Final Capstone Project

Simon Li

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OUTLINE

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

EXECUTIVE SUMMARY

- The goal of this project was to look into trends in the IT industry including current and projected technology trends using the analysis of programming languages and databases used.
- Data sources came from a survey on Stack Overflow, IBM Website, and job postings on GitHub's website and then subjected to cleaning and analysis. It was then visualized on dashboards
- The findings show that Javascript is the most popular programming language, and it will also be the most popular in the future as well
- The findings also suggest that the most popular database is MySQL, but PostgreSQL's popularity is on the rise.
- Additionally, data was collected on the genders and education levels of respondents

INTRODUCTION

- The presentation uses data analytics to emphasize current and projected trends in technologies used in the IT industry.
- Key questions driving the project:
  - Which languages are in demand?
  - What are the most popular databases being used?
  - Which web frames and IDEs are trending in the industry?
- This presentation is aimed at professionals within the IT industry along with HR managers and anyone else with interest in the industry

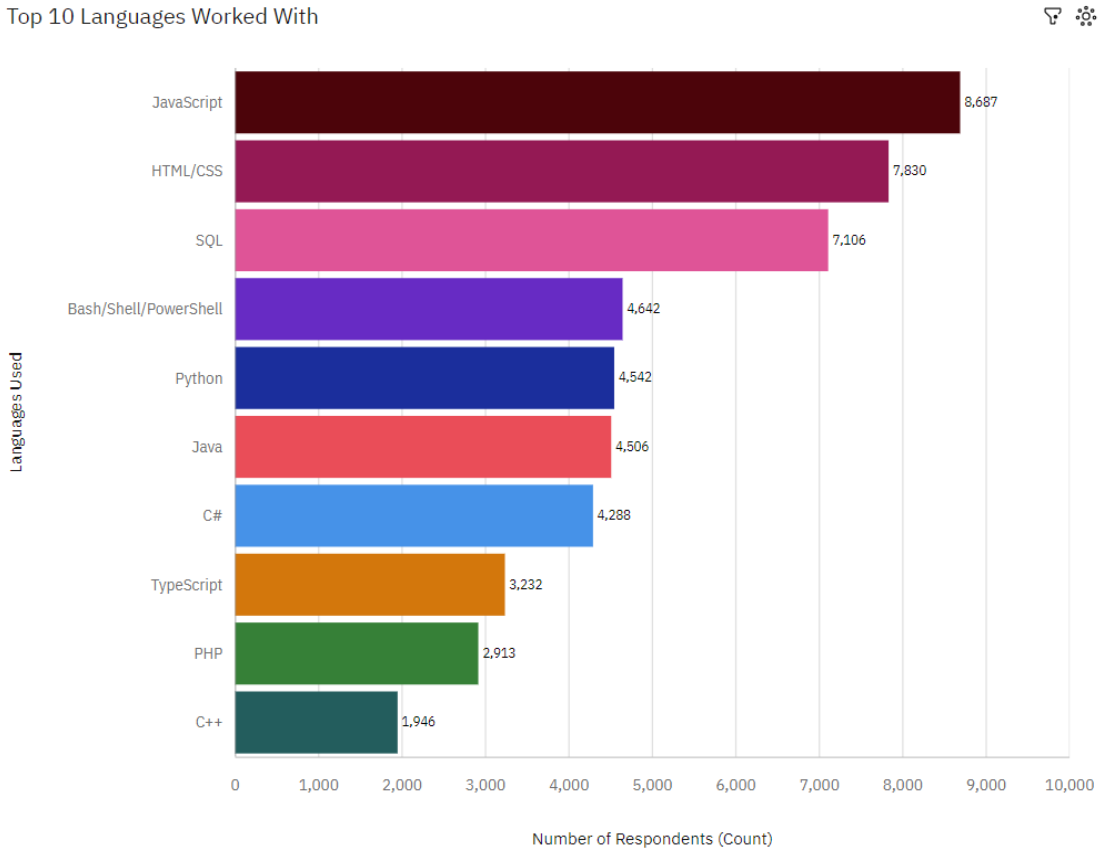
METHODOLOGY

- Data such as the number of job postings was collected from the Github Jobs API using Python and data on languages and wages were collected via web scraping from the IBM website. Other data was downloaded from the Stack Overflow survey.
- Data was cleaned and analyzed using Python
- Results and findings were visualized using both Python and IBM Cognos Analytics

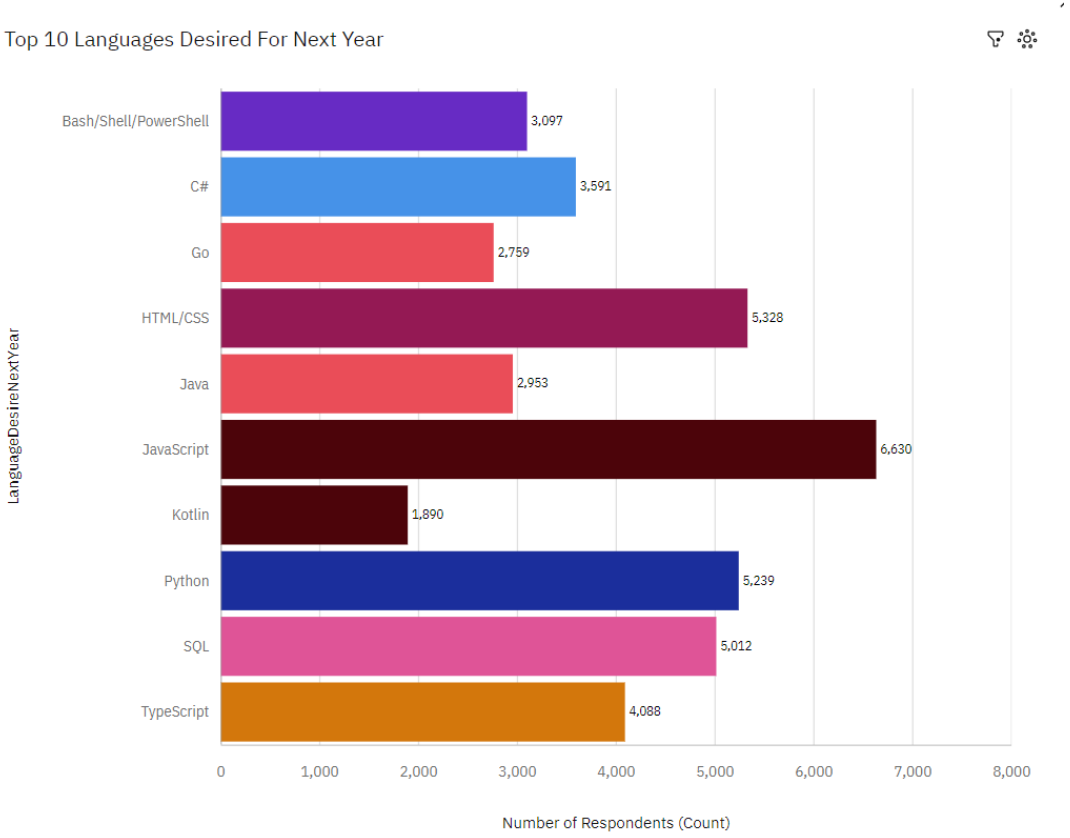
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

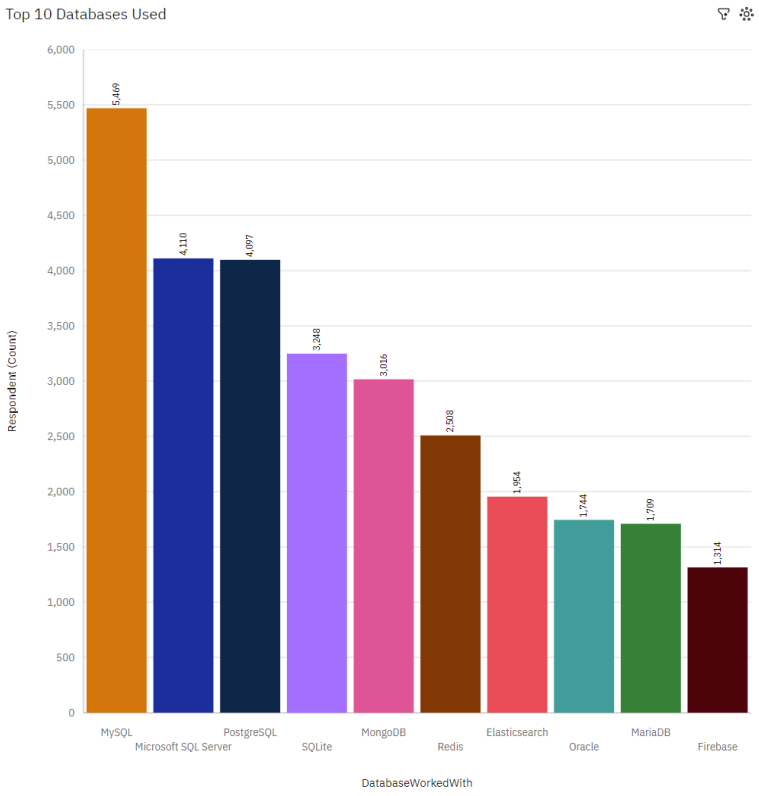
- The chart shows that Javascript is currently the most popular language to work with along with HTML/CSS
- Javascript also continues to be the most desired language for next year
- SQL's demand isn't changing too much , but there's growing interest in Python

Implications

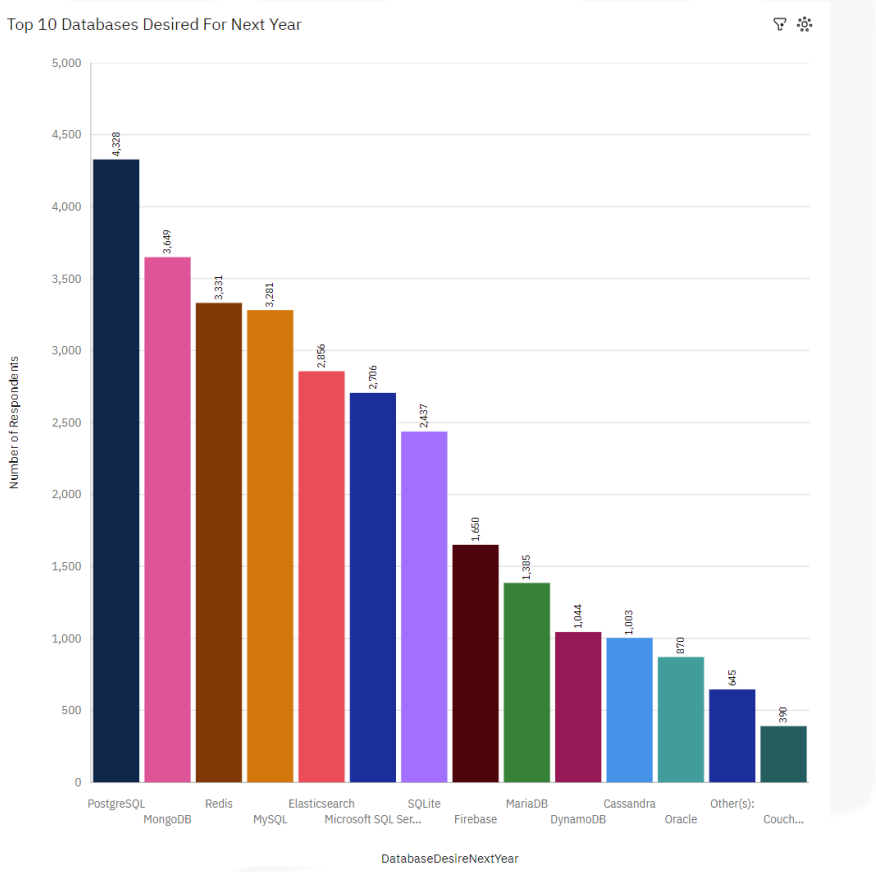
- Javascript and HTML will remain as the most popular due to the growing interest in application development
- The growing interest in Python suggest that there's growing interest in data analytics as well which aligns with the growing demand for data driven decision making.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is currently the most widely used database with Microsoft SQL server and Postgre SQL being tied for the next most popular
- Postgre SQL seems to be popular for the future with other servers growing in interest as well such as MongoDB and Redis
- There appears to be a decrease in demand for MySQL as well

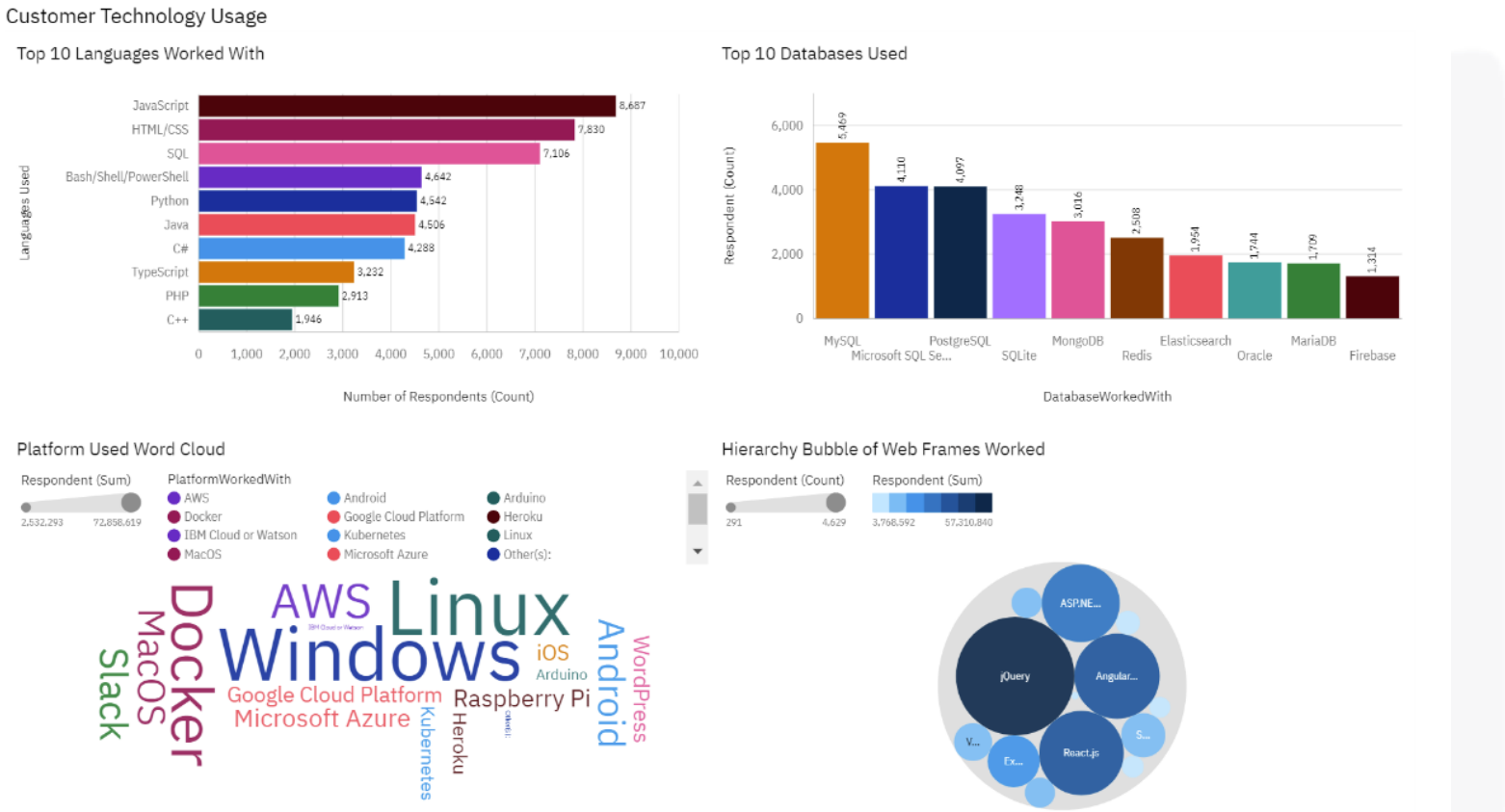
Implications

- SQL continues to be a prevalent database to use
- Open source databases continue to be popular within the industry
- Despite SQL's steady widespread use, other databases such as MongoDB are starting to grow in popularity

DASHBOARD

https://github.com/simon-xm97/certwork/blob/f30a638440abbc75702022d317408156b0f673a8/IBM%20Final%20Project%20Dashboard.pdf

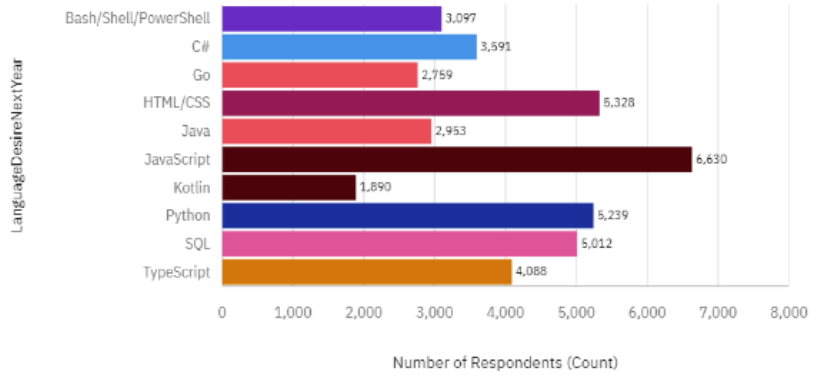
Dashboard of Current Technology Use



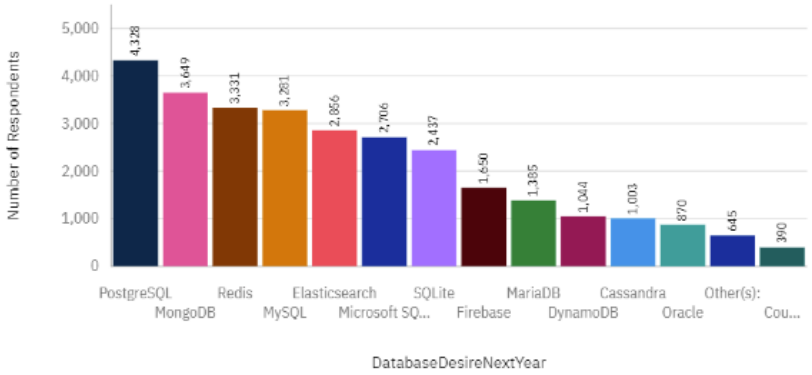
Dashboard of Future Technology Use

Future Technology Trend

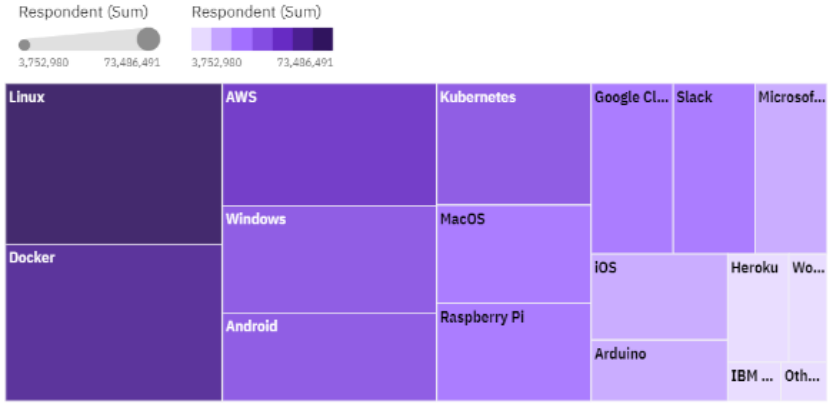
Top 10 Languages Desired For Next Year



Top 10 Databases Desired For Next Year

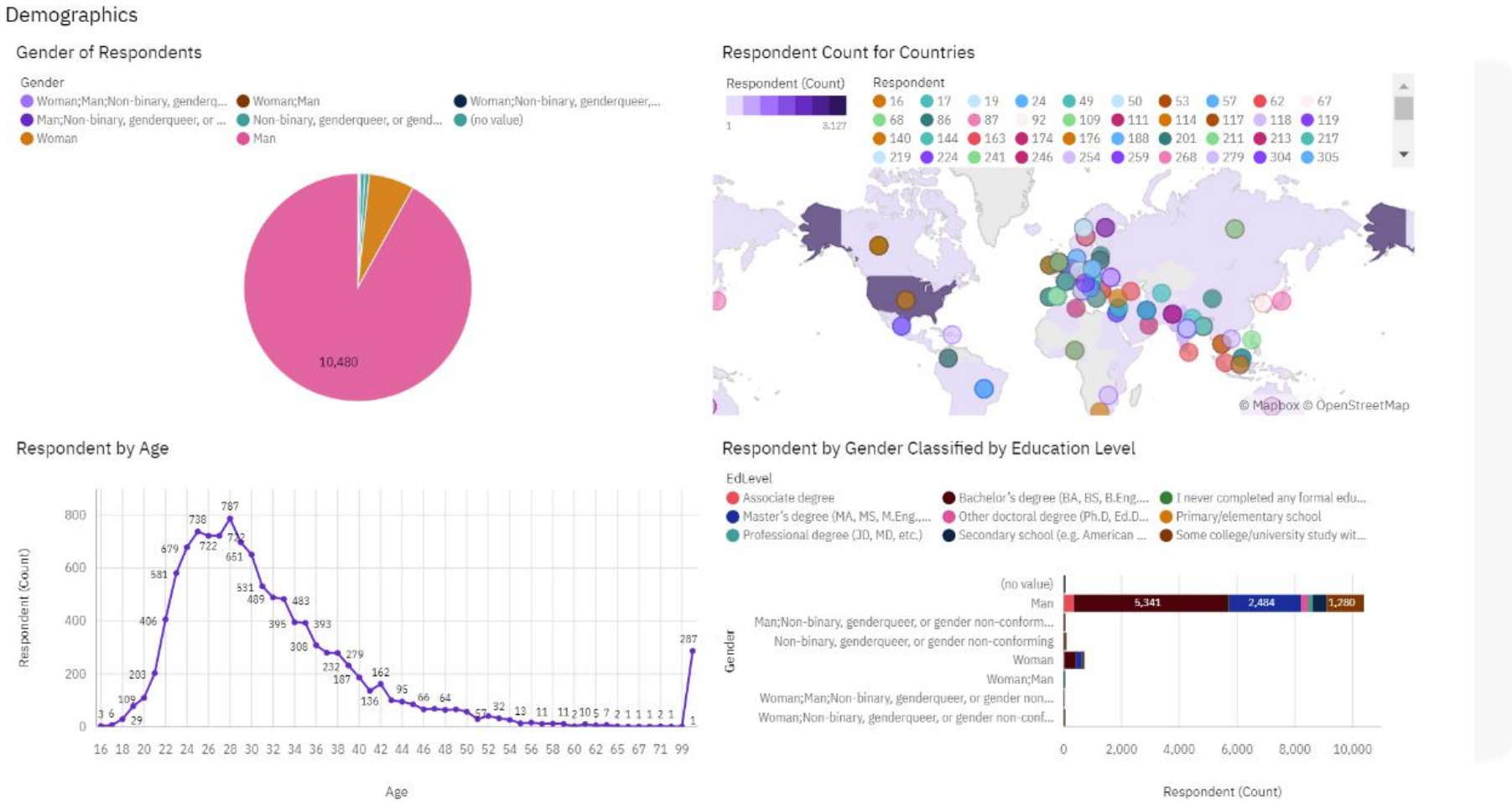


Platform Desired For Next Year



Top 10 Web Frames Desired For Next Year

Dashboard of Respondent Demographics



DISCUSSION

- Skills necessary for IT
- How to close the huge gender gap
- What kind of a degree is necessary
- There is a growing demand for mobile development with Kotlin becoming popular
- How to increase access to technology and education in developing countries

OVERALL FINDINGS & IMPLICATIONS

Findings

- Most people in the IT field have at least a bachelor's degree
- Web development languages such as Javascript and Typescript are the most popular and in high demand Typescript
- Majority of respondents are males in their 40s or younger

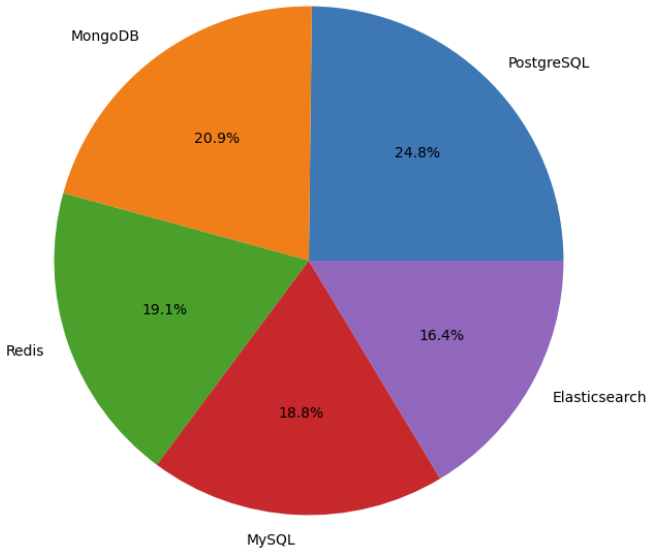
Implications

- Web development is a growing skill along with mobile development
- There's a huge gender gap and there also needs to be a way for technology to be more successful in less developed countries
- SQL remains a key technology as PostgreSQL increases in demand while MySQL still remains popular

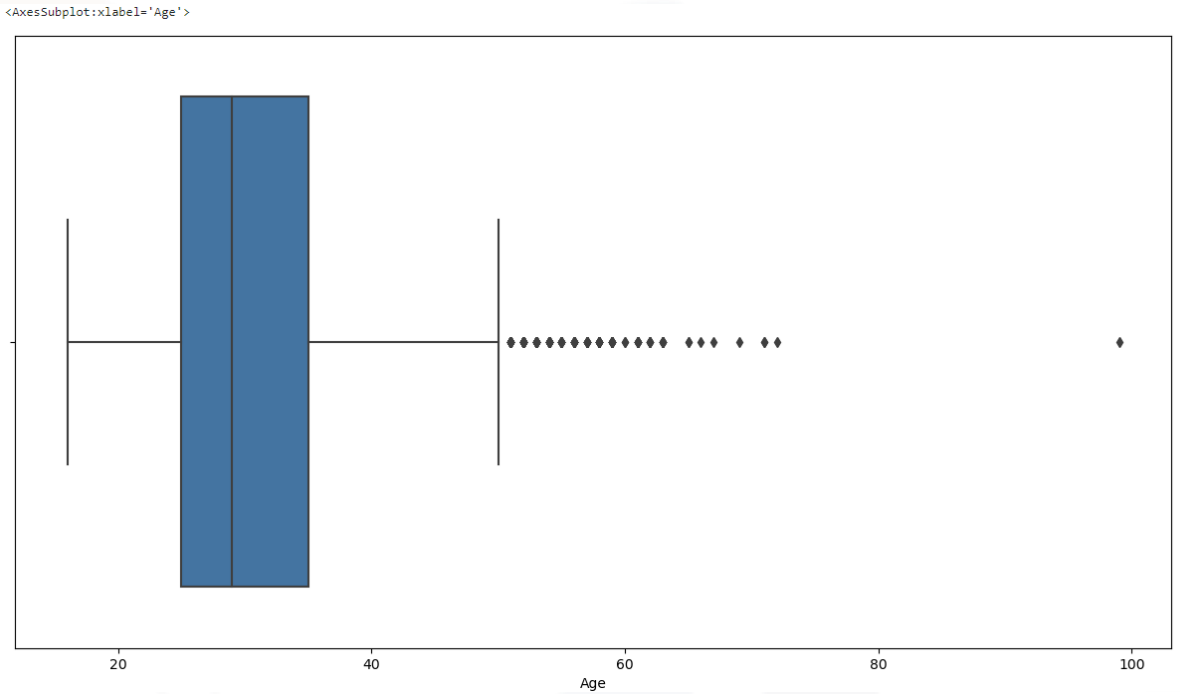
CONCLUSION

- It's important to stay up to date in technology as different technologies grow more and more popular
- Web development remains a lucrative skill

APPENDIX

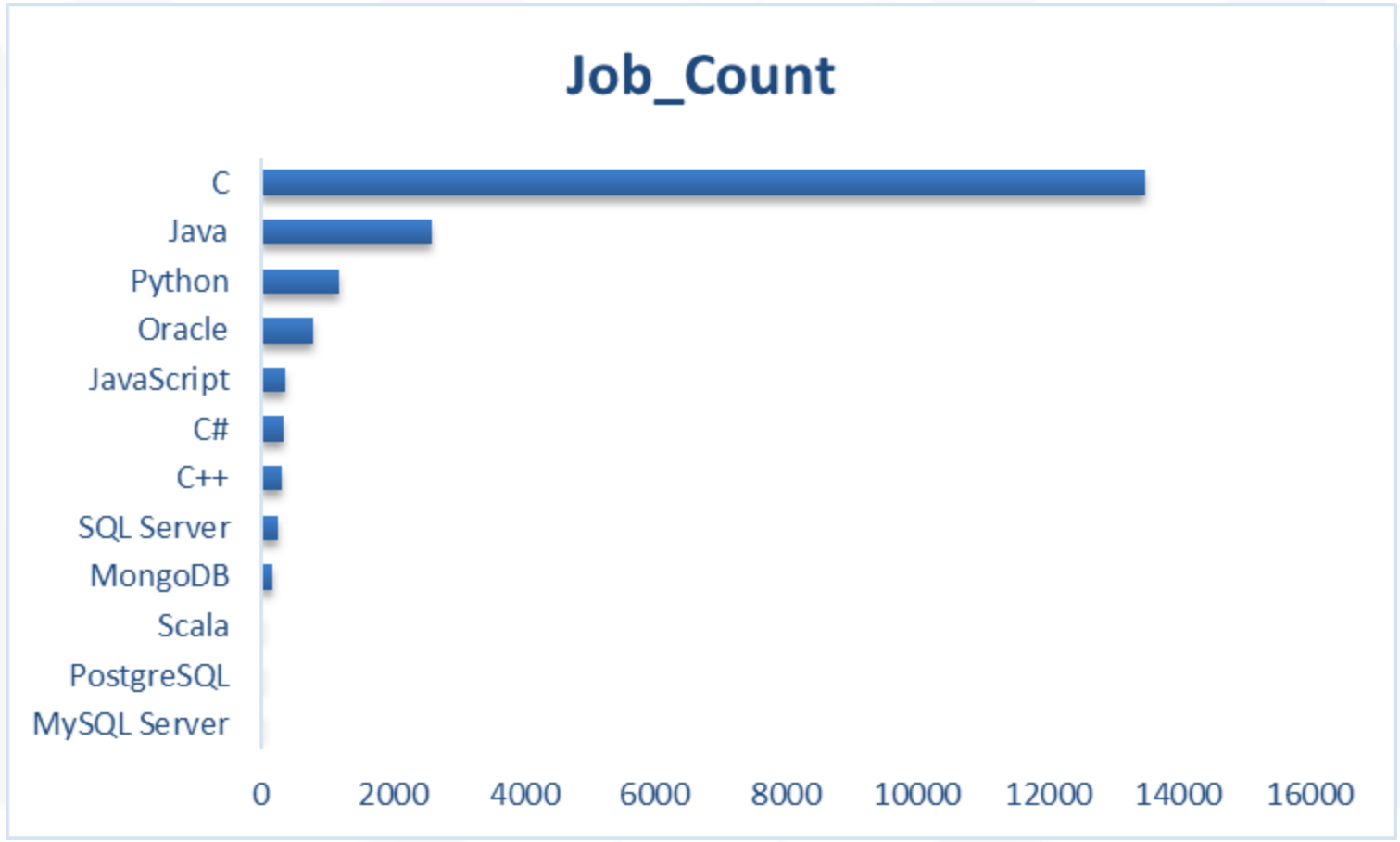
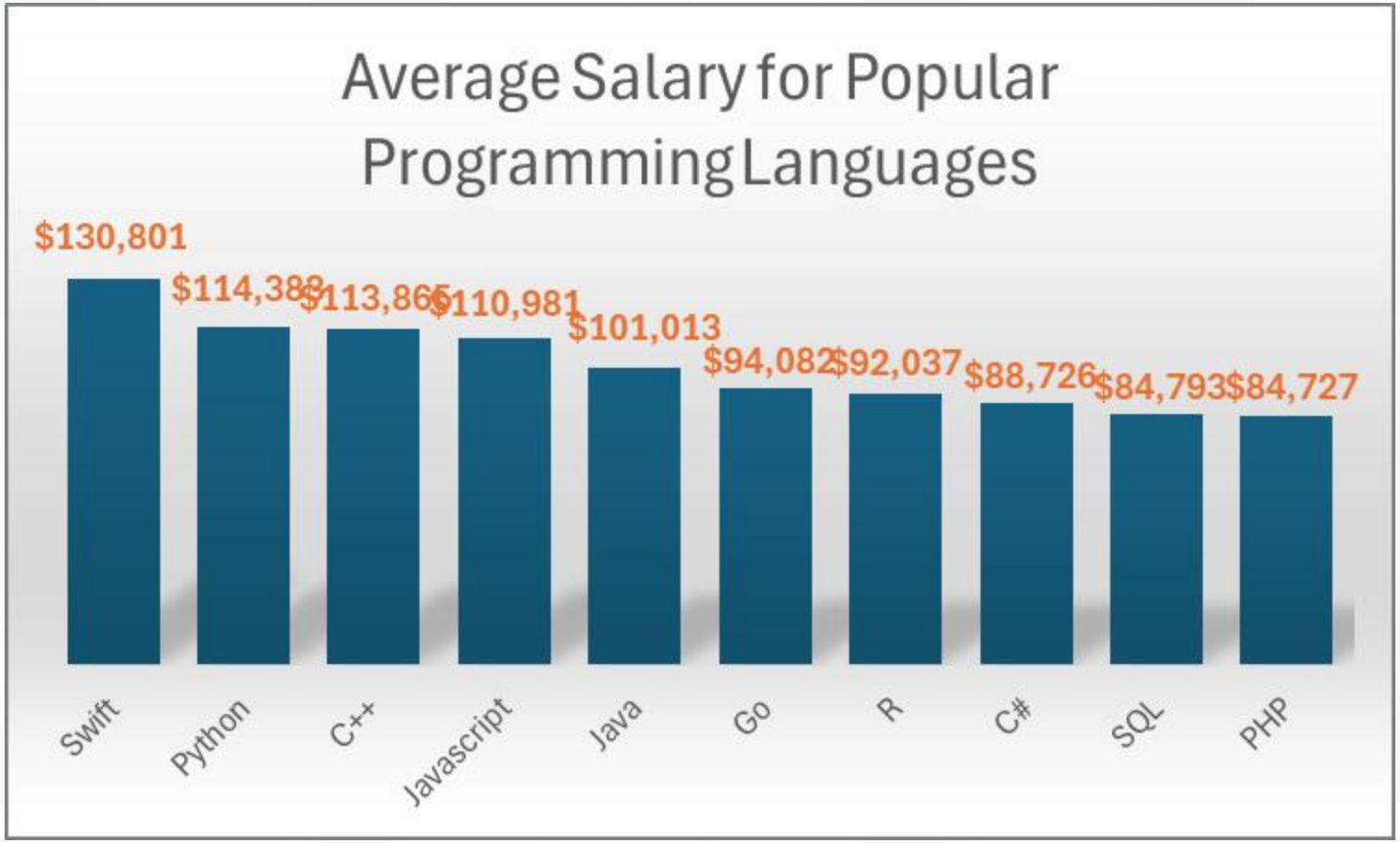


Top 5 databases respondents wish to learn



Age Distribution

JOB POSTINGS



POPULAR LANGUAGES