



# Analysis in IT Trends

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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
  - Identify skill requirements for future
  - Identify human resource gap in the industry
- Audience for this Presentation
  - Programmers
  - IT industry leaders
  - Computer science students

# METHODOLOGY



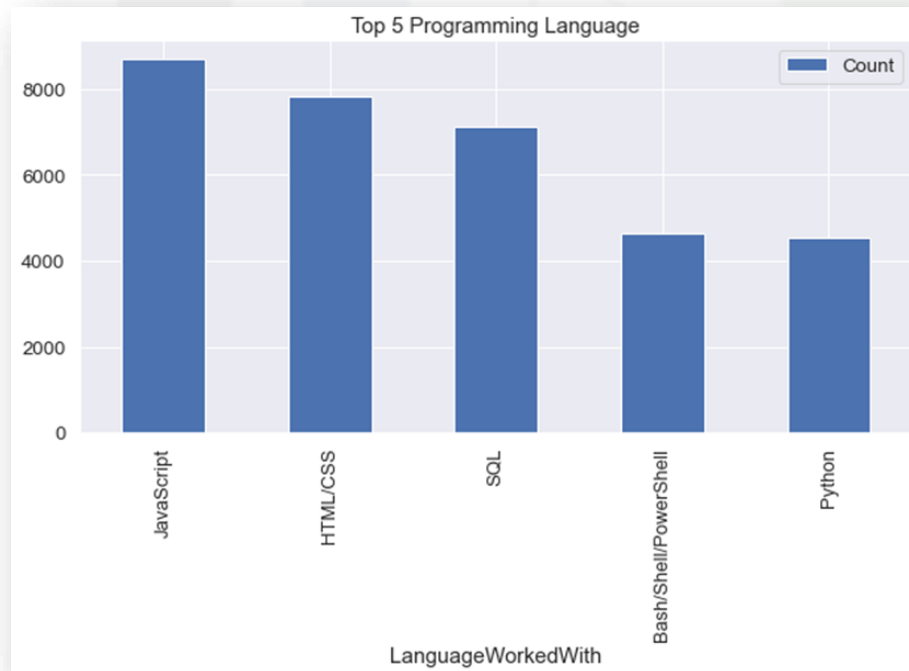
- Data Collection (Sources)
  - Stack overflow developer 2019 survey
  - GitHub job postings
  - Programming languages annual salary
- Data Wrangling
- Data Exploration
- Data Cleaning
- Data Visualization
  - Python matplotlib & turtle
  - IBM Cognos
- Presentation

# RESULTS

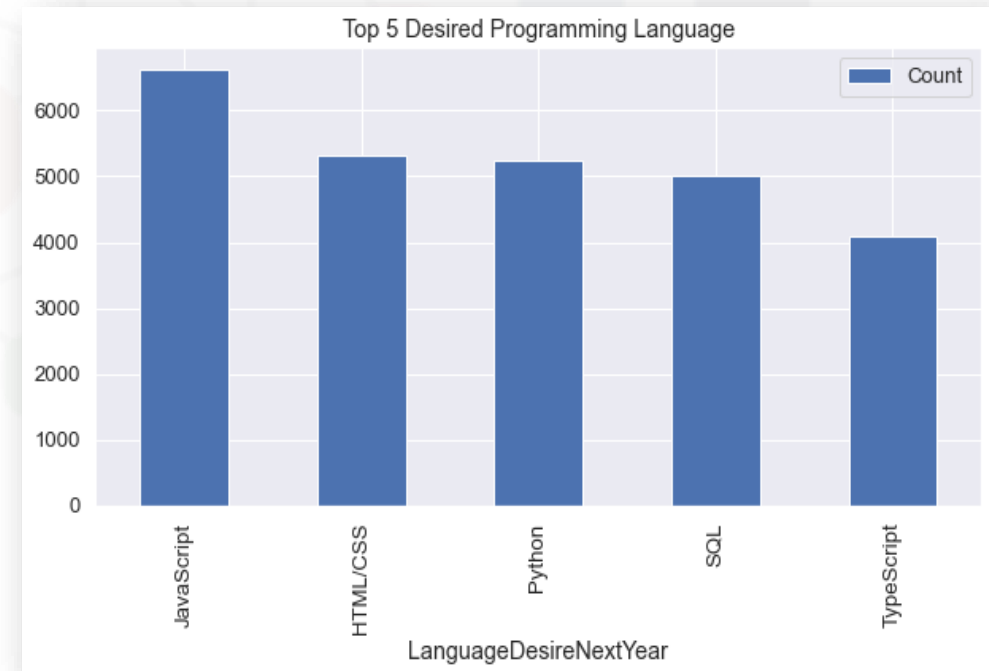
|       | Respondent | LanguageWorkedWith | LanguageDesireNextYear | DatabaseWorkedWith | DatabaseDesireNextYear | PlatformWorkedWith |
|-------|------------|--------------------|------------------------|--------------------|------------------------|--------------------|
| 0     | 4          | C                  | C                      | MySQL              | MySQL                  | Linux              |
| 1     | 4          | C++                | C#                     | SQLite             | SQLite                 | Windows            |
| 2     | 4          | C#                 | JavaScript             | NaN                | NaN                    | NaN                |
| 3     | 4          | Python             | SQL                    | NaN                | NaN                    | NaN                |
| 4     | 4          | SQL                | NaN                    | NaN                | NaN                    | NaN                |
| ...   | ...        | ...                | ...                    | ...                | ...                    | ...                |
| 74584 | 25142      | Go                 | Python                 | NaN                | NaN                    | NaN                |
| 74585 | 25142      | HTML/CSS           | R                      | NaN                | NaN                    | NaN                |
| 74586 | 25142      | PHP                | NaN                    | NaN                | NaN                    | NaN                |
| 74587 | 25142      | Python             | NaN                    | NaN                | NaN                    | NaN                |
| 74588 | 25142      | R                  | NaN                    | NaN                | NaN                    | NaN                |

# PROGRAMMING LANGUAGE TRENDS

Current Year



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

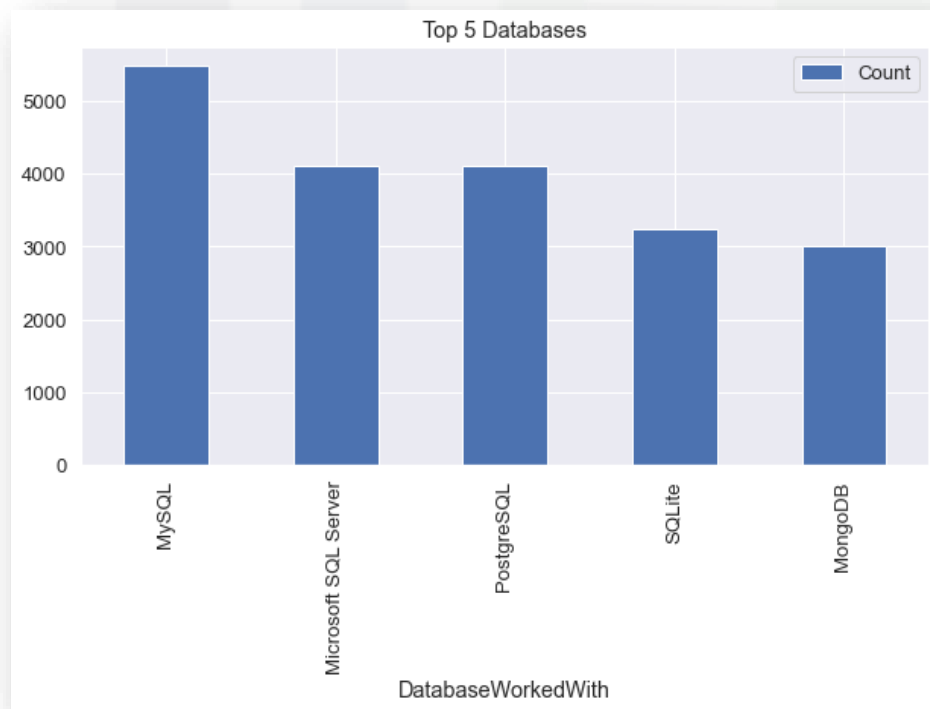
## Implications

- 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

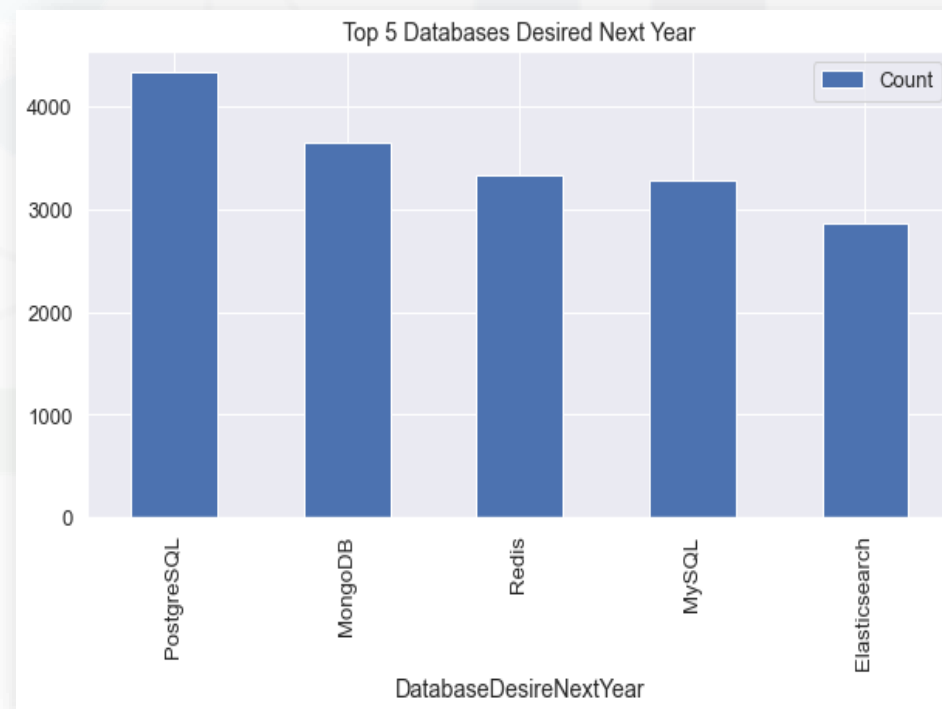


# DATABASE TRENDS

Current Year



Next Year



# 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



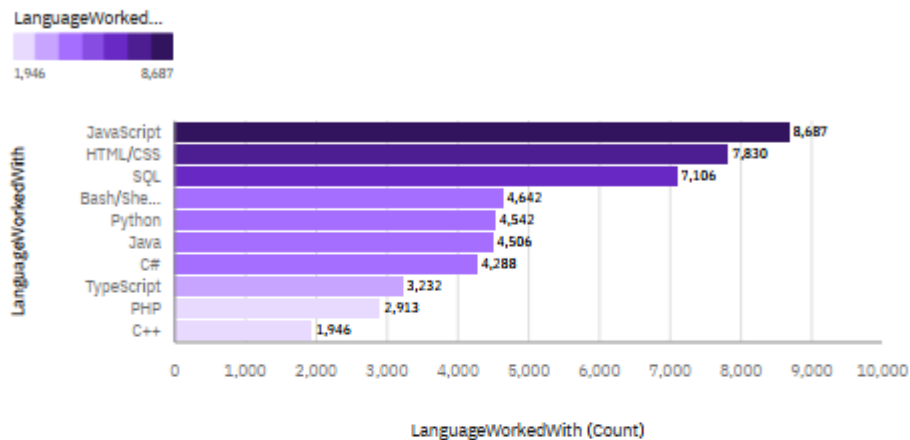
The permanent link of the read-only view of the Cognos dashboard:

<https://dataplatfrom.cloud.ibm.com/dashboards/fe52d392-0d9c-4f29-8996-389531352958/view/6e1bdc0911b91dfc56efe6e4079979037f652454e1bb8b0b83867b495e607197a96f12c7c87a495cd9425037fbee4708cc>

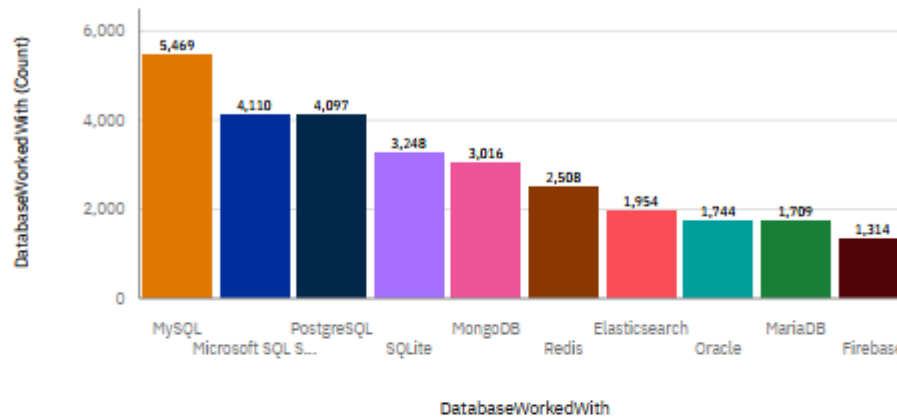
# CURRENT TECHNOLOGY USAGE

## Current Technology Usage

### Top 10 Language Worked With



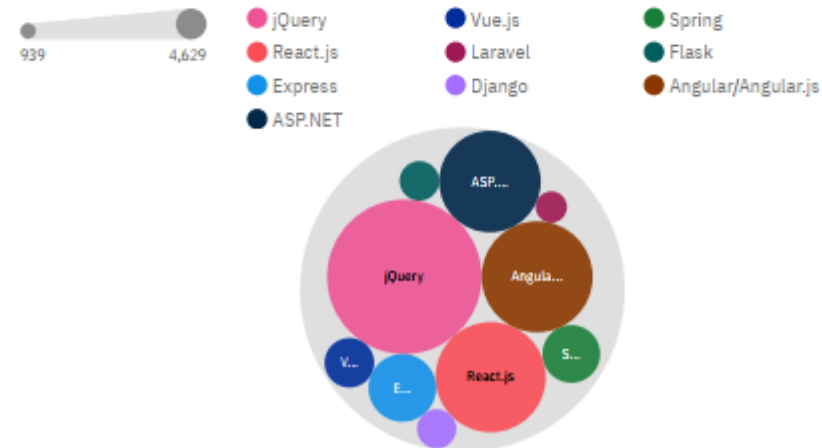
### Top 10 Database Worked With



### Platform Worked With



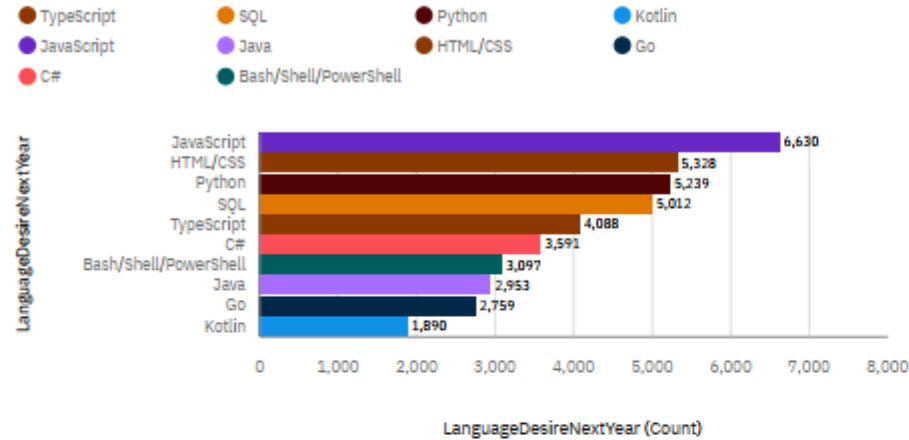
## Top 10 Web Frame Worked With



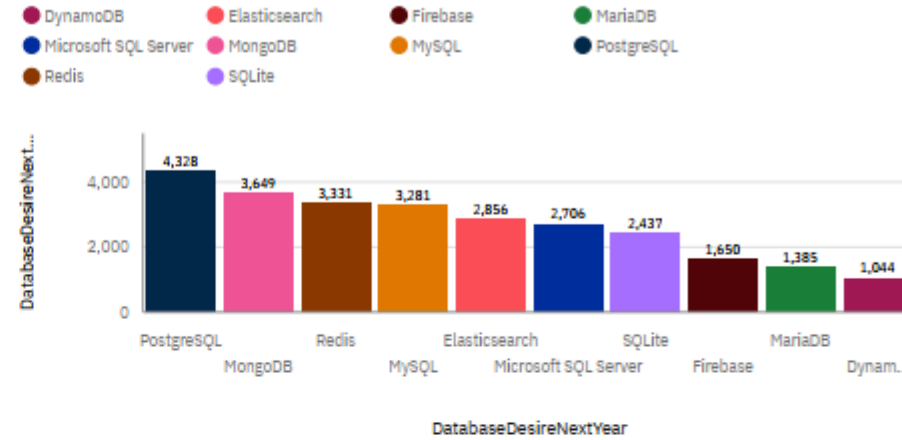
# FUTURE TECHNOLOGY TREND

Future Technology Trend

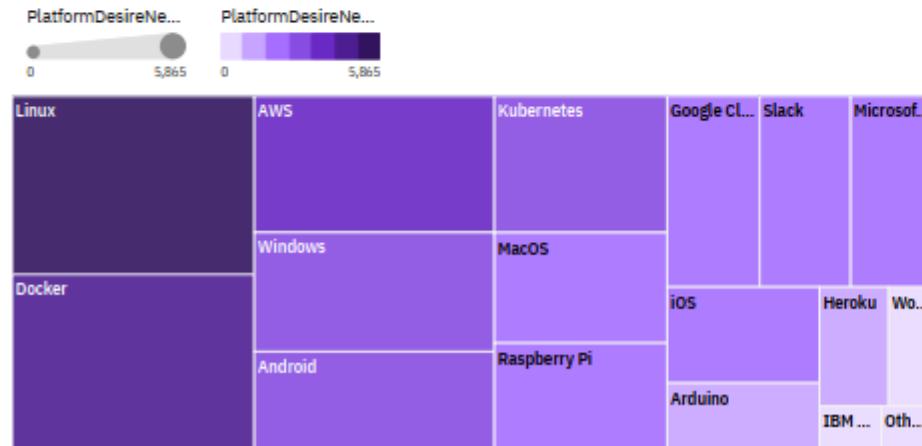
## Top 10 Language Desire Next Year



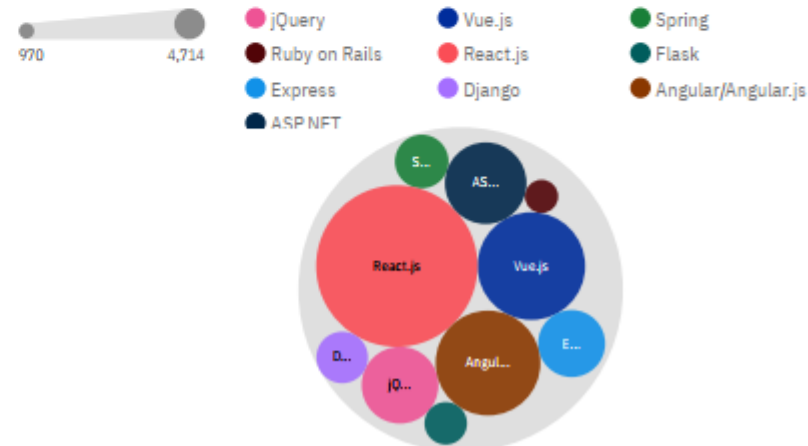
## Top 10 Database Desire Next Year



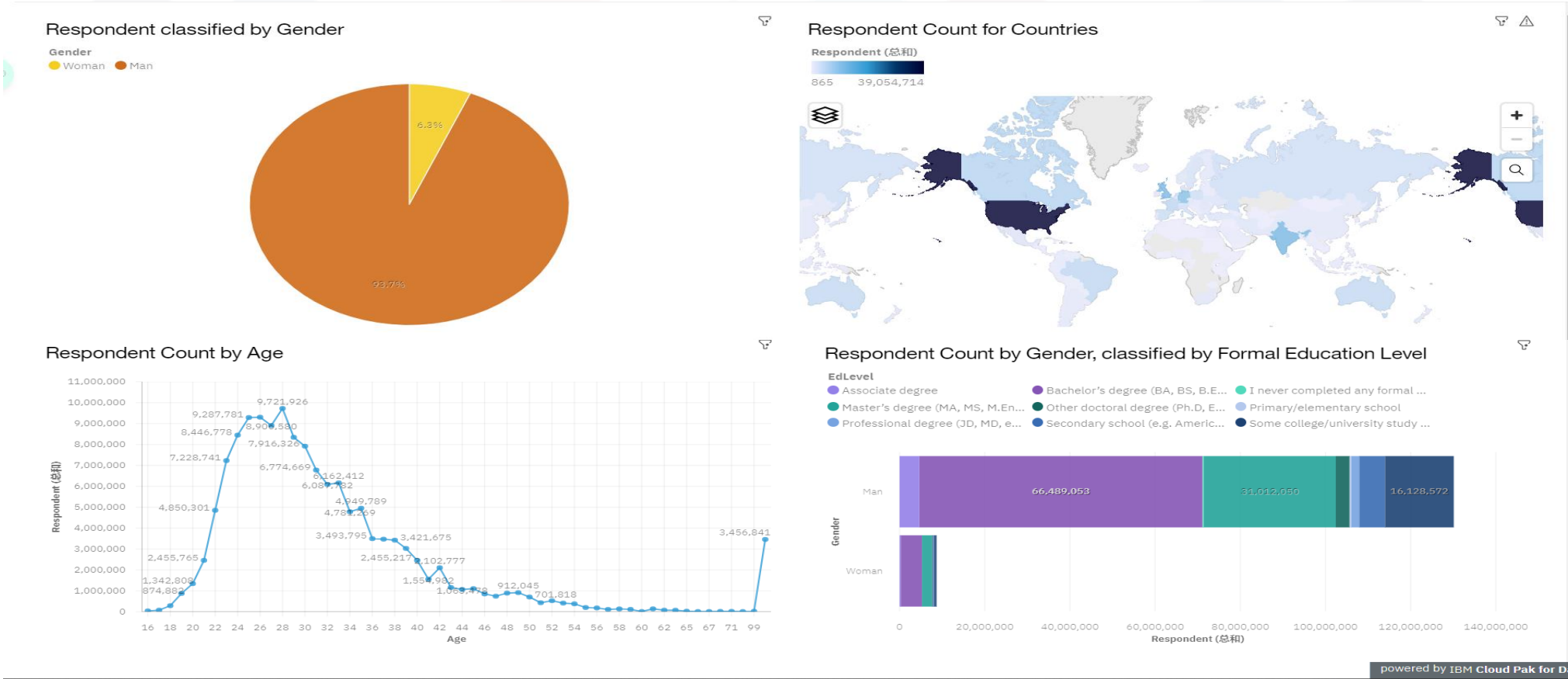
## Platform Desire Next Year



## Top 10 Web Frame Desire 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

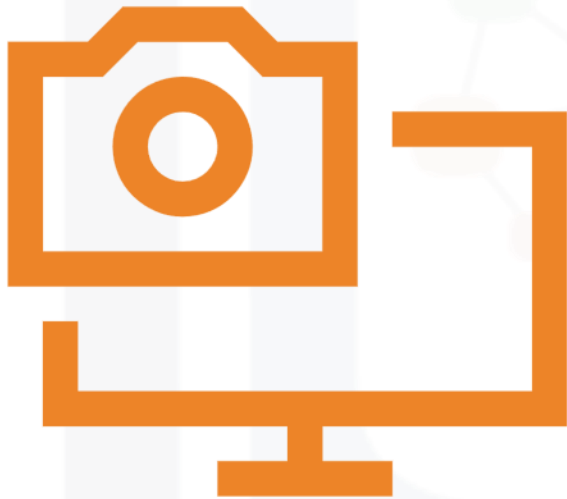


# CONCLUSION



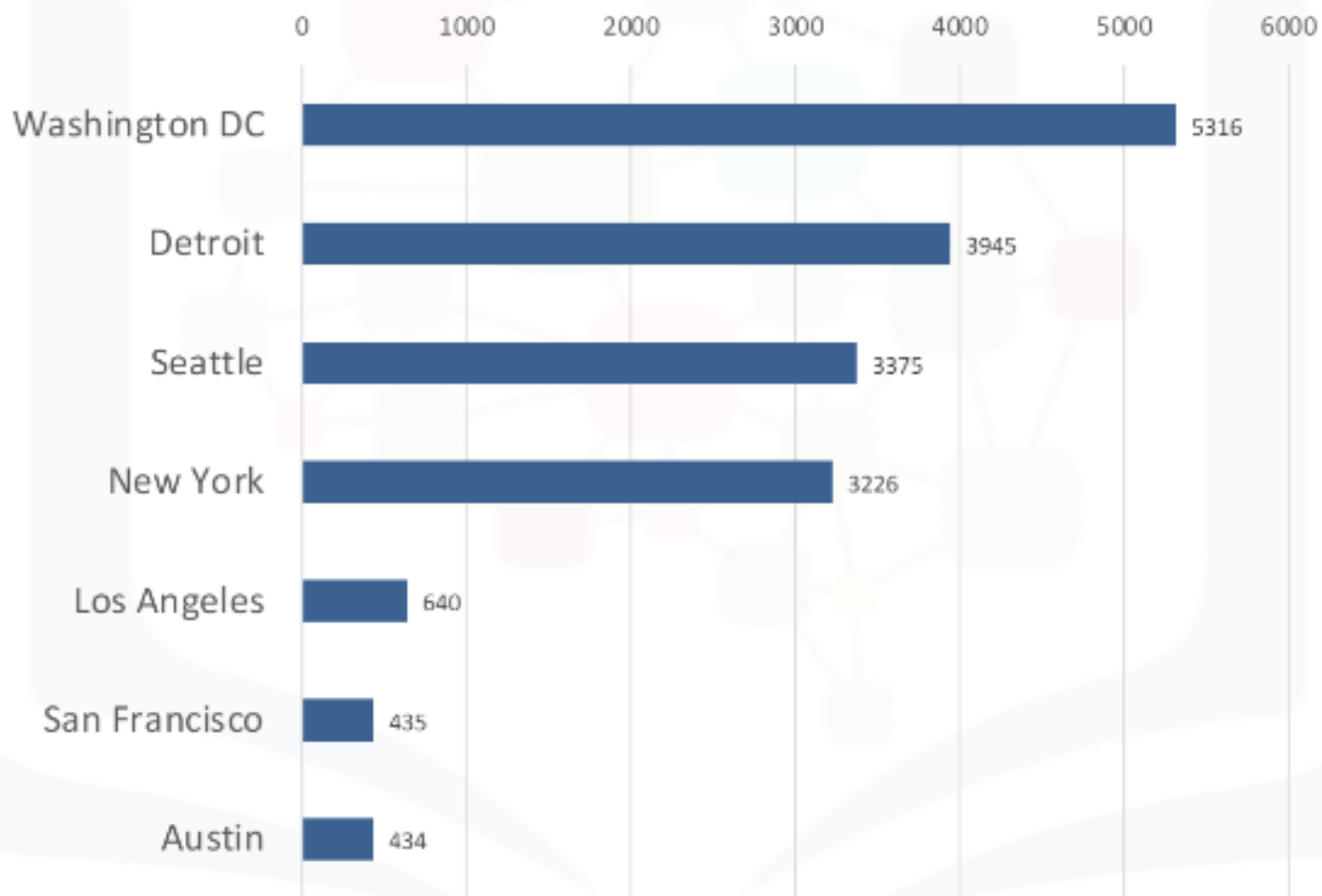
- The findings underscore the dynamic nature of the programming landscape and the critical role of technology in driving innovation across industries
- Database systems becomes essential to meet the demands of modern applications
- An understanding of programming become diverse

# 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

