TECHNOLOGY TRENDS & DEMOGRAPHIC DIVERSITY IN TECHNOLOGY

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IBM Developer

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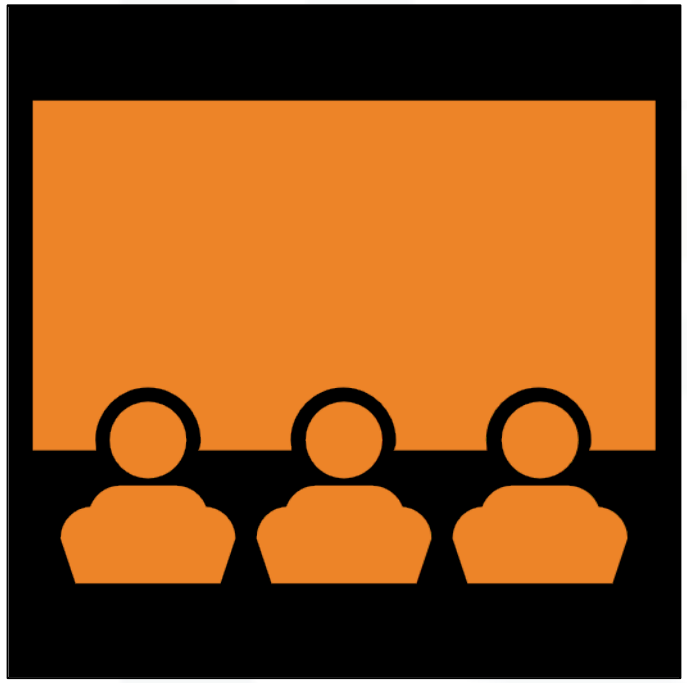
OUTLINE



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

EXECUTIVE SUMMARY

- Current demand in technology
- Technology Trends:
  - ✓Programming language Trends
  - ✓Database Trends
  - ✓Platform Trends
  - ✓Webframe Trends
- Demographic surveys to analyze the technology gaps in countries, by gender, by ages, and educational level

INTRODUCTION

Content About:

- Analyze data to help identify the current demands and trends in technologies for future to keep pace with changing technologies and remain competitive

Purpose:

- Identify the top programming languages in demand
- Identify the top database skills in demand
- Identify skill requirements in technology in the future
- Demographic factors impact to the technology workforce

Report to:

- Human Resource team and IT Manager

METHODOLOGY

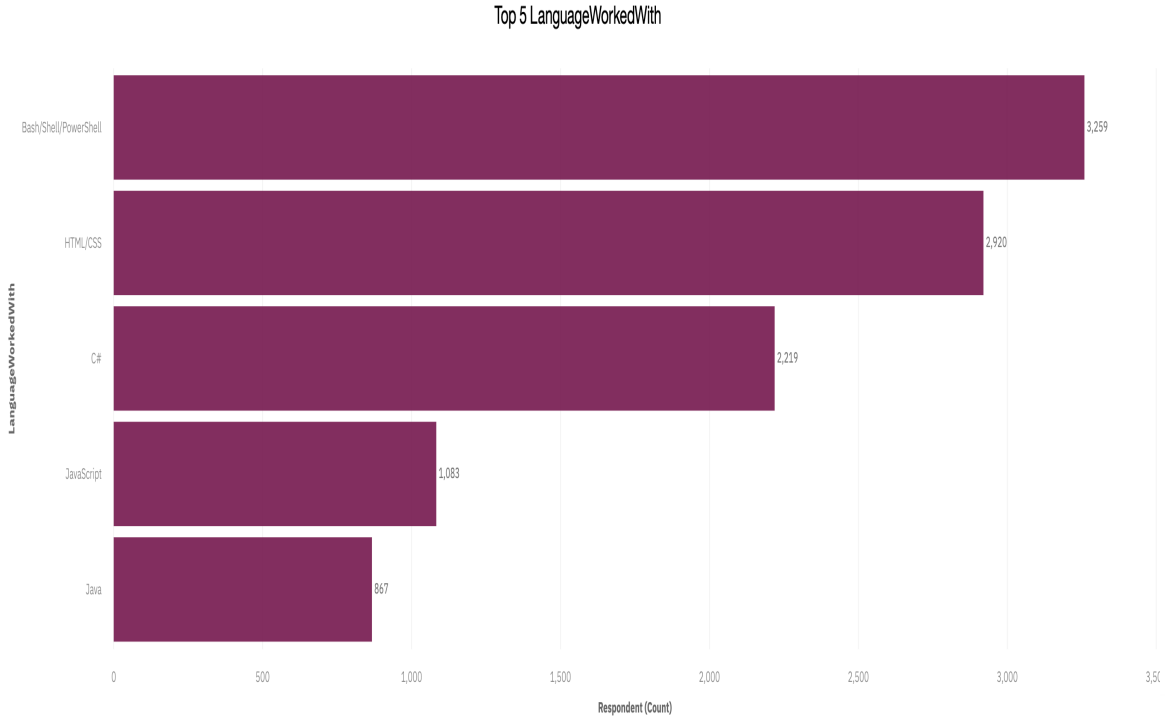
Data Sources:

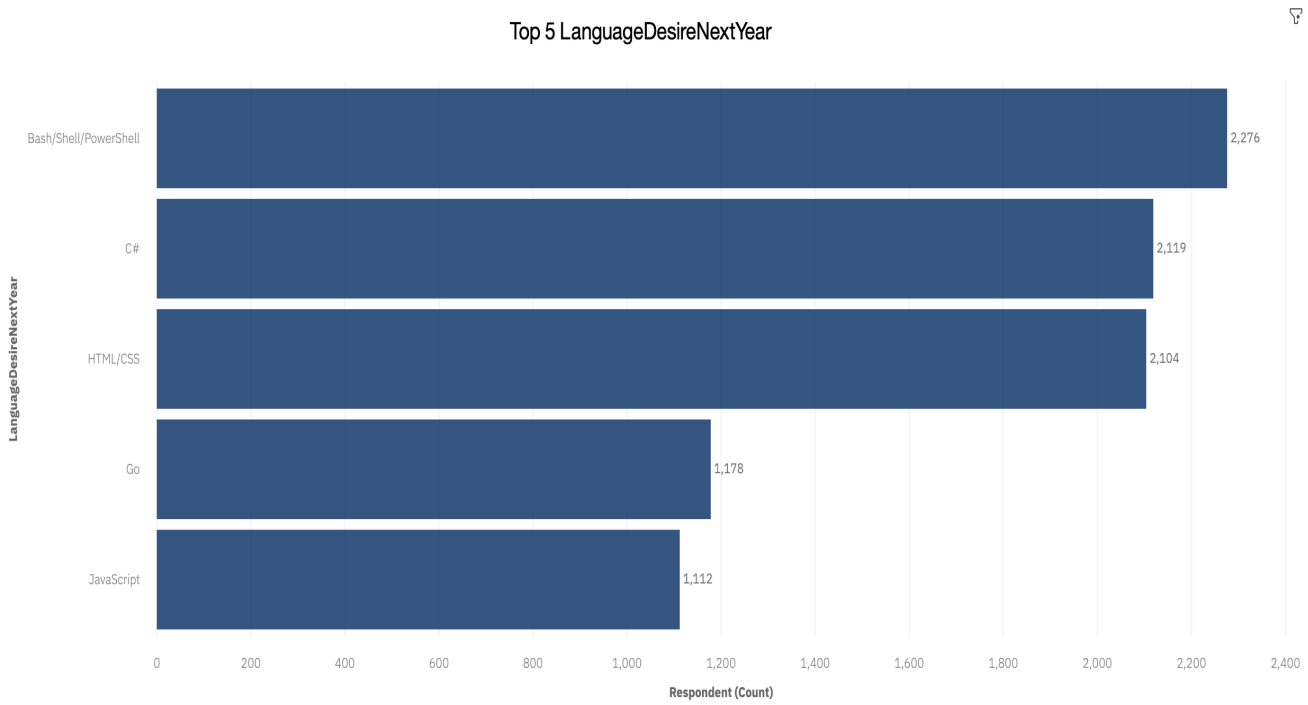
- ✓Job postings
- ✓Training portals
- ✓Surveys

- **Data Collection:**
  - ✓Collecting data using APIs
  - ✓Collecting data using Webscraping
- **Data Exploration**
- **Data Wrangling**
- **Data Visualization and Dashboard Creation**
- **Finding Presentation**

RESULTS

PROGRAMMING LANGUAGE TRENDS





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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

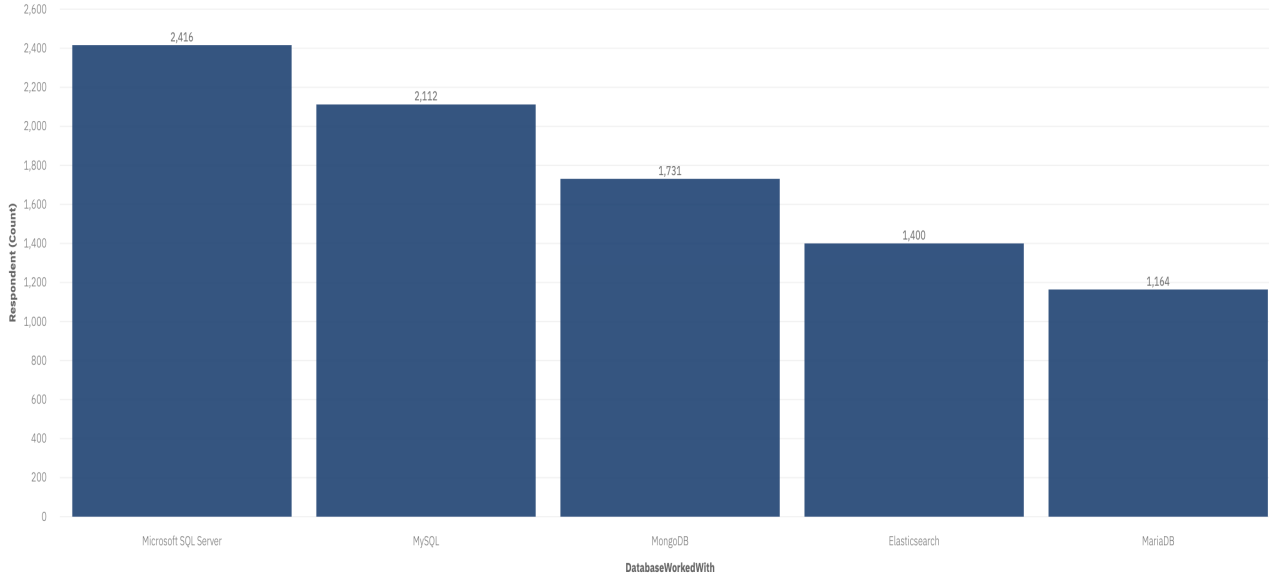
- PowerShell, HTML/CSS and C# are the top 3 programming languages to be used this year
- PowerShell, HTML/CSS and C# continues to be desired languages next year

Implications

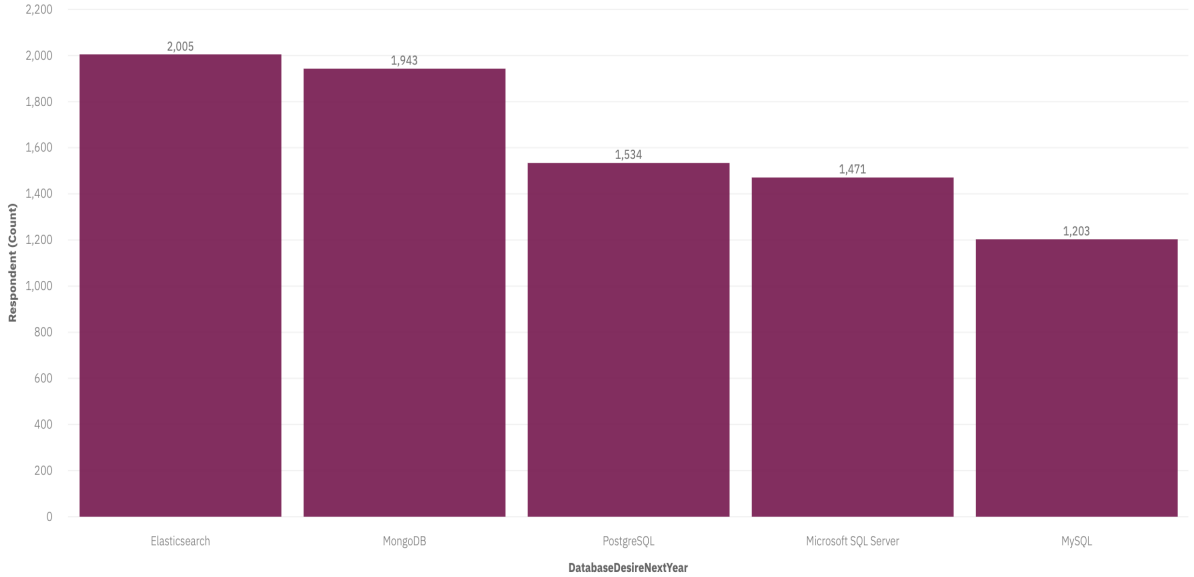
- Web development is still high demand for future

DATABASE TRENDS

Top 5 databases for the current year



Top 5 databases for next year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

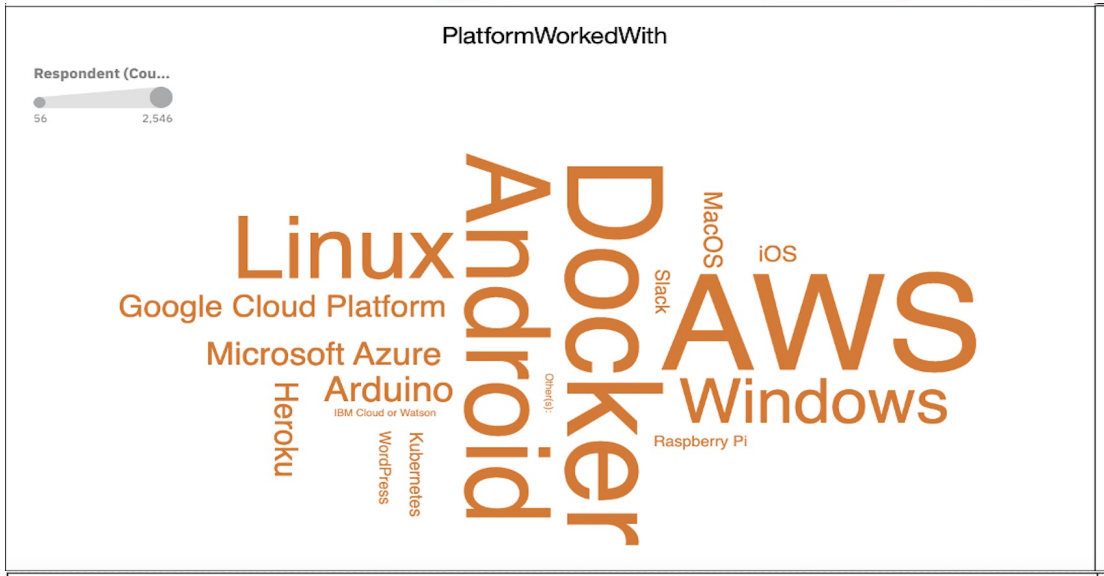
Findings

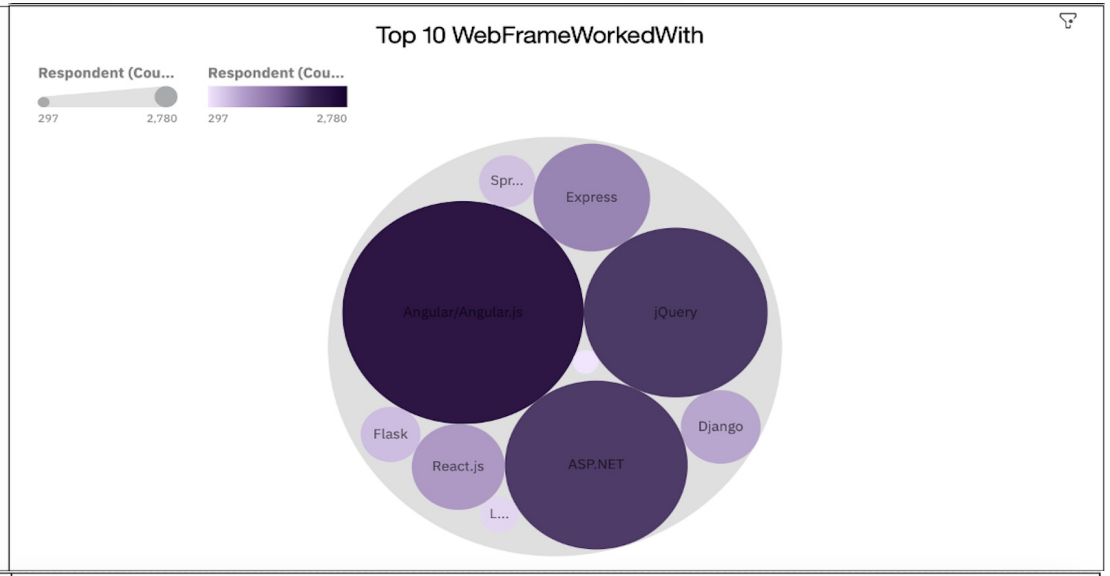
- MicrosoftSQLServer is the most popular
- Following by MySQL and MongoDB
- Elasticsearch and MongoDB will be upcoming favorites

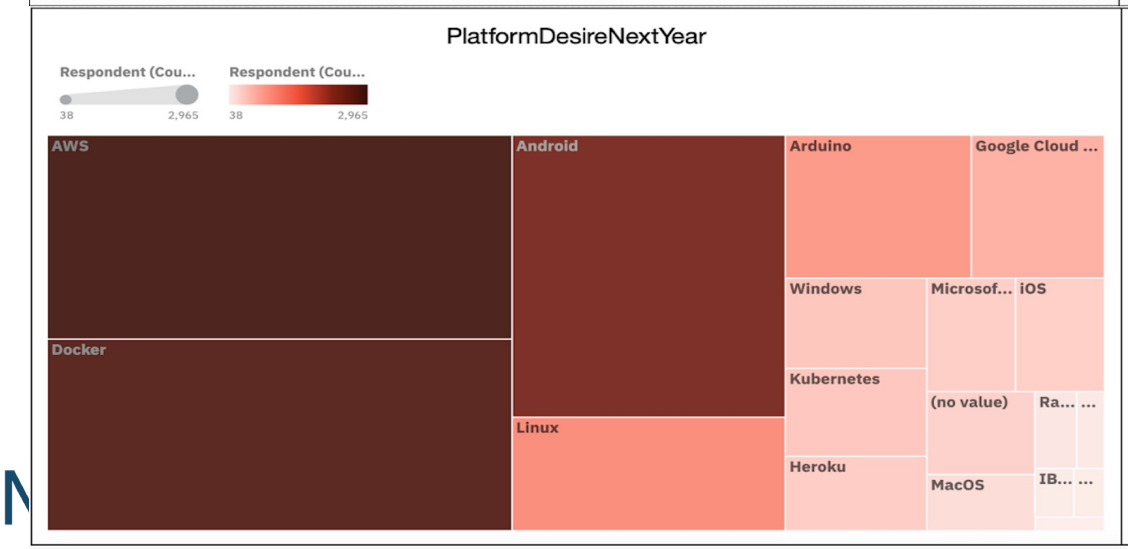
Implications

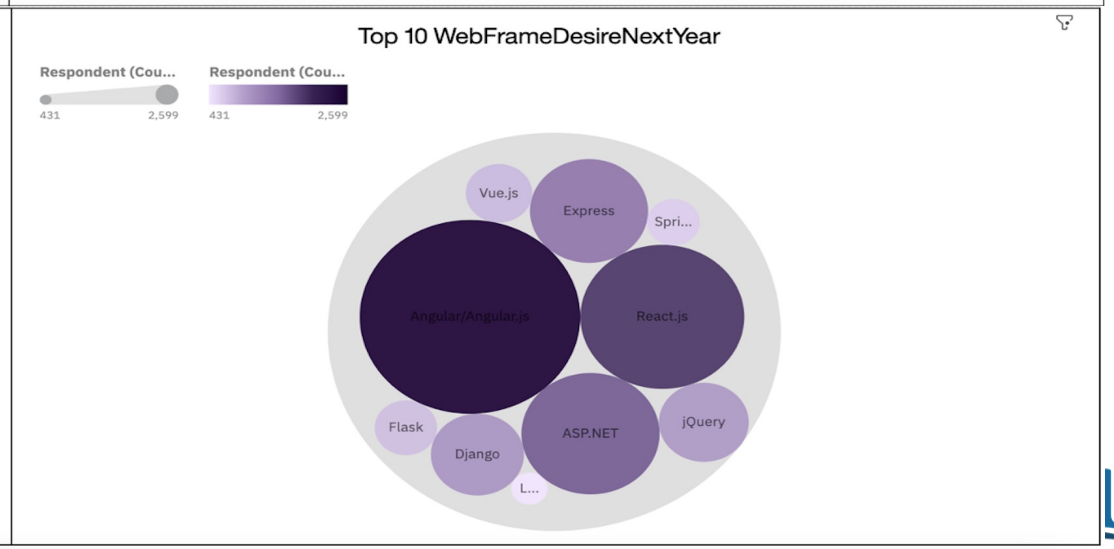
- Open - source databases are still preferable in companies
- NoSQL database will make an impact for storing non relational data
- Because of the rise of Cloud computing and Microservices Implication, Elasticsearch is gaining significant interest.

PLATFORM AND WEBFRAME TRENDS









PLATFORM AND WEBFRAME TRENDS - FINDINGS & IMPLICATIONS

Findings

- AWS, Docker and Android are the top 3 of popularity
- Platforms AWS and Docker continue to grow next year
- Angular, ASP.Net, jQuery are the most popular web-development frameworks at present
- In future, Angular is still the top 1, following by React.js and ASP.Net

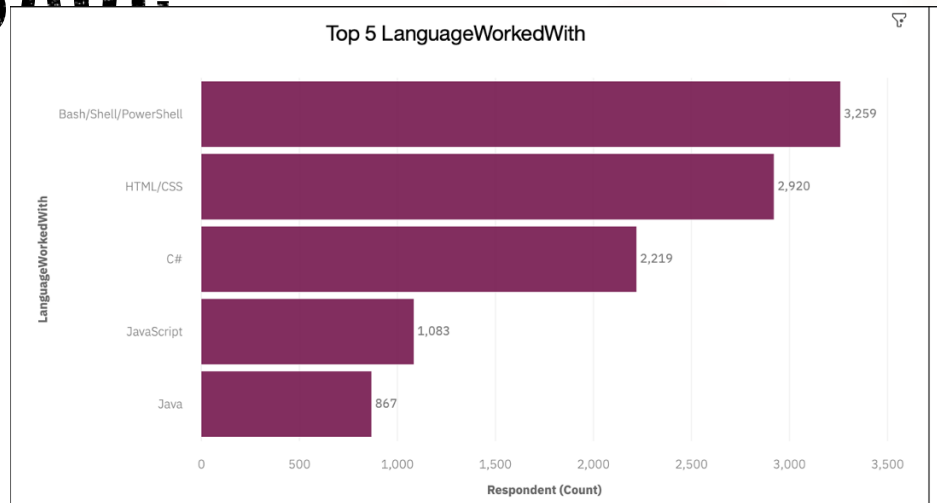
Implications

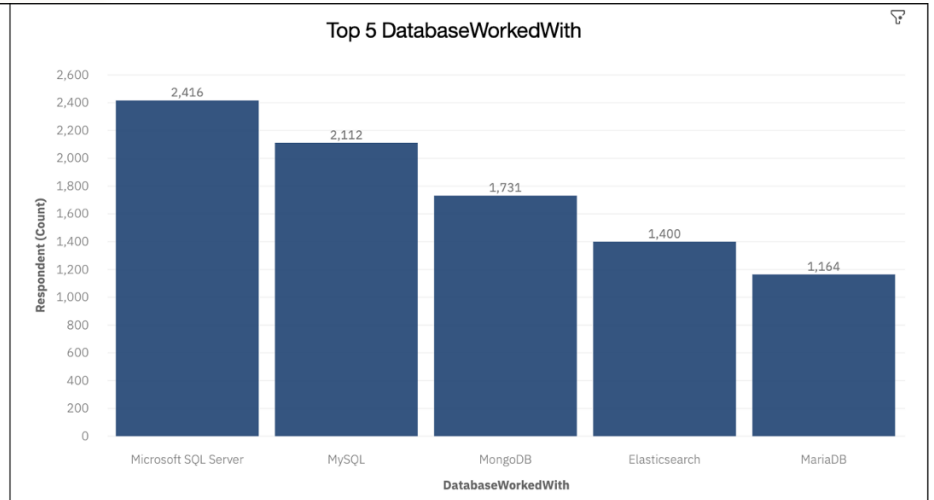
- Containerization technologies and cloud service are the most interested in.
- Front-end Frameworks are popular for Web Development
- Webframes with features of easy adaption, strong community support , flexibility, fast loading are preferable.

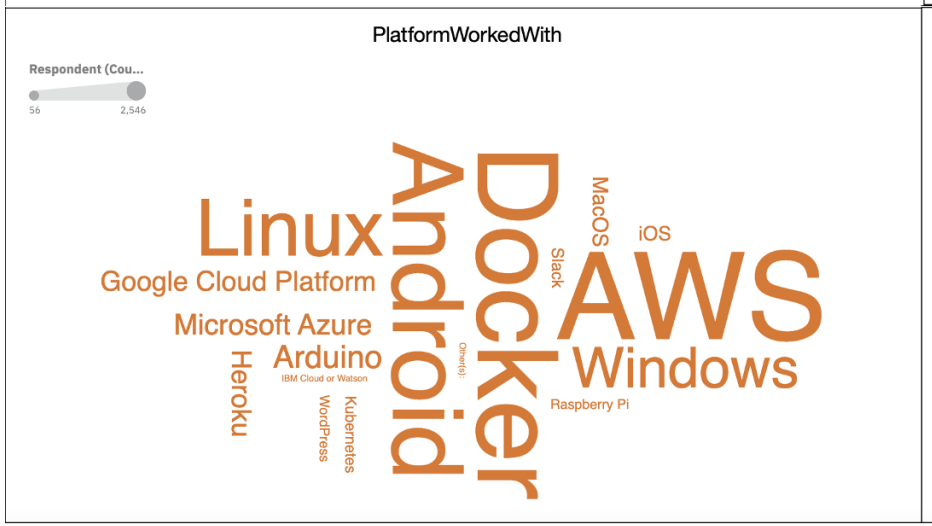
DASHBOARD

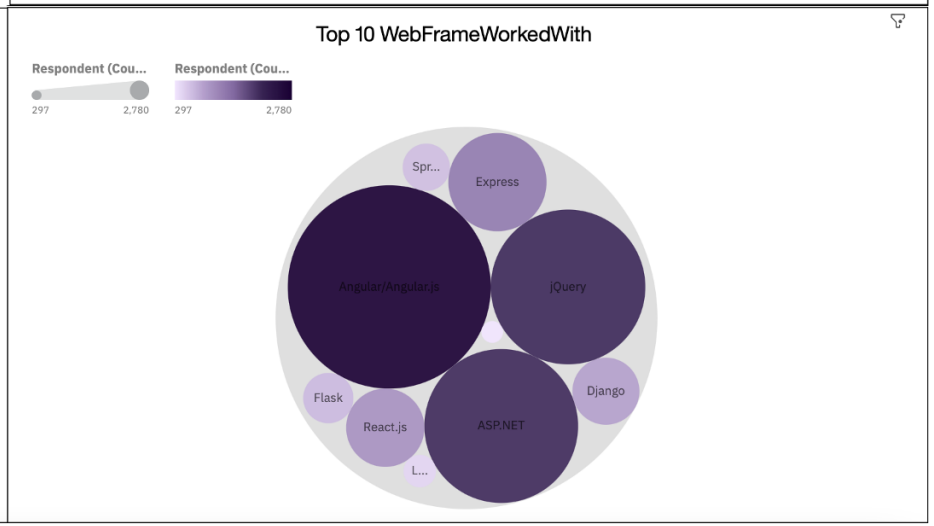
For more detail: Cognos Dashboard

DASHBOARD TAB 1 - CURRENT TECHNOLOGY USAGE









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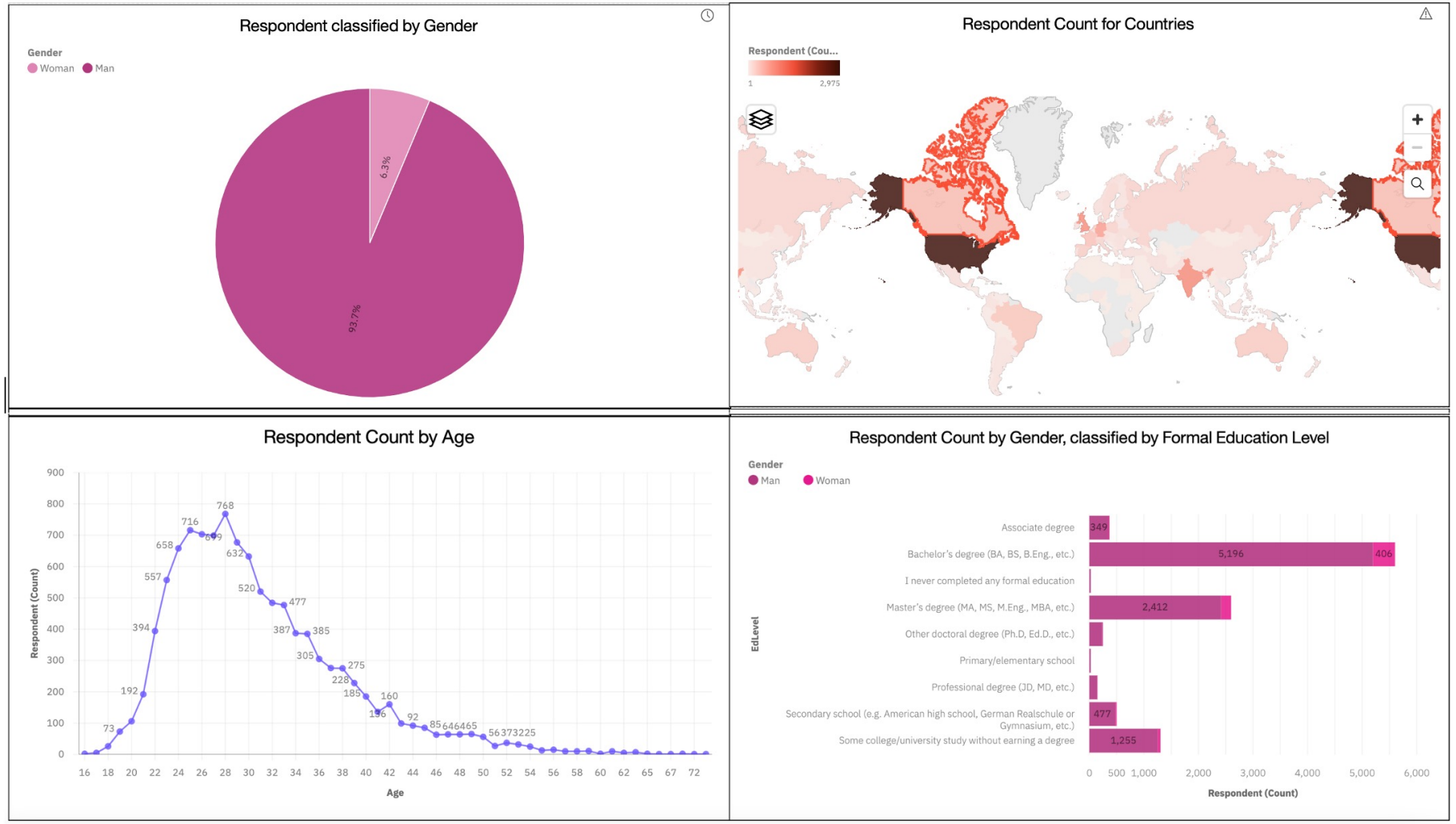
DASHBOARD TAB 2 - FUTURE TECHNOLOGY TREND

DASHBOARD TAB 3 - DEMOGRAPHIC SURVEY



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DISCUSSION

- Technology trends for now and future
- Solutions for increase of adaptability to changes
- Bridging the technology gaps within countries
- Lack of diversity within technology industry

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing in technology every year
- Technology is concentrated in developed countries than those in the developing countries
- There is a gap in technology workforce. Technology companies are predominantly white, male and young which limits the perspectives on the team and the industry as a whole.

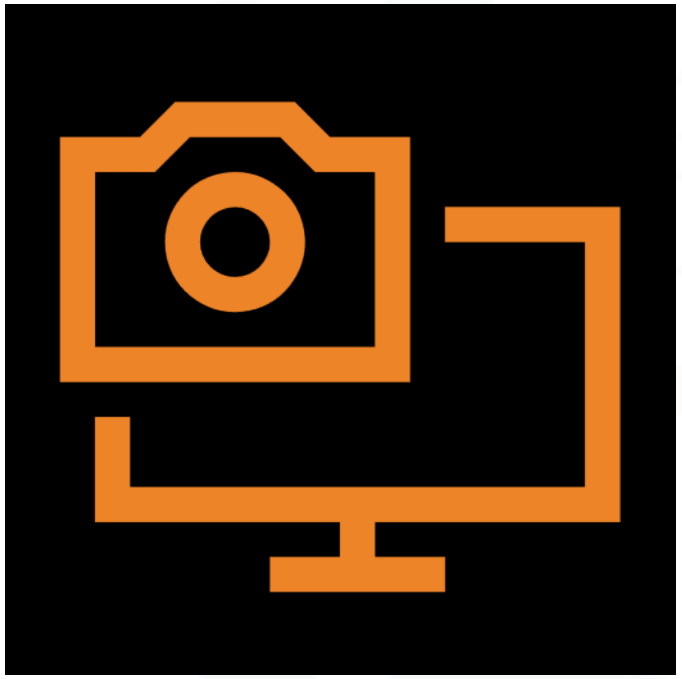
Implications

- Companies need to increase investments in reskilling and upskilling programs for employees to adapt the trends.
- Update skill requirements for recruitment process.
- Invest in data analytics and machine learning to predict the trends.
- Tech recruiters need to expand their horizons to look to other pools that might be offering candidates of a different gender, ethnic background, or race to improve the tech diversity.
- Globalization of technology, technology transfers and learning to reduce the gaps between nations

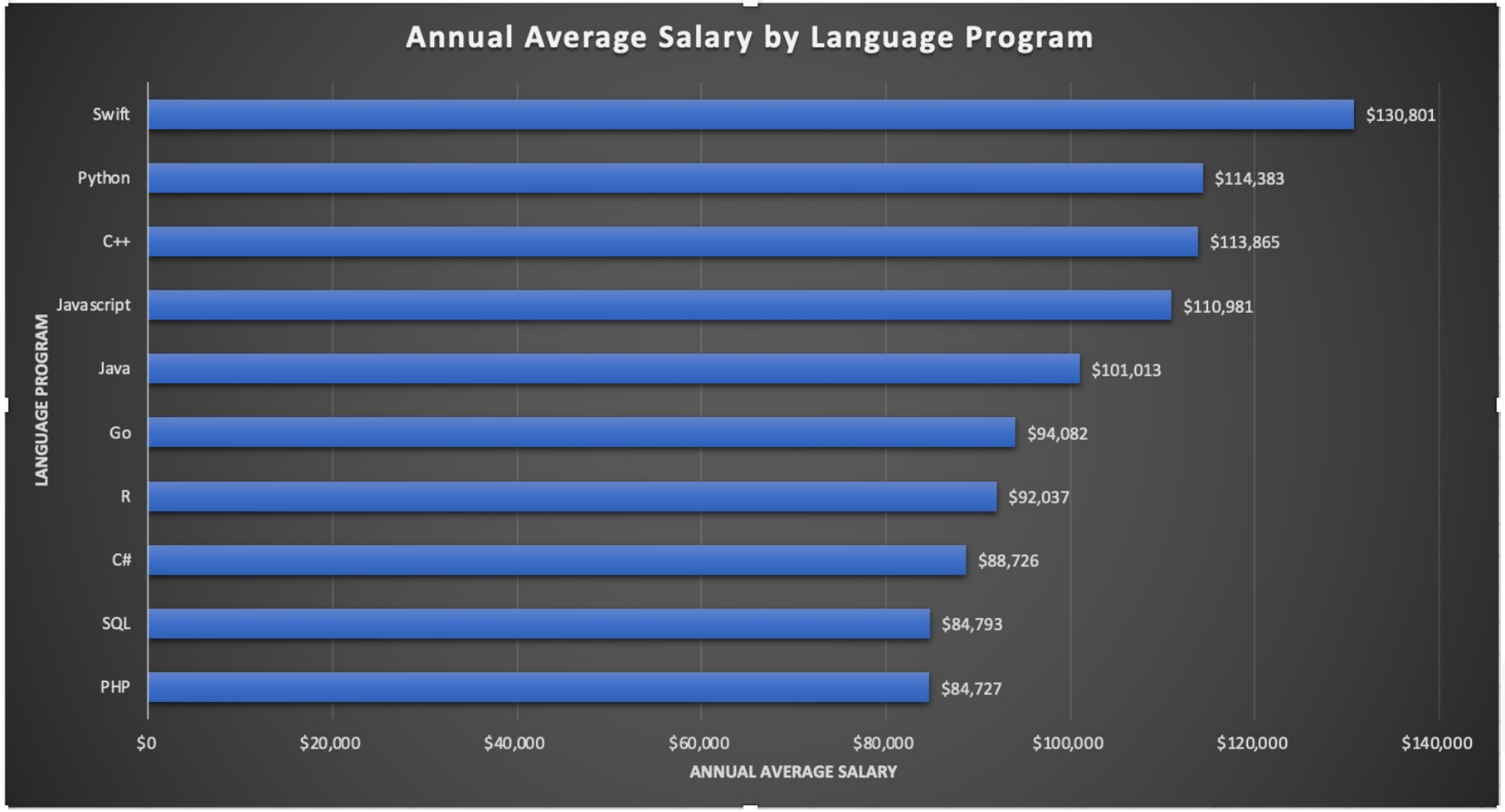
CONCLUSION

- Overview current technology demand
- Overview the trends in programing languages, databases, flatforms and web frames to state that technology keeps changing every year.
- Overview demographic survey by gender, age, countries and education levels which significantly impacts to technology industry
- Solutions to be suggested to adapt the changes as well as reduce the demographic gaps in technology.
- In future, incorporate machine learning to predict the trends to increase adaptability to changes

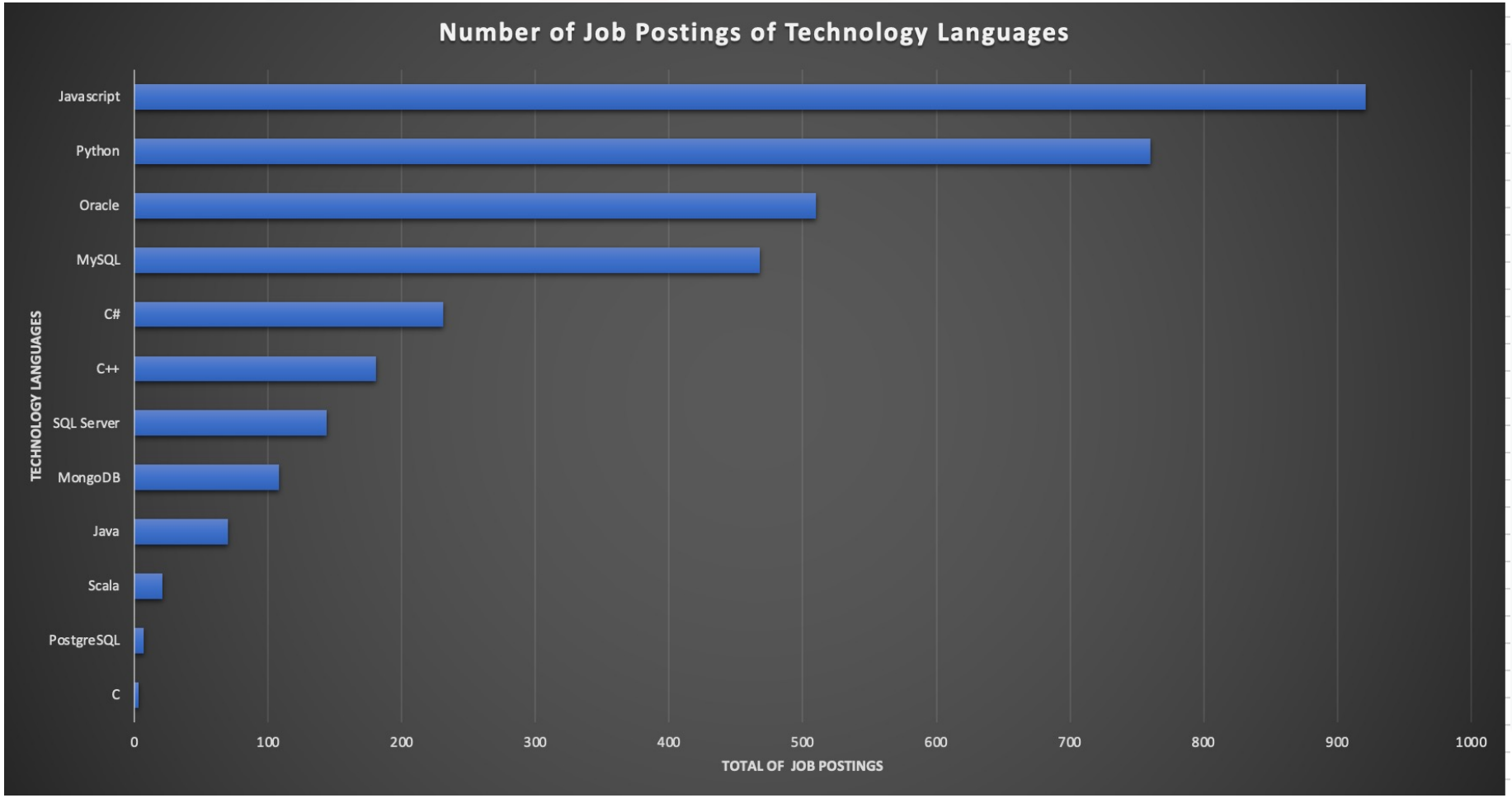
APPENDIX



POPULAR LANGUAGES



JOB POSTINGS



THANK YOU!