Technology Trends & Analysis Presentation

Dushyant Patel

23-Feb-2024

OUTLINE

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

EXECUTIVE SUMMARY

- Trends in programming languages and databases
- Demographics Survey
- Technological gap in Countries
- Gender gap in Jobs

INTRODUCTION

About:

Analyzing the trends in software development

Purpose:

- Identify skill requirements for future
- What are the top programming languages in demand?
- What are the top database skills in demand?
- What are the popular IDEs

Audience: Human Resource and IT Head

METHODOLOGY

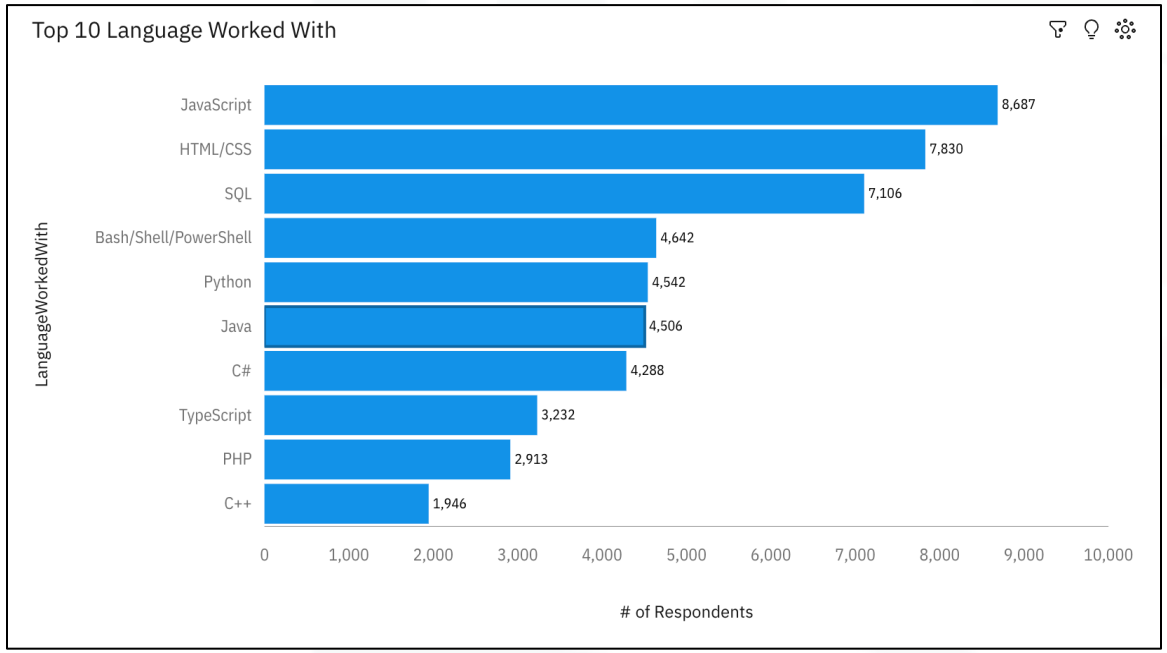
- Data Collection Sources
  - Stack Overflow Developer 2019 Survey
  - GitHub Job Postings
  - Programming Languages Annual Salary
- Data Exploration
- Data Cleaning
- Data Visualization
- Presentation

RESULTS

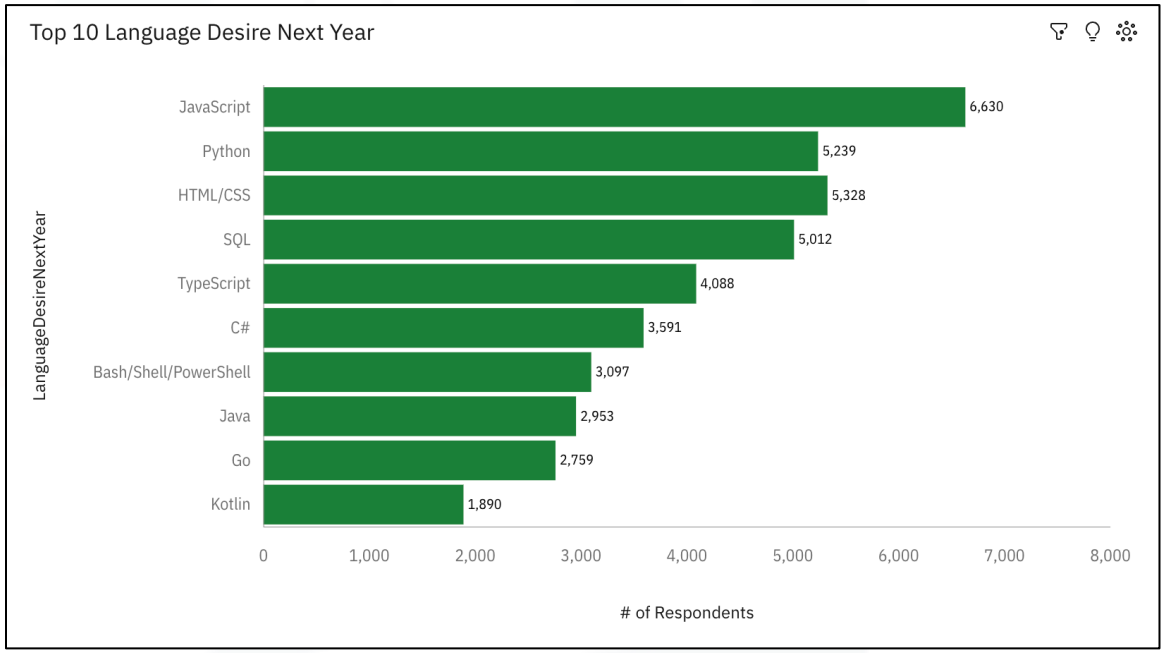
Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith	PlatformDesireNextYear	WebFrameWorkedWith	WebFrameDesireNextYear	DevEnviron	OpSys	Containers	BlockchainOrg	Blockchainls
4	C	C	MySQL	MySQL	Linux	Linux			Eclipse				
4	C++	C#	SQLite	SQLite	Windows	Windows			Vim				
4	C#	JavaScript							Visual Studio				
4	Python	SQL							Visual Studio Code				
4	SQL												
9	Bash/Shell/PowerShell	Bash/Shell/PowerShell	DynamoDB	PostgreSQL	AWS	AWS	Express	Express	Vim				
9	C#	C	PostgreSQL	Redis	Docker	Docker	Ruby on Rails	Ruby on Rails					
9	HTML/CSS	HTML/CSS	SQLite	SQLite	Heroku	Heroku	Other(s):	Other(s):					
9	JavaScript	JavaScript			Linux	Linux							
9	Python	Ruby			MacOS	MacOS							
9	Ruby	Rust			Slack	Slack							
9	Rust	SQL				Other(s):							
9	SQL	TypeScript											
9	TypeScript	WebAssembly											
9	WebAssembly	Other(s):											
9	Other(s):												
13	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Couchbase	Firebase	Android	Android	Angular/Angular.js	Express	Vim				
13	HTML/CSS	HTML/CSS	DynamoDB	MySQL	AWS	AWS	ASP.NET	Vue.js	Visual Studio				
13	JavaScript	JavaScript	Firebase	Redis	Docker	Docker	Express		Visual Studio Code				
13	PHP	Rust	MySQL		IBM Cloud or Watson	IBM Cloud or Watson	jQuery		Xcode				
13	SQL	SQL			iOS	Linux	Vue.js						
13	TypeScript	TypeScript			Linux	Slack							
13		WebAssembly			MacOS	Windows							
13					Microsoft Azure	WordPress							
13					Slack								
13					Windows								
13					WordPress								
16	Bash/Shell/PowerShell	C#	MongoDB	Elasticsearch		AWS	Angular/Angular.js	Angular/Angular.js	Visual Studio				
16	C#	HTML/CSS	Microsoft SQL Server	MongoDB		Google Cloud Platform	ASP.NET	ASP.NET	Visual Studio Code				
16	HTML/CSS	JavaScript	MySQL	Microsoft SQL Server		Microsoft Azure	jQuery	React.js					
16	JavaScript	TypeScript		SQLite									
16	TypeScript	WebAssembly											
16	VBA	Other(s):											
17	Bash/Shell/PowerShell	Bash/Shell/PowerShell	MongoDB	Elasticsearch	Arduino	Docker	Angular/Angular.js	Angular/Angular.js	IntelliJ				
17	HTML/CSS	HTML/CSS	PostgreSQL	Firebase	Docker		Express	Express	Visual Studio Code				
17	JavaScript	Java		MongoDB	Heroku		Spring	React.js					
17	TypeScript	JavaScript		PostgreSQL	Raspberry Pi			Spring					
17		TypeScript			WordPress			Vue.js					
17		WebAssembly											
19	C#	HTML/CSS	DynamoDB	DynamoDB	Android	AWS	Angular/Angular.js	Express	Vim				
19	HTML/CSS	JavaScript	Firebase		AWS		ASP.NET	React.js	Visual Studio Code				
19	Java		Microsoft SQL Server		Microsoft Azure		Express						
19	JavaScript		MySQL				jQuery						
19	SQL		SQLite				React.js						
19	TypeScript												
20	Bash/Shell/PowerShell	Bash/Shell/PowerShell	Elasticsearch	Elasticsearch	Android	Android	Angular/Angular.js	Angular/Angular.js	Android Studio				
20	C#	C#	MariaDB	MariaDB	Docker	Docker	ASP.NET	ASP.NET	Visual Studio				
20	HTML/CSS	HTML/CSS	MongoDB	MongoDB	Windows	Windows	jQuery	jQuery	Visual Studio Code				

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

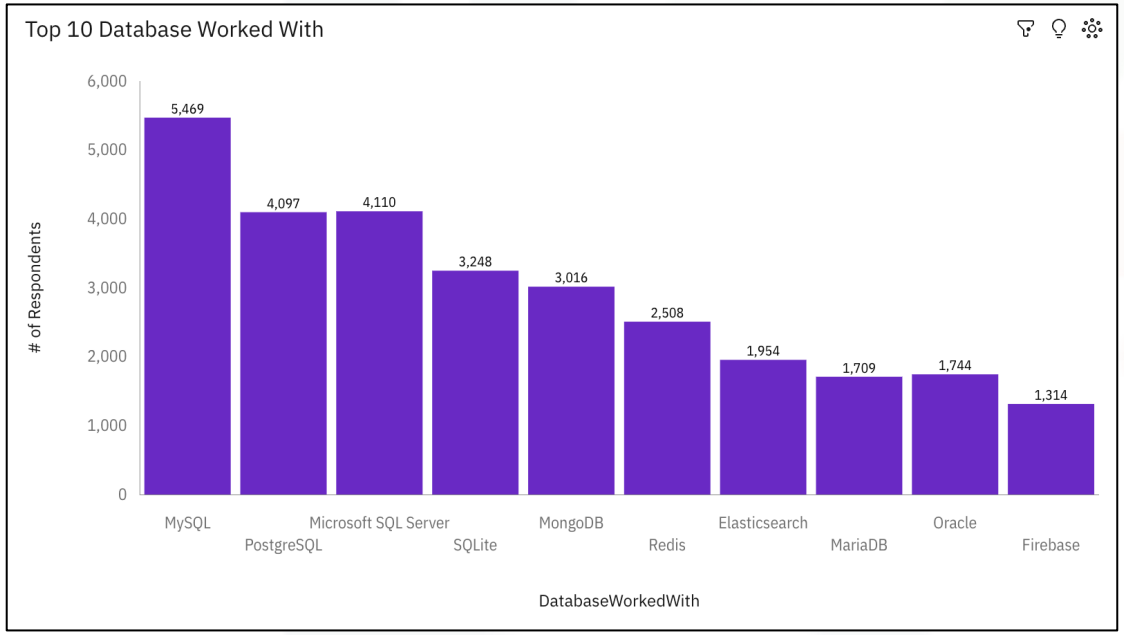
- JavaScript, HTML/CSS, SQL are top 3 this year
- Python and Typescript becoming popular next year
- PowerShell edged out in next year

Implications

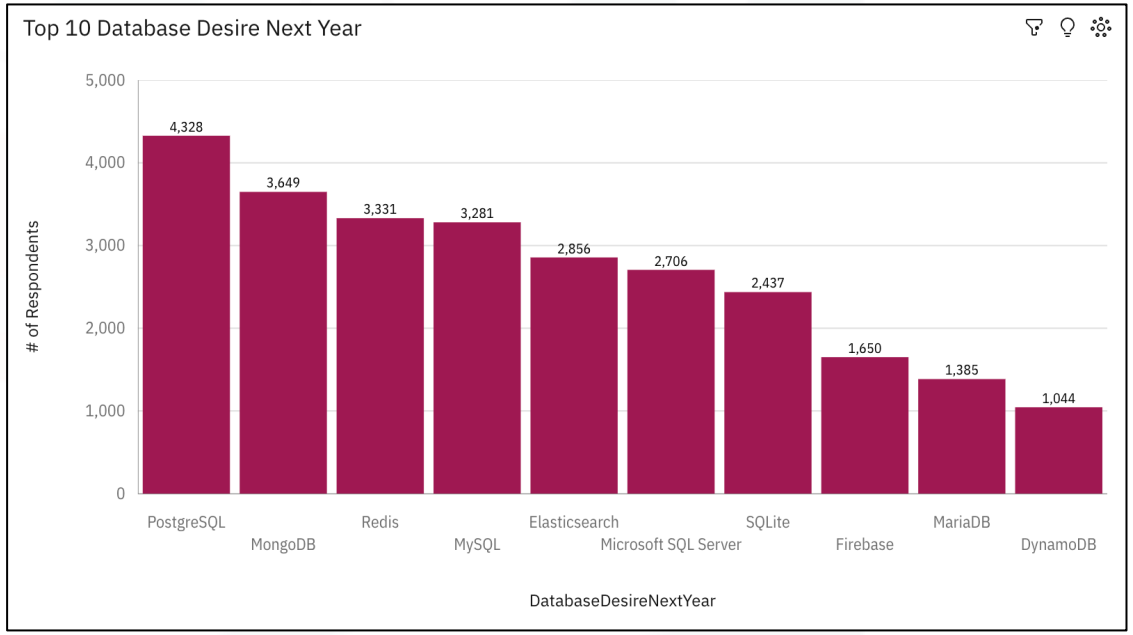
- Web development are still in high demand
- Big Data technology in companies still requires SQL
- With AI and ML in rising demand, Python is best choice

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL most popular
- Behind is Microsoft SQL
- MongoDB and Redis are upcoming favorites
- New kid on the block: Elasticsearch

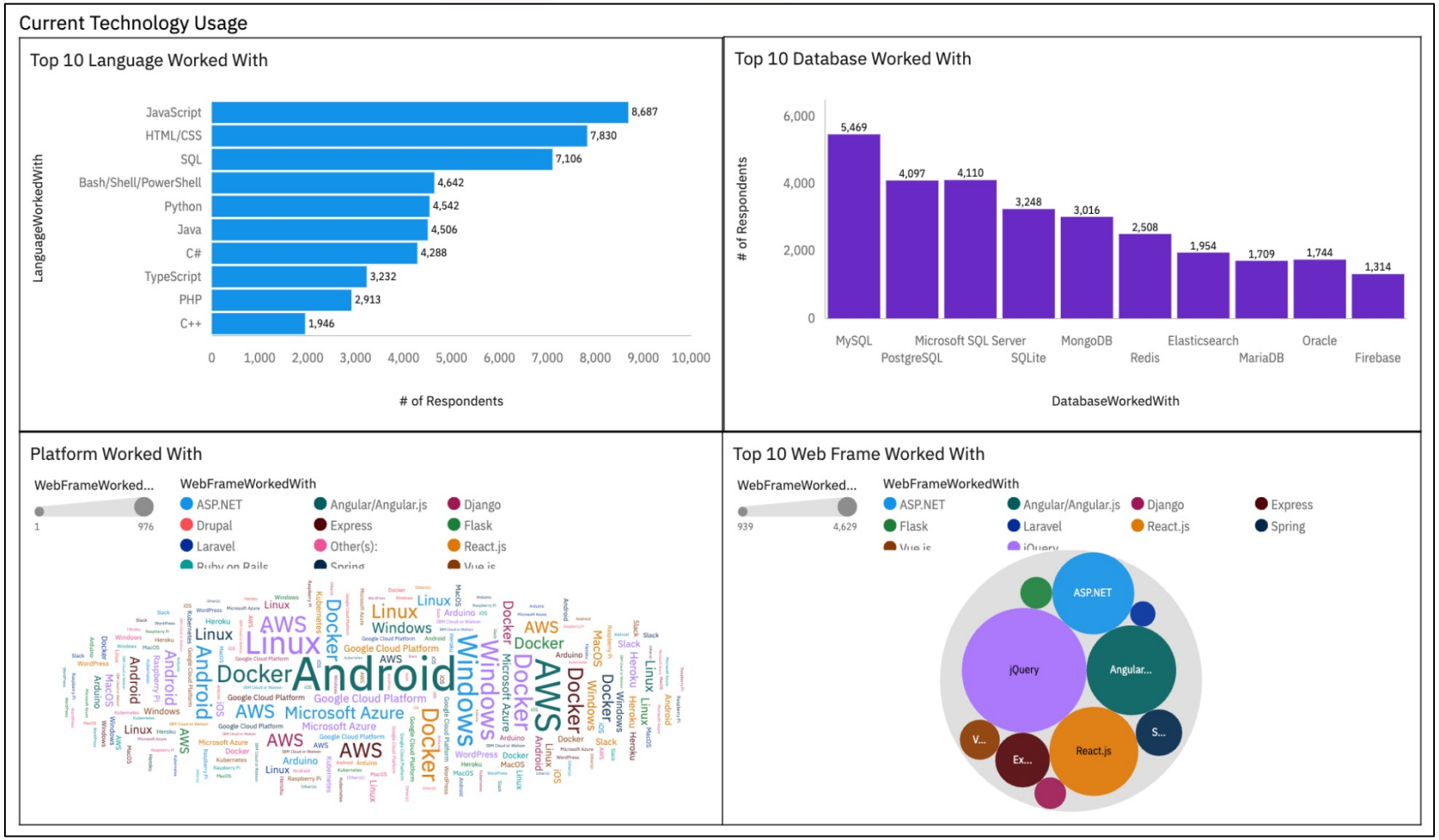
Implications

- Open-source databases are still preferable in companies
- NoSQL databases will make an impact for storing non relational data
- Redis supports abstract data types
- Pre tuned search to website, app, or ecommerce store

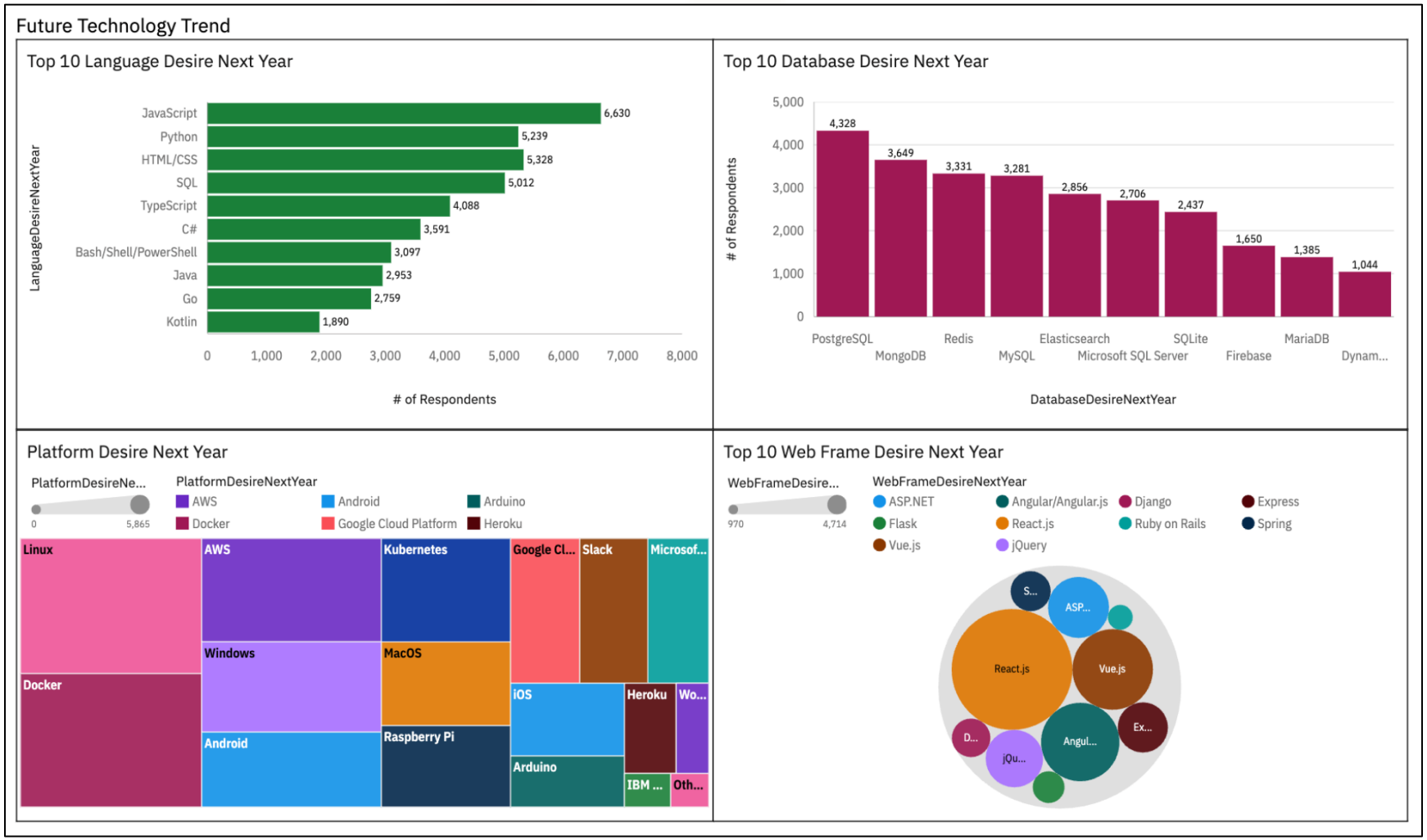
DASHBOARD

https://github.com/dkpatel369/Cognos-Dashboard/blob/main/Dashboard.pdf

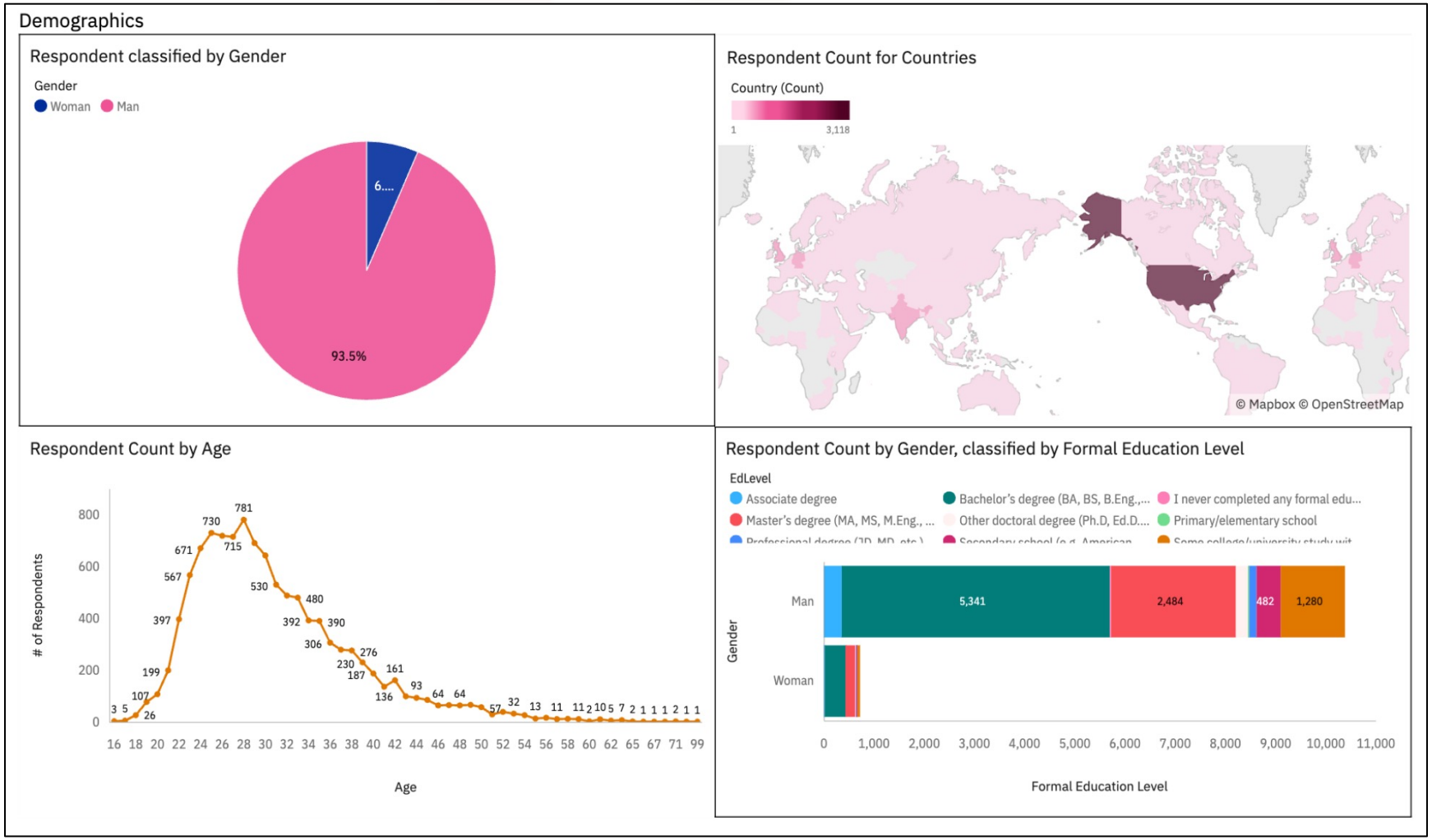
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- Technology Trends now and future
- Training and Reskilling workers
- Female participation in Technology field
- Bridge divide of technology gaps in developing countries
- Eliminate age and education discrimination in employment

OVERALL FINDINGS & IMPLICATIONS

Findings

- Fast changing technology every year
- Concentration on several countries like USA and India
- Gender gap in technology jobs
- Platforms like Docker and AWS are growing

Implications

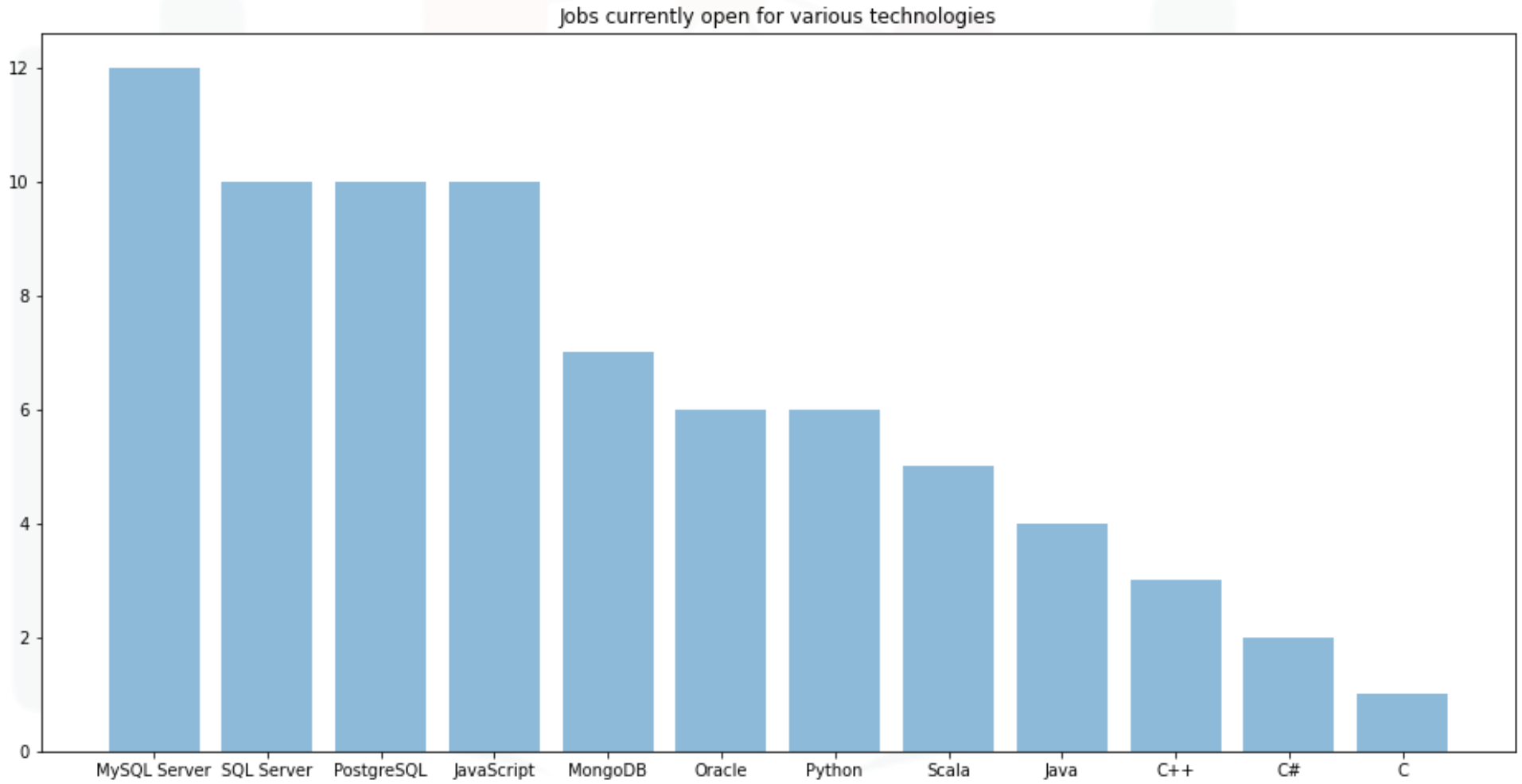
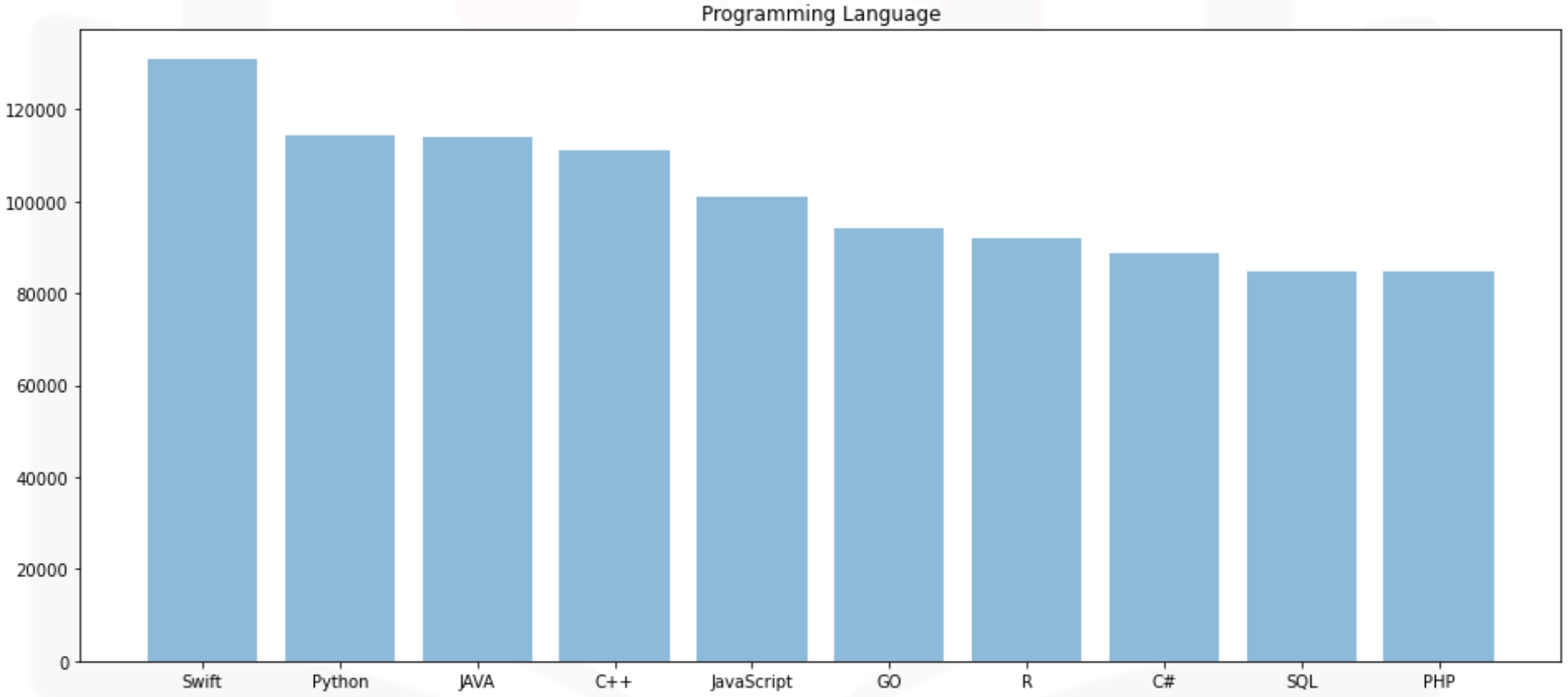
- Companies need to be flexible and adjust to rapid changes
- Need to spread technology out to lagging countries
- Impact of job hiring’s
- Shift to faster app deployments and cloud services in future

CONCLUSION

- Technology Trends for current and next year
- Programming Languages, Database and
- Platform overview
- Demographics overview
- Actions to be taken
- In future, incorporate Machine Learning to predict trends and salaries

APPENDIX

JOB POSTINGS



POPULAR LANGUAGES