



Stack Overflow Developer Survey 2019

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OUTLINE



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EXECUTIVE SUMMARY



- The following PPT summarize key findings from IBM adapted version of the “2019 Stack Overflow Developer Survey”.
- The analysis focus on:
 - Most popular languages, databases, and other technologies.
 - Reflexing about which technologies could become most popular in the future.
 - Demographics (Who use what technology).

The present analysis could be relevant for current and aspiring developers, recruiters, and companies.

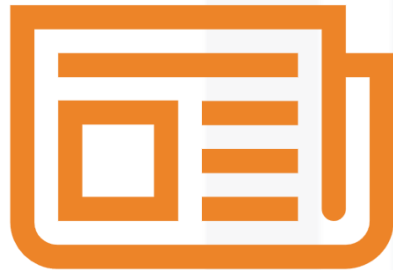
INTRODUCTION



- “Stack Overflow’s annual Developer Survey” is the largest survey about people who code around the world.
- This survey objective is to have a vision about technology usage and trends among developers.
- In 2019 had nearly 90,000 participants but for this analysis we have used IBM version with 11.398 results.
- Potential Audience: aspiring developers, recruiters, and companies

METHODOLOGY

- This analytical report is based on a IBM survey version 2019 of 11,398 software developers from 179 countries around the world.
- Original Data Source :(full version)



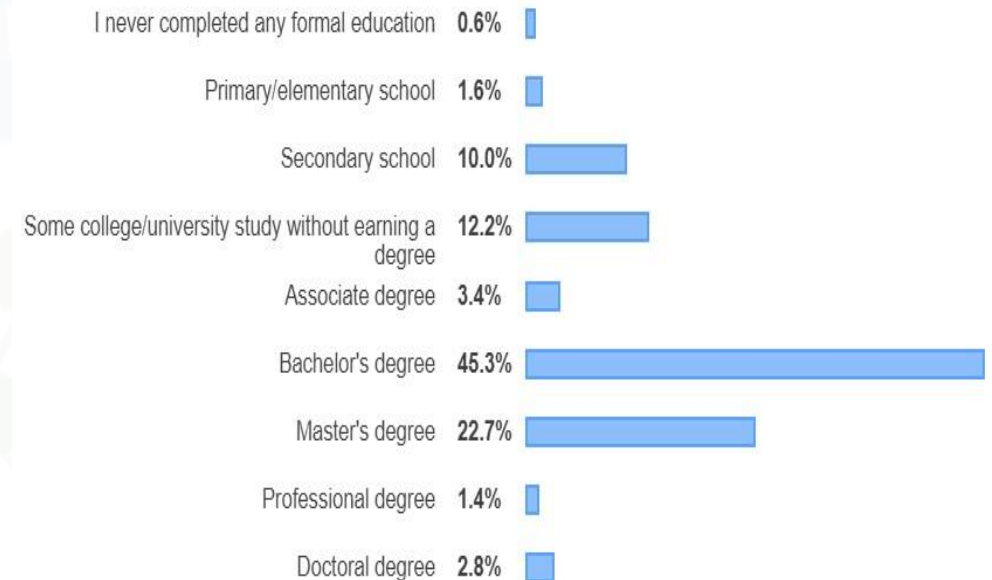
[“2019 Stack Overflow Developer Survey” \(click link\)](#)

- Data Wrangling Proccess: “IBM survey version” cleaned with sql and python(Apis and beautifulsoup).
- Data Cleaning: removed duplicates data and rows, null values, blank values with python.
- Data Analysis / Visualization:
 - Python libraries (seaborn, matplotlib).
 - IBM Cloud- Cognos datapack.

RESULTS

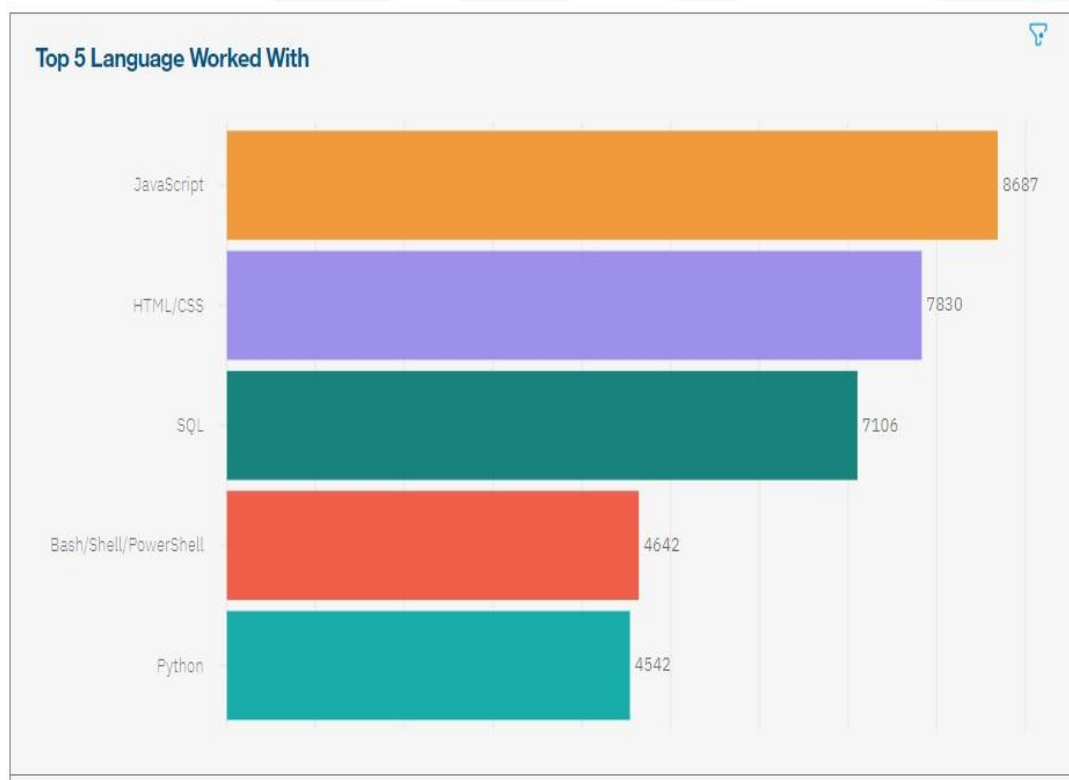
- Before data Cleaning 11,398 survey.
- After data Cleaning 10,519 survey.
- About one-quarter of respondents are enrolled in a formal college or university program full-time or part-time.
- About three-fourths of professional developer have the equivalent of a bachelor's degree or higher.
- About 90% of our respondents are men.
- About three-fourths of professional developers are younger than 35.

Educational level

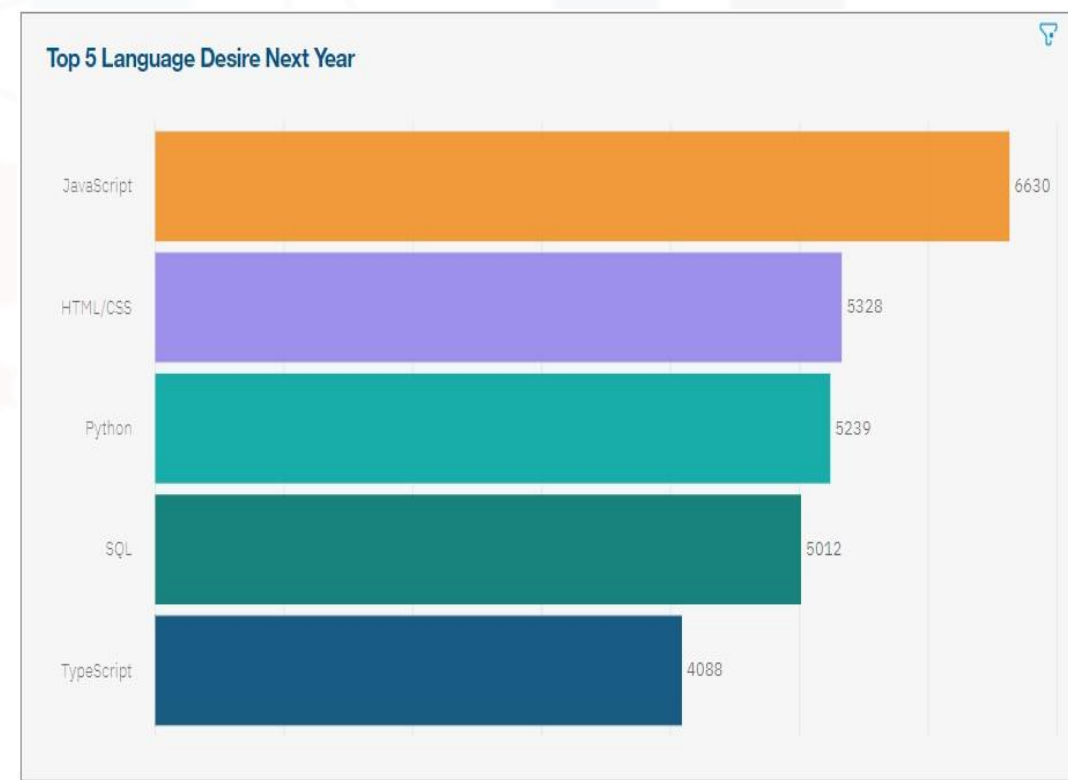


RESULTS: PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

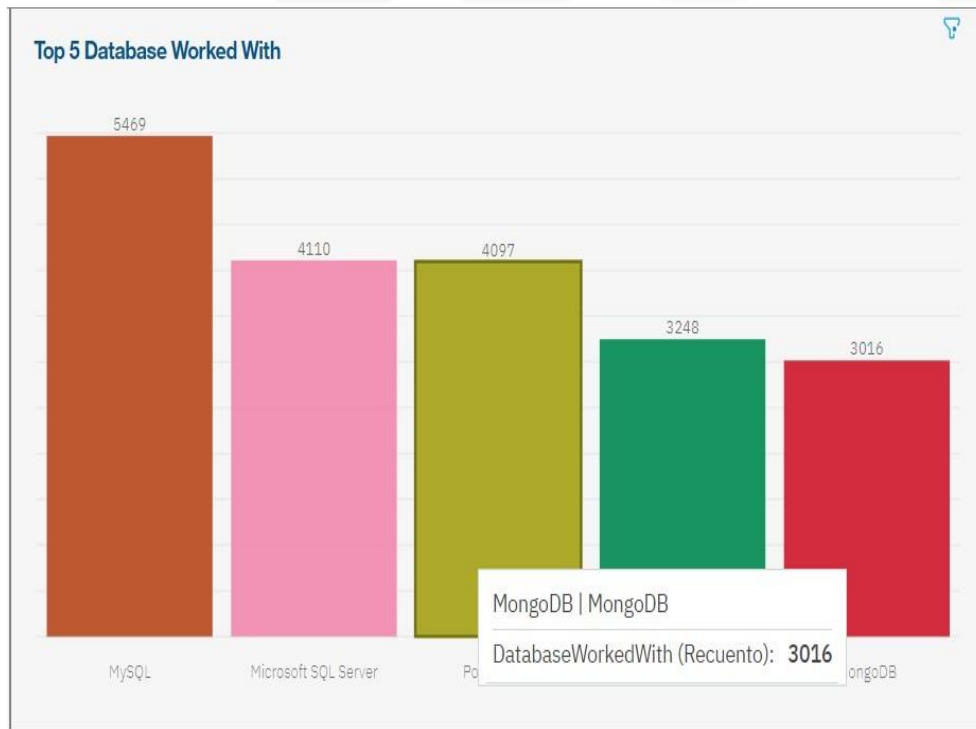
- Javascript is the king and will likely be next years.
- SQL was popular in 2019 and is going continue next year.
- Increasing interests in Python.
- Decreasing interest in PowerShell/Bash.

Implications

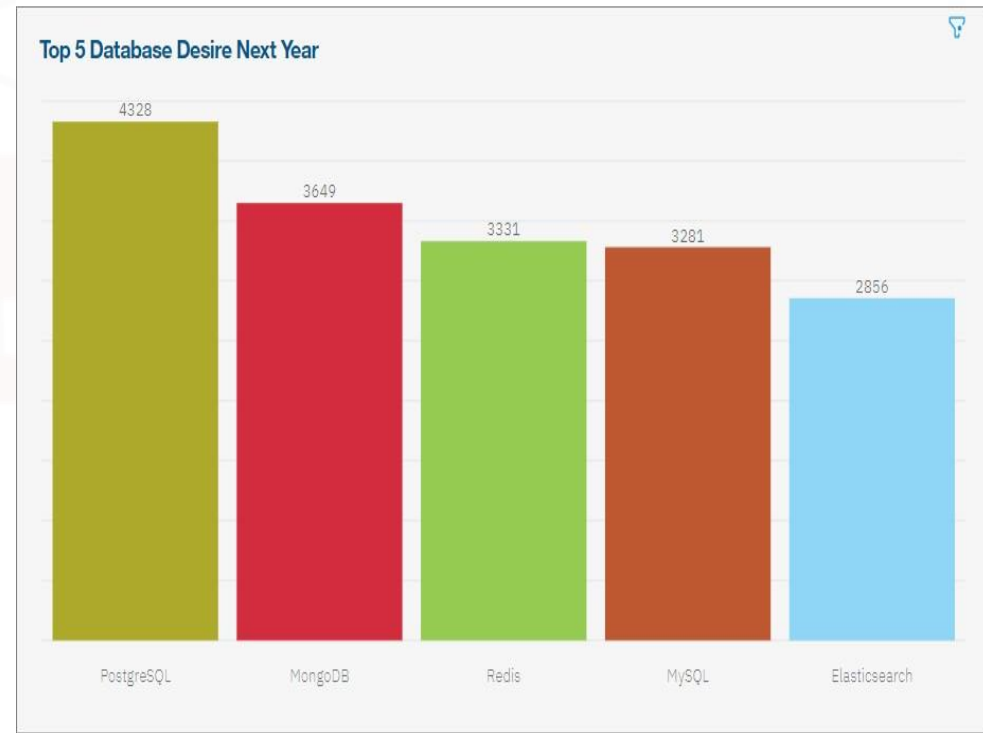
- Developers demand Javascript and HTML/CSS and looks like a tendency next years.
- TypeScript could be an alternative in the future.
- SQL is a must for storage and querying.
- Python, the fastest-growing major programming language, has risen in the ranks of programming.

RESULTS: DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- SQL Server and MySQL were the most popular responder choice in 2019.
- PostgreSQL is taking relevance if we think on previous years.
- Increasing interest in MongoDB and Elasticsearch.

Implications

- Looks like a change of tendency in use of database. Developers are using more and more open-source database programs.
- NoSQL database are gaining popularity between developers.
- The futures developers looks like they are going to work with SQL and NoSql.

DASHBOARD

The following link contains Cognos dashboard Analysis:

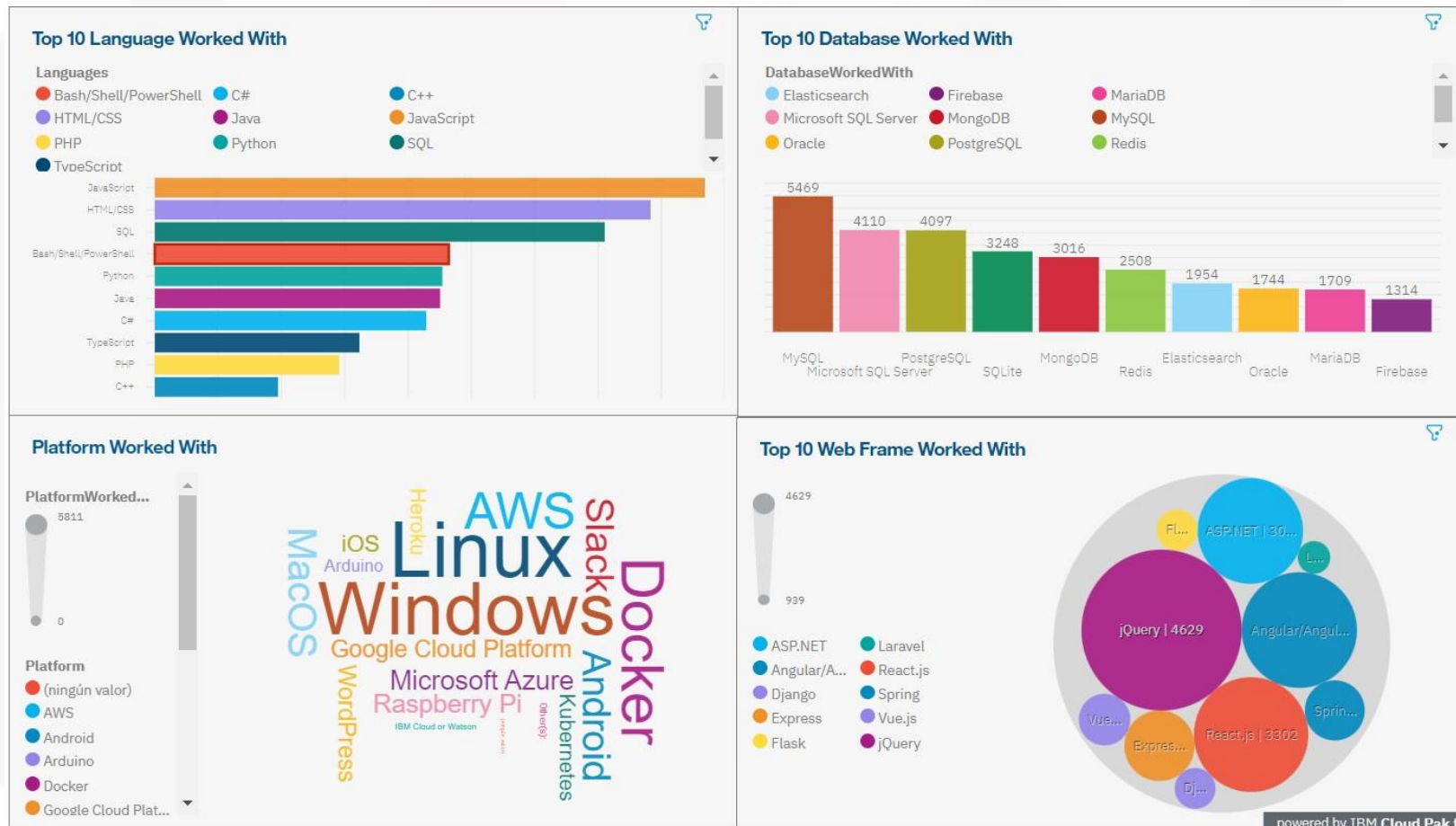
- current technology use.
- future technology trend.
- Demographics of the survey respondents.

[Click here to open the dashboard](#)

Static screenshots of this dashboard are shown in the next slides.

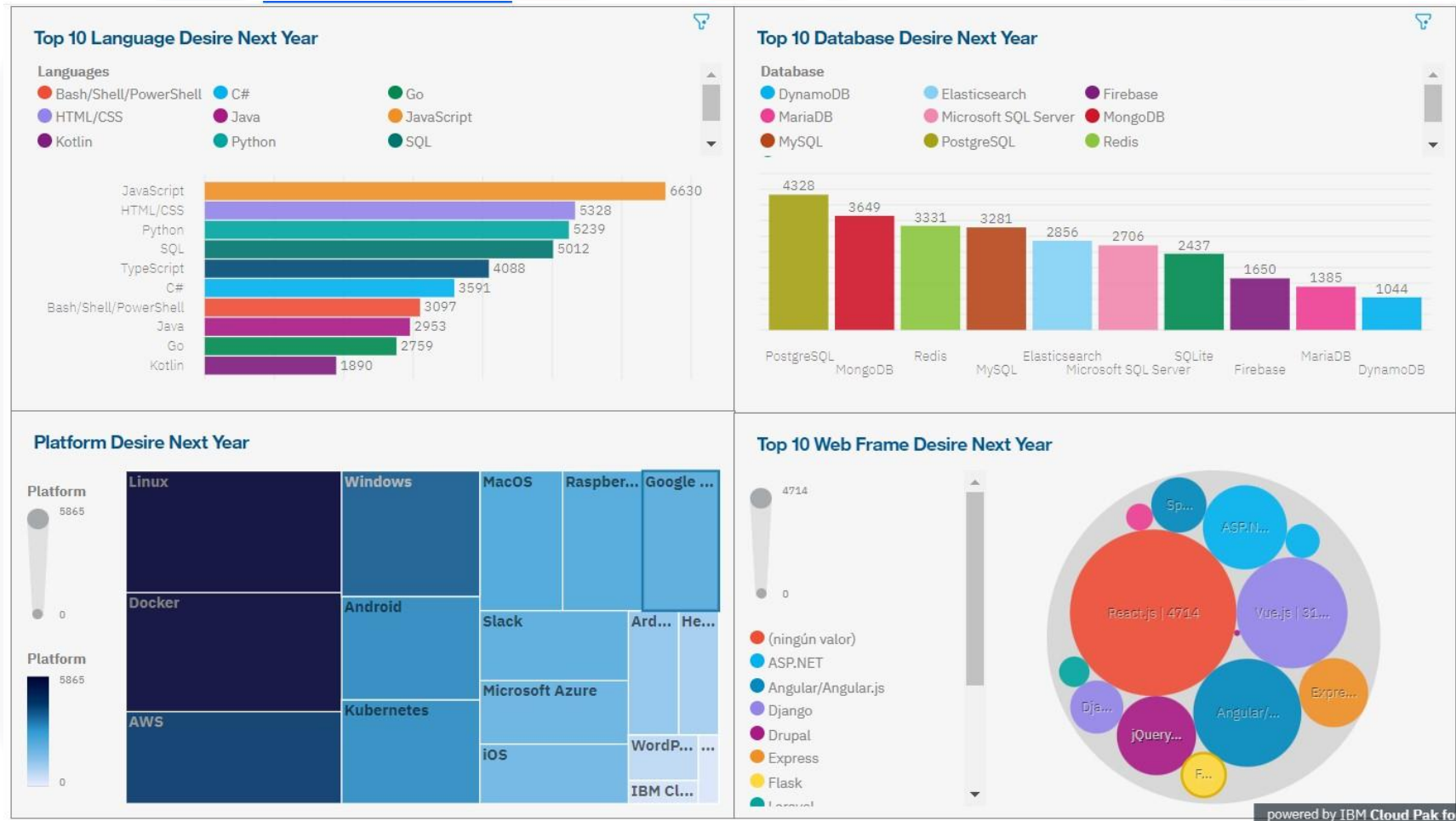
DASHBOARD TAB 1:

Current technology use

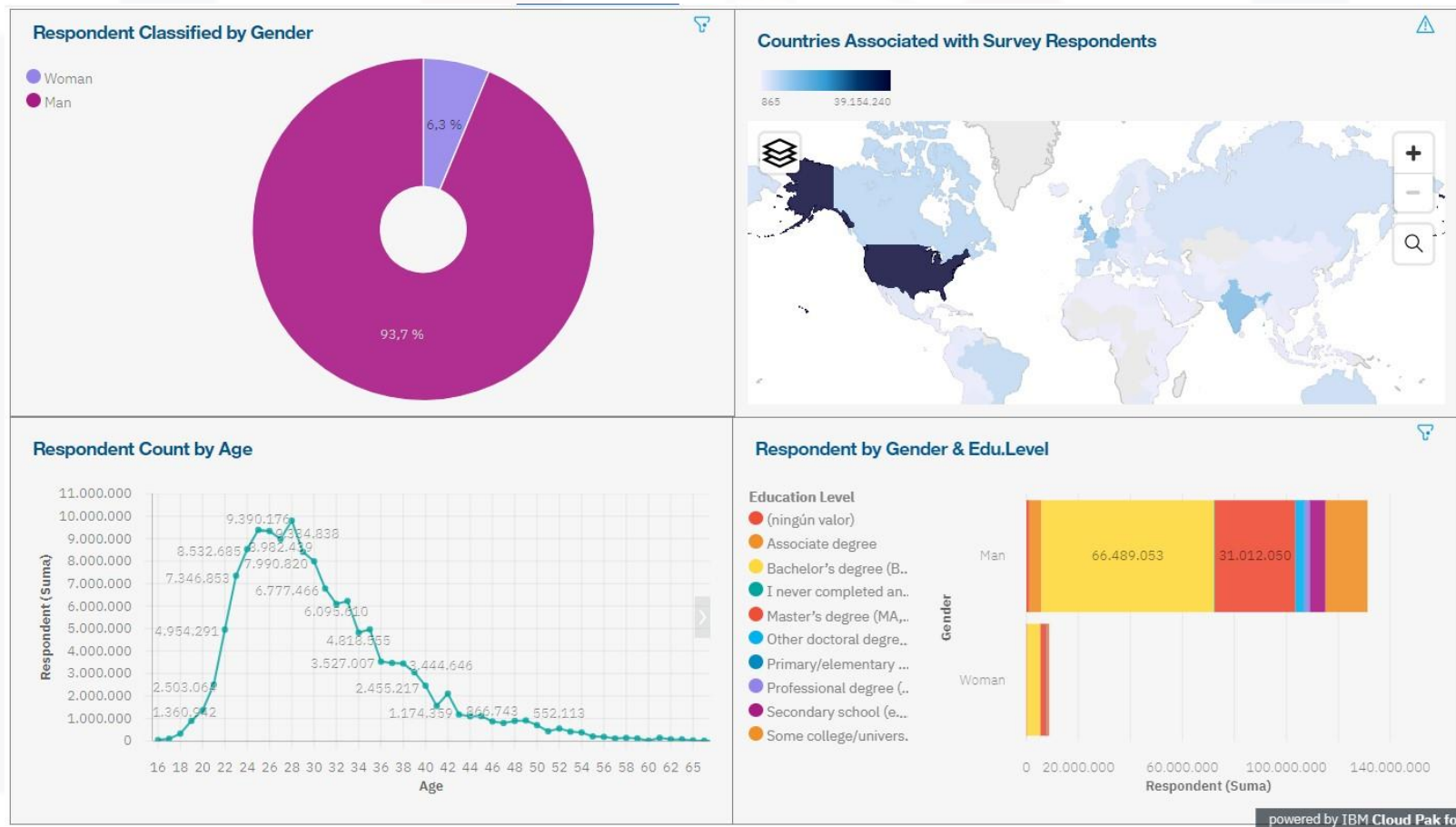


DASHBOARD TAB 2:

Future technology trend



DASHBOARD TAB 3: Demographics of the survey respondents



DISCUSSION

- Taken account about previous information and graph could have answered the next questions:

- What technologies are in top demand this and next year?
- Which technology study if you want to be a developer next year?
- Which is the typical developer profile?
- Is there a gender gap between professionals?
- Which is a good company invest on developers / technologies for next year?

OVERALL FINDINGS & IMPLICATIONS

Findings

- Javascript is the king and will likely be next years.
- SQL is a must for storage and querying.
- Python, the fastest-growing major programming language, has risen in the ranks of programming.
- Looks like a change of tendency in use of databse. Developers are using more and more open-source database programs.
- About 90% of our respondents are men.
- About three-fourths of professional developers are younger than 35.

Implications

- NoSQL database are gaining popularity between developers.
- The futures developers looks like they are going to work with SQL and NoSql.
- In a world where everything is data, developers are going to be highly demanded.
- New developers may consider picking up Typescript in addition to Javascript next yerars.
- SQL it's and is going to be a must in big data.
- Gender gap 90% to 10% it's a problem happening around the world.

CONCLUSION

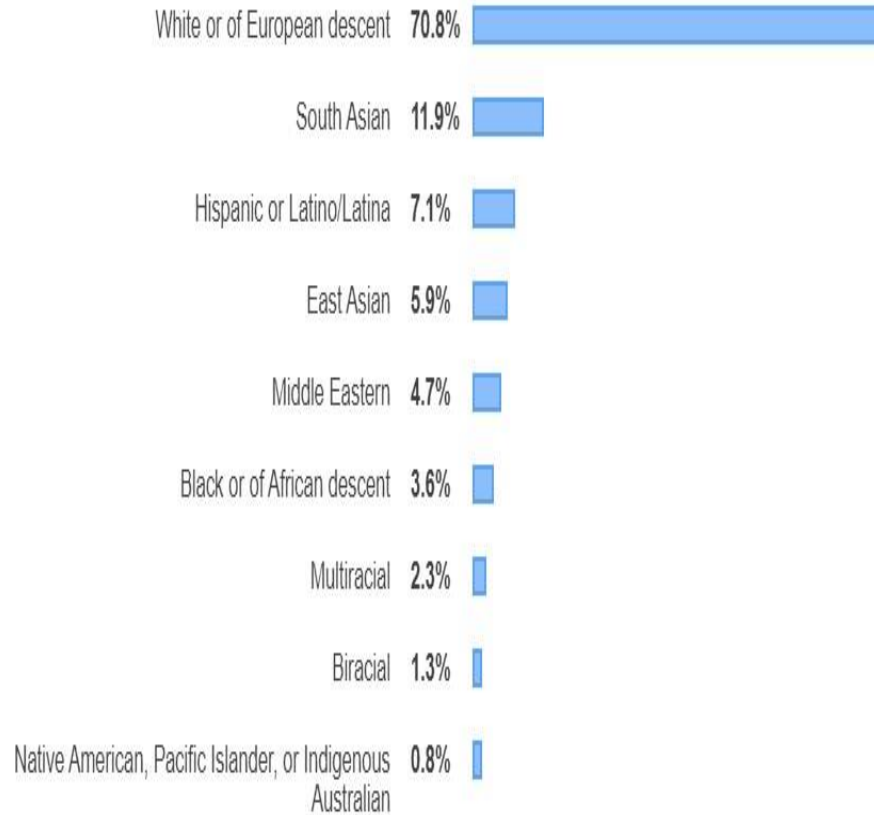


- After the analysis IBM version of “the 2019 Stack Overflow Developer Survey” the conclusion we have are:
 - The developer technology world is in demanding professionals.
 - The top technologies used today are not necessarily used tomorrow but SQL, Python, javascript looks like are going to be relevant next years.
 - There is a gender big gap in the developers’ world.
 - Companies must pay attention to the future technologies tendency to looking for the best professionals needed next years.

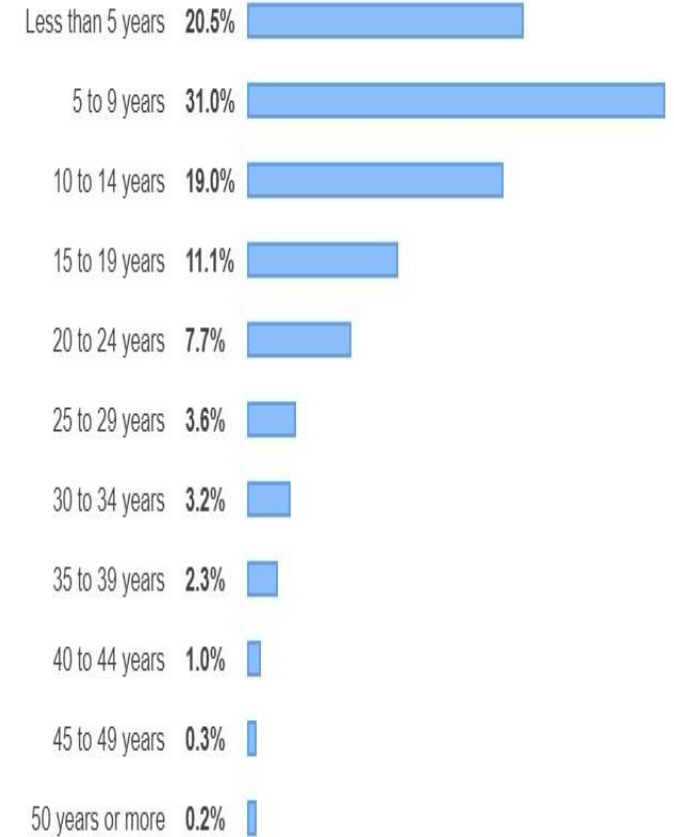
APPENDIX A



Race & Ethnicity

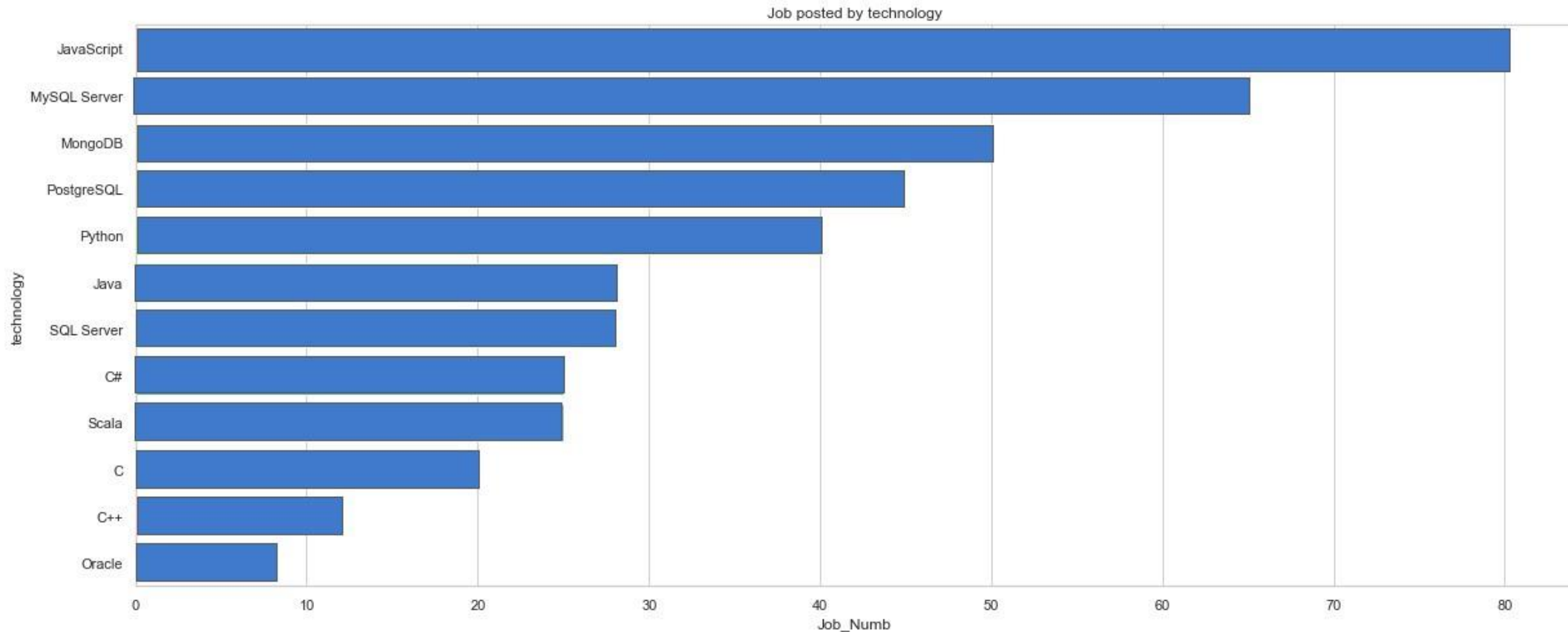


Years since learn to code



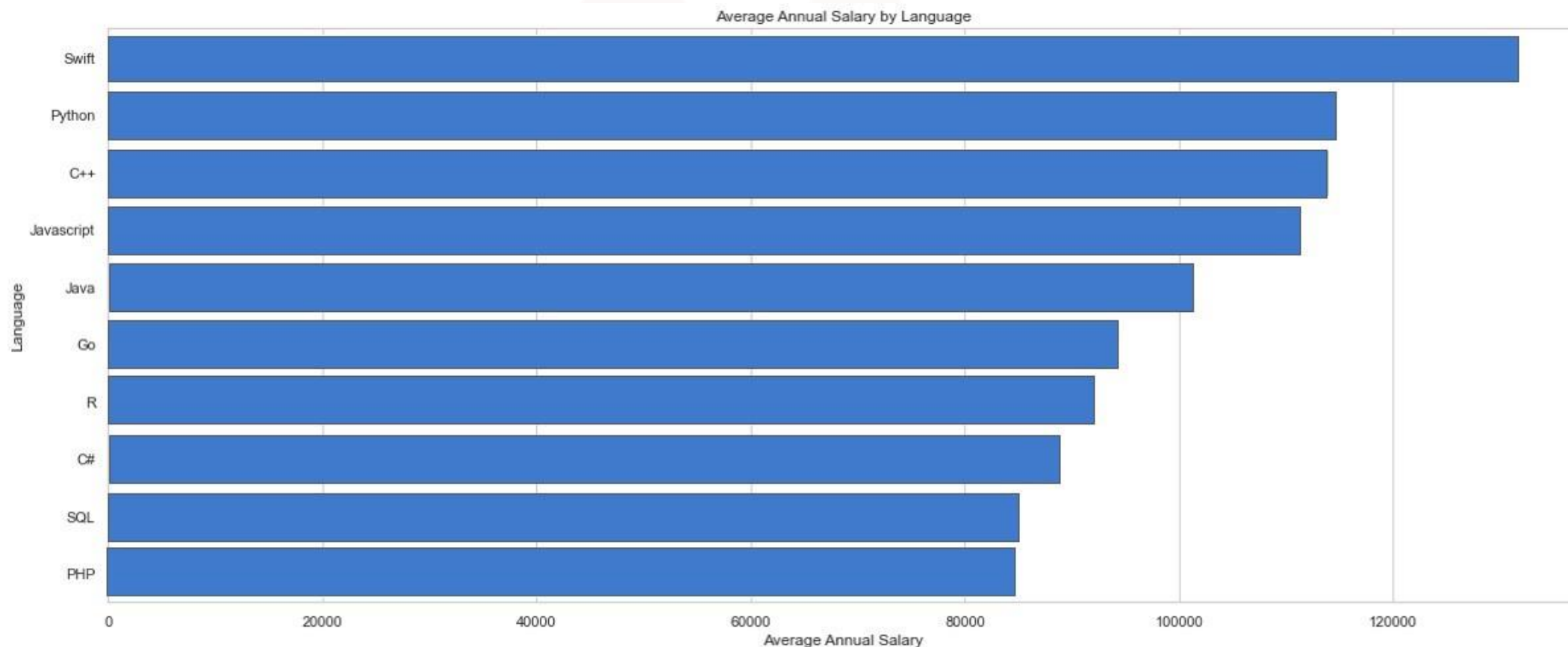
** Note: Info and graph from <https://insights.stackoverflow.com/survey/2019>

APPENDIX B: JOBS POSTING



Note: Data from IBM Module 1 “job-postings.xlsx”.

APPENDIX C: POPULAR LANGUAGES SALARY



Note: Data from IBM Module1 file named "popular-languages.csv".