

The background features a complex geometric pattern of overlapping triangles in shades of gray, blue, and purple. In the top-left triangle, there is a small inset image of a bar chart with an orange trend line and numerical data points. The bottom half of the cover is dominated by a large, vibrant image of a candlestick chart with pink and white bars, overlaid with glowing blue binary code (0s and 1s) and a grid pattern.

YEAR'S REPORT ON EMERGING SKILLS

IBM Data Analytics Capstone Project

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IBM | CURSERA

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OUTLINE

1. Executive Summary
2. Introduction
3. Methodology
4. Results
 - Visualization – Charts
 - Dashboard
5. Discussion
 - Findings & Implications
6. Conclusion
7. Appendix



EXECUTIVE SUMMARY



- 🎯 We work with the stack Overflow Developer Survey 2019

- 🎯 We are looking for analyze:

 - 🎯 Current technology usage

 - 🎯 Future Technology Trends

 - 🎯 Demographics

- 🎯 For the analysis we are going to use CDE (Cognos Dashboard Embedded) and Jupyter notebook.

INTRODUCTION



- Keeping pace with technology change
- Analyzing data to identify future skill requirements
- Question to answer:
 - What are the top programming languages in demand?
 - What are the top database skills in demand?

METHODOLOGY



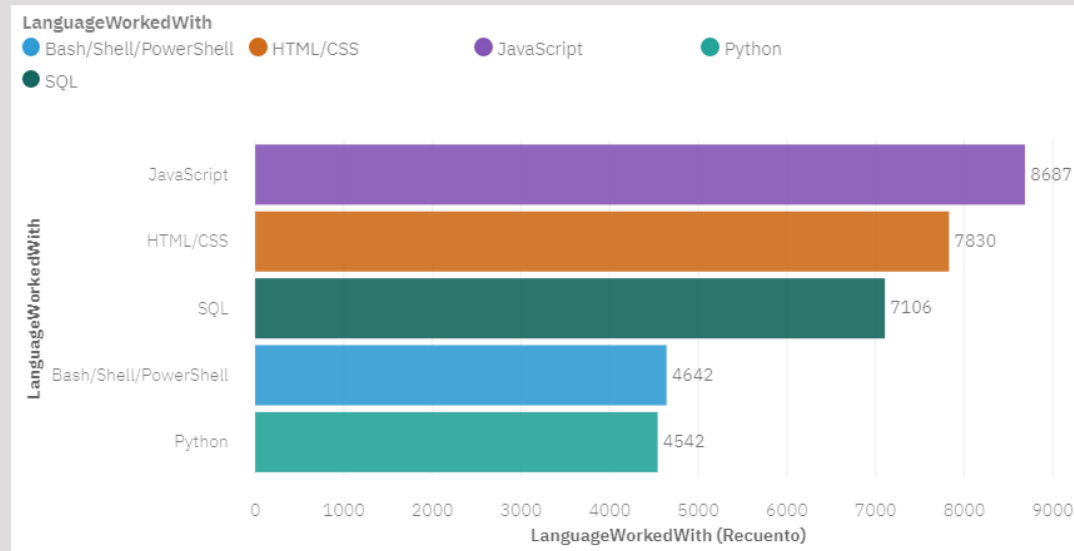
- Data sources
 - GitHub Job postings
 - Programming Languages Annual Salary
 - [Stack Overflow Developer Survey 2019](#)
- Data imported into IBM Cogno Dashboard Embedded (CDE)
 - Randomized subset with $1/10^{\text{th}}$ of the of the original data set
- Process:
 - Data exploration
 - Data wrangling
 - Data exploratory analysis
 - Data visualization using CDE
 - Data presentation

RESULTS

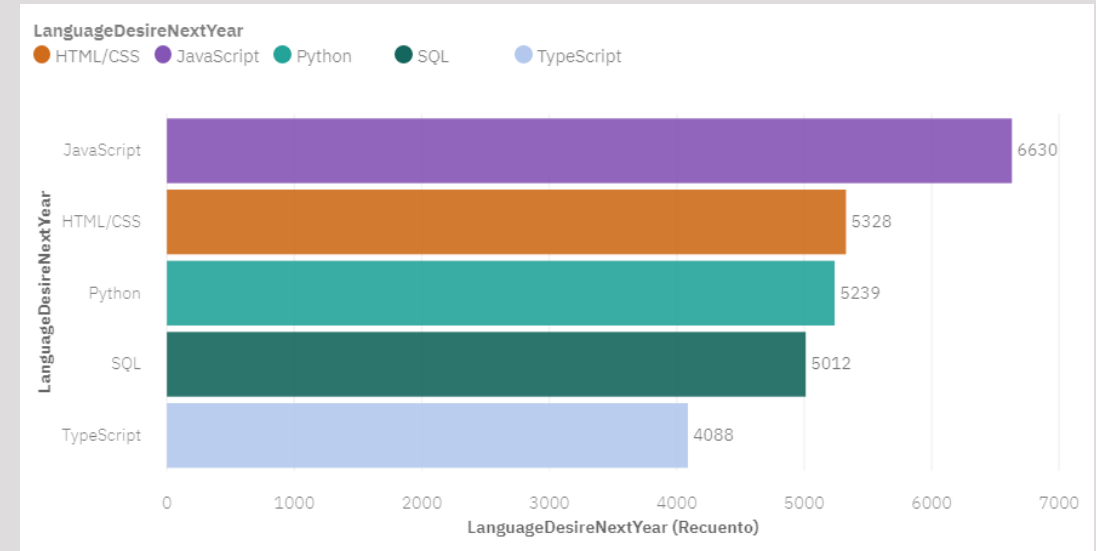
- Programming language trends
- Data base trends
- Current technology usage
- Future technology trend
- Demographics

PROGRAMMING LANGUAGE TRENDS

Top 5 Programming Languages Current Year



Top 5 Programming Languages Next Year



PROGRAMMING LANGUAGE TRENDS

FINDINGS & IMPLICATIONS

FINDINGS

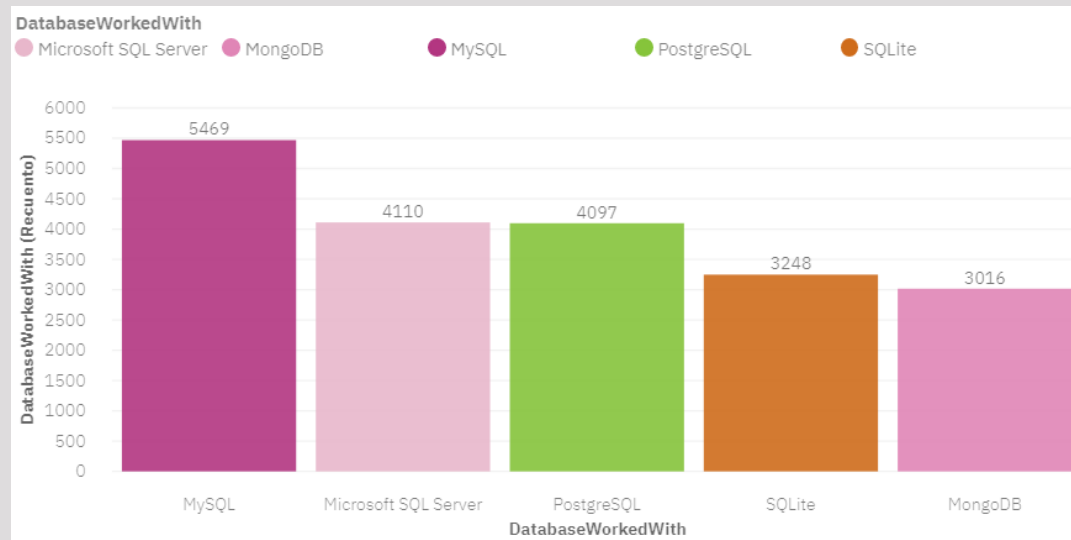
- ***JavaScript*** and ***HTML/CSS*** are the most popular programming language this year and still will be the next year.
- ***Python*** go up in the next year
- ***SQL*** still in top 4
- ***TypeScript*** in top 5 in the next year

IMPLICATIONS

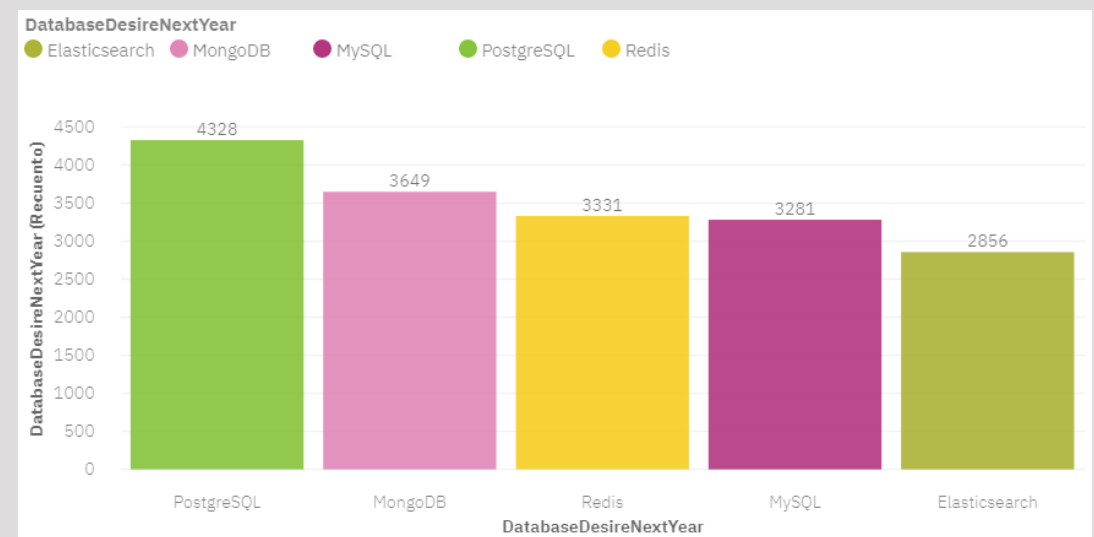
- ***Web technologies*** are habitually in demand and growing.
- ***Typescript*** is going to be an important skill to learn

DATABASE TRENDS

Top 5 Databases Current Year



Top 5 Databases Next Year



DATABASE TRENDS

FINDINGS & IMPLICATIONS

FINDINGS

- Increase of interest in ***PostgreSQL*** and ***MongoDB***
- ***MySQL*** still in top 5
- ***Microsoft SQL Server*** and ***SQLite*** were replaced for ***Redis*** and ***ElasticSearch***

IMPLICATIONS

- ***MySQL*** is still trending, but ***Microsoft SQL Server*** may be not.
- ***NoSQL (MongoDB, ElasticSearch)*** are becoming more popular in the next year.
- ***Open-source database*** are habitually in high demand
- ***Redis*** and ***ElasticSearch*** became emerging popular databases the next year.

METHODOLOGY



↖ [Cognos dashboard](#)

Top 10 Language Worked With

LanguageWorkedWith

● Bash/Shell/PowerShell ● C# ● C++ ● HTML/CSS ● Java ● JavaScript ● PHP ● Python ● SQL ● TypeScript

LanguageWorkedWith	Count
JavaScript	8687
HTML/CSS	7830
SQL	7106
Bash/Shell/PowerShell	4642
Python	4542
Java	4506
C#	4288
TypeScript	3232
PHP	2913
C++	1946

Top 10 Database Worked With

DatabaseWorkedWith

● Elasticsearch ● Firebase ● MariaDB ● Microsoft SQL Server ● MongoDB ● MySQL ● Oracle ● PostgreSQL ● Redis ● SQLite

DatabaseWorkedWith	Count
MySQL	5469
Microsoft SQL Server	4110
PostgreSQL	4097
SQLite	3248
MongoDB	3016
Redis	2508
Elasticsearch	1954
Oracle	1744
MariaDB	1709
Firebase	1314

Platform Worked With

PlatformWorkedWith

● (ningün valor) ● AWS ● Android ● Arduino ● Docker ● Google Cloud Platform ● IBM Cloud or Watson ● Kubernetes ● Linux ● MacOS ● Microsoft Azure ● Other(s): ● Raspberry Pi ● Slack ● Windows ● WordPress ● iOS

Word cloud of platforms worked with. The most prominent words are Linux, Docker, Windows, AWS, and Android. Other visible words include Google Cloud Platform, IBM Cloud or Watson, Kubernetes, MacOS, Microsoft Azure, Other(s):, Raspberry Pi, Slack, WordPress, and iOS.

Top 10 WebFrameWorkedWith

WebFrameWorkedWith

● JQuery ● Vue.js ● Spring ● React.js ● Laravel ● Flask ● Express ● Django ● Angular/Angular.js ● ASP.NET

WebFrameWorkedWith	Count
JQuery	4629
Angular/Angular.js	429
React.js	429
Spring	429
Vue.js	429
Express	429
Django	429
ASP.NET	429
Laravel	429
Flask	429

Platform Worked With (Word Cloud)

Word cloud of platforms worked with. The most prominent words are Linux, Docker, Windows, AWS, and Android. Other visible words include Google Cloud Platform, IBM Cloud or Watson, Kubernetes, MacOS, Microsoft Azure, Other(s):, Raspberry Pi, Slack, WordPress, and iOS.

Top 10 WebFrameWorkedWith (Bubble Chart)

Bubble chart showing the top 10 web frameworks worked with. The size of each bubble represents the count. jQuery is the largest bubble, followed by Angular/Angular.js, React.js, Spring, Vue.js, Express, Django, ASP.NET, Laravel, and Flask.

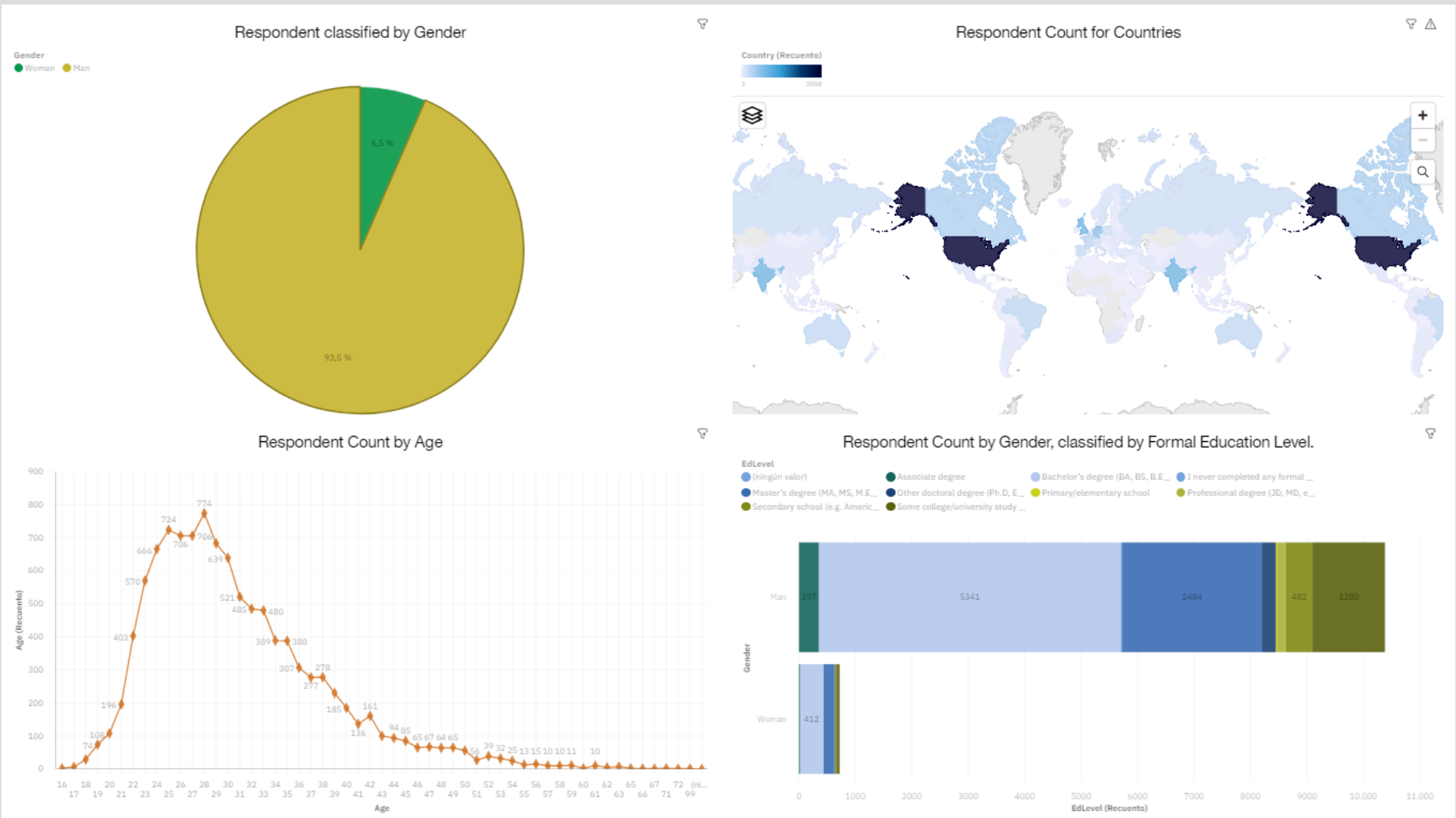
DASHBOARD TAB 2

Future Technology Trend



DASHBOARD TAB 3

Demographics



DISCUSSION



- Typescript vs JavaScript: JS still hot but is important to keep Typescript in sight.
- Bash/Shell/Power Shell in the top 10
- Data with a 93,5% of Men vs 6,5% of Women.
- 50% of respondent between 25 and 35 years old.
- The major part of respond from USA.
- Database trend changes more dynamic than Programing Language.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Many more men than women participated in the survey.
- Programing Language are not going to change significantly in the next year.
- Database change more significantly in the top 5.
- Oracle is not in the top 10 in the next year.

Implications

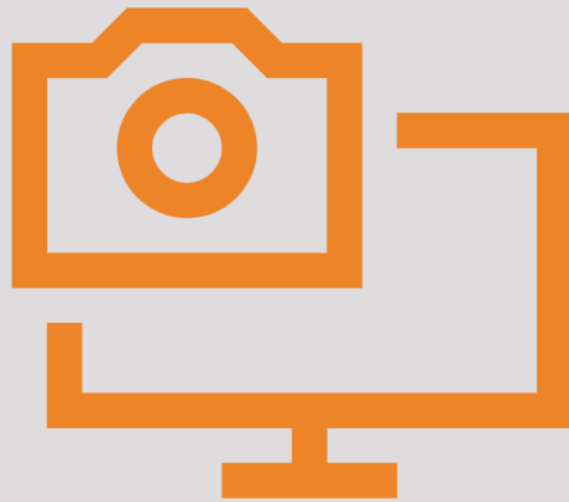
- Needed of data to analyses implications about gender.
- Needed of data to analyses implications about countries.
- JavaScript, HTML/CSS and SQL are very important to developers.
- Platforms like Windows, Linux, Docker and AWS are really important to know.

CONCLUSION

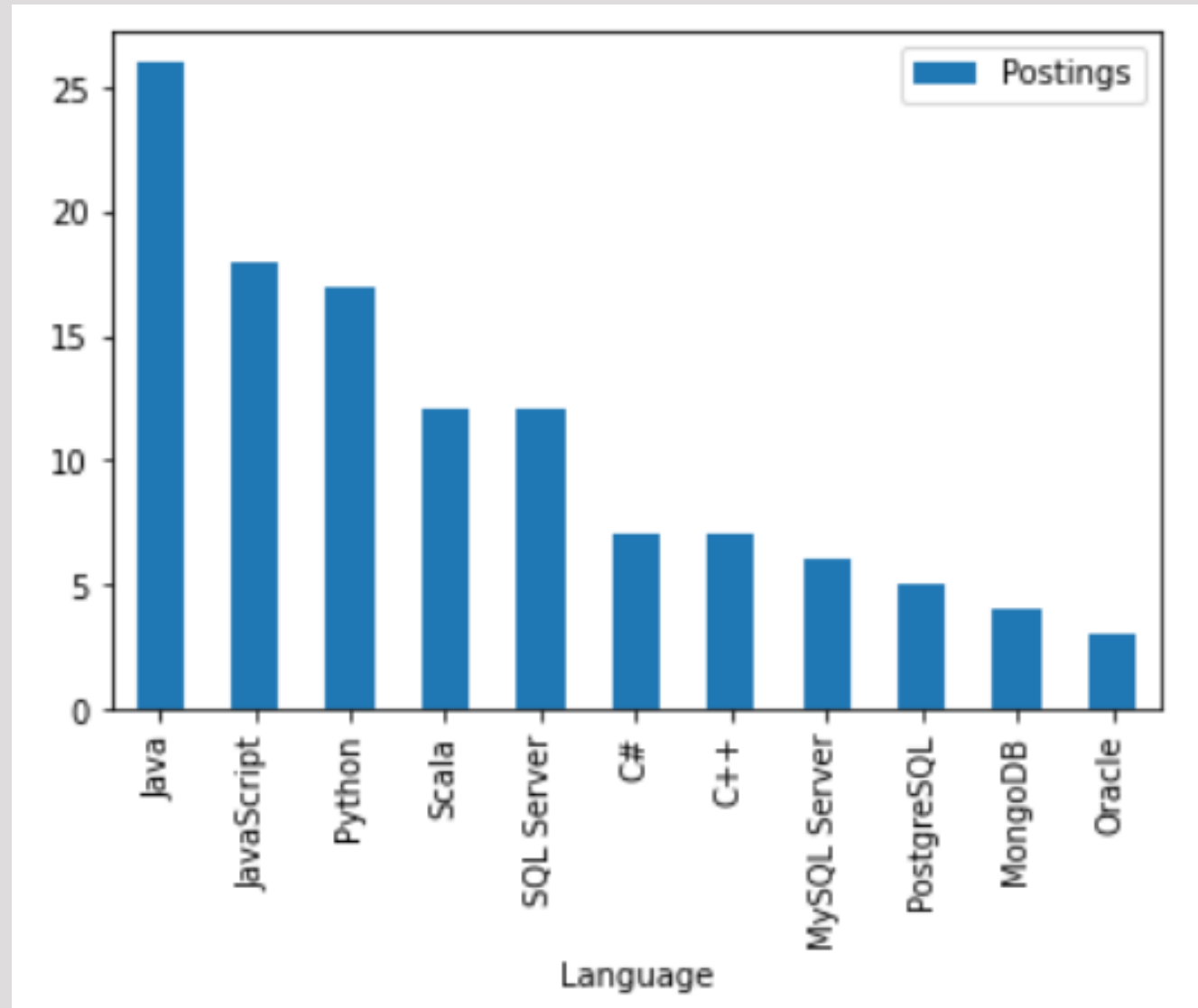


- ✓ An analysis of programming language and Database skills for next year was performed with valuable insight.
- ✓ Many statistical tool were be used in order to perform the successful analysis.
- ✓ This kind of analysis help to keep pace with technology change and identify future skill requirements successfully.

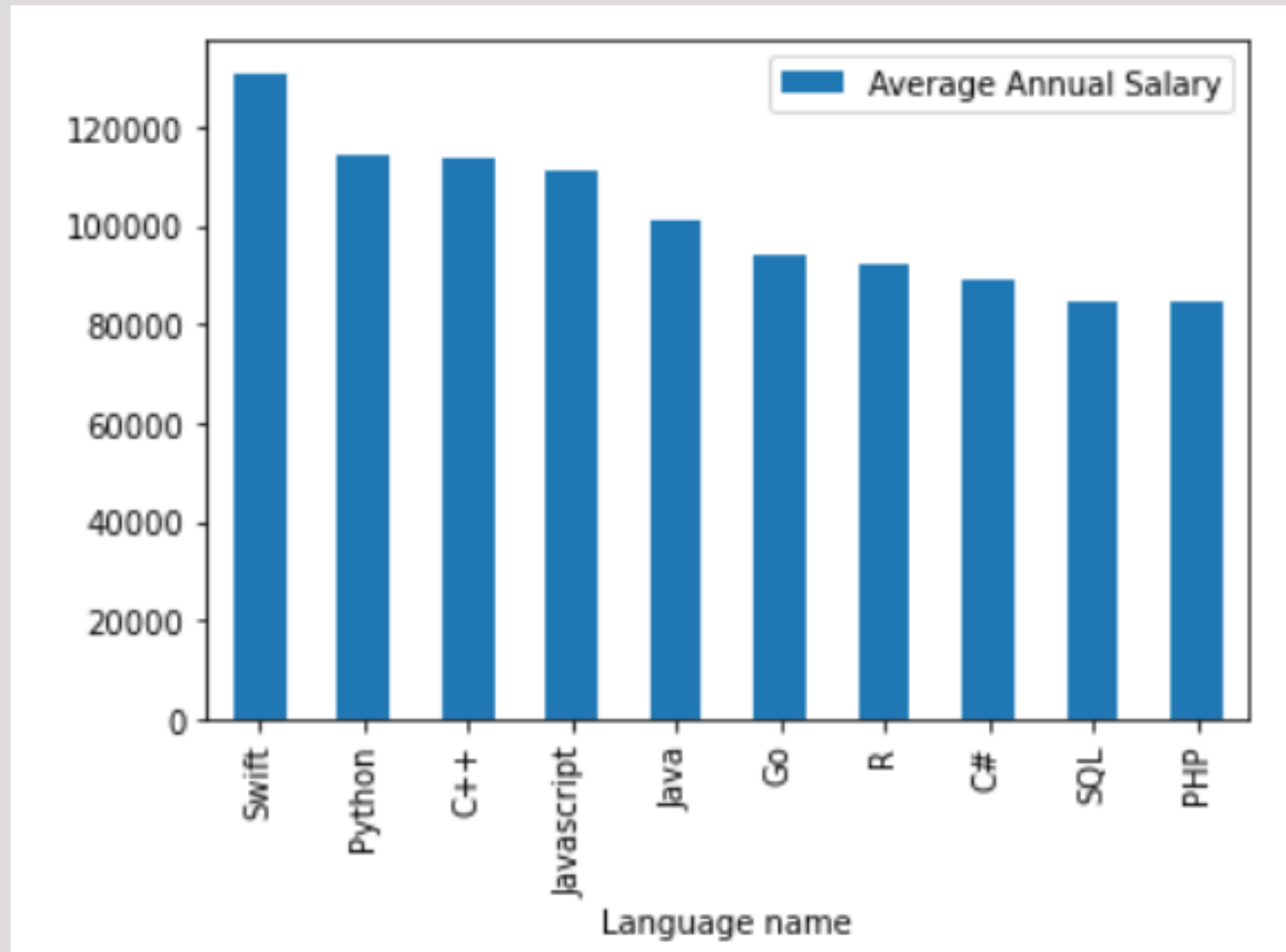
APPENDIX



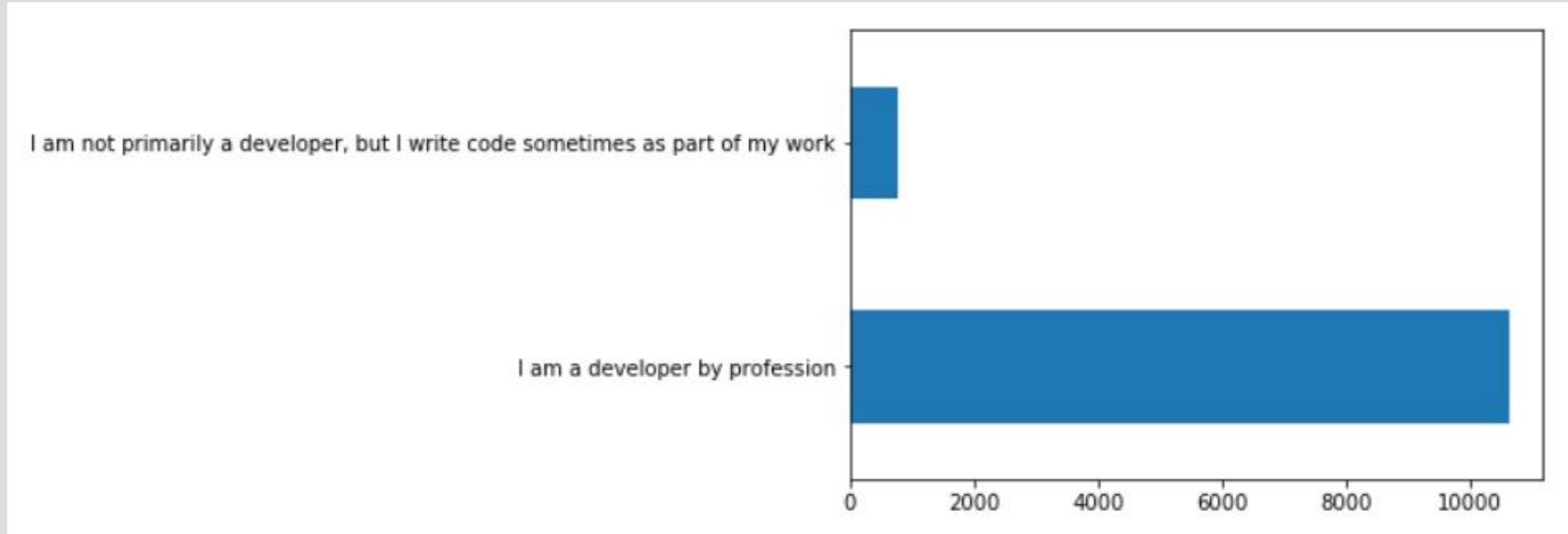
GITHUB JOB POSTINGS



POPULAR LANGUAGES



Main Branch



Thank You!

