



# Technology Trend Analysis

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# OUTLINE



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

# 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 trend 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 and current time period
  - Identify skill requirements for 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
  - IBM Cognos
- Presentation

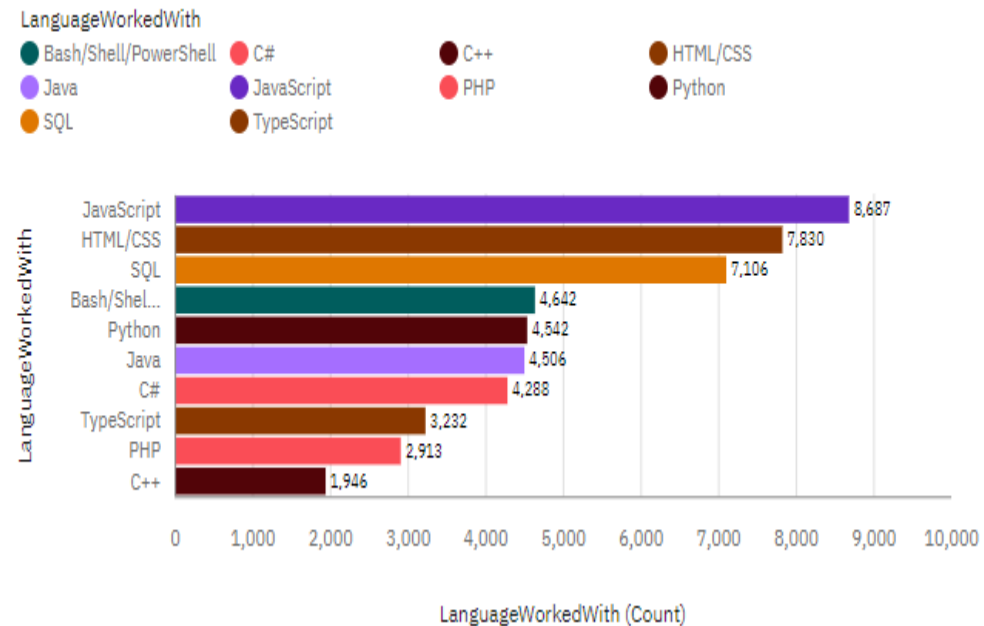


# RESULTS

# PROGRAMMING LANGUAGE TRENDS

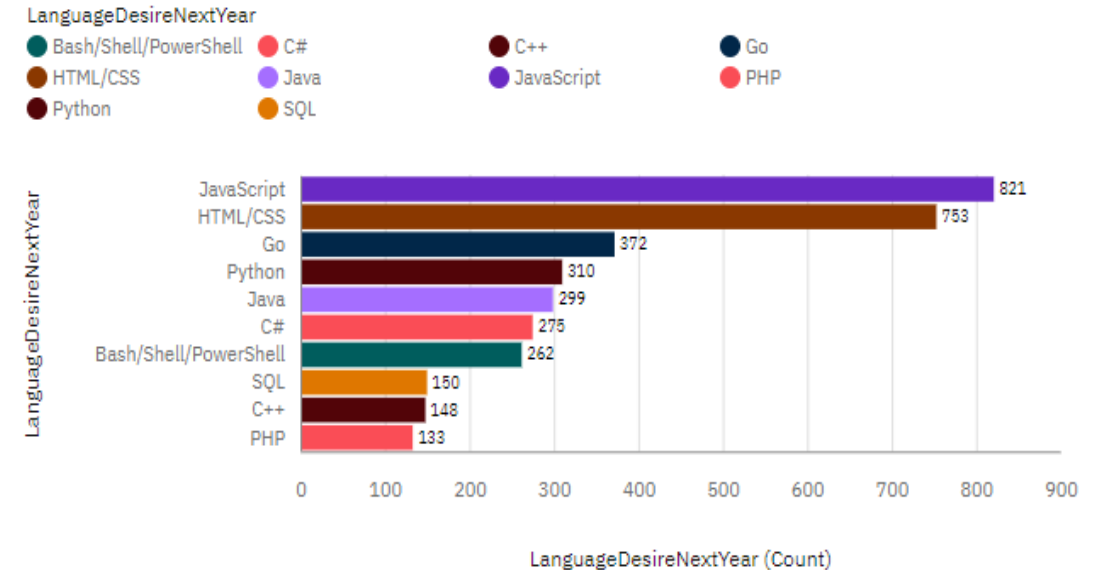
## Current Year

Top 10 Language Worked With



## Next Year

Top 10 Language Desire Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- JavaScript is top trending language in the world
- Python and TypeScript are becoming more and more popular
- HTML/CSS and SQL still has great portion in language usage trend

## Implications

- Web developments and Web developers are still in high demands
- JavaScript and TypeScript are crucial to learn for developers
- Python is the new trending language, especially popular in AI fields

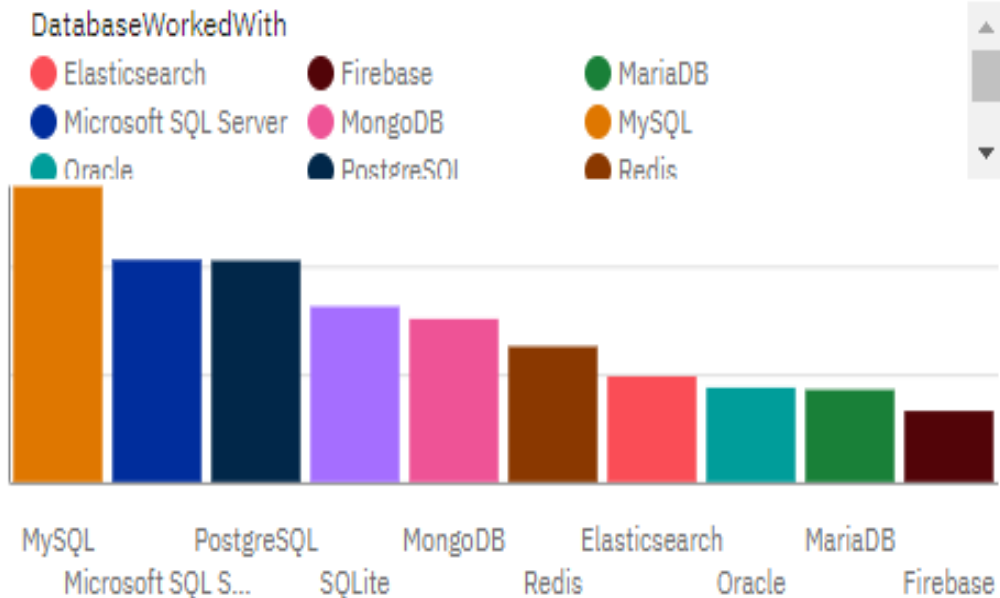


# DATABASE TRENDS

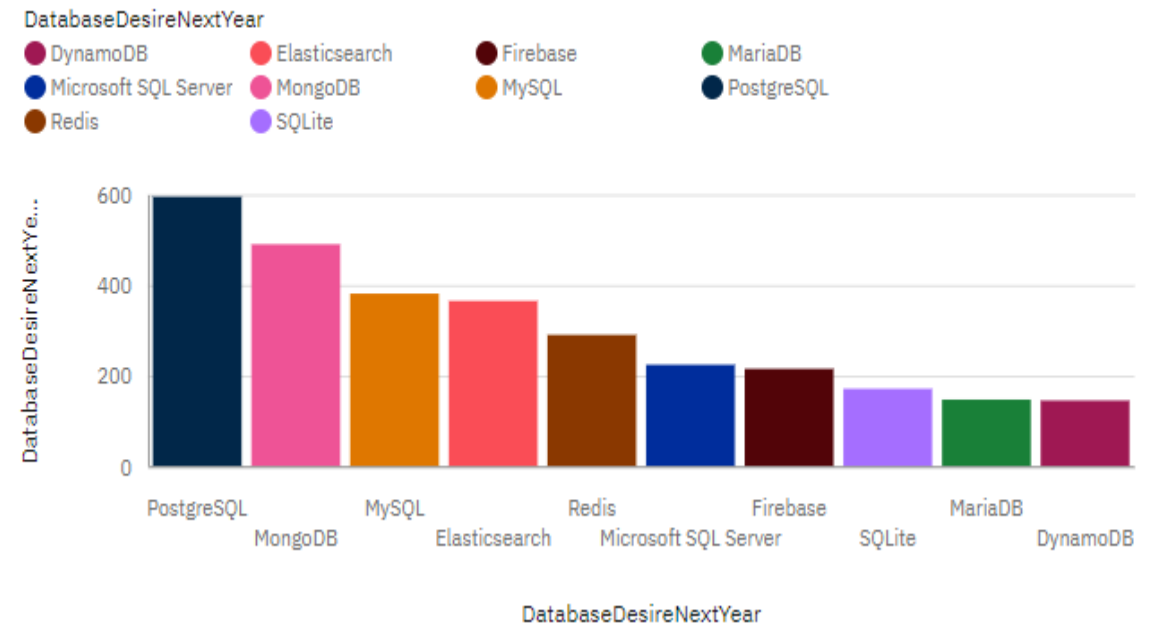
Current Year

Next Year

Top 10 Database Worked With



Top 10 Database Desire Next Year



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- MySQL is the most popular database
- There are still a lot of companies using Microsoft SQL Server
- MongoDB and Redis 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

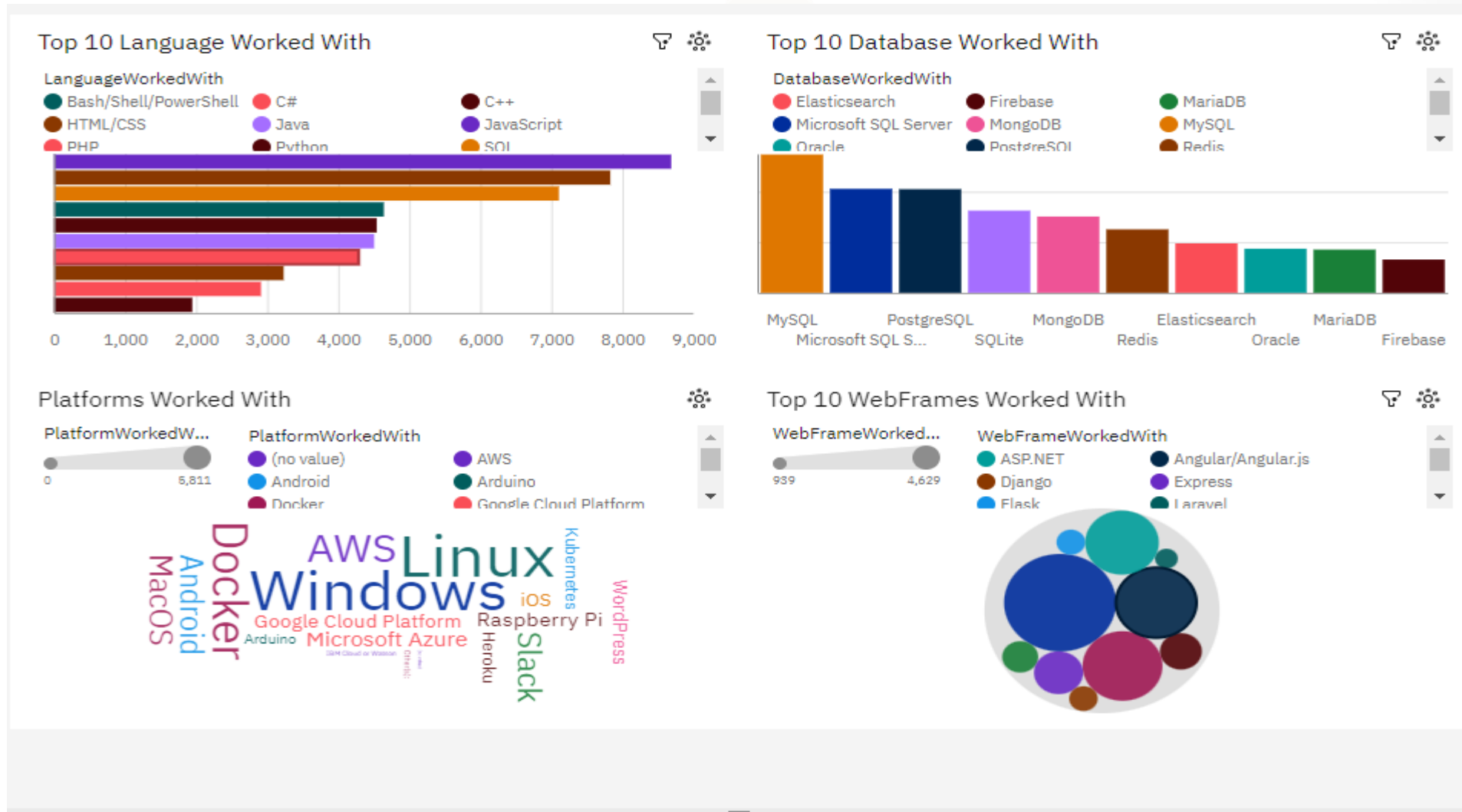
# DASHBOARD



The link of the Cognos dashboard:

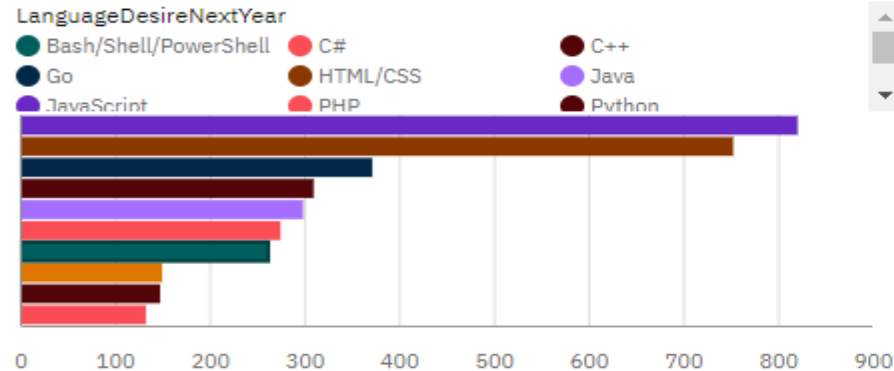
[https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my\\_folders%2FTechnology\\_data\\_analysis.pdf&action=view&mode=dashboard&subView=model0000001913ae35b62\\_00000000](https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FTechnology_data_analysis.pdf&action=view&mode=dashboard&subView=model0000001913ae35b62_00000000)

# CURRENT TECHNOLOGY USAGE

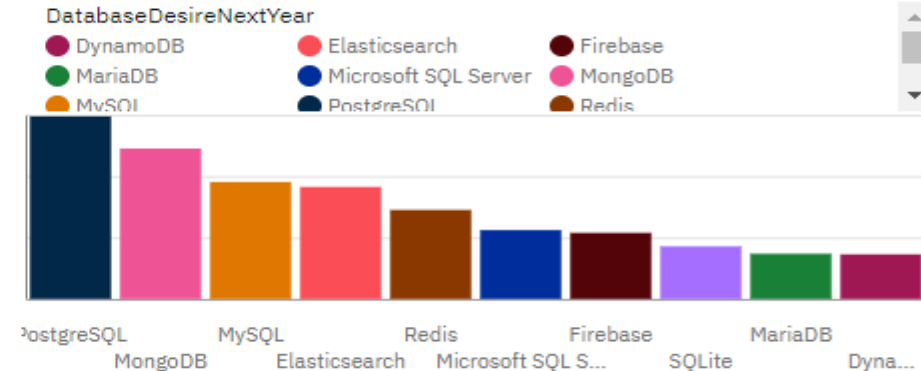


# FUTURE TECHNOLOGY TREND

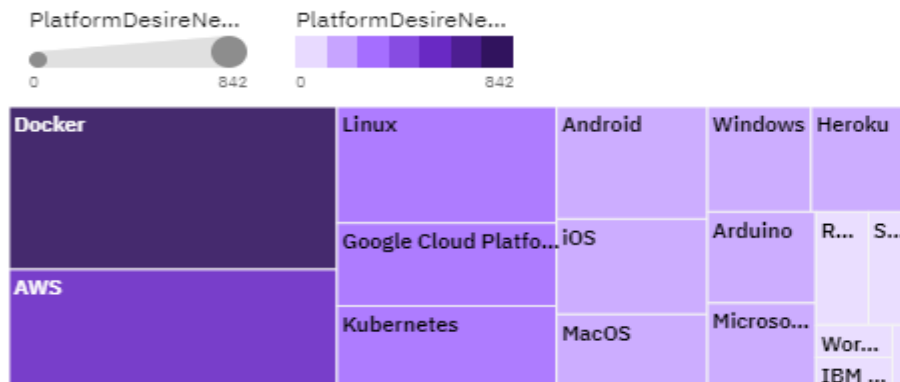
Top 10 Language Desire Next Year



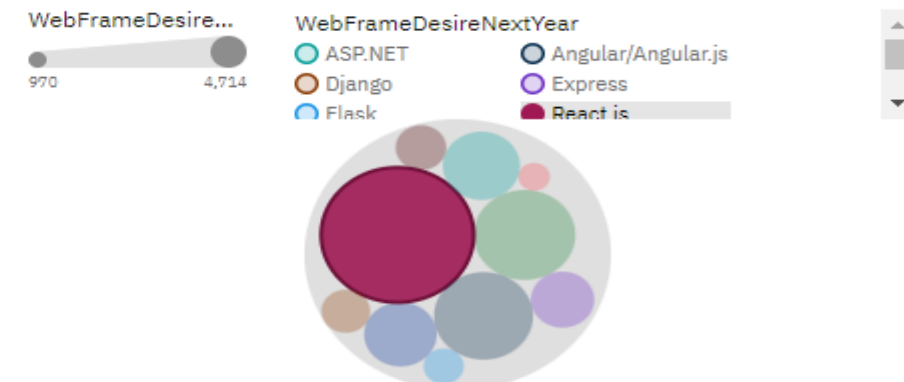
Top 10 Database Desire Next Year



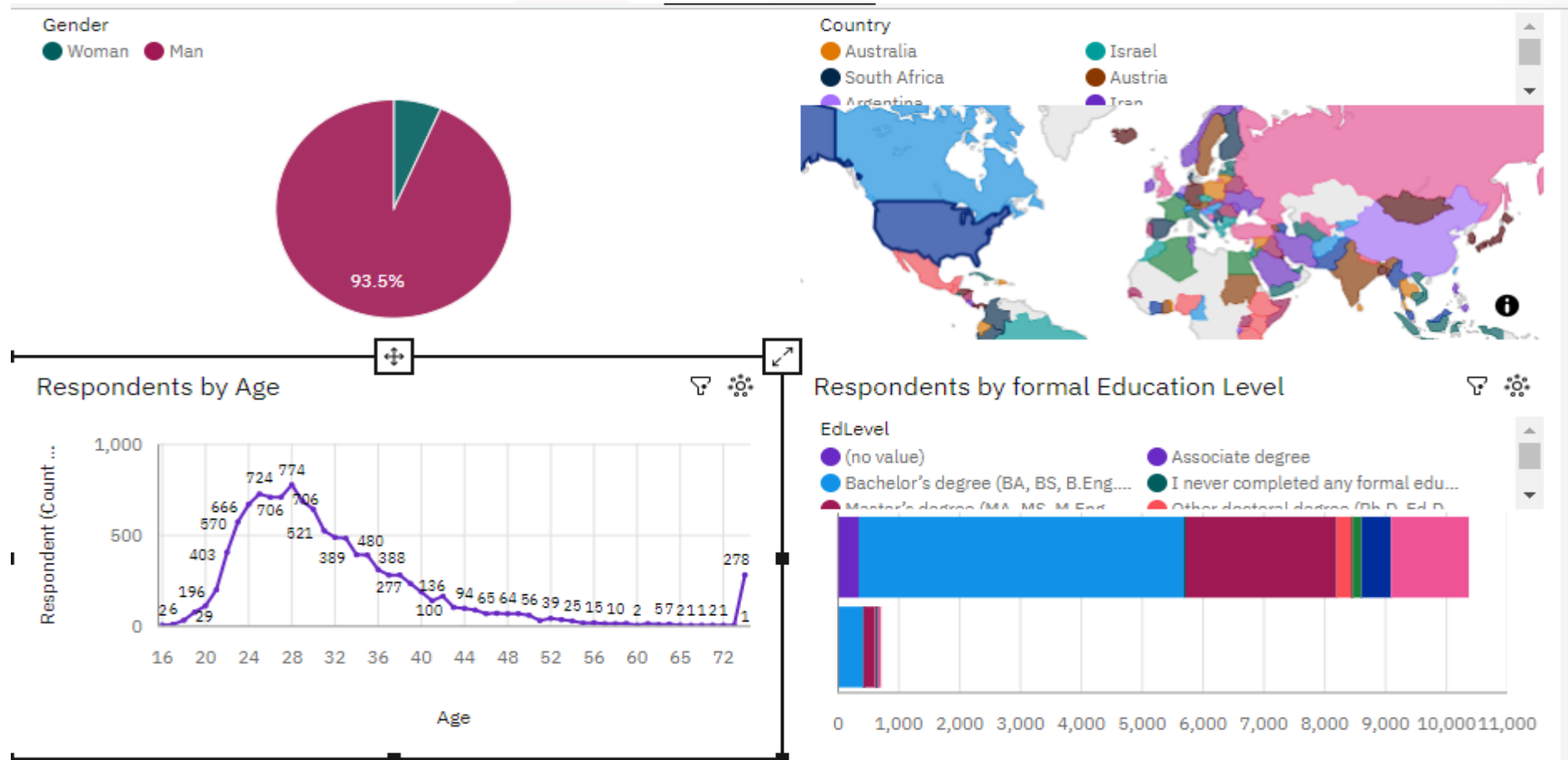
Most Desired Platforms Next Year



Most Desired Web frames Next Year



# DEMOGRAPHICS



# DISCUSSION



- Technology Usage Trend Now and Future
- Gender, Age and Education Discrimination in IT Industry

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Technology trends changes every year
- USA is the top technology country
- There are extreme gender and age discrimination
- Docker and AWS are the most popular platform

## Implications

- Programmers should always follow the latest technology trends
- More countries should have the equal chance to be exposed to new technology
- Gender and Age should not be one of the concerns or benefits of Employment



# CONCLUSION



- Technology Trends
- Programming Languages, Database, Platform and Web frame Trends
- Demographics Trends
- Gender and Education
- Programming Languages Trends and Salary Trends

# APPENDIX

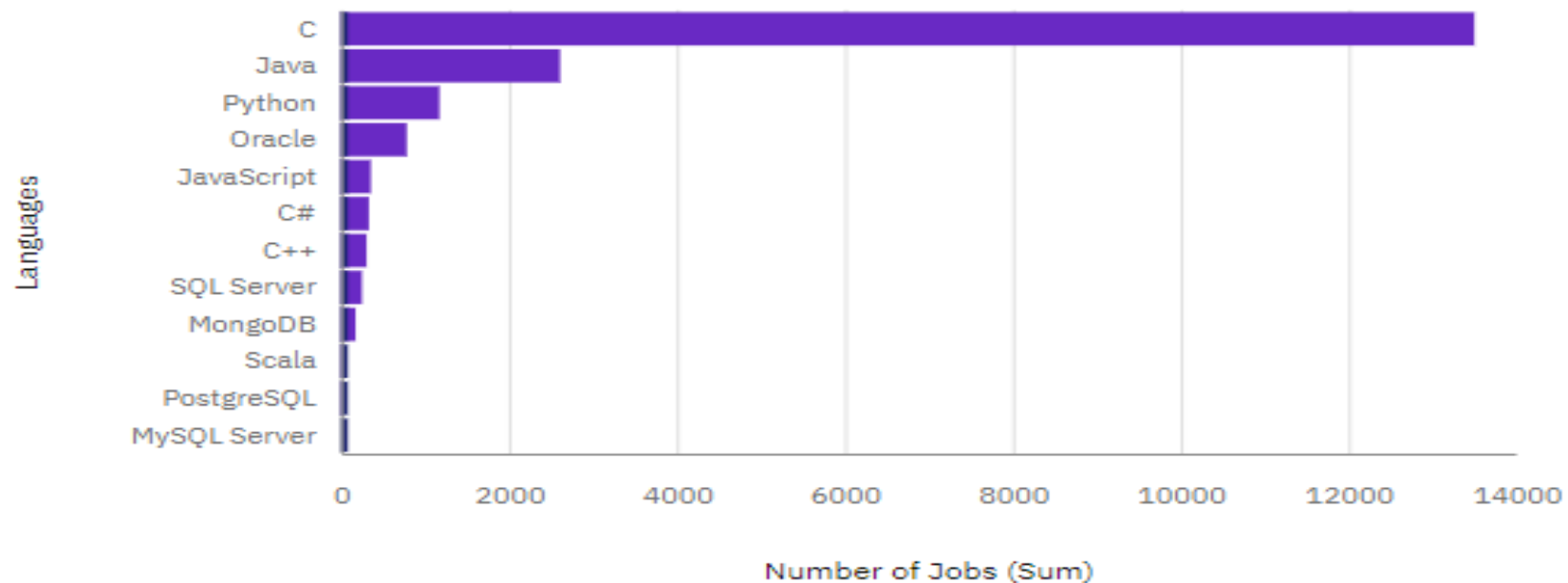


- IBM Cognos Dashboard Embedded (CDE) is an AI-fueled business intelligence service that supports the entire data analytics cycle, from discovery to operationalization. It provides users with data discovery capabilities to visually explore and interact with their data to identify the key insights for 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

Number of Jobs Posting

● Number of Jobs (Sum) ● Languages (Count)



# POPULAR LANGUAGES

Average Annual Salary by Language

