TECHNOLOGY TREND ANALYSIS

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IBM **Developer**

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OUTLINE

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

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EXECUTIVE SUMMARY

- Current Technology Usage Trend
  - Language
  - Database
  - Platform
  - Web frame
- Future Technology Trend
  - Language
  - Database
  - Platform
  - Web frame
- Demographics Survey
- Country & Gender Difference

INTRODUCTION

- Analyze technology trends in software and web development among developers around the world

- Purpose of this Analysis
  - Identify the top programming languages, database, platform and web frame skills in demand
  - Identify skill requirements for the future
  - Identify human resource gap in the industry

- Audience for this Presentation
  - Programmers
  - IT industry leaders
  - Computer science students

METHODOLOGY

- Data Collection (Sources)
  - Stack overflow developer 2019 survey
  - GitHub job postings
  - Programming languages annual salary

- Data Wrangling

- Data Exploration

- Data Cleaning

- Data Visualization
  - Python matplotlib & turtle
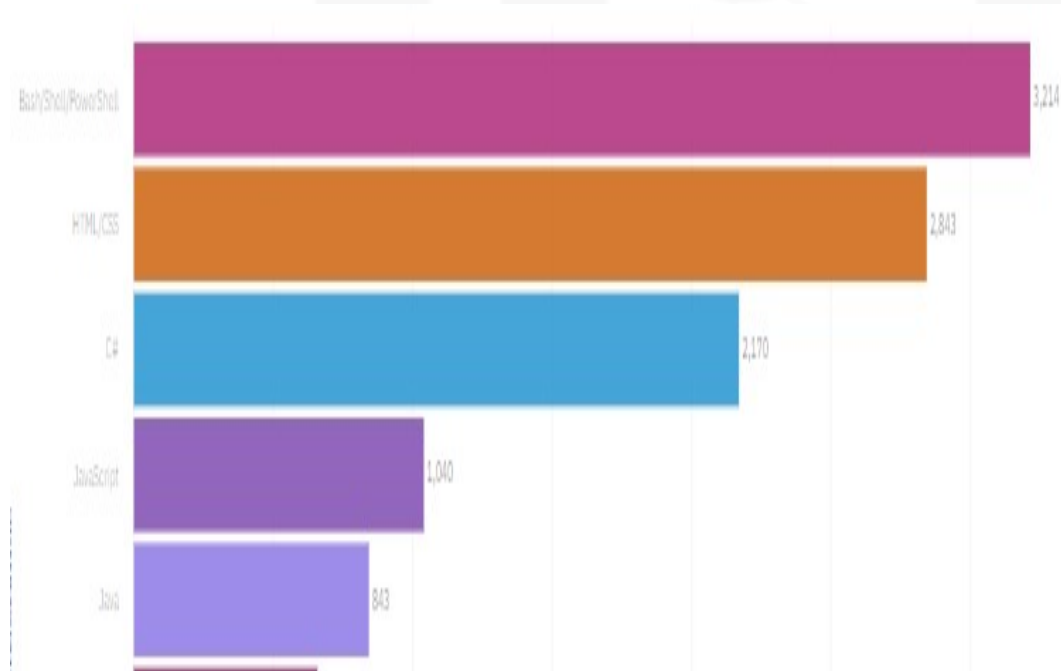 - IBM Cognos

- Presentation

RESULTS

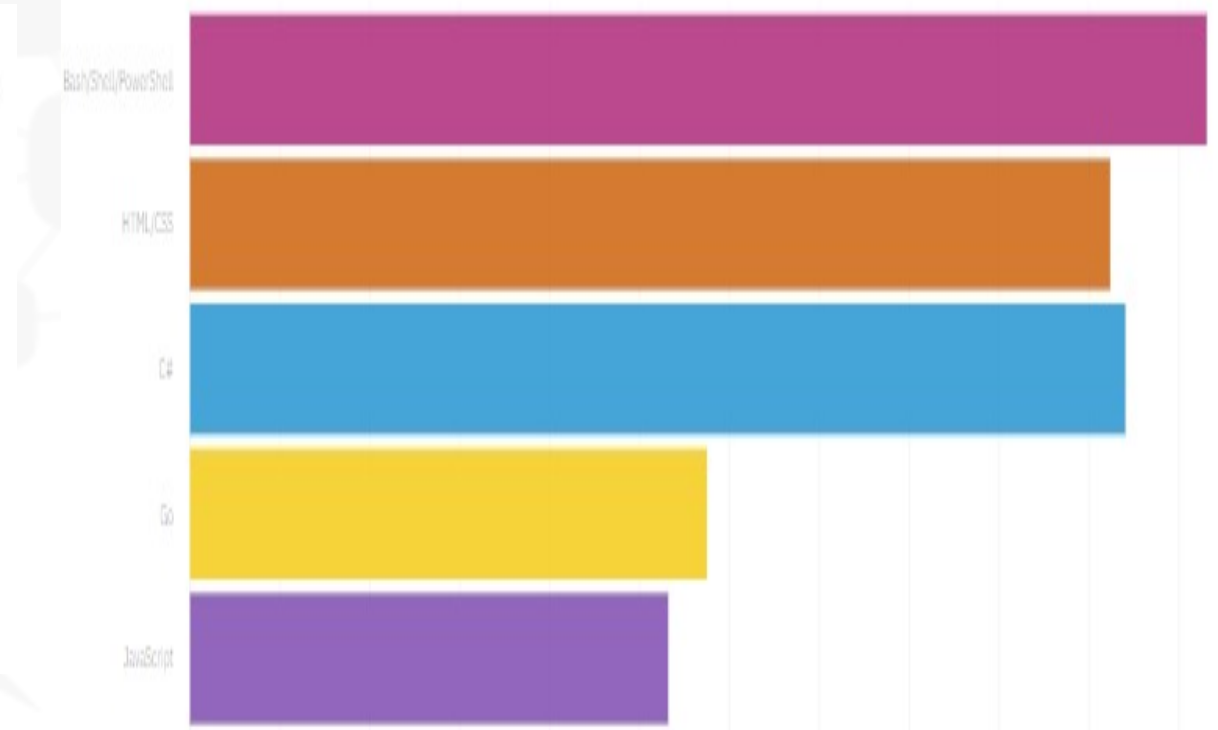|	Respondent	LanguageWorkedWith	LanguageDesireNextYear	DatabaseWorkedWith	DatabaseDesireNextYear	PlatformWorkedWith	PlatformDesireNextYear
0	NaN	NaN	NaN	NaN	NaN	NaN	NaN
1	4.0	C	C	MySQL	MySQL	Linux	Linux
2	4.0	C++	C#	SQLite	SQLite	Windows	Windows
3	4.0	C#	JavaScript	NaN	NaN	NaN	NaN
4	4.0	Python	SQL	NaN	NaN	NaN	NaN
...	...	...	...	...	...	...	...
74585	25142.0	Go	Python	NaN	NaN	NaN	NaN
74586	25142.0	HTML/CSS	R	NaN	NaN	NaN	NaN
74587	25142.0	PHP	NaN	NaN	NaN	NaN	NaN
74588	25142.0	Python	NaN	NaN	NaN	NaN	NaN
74589	25142.0	R	NaN	NaN	NaN	NaN	NaN

74590 rows × 14 columns

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS
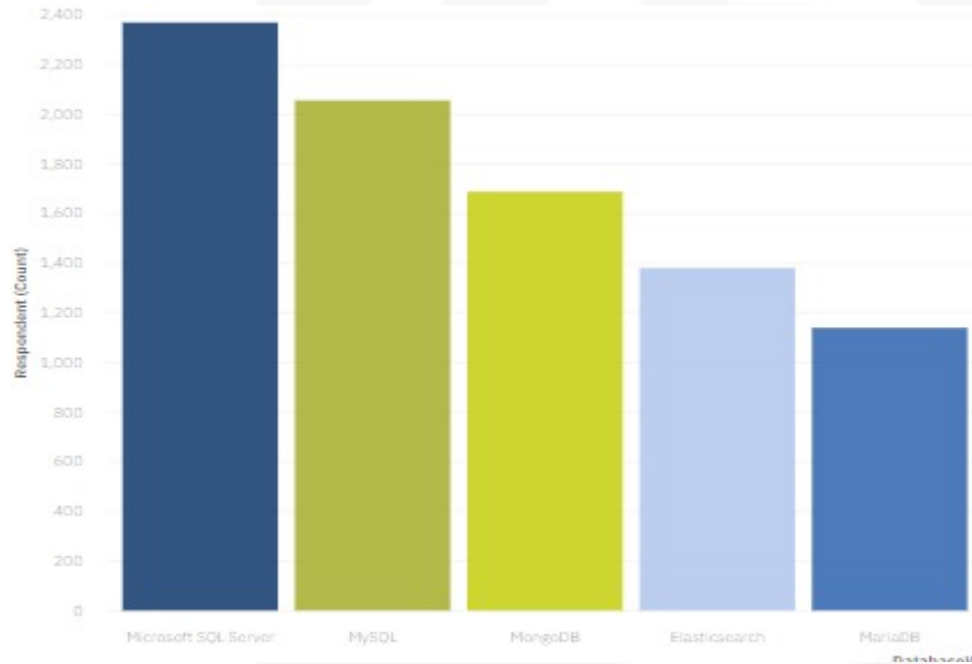
Findings

- Powershell is the top trending language in the world

- Java and JavaScript are becoming more and more popular

- HTML/CSS and C# still has a good portion in the language usage trend
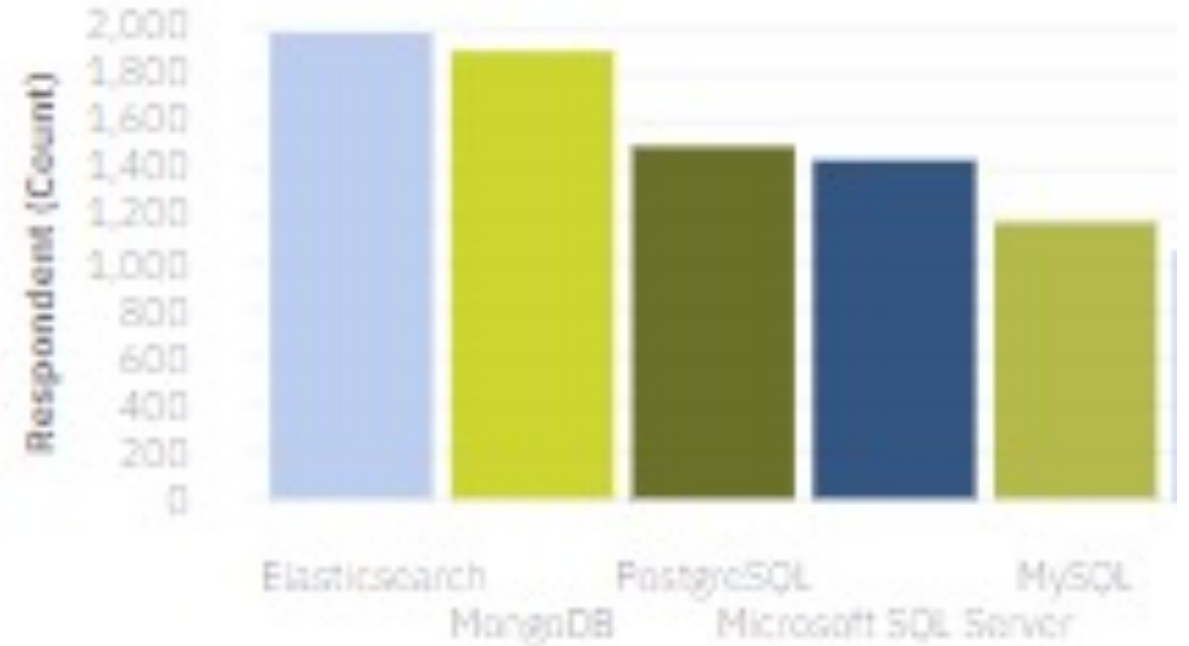
Implications

- Web developments and Web developers are still in high demand

- JavaScript and C# are crucial to learn for developers

- Python is the new trending language, especially popular in AI fields

DATABASE TRENDS

Current Year

Next Year

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Microsoft SQL Server is the most popular database

- There are still a lot of companies using PostgreSQL

- MongoDB and MySQL are the most favorable NoSQL database

Implications

- Open-source databases like MySQL are still preferable

- Software development and Big Data technology still requires SQL

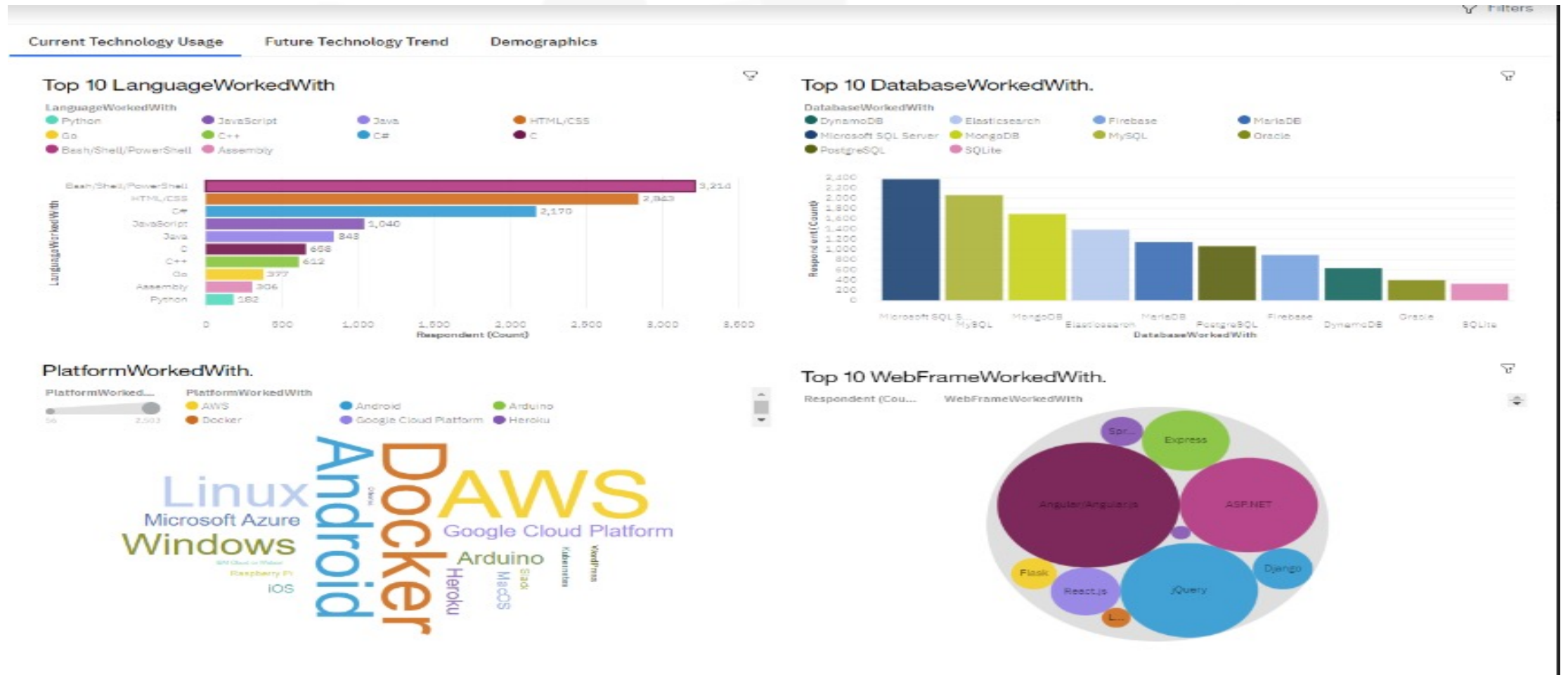- NoSQL databases will make an impact for relational databases

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DASHBOARD

The permanent link of the read-only view of the Cognos dashboard:
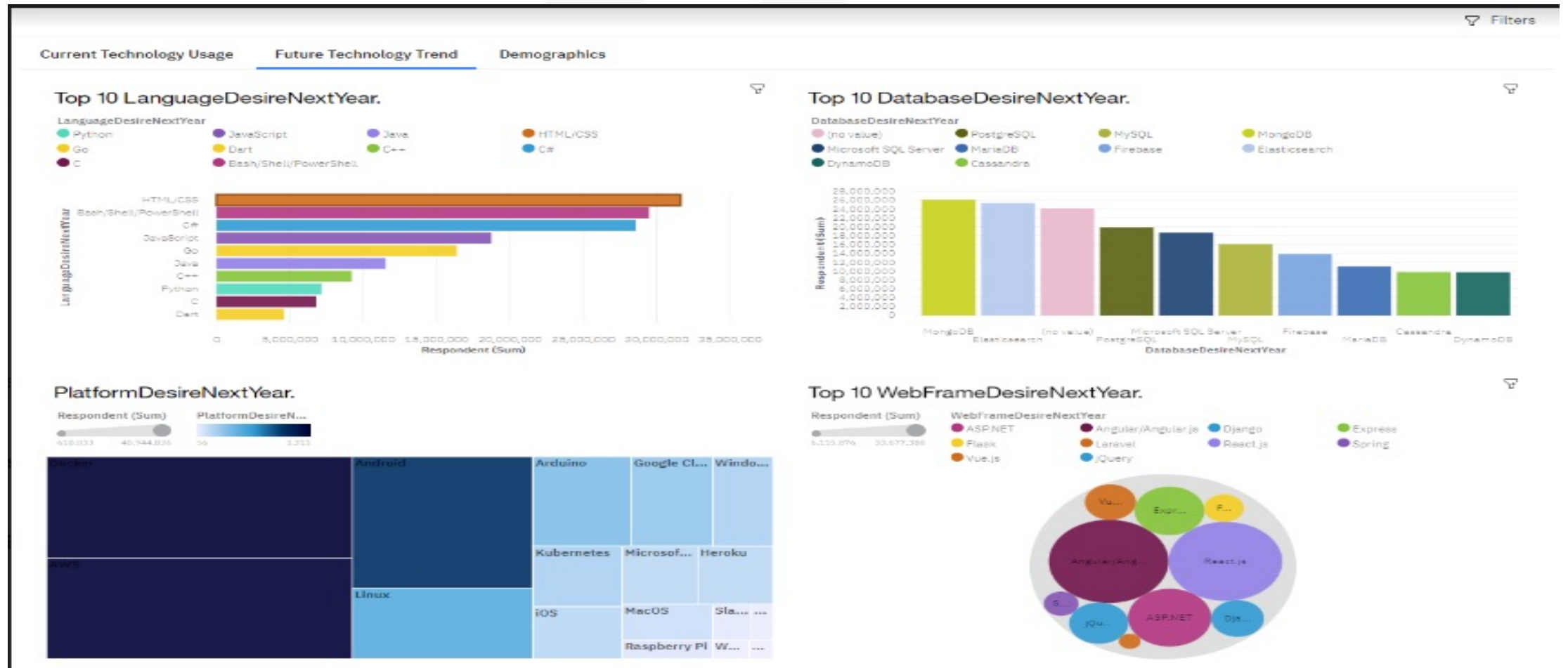
https://dataplatform.cloud.ibm.com/dashboards/765ce400-0166-40a3-8f89-022957533ba5/view/5461ea0731b40ecc1ec3cce4079d2801 7433210bb6bb855184847b495d627697f06f10c3c8294a598 e18566ba1eb410ac9
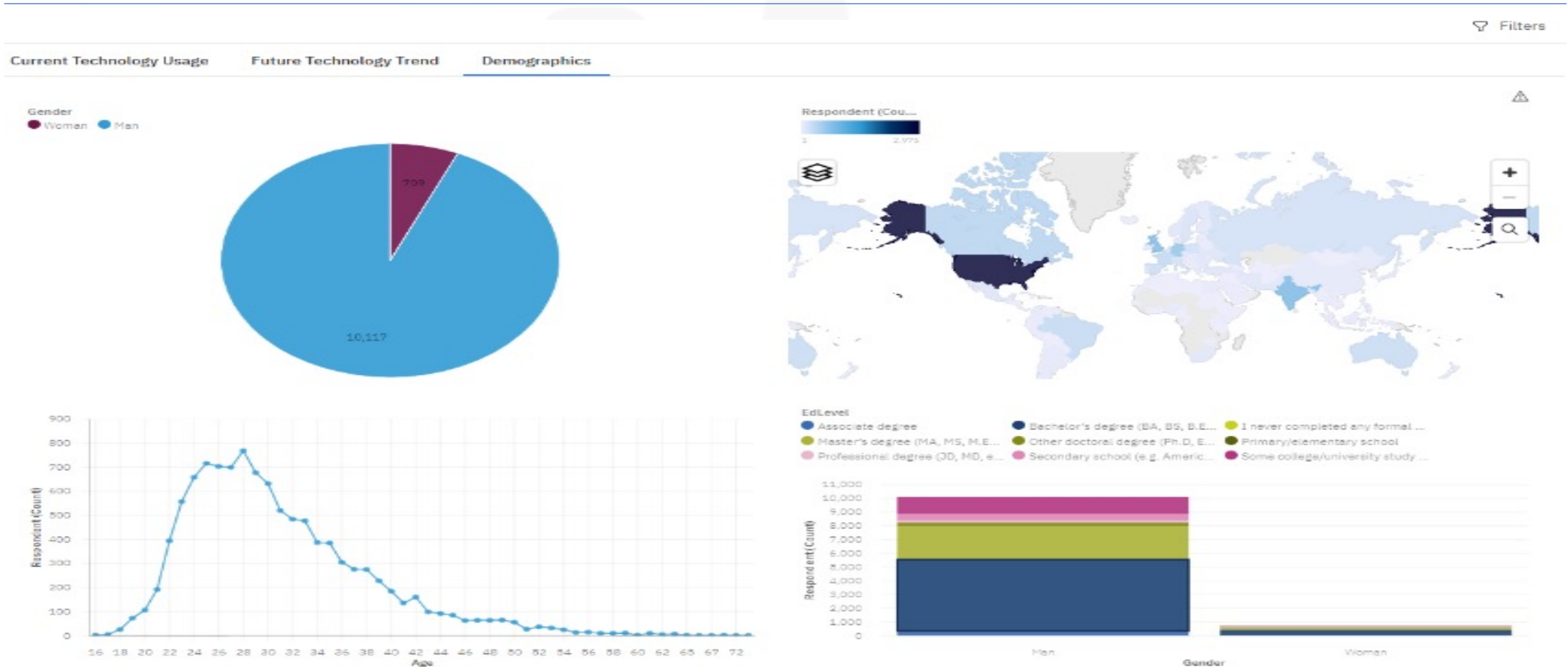
DASHBOARD TAB 1

DASHBOARD TAB 2

DASHBOARD TAB 3

DISCUSSION

- Technology Usage Trend Now and Future

- Gender, Age and Education Discrimination in IT Industry

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology trends change every year

- USA is the top technology country

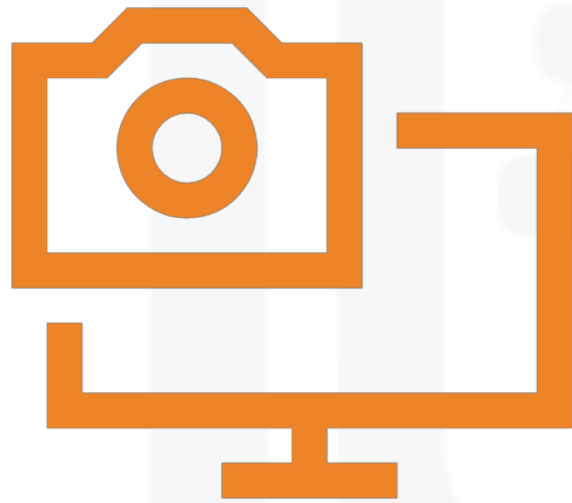- There is extreme gender and age discrimination

Implications

- Programmers should always follow the latest technology trends

- More countries should have an equal chance to be exposed to new technology

- Gender and Age should not be one of the factors regarding Employment
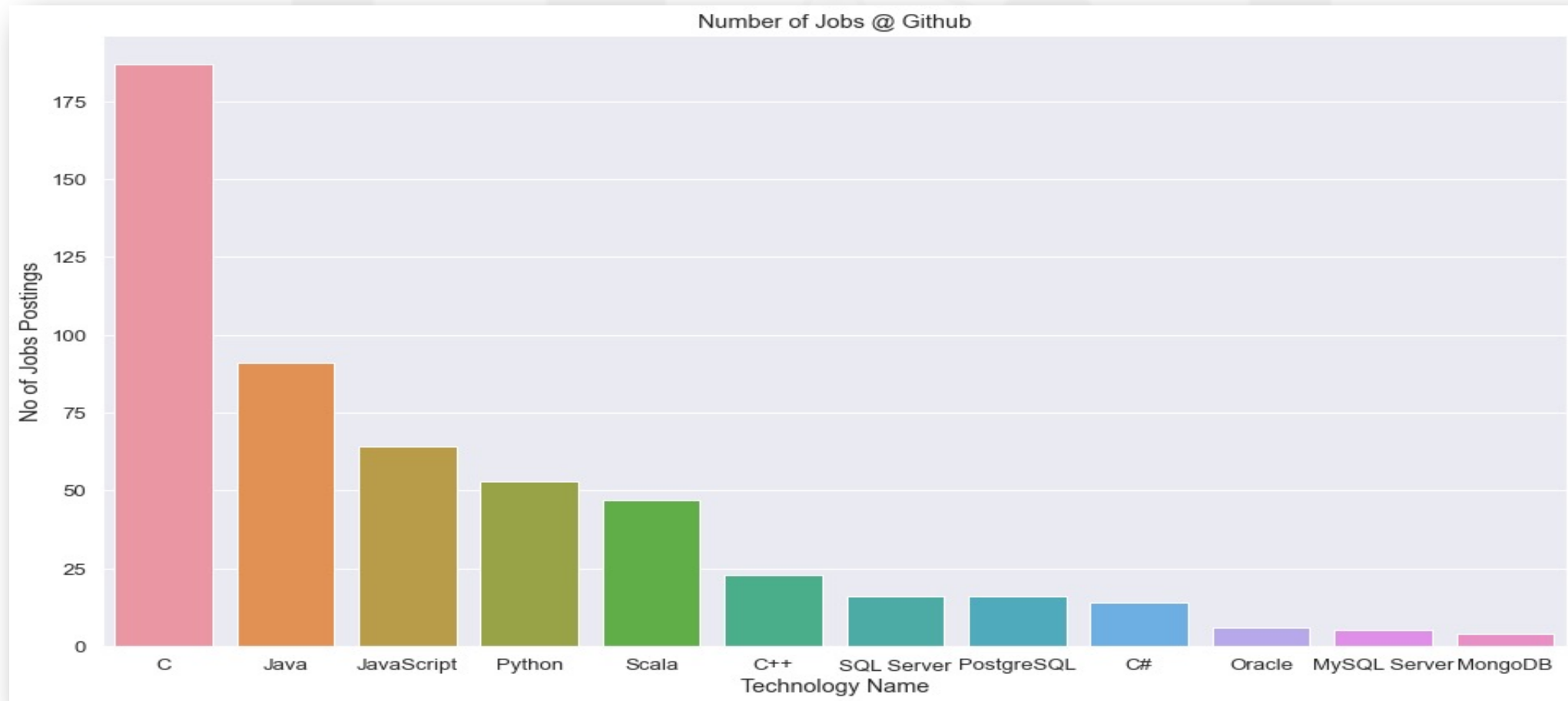
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CONCLUSION

- Technology Trends

- Programming Languages, Database, Platform and Web frame Trends

- Demographics Trends

- Gender and Education

- Programming Languages Trends and Salary Trends

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APPENDIX

- IBM Cognos Dashboard Embedded (CDE) is an AI-fueled business intelligence service that supports the entire data analytics cycle, from discovery to operationalization. It provides users with data discovery capabilities to visually explore and interact with their data to identify the key insights for improving data driven decisions. Users can perform data discovery and then quickly assemble that information into interactive, visually appealing dashboards; all without the need of formal training.

JOB POSTINGS

POPULAR LANGUAGES

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