Trends of Information Technology

Hoyt Leung

01/04/2022

OUTLINE

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

EXECUTIVE SUMMARY

Trends

- Linux is the most common use platform
- The use of Python will increase 15 % next year
- Top 3 used databases will all be NoSQL databases in the following year

Demographics

- 11211 respondents
  - 93.5% men
  - 6.5% women
- 8477 (75.6%) respondents are at the age between 21 to 35

INTRODUCTION

- Discuss the usage and the trends of programming languages
- Discuss the usage and the trends of databases
- Overview of dashboards
- Summary of the demographics of technology industry

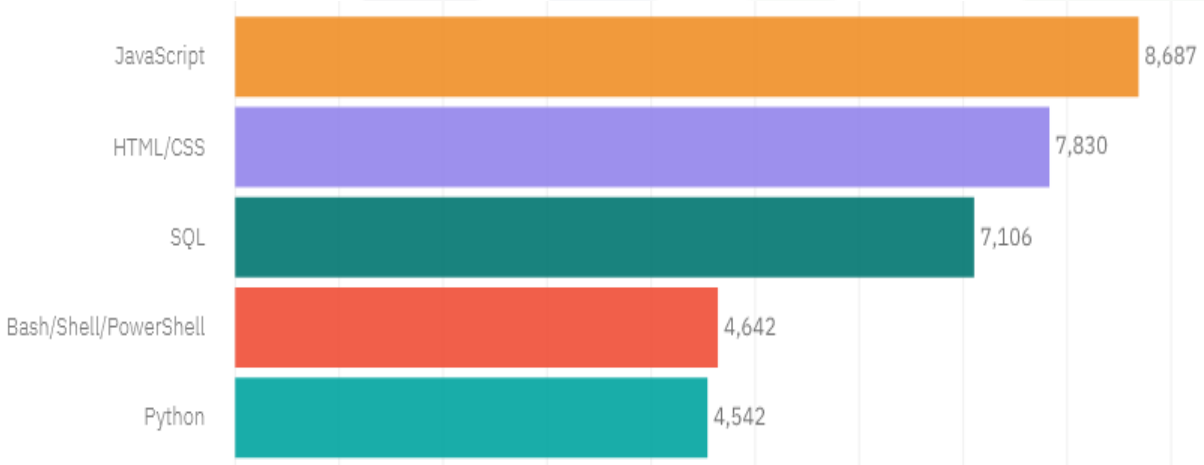
METHODOLOGY

- Survey on demographics of technology industry
- Survey on tools that practitioners in the industry use
- Web Scraping
  - Numbers of job postings of programming languages
  - Average annual salaries of programming languages
- Analysis and visualise the results of the surveys

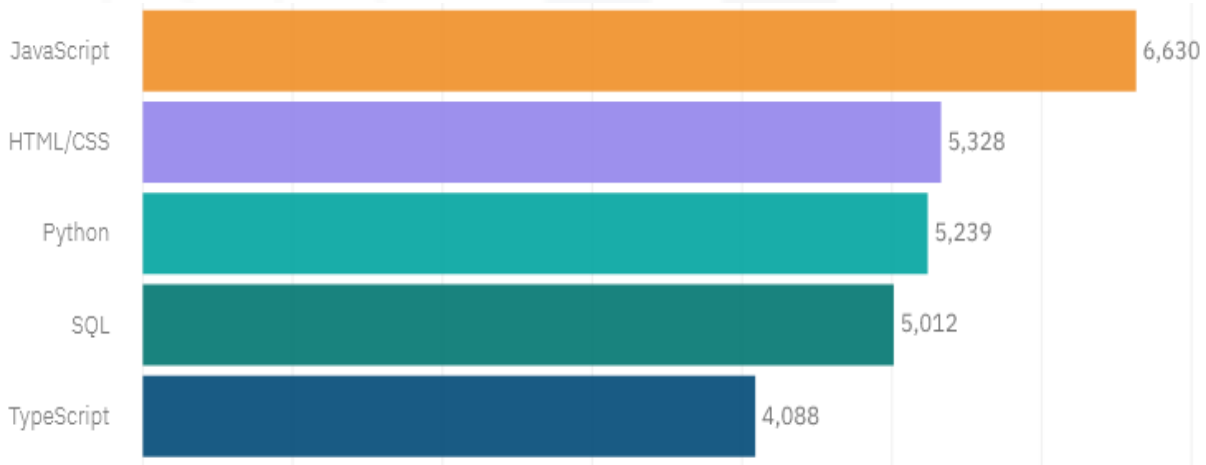
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

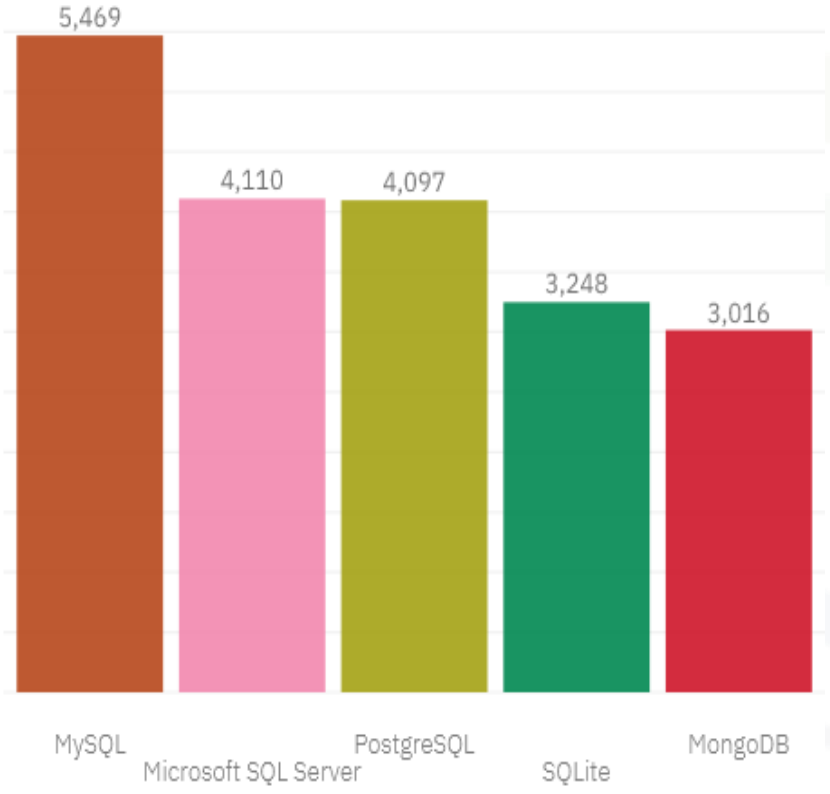
- JavaScript and HTML/CSS are top 2 languages both this year and next year
- Users of Python will increase by 15% in the following year
- More than 2100 (29.5%) respondents claim they will not use SQL next year

Implications

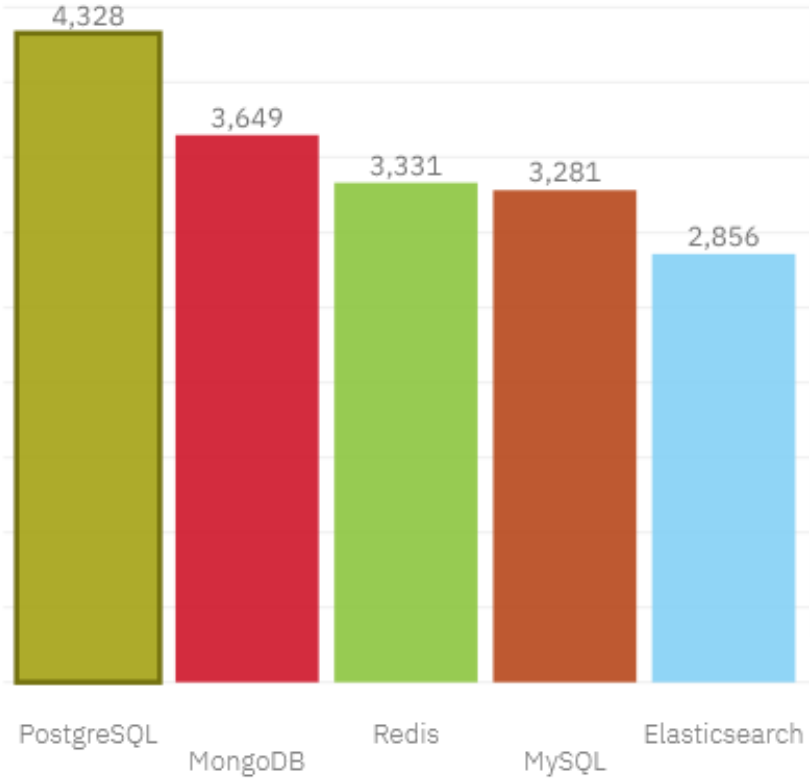
- JavaScript and HTML/CSS will still be the tools for web development in nearly future
- Due to its low difficulty and having extensive libraries, the popularity of Python is expected to grow rapidly in future
- Usage of SQL databases will possibly decrease in consequence of less SQL users

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 3 databases (PostgreSQL, MongoDB, Redis) will all be NoSQL databases in the following year
- Users of PostgreSQL, MongoDB and Redis will increase 6%, 21% and 33% respectively
- Users of MySQL and MS SQL Server will drop 40% and 34% respectively

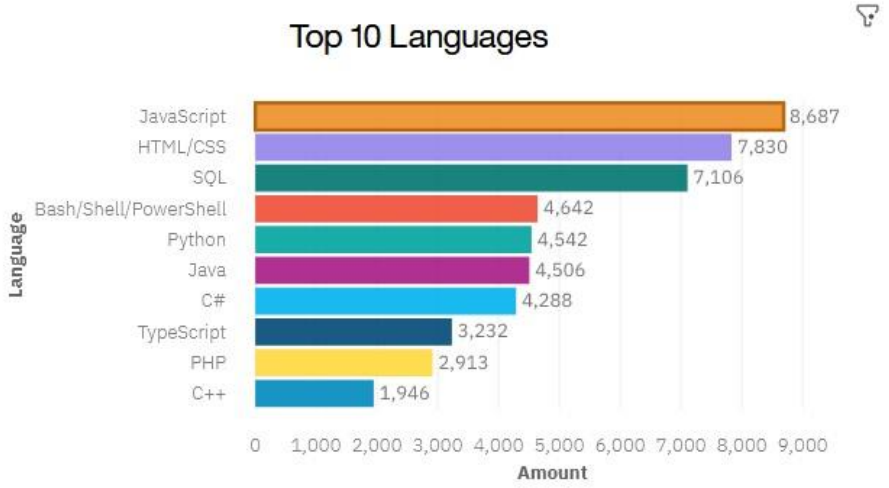
Implications

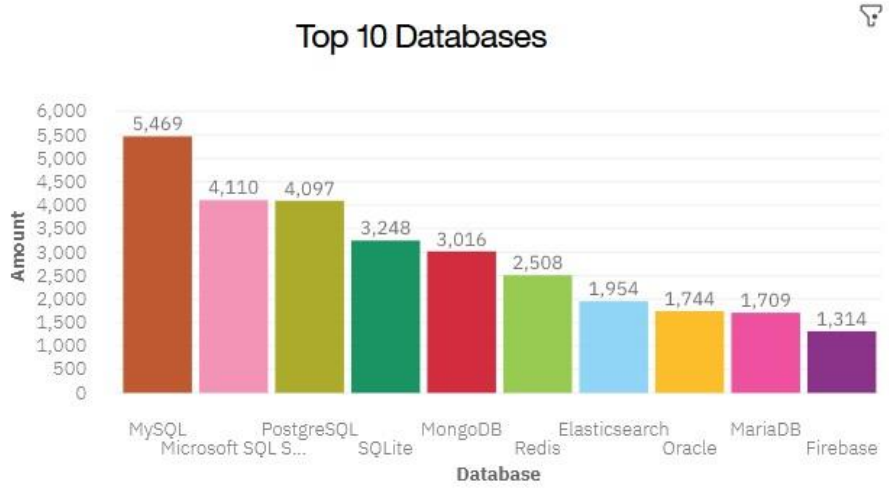
- Benefiting from its properties, we predict NoSQL databases will be more generally used in future
- Comparatively, usage of SQL databases is expected to keep dropping down

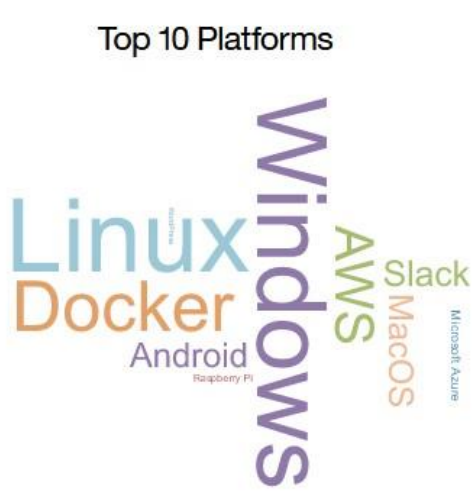
DASHBOARD

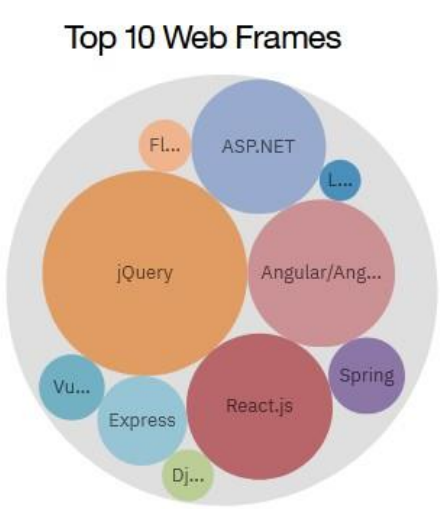
https://dataplatform.cloud.ibm.com/dashboards/3ed7e9af-85b8-4b48-8045-ab0eaa392ead/view/0e11d00e12a96fcb48cad4e407cf2b0f7566265ab2bb8604d68d7b495d637197a86e1a97c87c485ddf470331a7b9120c9b

DASHBOARD TAB 1

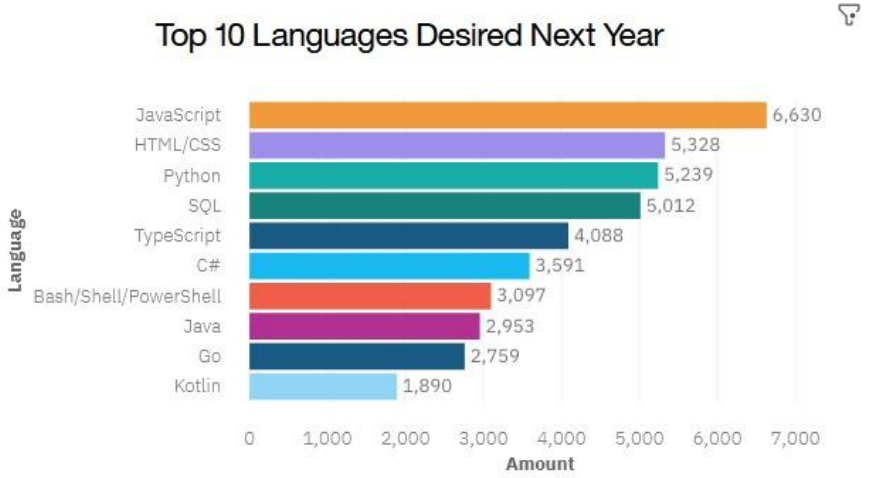


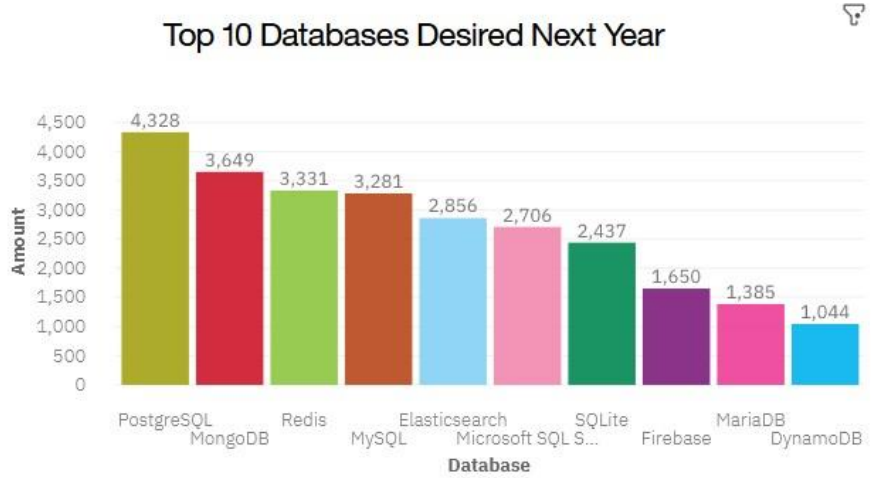


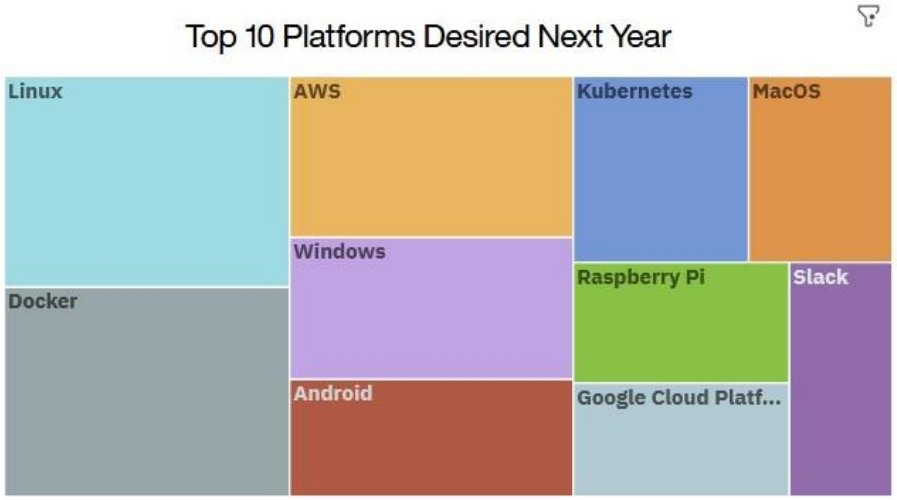


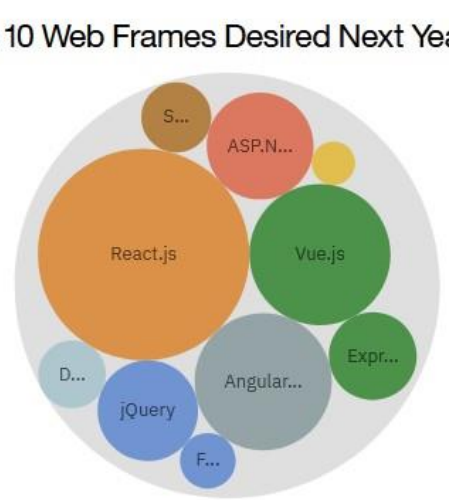


DASHBOARD TAB 2

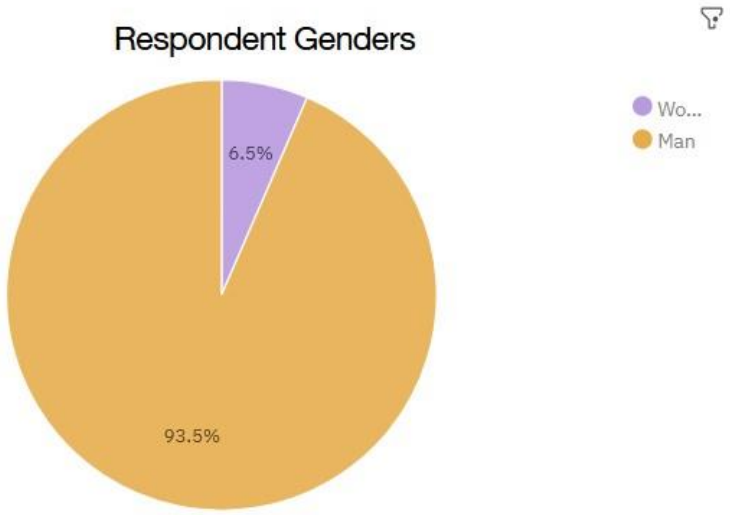


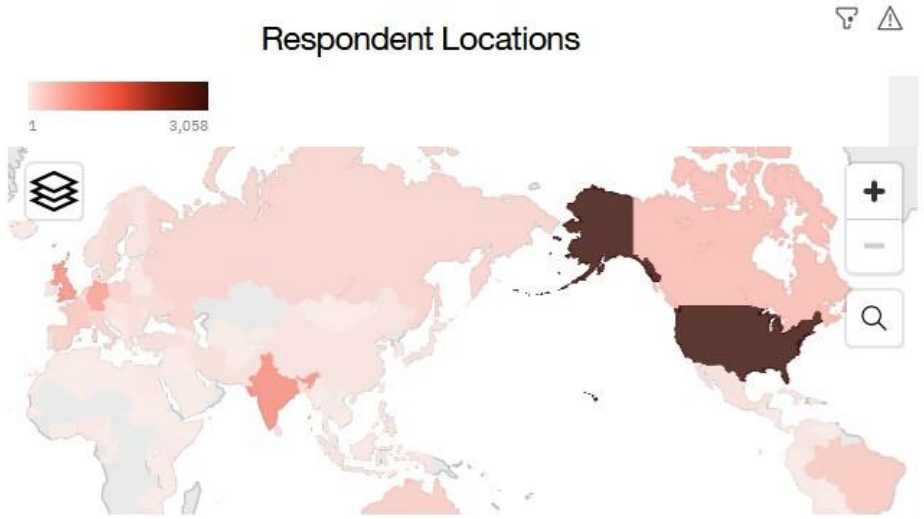


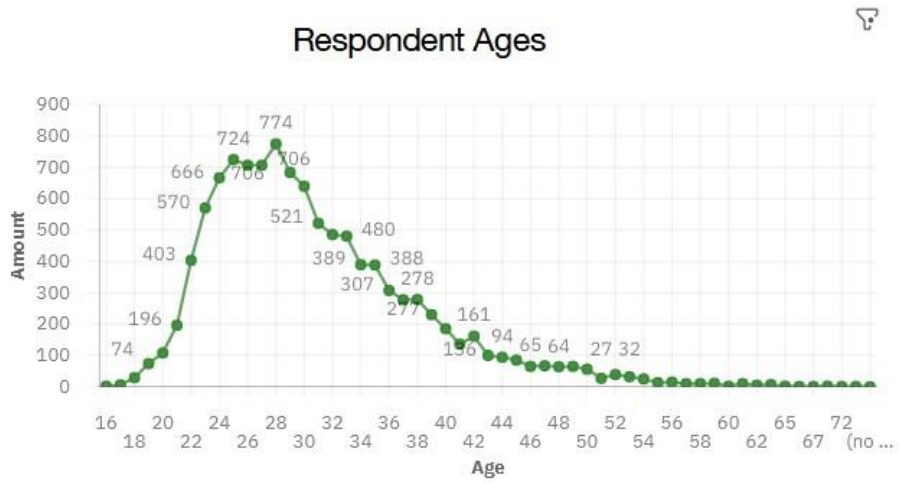


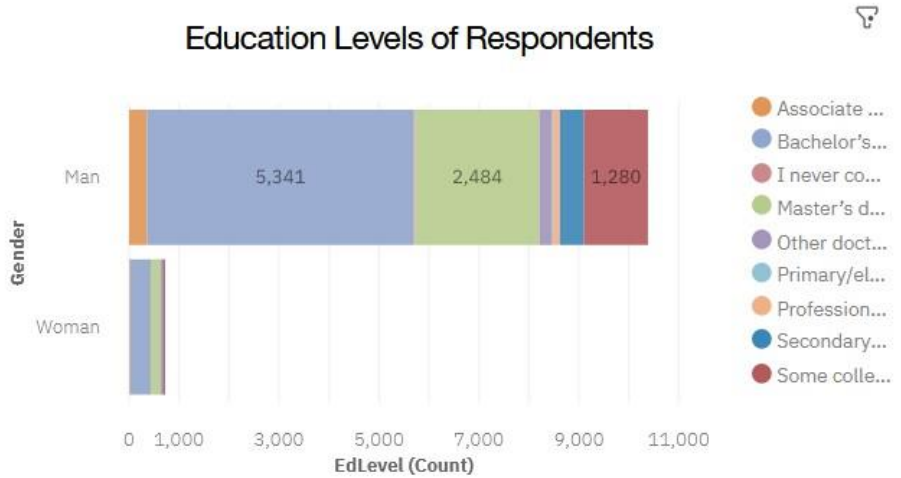


DASHBOARD TAB 3









DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Linux is the preferable platform
- Users of Docker and AWS will exceed Window in next year
- 93.5% respondents are men. The ratio of men to women is 14.4:1
- 75.6% respondents are in the range of 21 to 35 years old

Implications

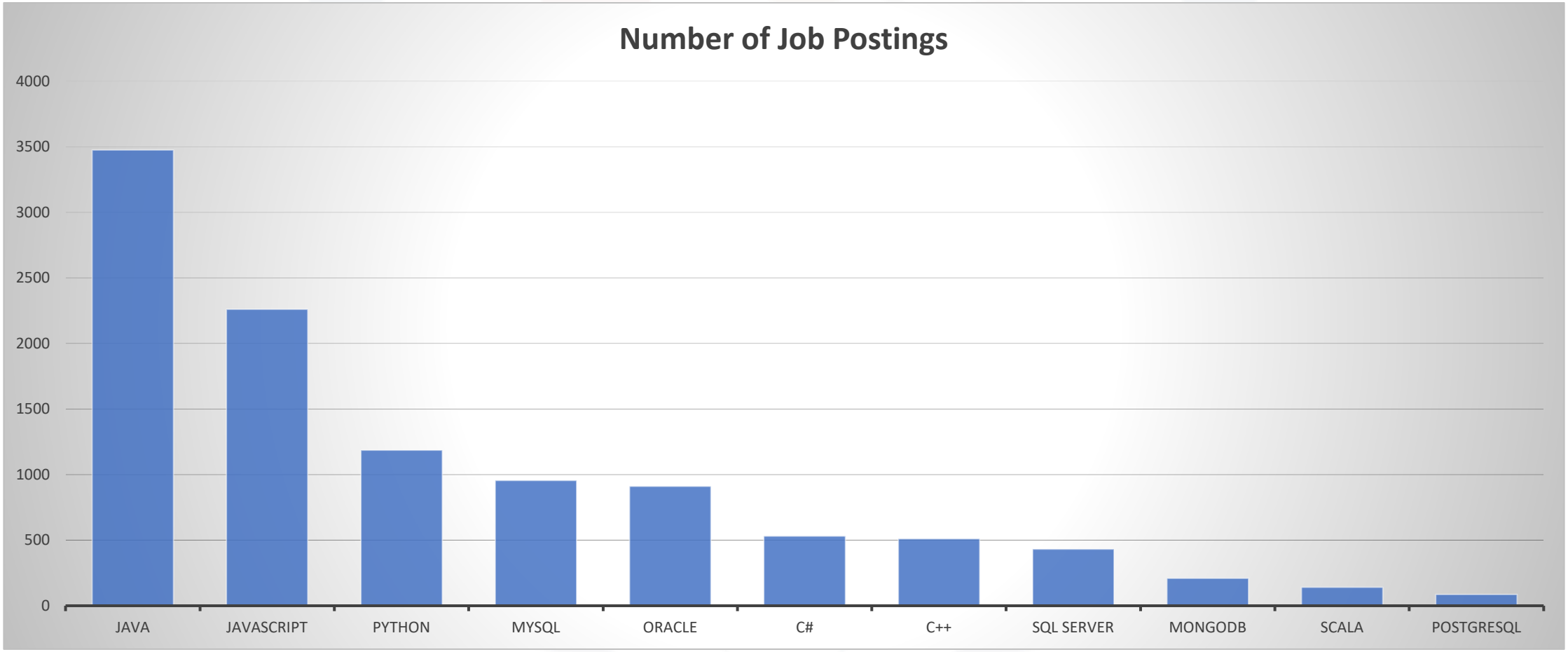
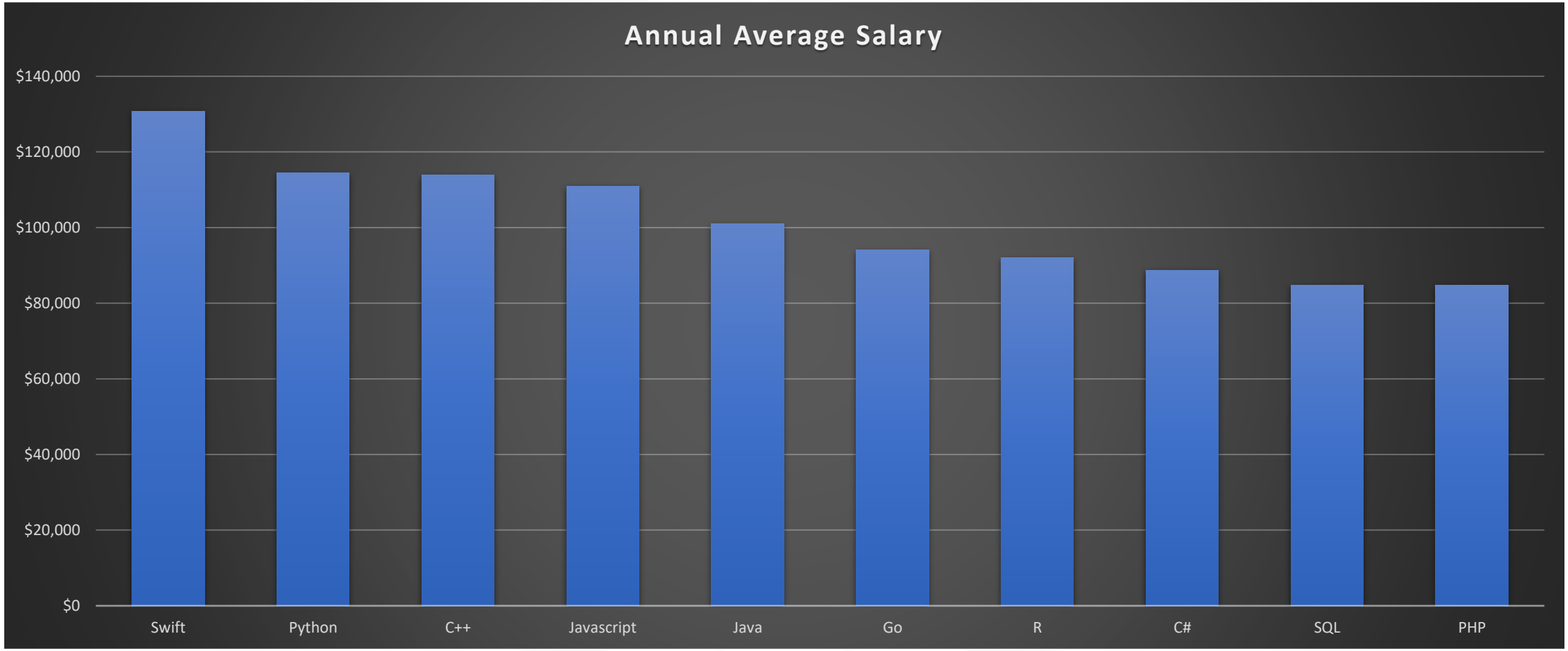
- Companies are looking for solutions to optimise their systems and improve the performance
- Proprietary software, such as Window, is not developer friendly and flexible enough
- Further research and changes are required to encourage more women to enter the industry

CONCLUSION

- Multi-purpose and easy to learn make Python becomes one of the most popular programming language recently
- Flexible platforms and databases can optimise systems, improve the performance and closely meet company needs
- Young generation is willing to join technology industry. However, more promotions are needed to women and people from worldwide

APPENDIX

GITHUB JOB POSTINGS



POPULAR LANGUAGES