A pullback in employment for Microsoft SQL Server, Oracle and MySQL.

PLATFORM TRENDS

Current Year

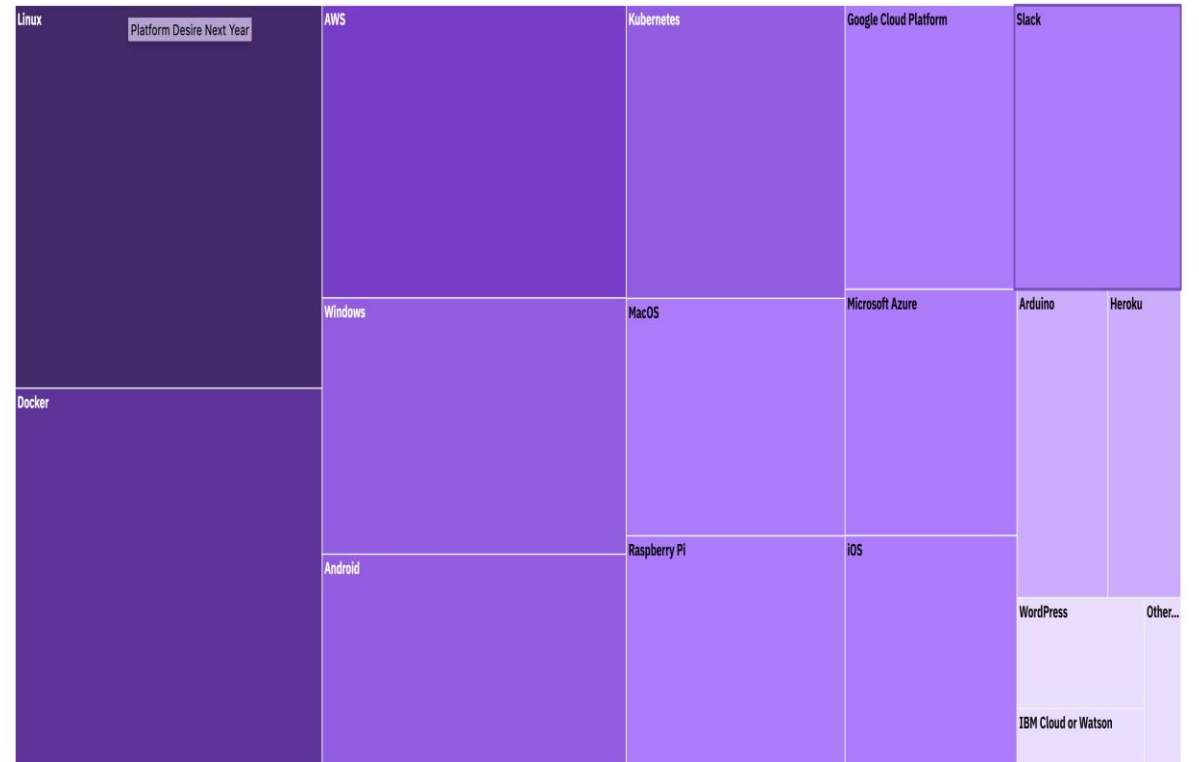
Top 10 Platforms Worked With

Top 10 Platforms Worked With



Next Year

Platform Desire Next Year



PLATFORM TRENDS - FINDINGS & IMPLICATIONS

Findings

- Windows and Linux spearheads a dominant trend in the future.
- Android remains the dominant mobile platform as compared to IOS.
- Docker, Kubernettes and AWS are the preferred cloud platforms in the future.

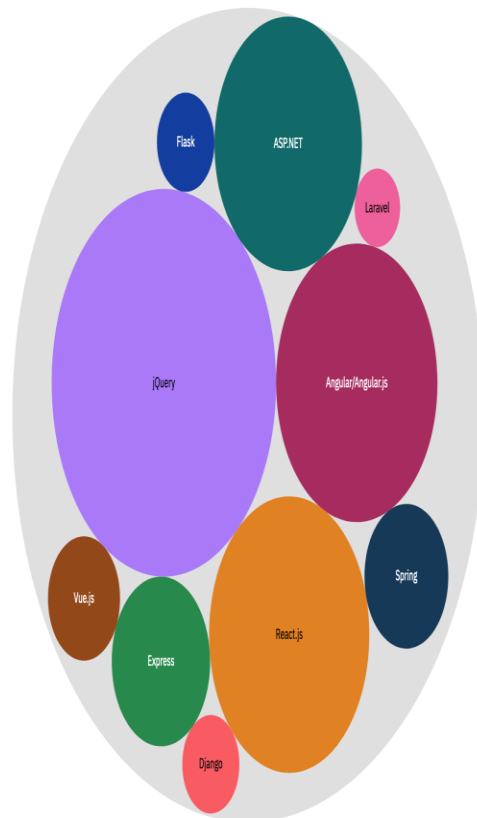
Implications

- Maintain job employment interests in Windows and Linux.
- Reduction in employment preference for Slack and Raspberry Pi.

WEB FRAME TRENDS

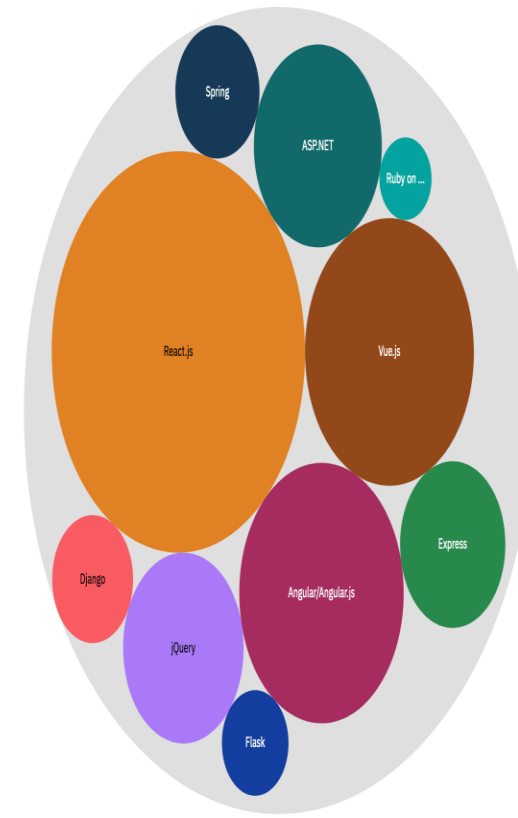
Current Year

Top 10 Web Frames Worked With



Next Year

Top 10 Web Frame Desire Next Year



WEB FRAME TRENDS - FINDINGS & IMPLICATIONS

Findings

- React.js, Angular.js and Vue.js are set to be the preferred web frames in the future.
- A substantial diminished interest in JQuery and ASP.net in the coming year.

Implications

- React.js and Vue.js to be a prominent preference and as the de facto standard.
- A likelihood of reduction in employment opportunities for ASP.net.

DASHBOARD

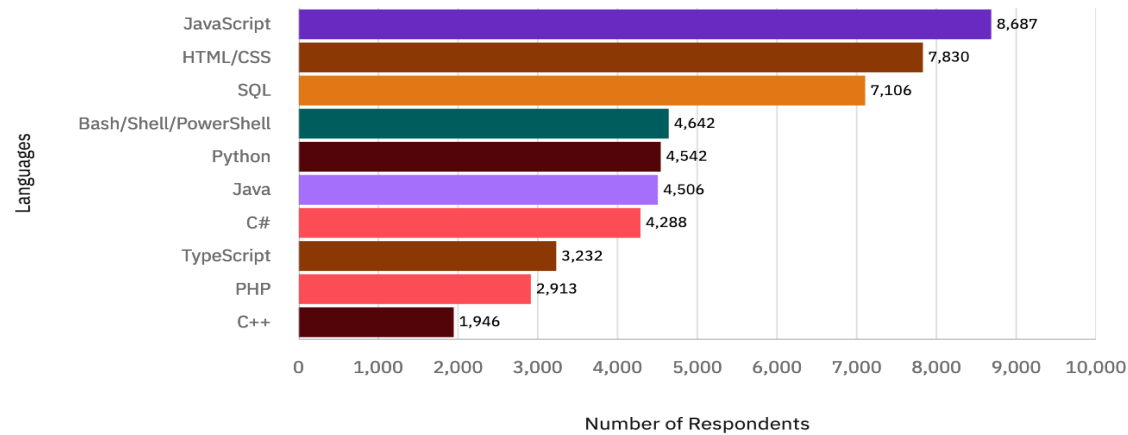


URL :

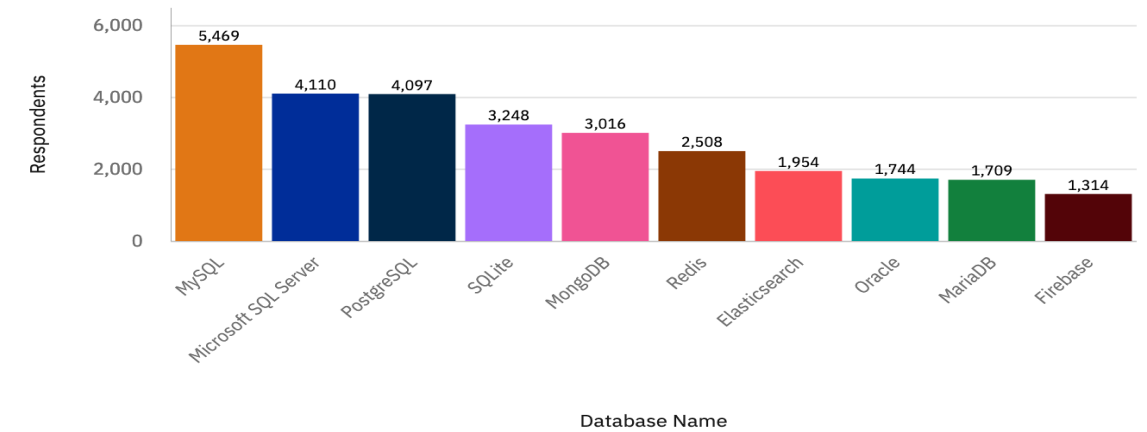
<https://github.com/thisSELFmySELF/Stackoverflow-2019-Survey-Dashboard>

CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Languages Worked With



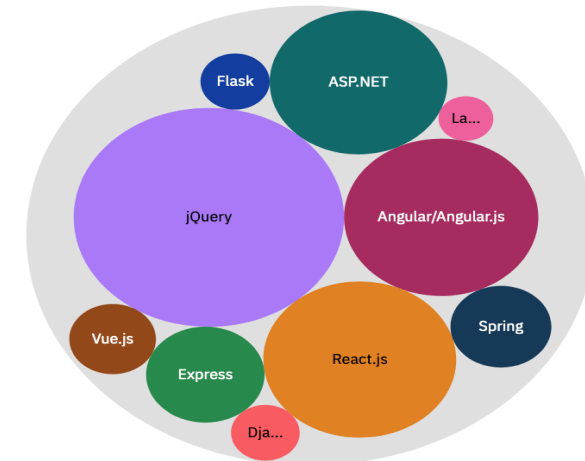
Top 10 Databases Worked With



Top 10 Platforms Worked With

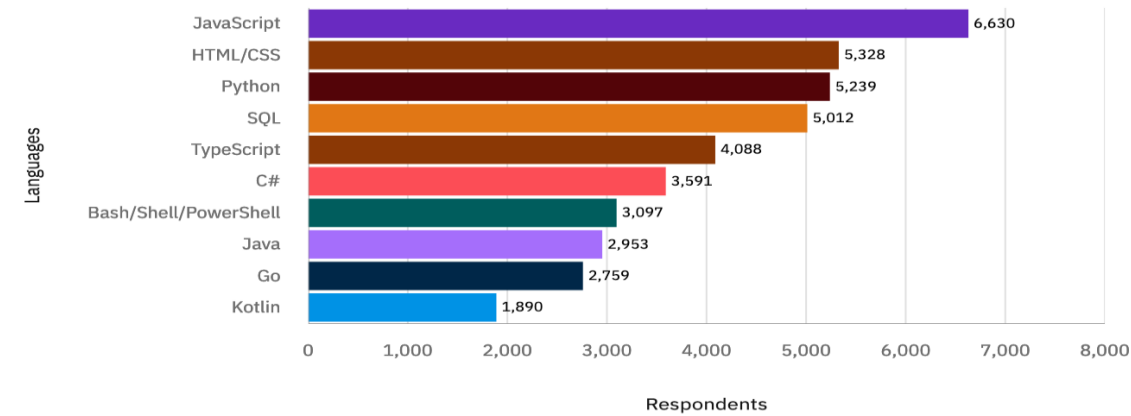


Top 10 Web Frames Worked With

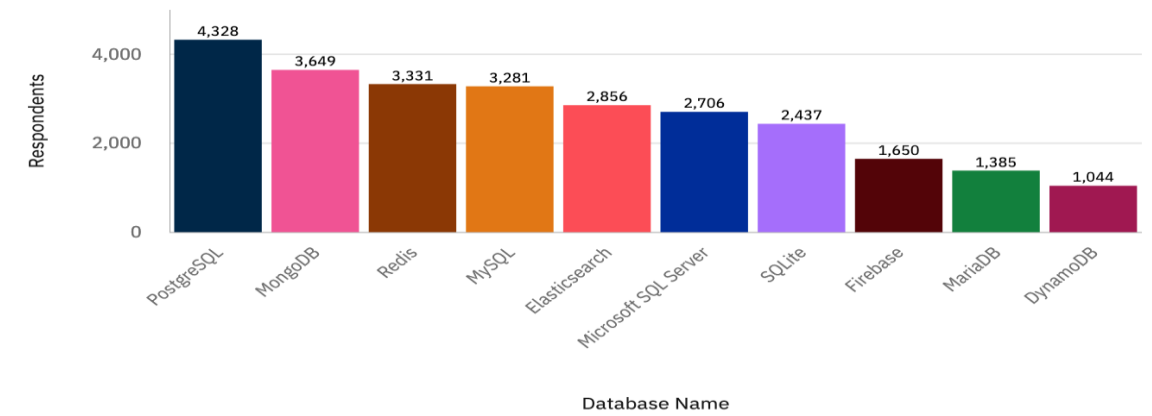


FUTURE TECHNOLOGY TREND DASHBOARD

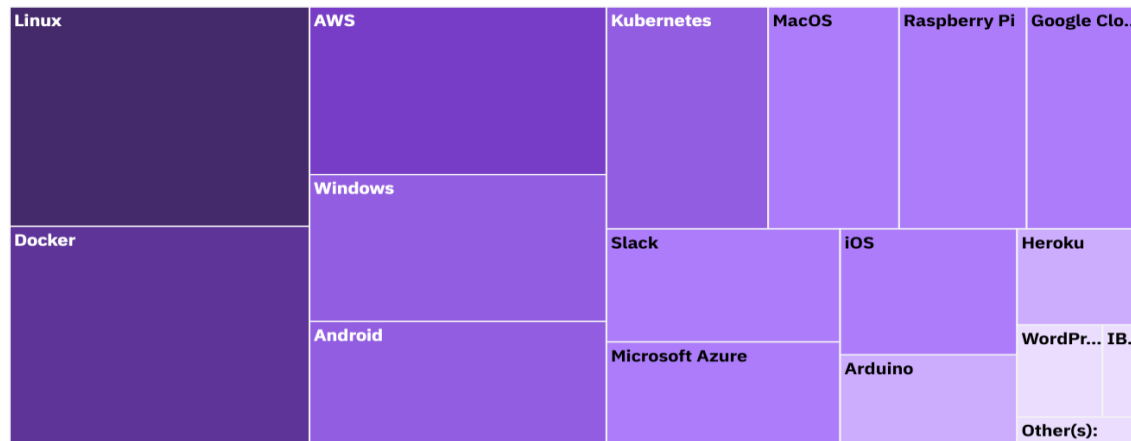
Top 10 Language Desire Next Year



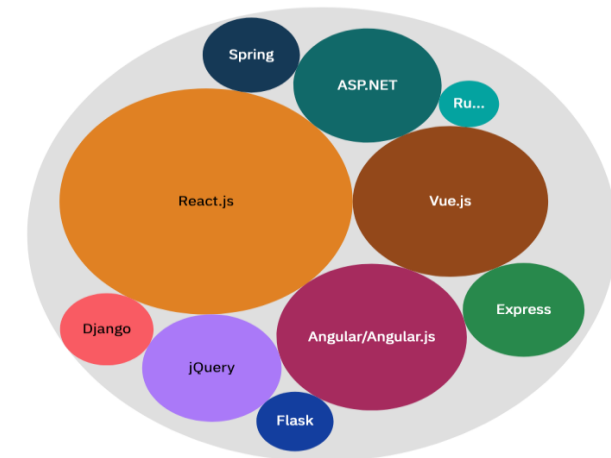
Top 10 Database Desire Next Year



Platform Desire Next Year



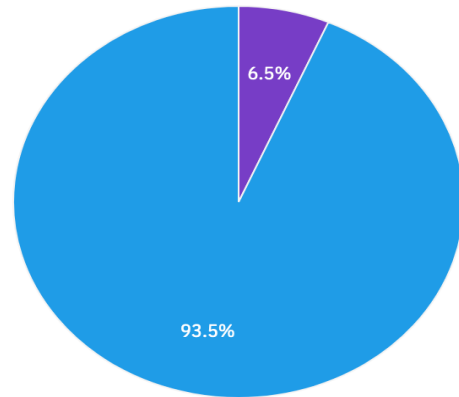
Top 10 Web Frame Desire Next Year



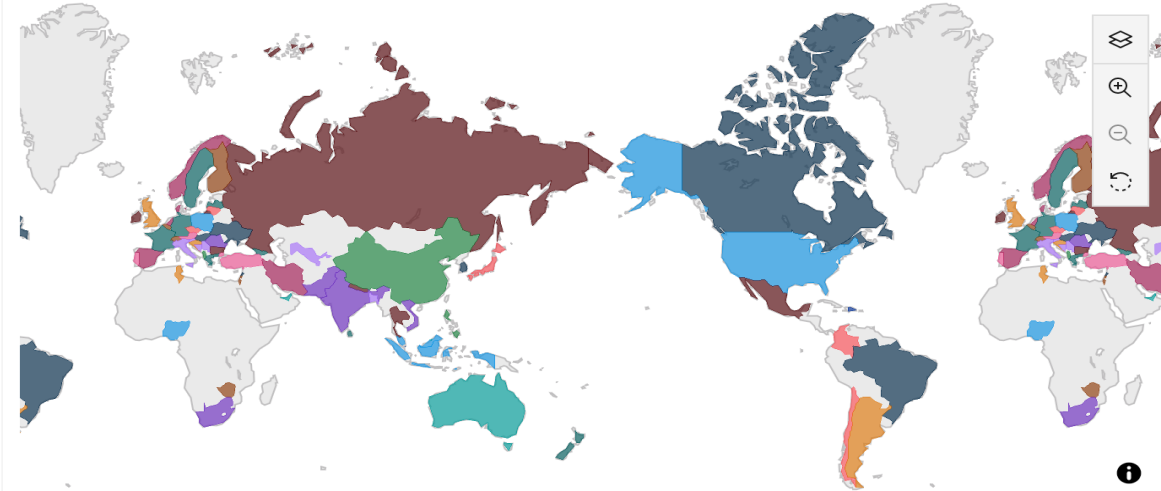
DEMOGRAPHICS DASHBOARD

Respondent classified by Gender

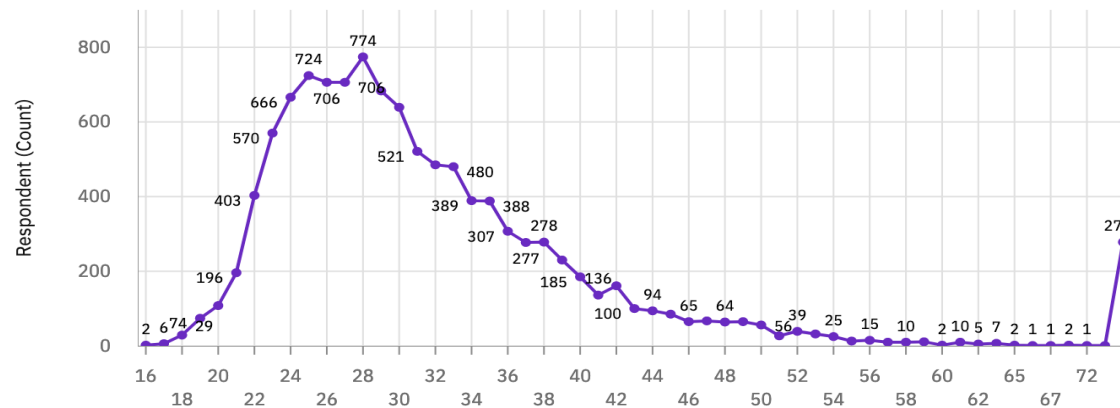
Gender
● Woman ● Man



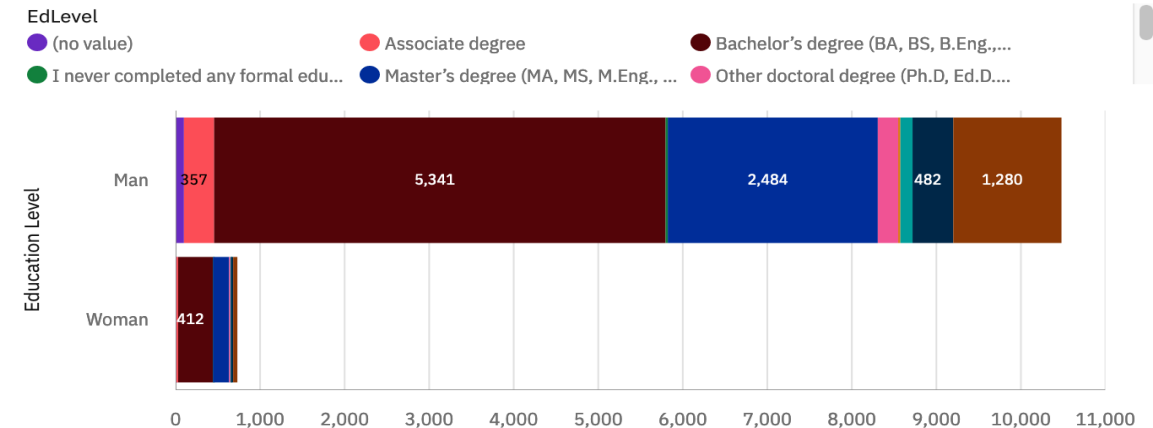
Respondent Count for Countries



Respondent by Age



Respondent Count by Gender, classified by Formal Education Level



OVERALL FINDINGS & IMPLICATIONS

Findings

- **Programming Languages** : HTML/CSS, Python and SQL to be the prevalent choice.
- **Databases** : Significant interest in PostgreSQL, MongoDB, Redis and ElasticSearch.
- **Platforms** : Windows and Linux to retain top spots.
- **Web Frames** : A substantial drop in interest for JQuery and ASP.Net closing in on second.

Implications

- Substantial demand for these languages to be provided by IT education stakeholders and increased hiring for business enterprises.
- A surge increase for non-relational databases leads to employment demand.
- A provision of employment for Windows and Linux and deduction in Slack and Rasbery Pi.
- Increase in hiring required for top skills in React.js and Vue.js.

CONCLUSION



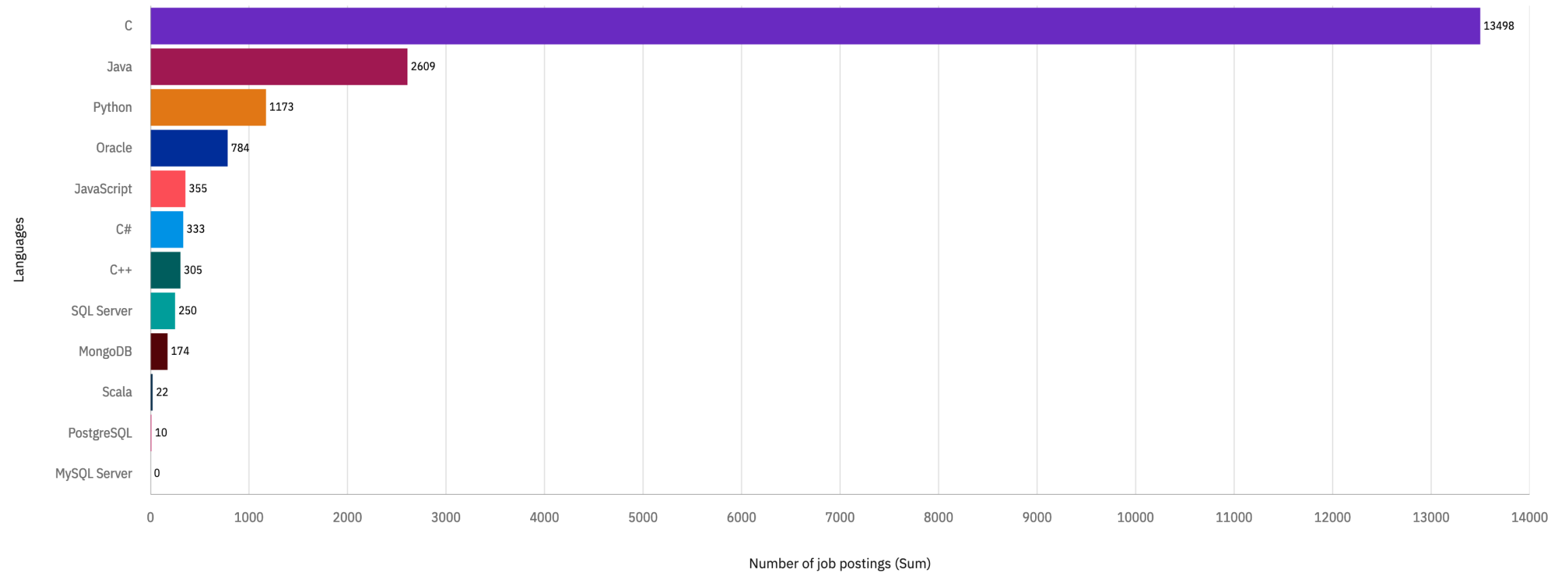
- For business owners and job seekers, adoption of web languages should be the primary focus and optimal preference.
- To remain relevant for all IT stakeholders, the inclusion of non-relational databases is inevitable.
- React.js and Vue.js are the top web frameworks for continuous implementation in the future.
- Due to rapid changing landscapes in technological trends, provisions by business owners are needed to pivot current staff and upgrade to demanded skills as the current lose prevalence.

APPENDIX

- https://stackoverflow.blog/2019/04/09/the-2019-stack-overflow-developer-survey-results-are-in/?utm_medium=Exinfluencer&utm_source=Exinfluencer&utm_content=000026UJ&utm_term=10006555&utm_id=NA-SkillsNetwork-wwwcourseraorg-SkillsNetworkCoursesIBMDA0321ENSkillsNetwork21426264-2022-01-01
- Github-job-postings.xlsx
- m5_survey_data_demographics.csv and m5_survey_data_technologies_normalised.csv
- https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html

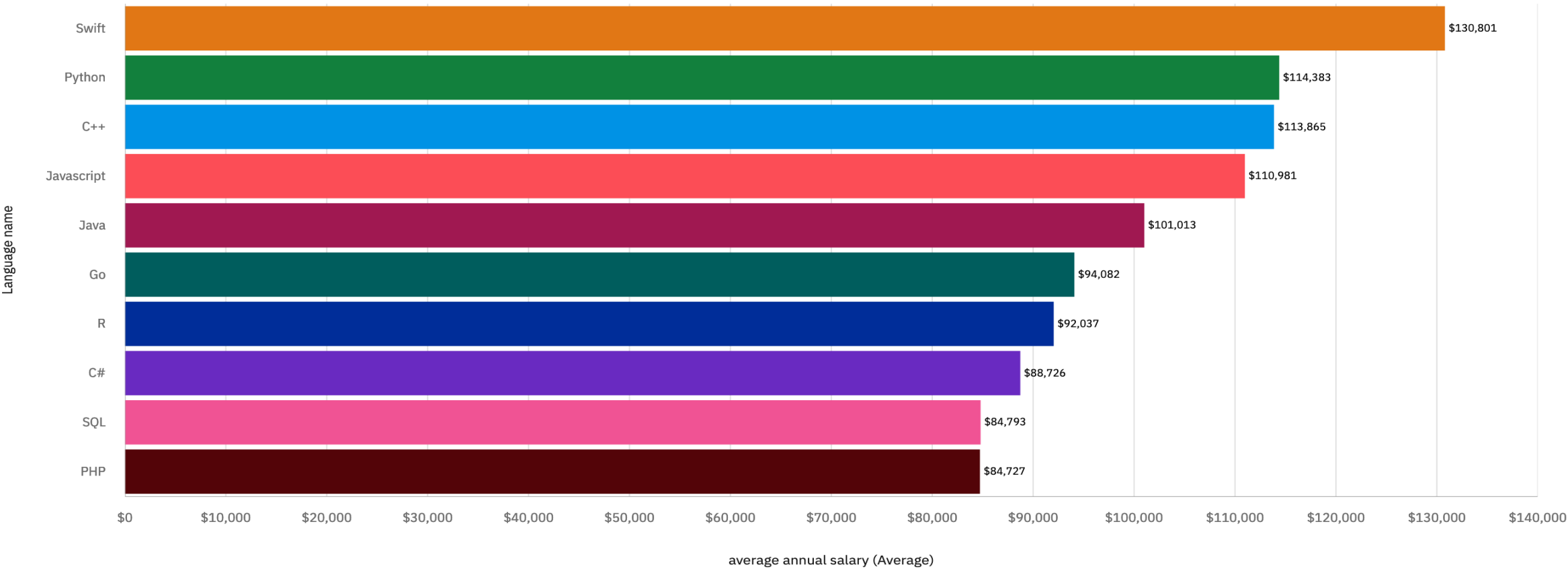
JOB POSTINGS

GITHUB JOB POSTINGS



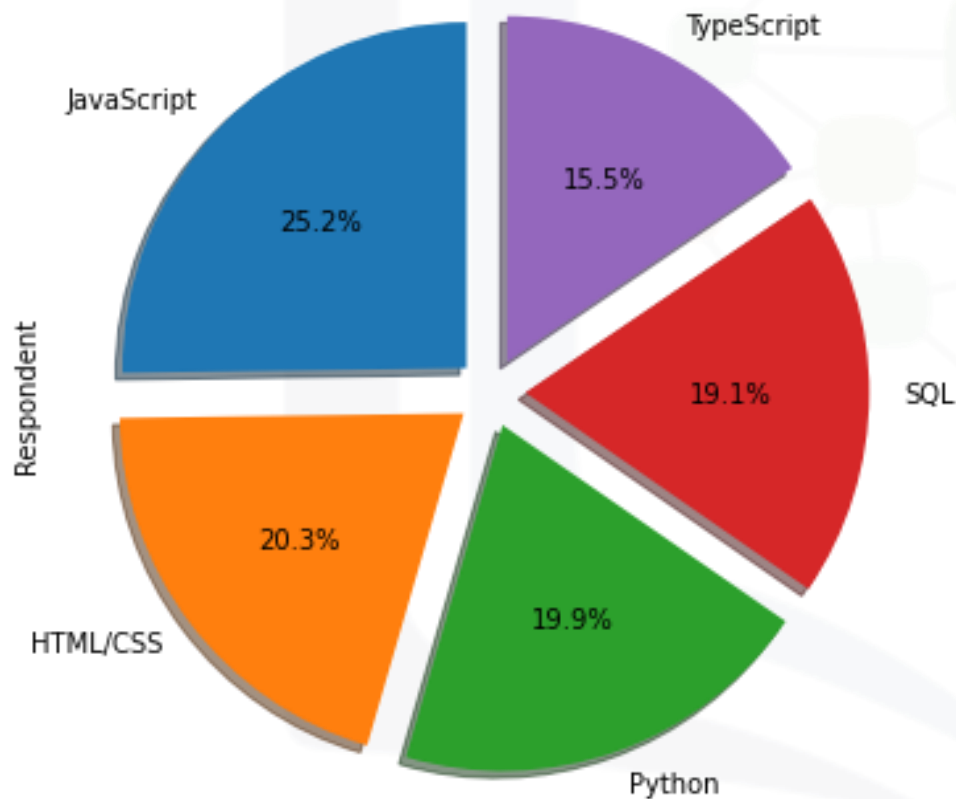
POPULAR LANGUAGES

POPULAR LANGUAGES



ADDITIONAL VISUALS

Top 5 Languages Respondents Wish to Learn Next Year



Top 5 Databases Respondents Wish to Learn Next Year

