



Stack Overflow Developer Survey

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OUTLINE



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EXECUTIVE SUMMARY



Stack Overflow surveyed the developer community to gain insight into the following main topics:

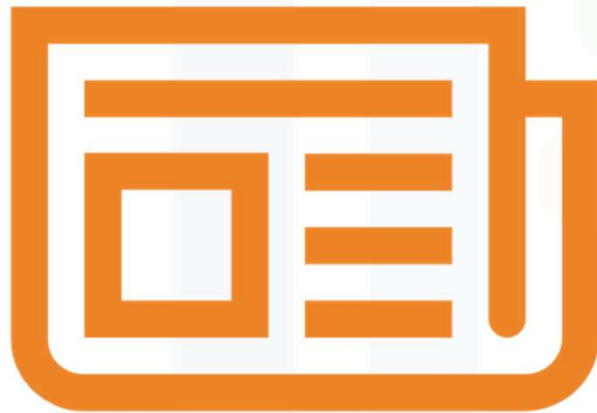
1. Most widely used technologies currently and in the foreseeable future based on the preferences of the respondents
2. Who are making up the developer community – geographic locations, education level, age and gender of the participating developers and their career satisfaction level
3. How much do the participants benefit from the usage of Stack Overflow

INTRODUCTION



- The survey was designed to
 - identify trends in technologies,
 - provide insight about the developer community Stack Overflow serves and
 - assess how much Stack Overflow has been contributing to the productivity of the community
- The findings, on one hand, are supposed to provide guidance to those looking for directions for their technology investment plans or in their learning journey
- On the other hand, the Stack Overflow Service Team will utilize the feedbacks to improve the user experience

METHODOLOGY



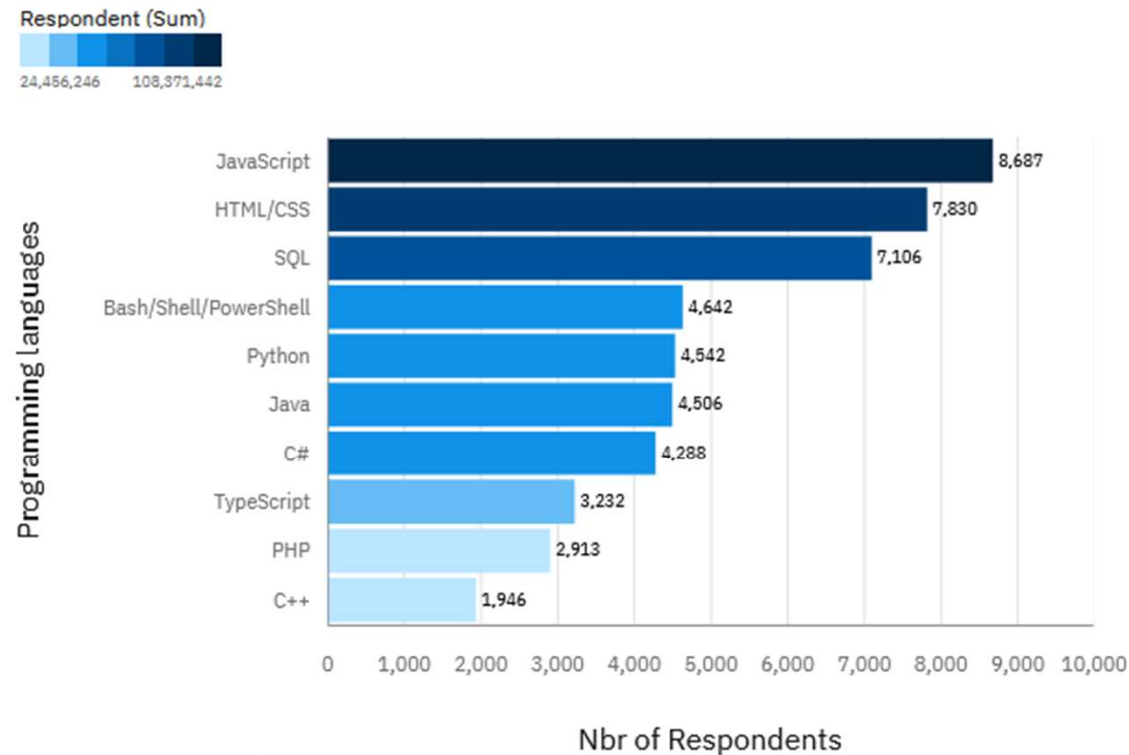
- Online survey was conducted between 23rd January and 14th February 2019
- Respondents were recruited primarily through channels owned by Stack Overflow
- Main focus areas of the questions were:
 - Technology
 - Career (including salary, experience, satisfaction)
 - Demographics
- The survey took around 20 minutes to fill on average
- The anonymized results of the survey were made available publicly



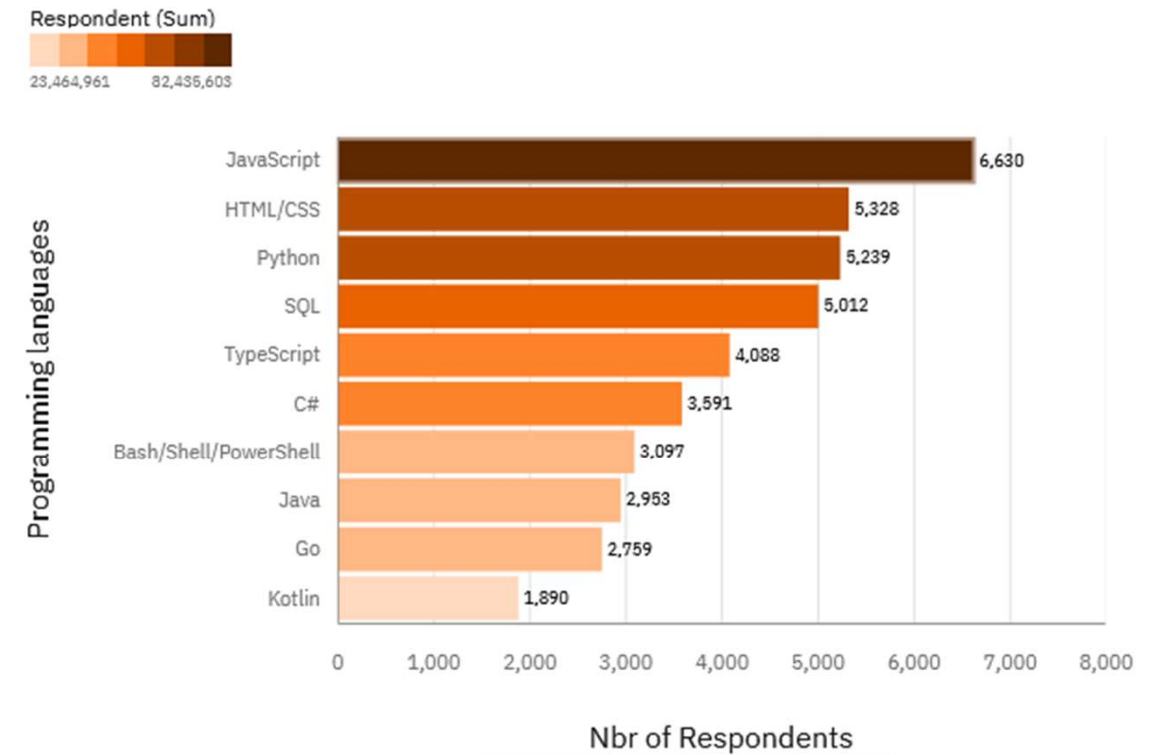
RESULTS

PROGRAMMING LANGUAGE TRENDS

Top 10 Programming Languages Used by the Respondents



Top 10 Programming Languages Desired to be Used in the Future



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is the most commonly used language and in the same time attracts the most interest
- HTML and SQL have their strong presence behind JavaScript
- Python has beaten Java and C# in rank and places as the 3rd on the learning plans of the community
- Scripting languages solidly among the top 10

Implications

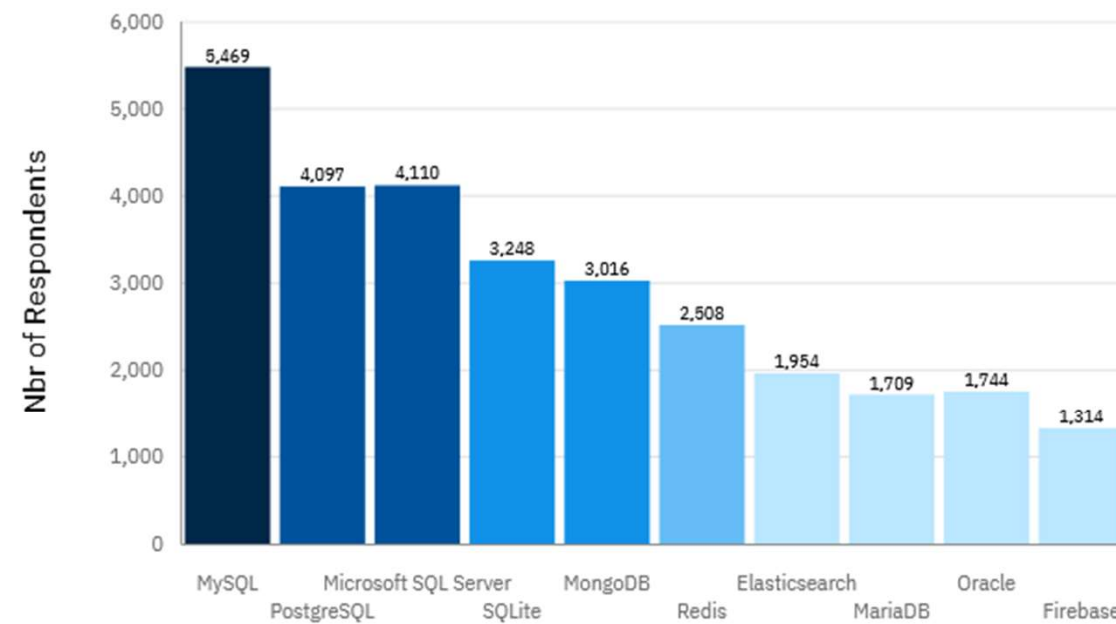
- JavaScript seems to stick around for a while to lead the development work
- HTML and SQL with their own special use cases are still major players on the skill market
- The Python community shows the most dynamic growth among all
- The knowledge of scripting languages is still a must and seems like this won't change in the near future

DATABASE TRENDS

Top 10 Databases Used by the Respondents



Respondent (Sum)
16,227,799 68,301,583

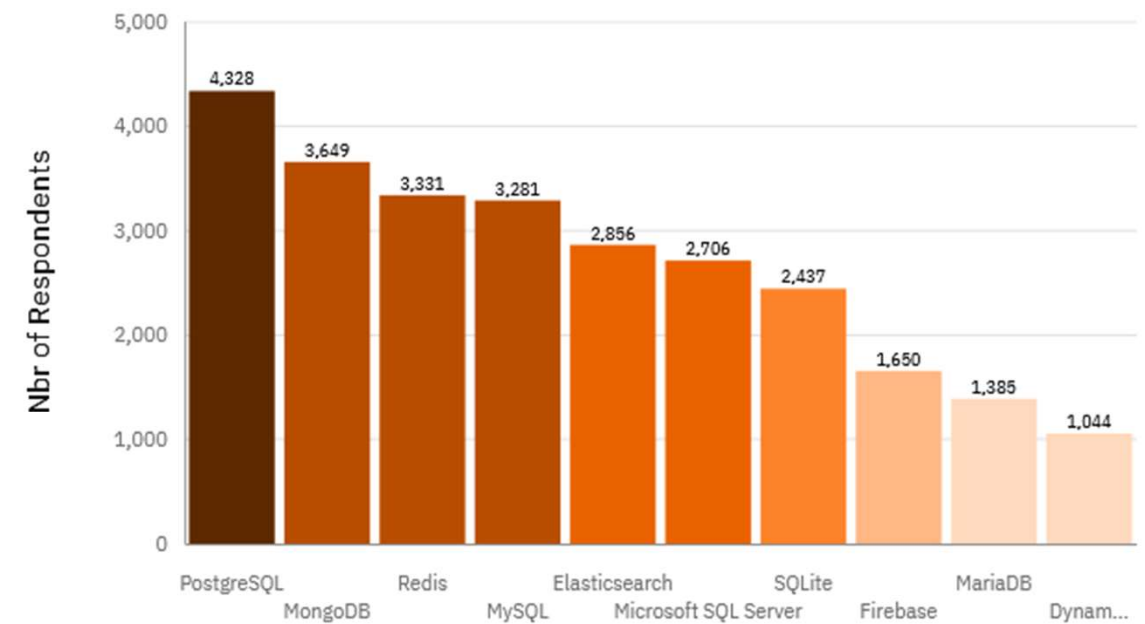


Database

Top 10 Databases Desired to be Used in the Future



Respondent (Sum)
12,995,539 53,804,386



Database

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL leads today, but PostgreSQL has the ambition to soon take over the lead
- The top 4 databases are all SQL based ones, but the community shows more and more interest towards MongoDB and Redis
- Oracle is still here, but how long?

Implications

- People's preference is shifting towards open-source technologies
- Databases able to handle non-structured and big data are gaining significant market share
- Looks like the world is passing by Oracle

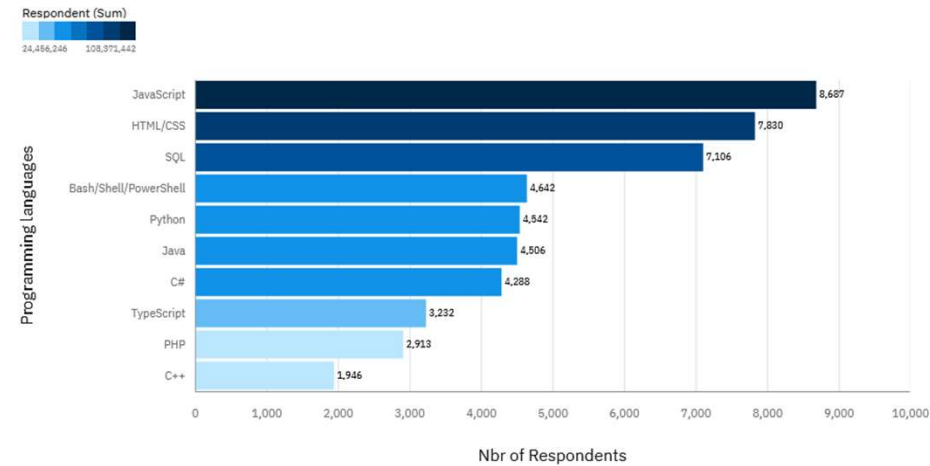
DASHBOARD



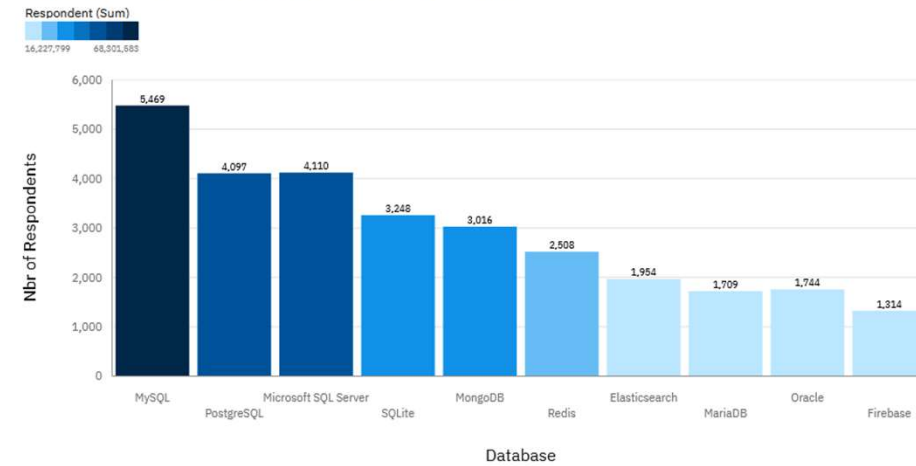
<https://github.com/gabrielladudas/Learning/blob/main/Capstone%20Project%20Final%20Assignment%20Dashboard.pdf>

CURRENT TECHNOLOGY USAGE

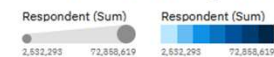
Top 10 Programming Languages Used by the Respondents



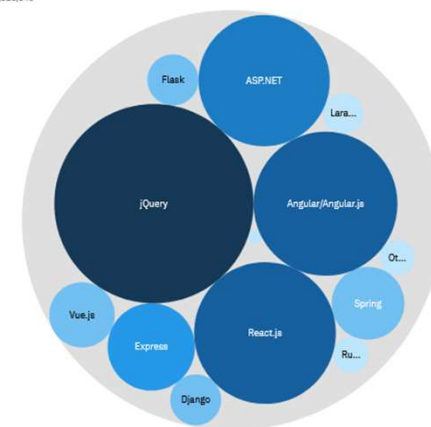
Top 10 Databases Used by the Respondents



Platforms Used by the Respondents

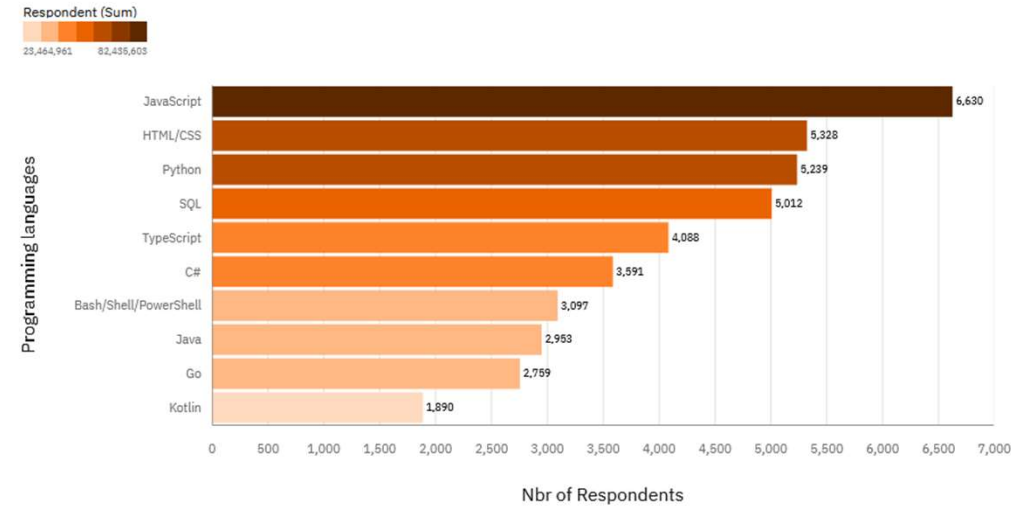


Top 10 Webframes Used by the Respondents

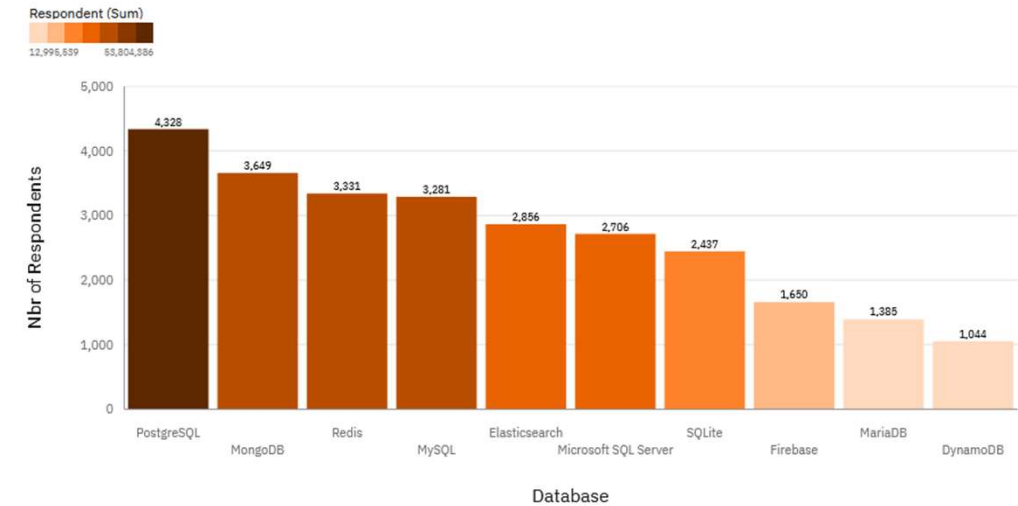


FUTURE TECHNOLOGY TREND

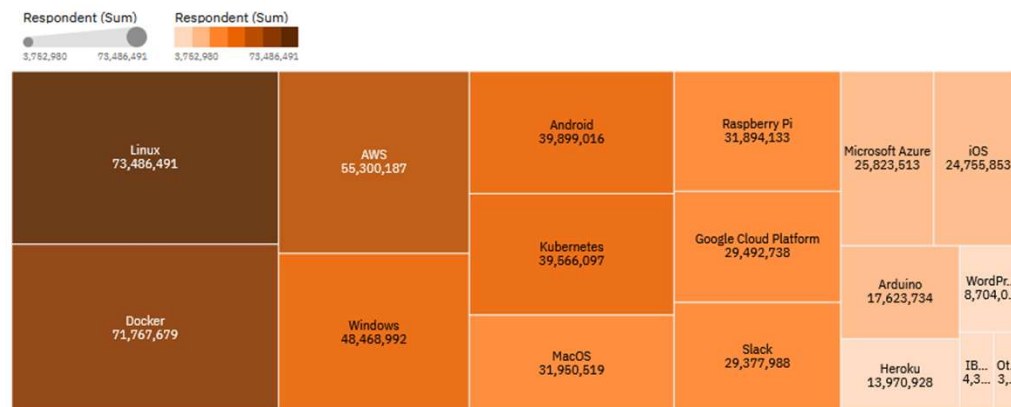
Top 10 Programming Languages Desired to be Used in the Future



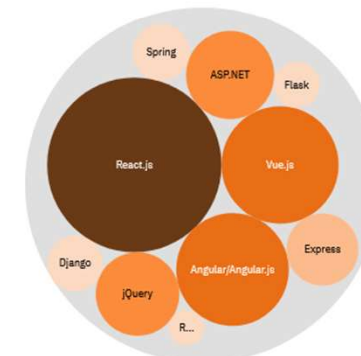
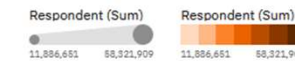
Top 10 Databases Desired to be Used in the Future



Platforms Desired to be Used in the Future



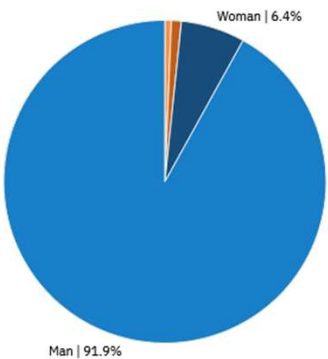
Top 10 Webframes Desired to be Used in the Future



DEMOGRAPHICS

Respondent by Gender

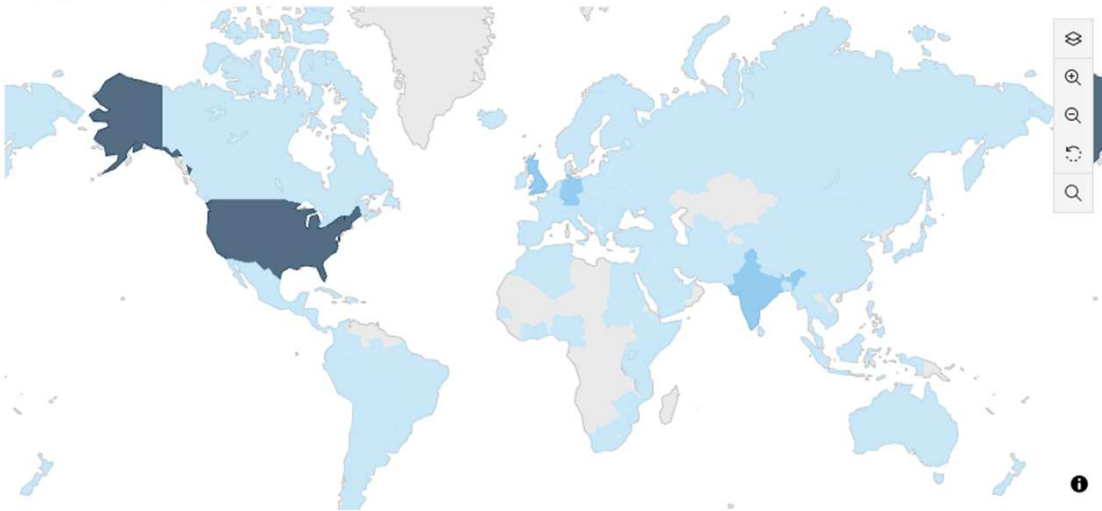
Gender
● Man 91.9% ● Woman 6.4% ● Other 1.0% ● No data 0.6%



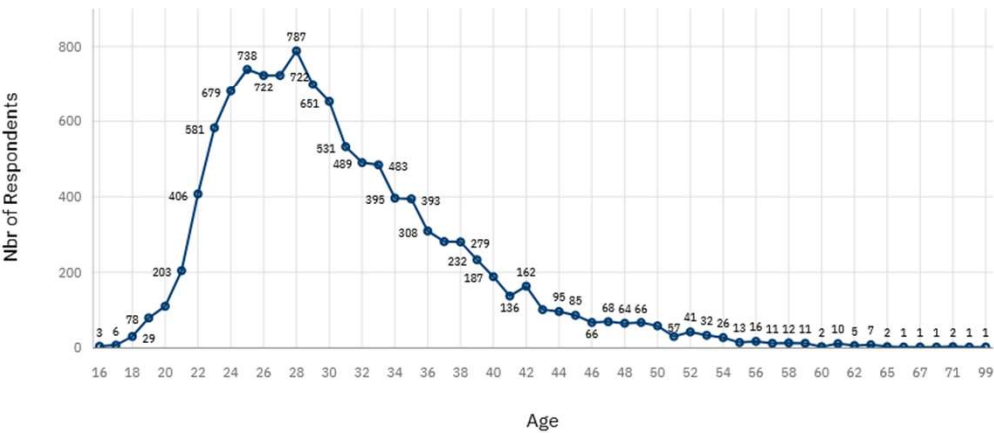
11.4K

Respondents

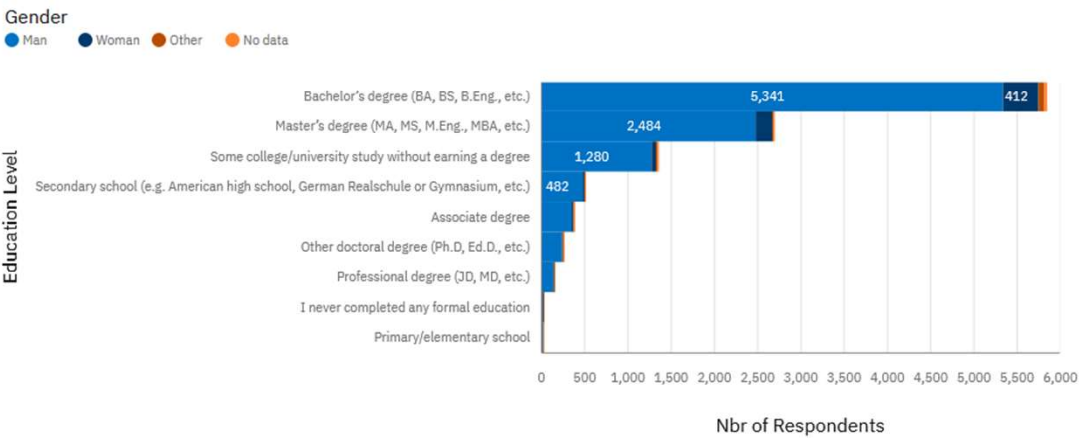
Respondents by Countries



Respondents by Age



Respondents by Education Level and by Gender



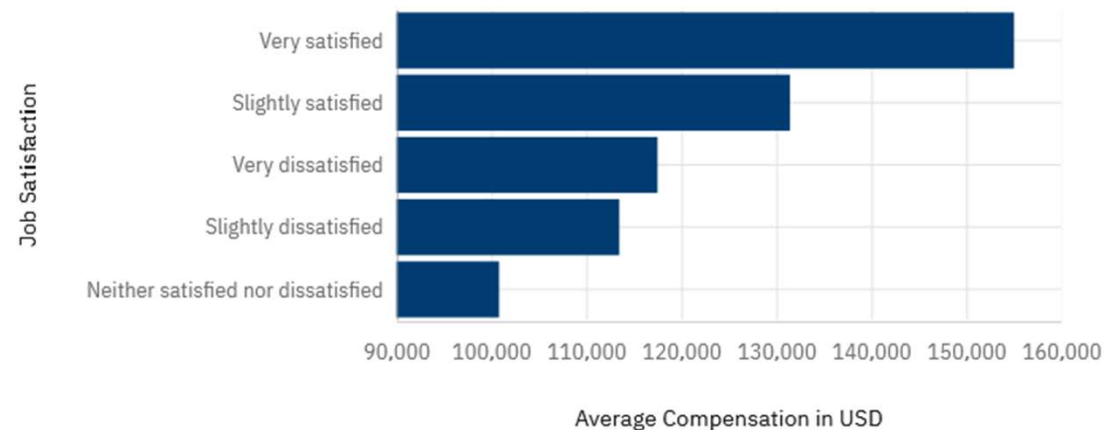


DISCUSSION

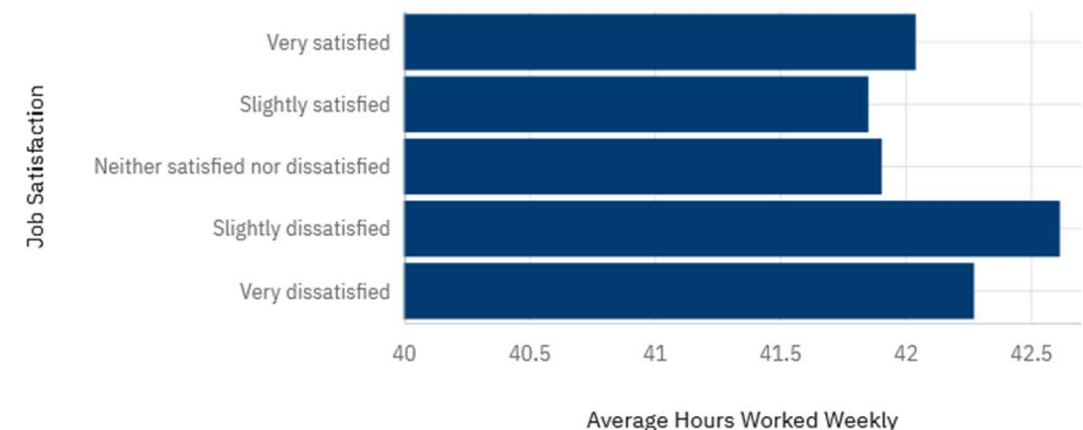
Job Satisfaction (2/1)

No surprise: job satisfaction increases with earned compensation and drops with more hours worked, although even those very satisfied with their job are working around 42 hours per week on average.

Job Satisfaction and Compensation



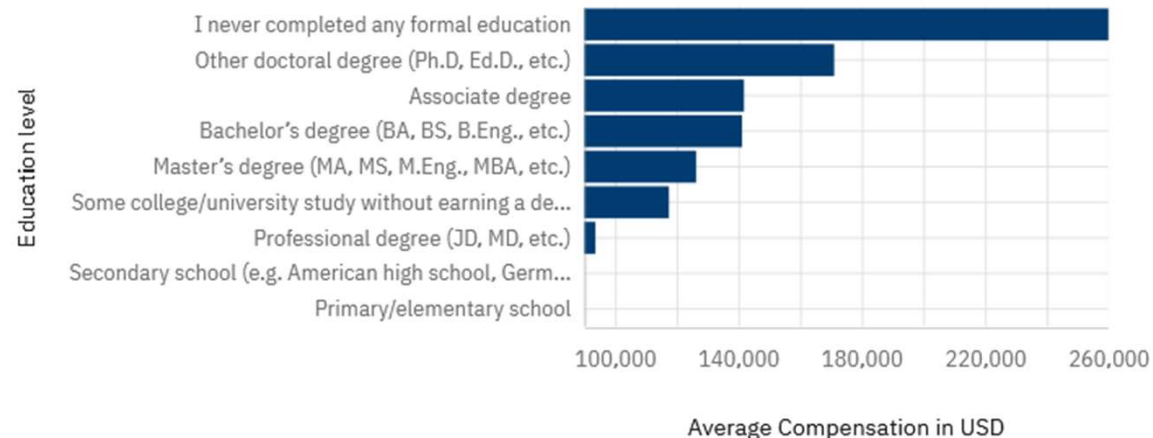
Job Satisfaction and Weekly Hours Worked



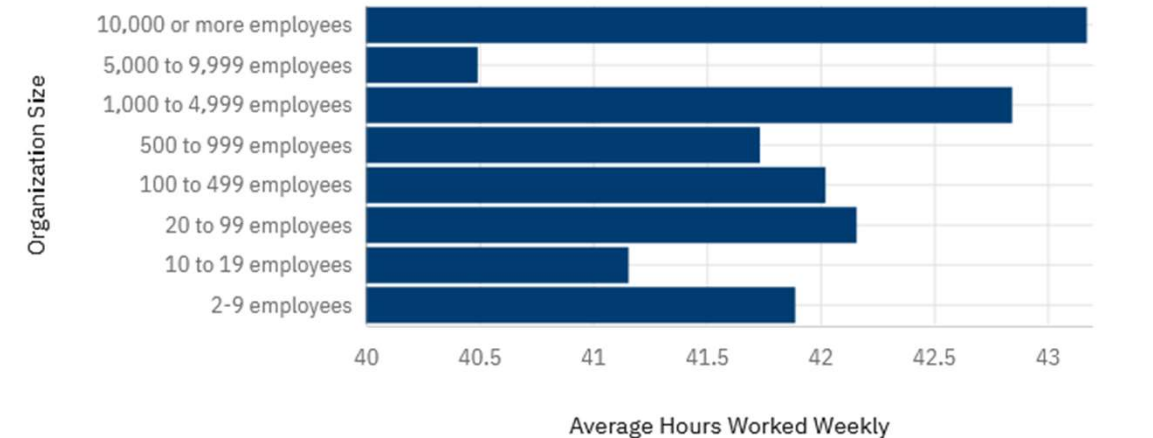
Job Satisfaction (2/2)

Compensation is mostly not tied to education, but hours worked seems to be the higher the size of the employer's organization.

Average Compensation by Education Level



Weekly Hours Worked in Different Size of Companies



OVERALL FINDINGS & IMPLICATIONS

Findings

- Vast majority of the developer community is of Millennials and Gen Z
- Job satisfaction is clearly tied to compensation and total working hours
- The highest average compensation is of those without formal educational degree
- The developer profession seem to attract more man, than woman

Implications

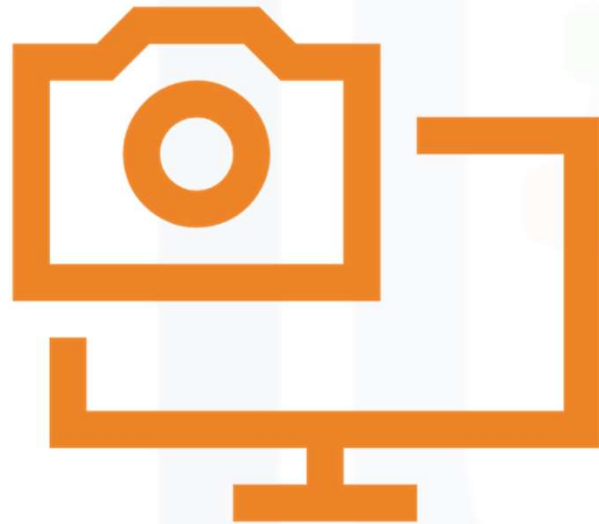
- The developer community is full of young energy
- Big corps need to balance workload and compensation to keep their talents on board
- Educational institutes doesn't seem to be able to keep up with the rapidly changing technologies
- On the job experience still outweighs formal degrees in the race for better salaries

CONCLUSION



- The future of SW development relies on open-source technologies
- Big and unstructured data are getting utilized more and more
- Professional success follows organic knowledge gained through experience
- JavaScript, HTML, SQL and Python are the most trending programming languages among users, however there's a shortage of C and C++ skills on the job market

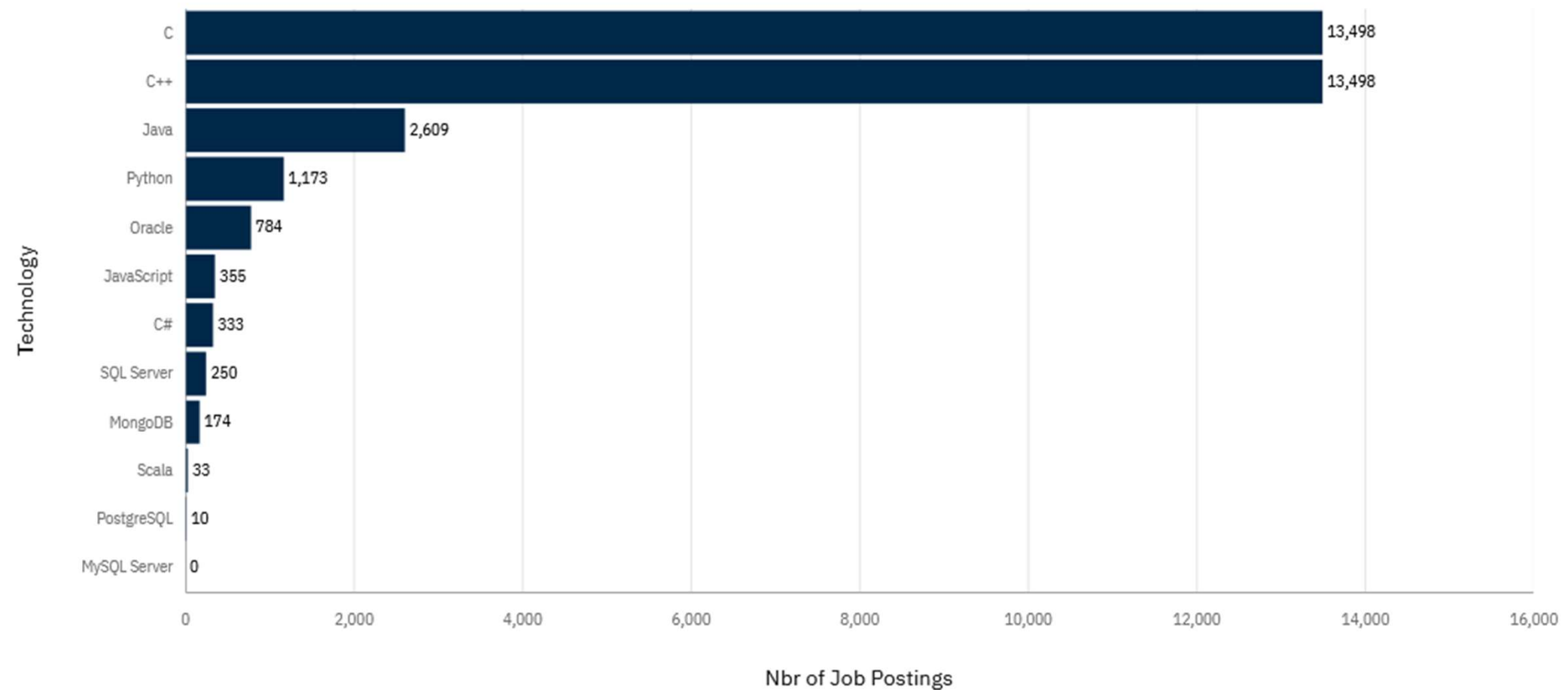
APPENDIX



- Further data was collected from GitHub job postings through webscraping to observe the trending technologies on the job market
- The programming language skills most employers are looking for are mainly C, C++ followed by Java and Python
- The highest average salaries are offered to those with knowledge of Swift, followed by Python, C++ and JavaScript

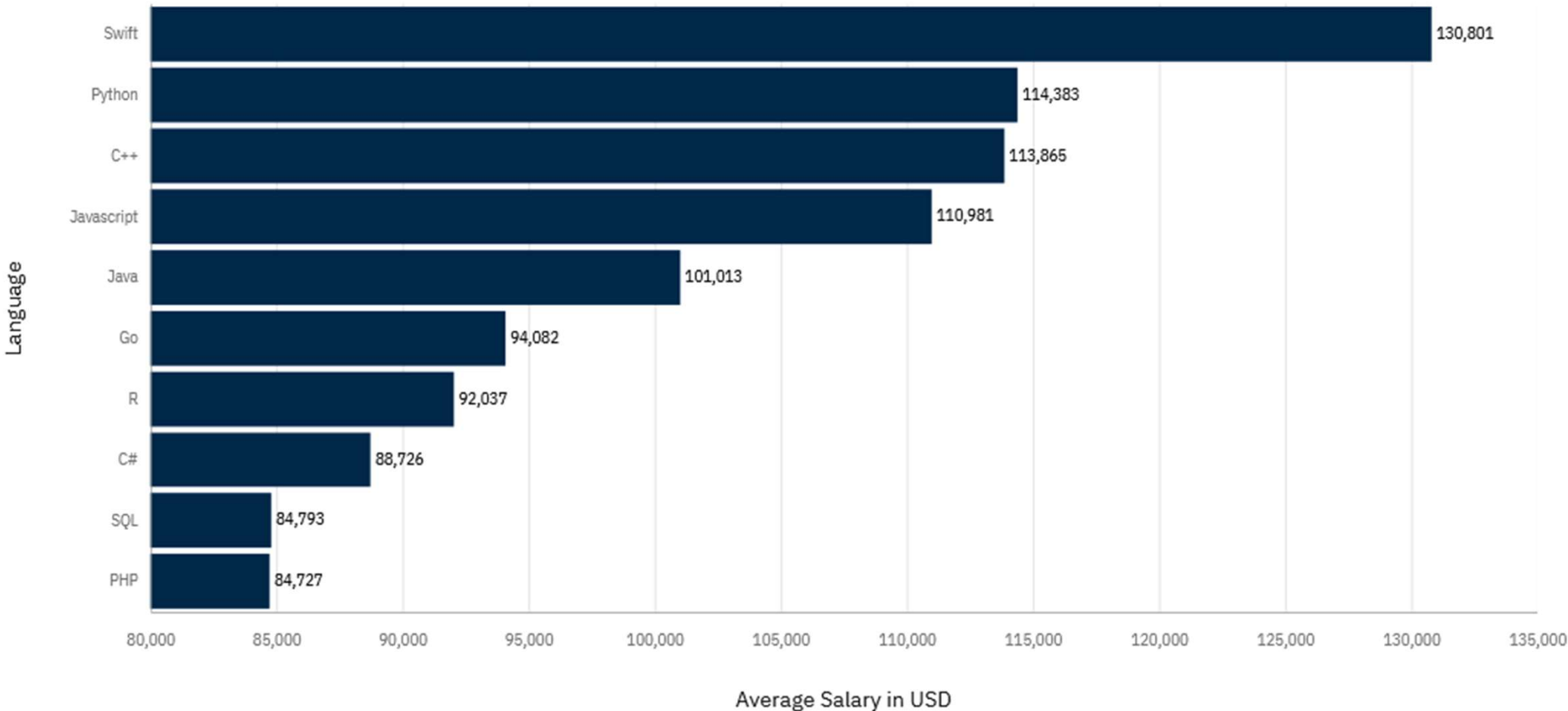
JOB POSTINGS

GitHub Job Postings by Technology



POPULAR LANGUAGES

Average Salary Earned with Different Programming Languages



MORE ABOUT THE SURVEY



https://insights.stackoverflow.com/survey/2019?utm_source=social&utm_medium=blog&utm_campaign=dev-survey-2019&utm_content=launch-blog#overview