Current Technology Usage and Future Trends

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SKILLS NETWORK

OUTLINE

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EXECUTIVE SUMMARY

- **Competitive Nature of IT Industry:** The IT industry is dynamic and competitive, necessitating continuous updates to programming skills and database knowledge.
- **Project Objective:** This project aims to analyze and identify key trends within the IT industry.
- **Key Areas of Analysis:**
  - **Current Technology Usage:** Assessing the current state of programming languages, databases, and platforms used.
  - **Future Technology Trends:** Predicting upcoming trends in programming languages, databases, and platforms.
  - **Demographics in IT Industry:** Understanding the distribution of gender, age, and education levels in IT.
- **Goals:**
  - Identifying top Programming Languages in the industry.
  - Top Database Skills in high demand.
  - Popular IDEs among professionals.

INTRODUCTION

- Emerging Trends and Future Skills:
  - Top Programming Languages in Demand
  - Top Database Skills in Demand
  - Popular IDEs
- Data Collecting Sources:
  - Job Postings
  - Training Portals
  - Surveys
- Role of Data Analyst:
  - **Context**: Working in a global IT and business consulting firm known for expertise in IT solutions.
  - **Objective**: Regularly analyze data to identify future skill requirements and keep pace with changing technologies.

METHODOLOGY

- **Data Sources:**
  - **Stack Overflow**
  - **Survey Data Technologies:**
    - **Current Trends:** Based on Language, Database, Platform & Web Frame used or worked.
    - **Future Trends:** Interest in learning new Language, Database, Platform & Web Frame.
  - **Demographics Data:**
    - Gender (Man and Woman), Age, Formal Education Level & Countries
  - **Data Filtering:**
    - Cleaned empty or Null entries
    - Filtered to include only Man and Woman

- **Illustration and Analysis Tools:**
  - **Python Libraries:** Numpy, Matplotlib, Pandas & Seaborn
  - **IBM Cognos Analytics Dashboard**
  - **Jupyter Notebook:**
    - Data Cleaning
    - Data Science Analysis

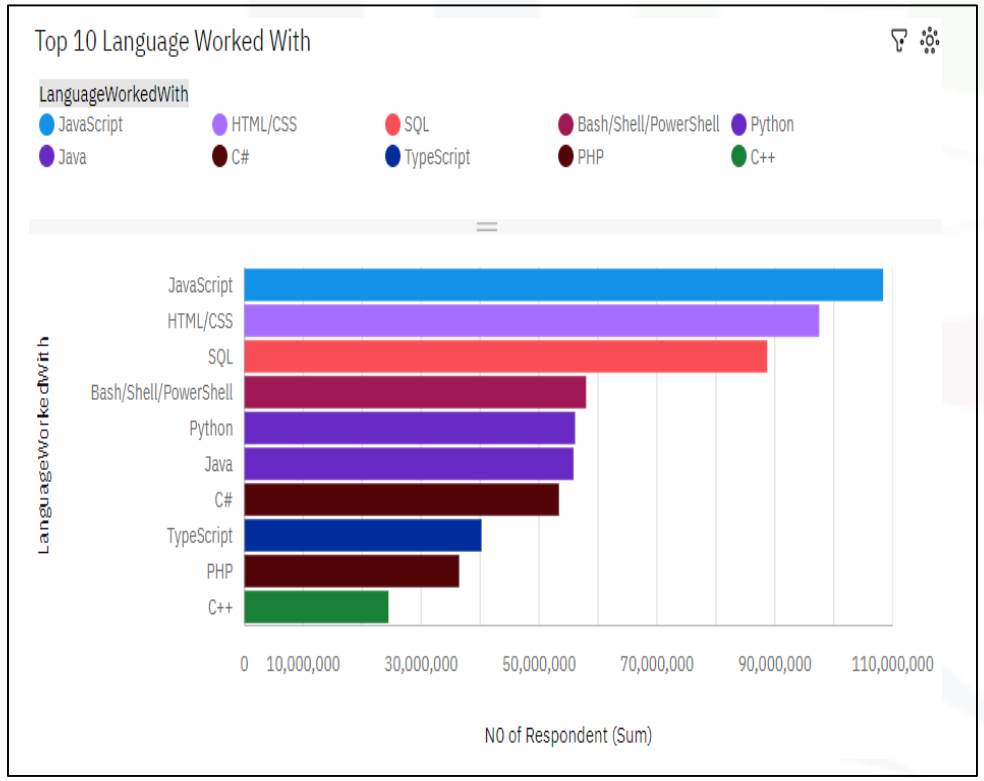
RESULTS

Comparison Results:

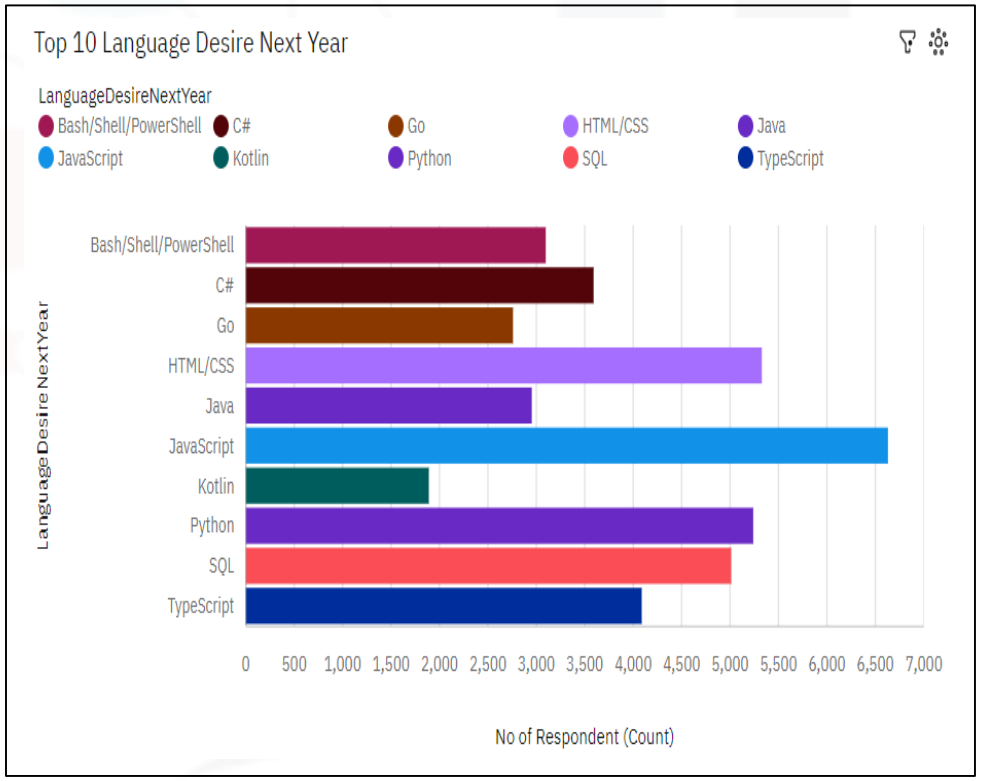
- **Programming Language Trends**
  - **Compare current and future trends in programming languages.**
- **Database Trends**
  - **Analyze current versus future database usage trends.**
- **IDE Trends**
  - **Evaluate the changes in popularity of IDEs over**

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

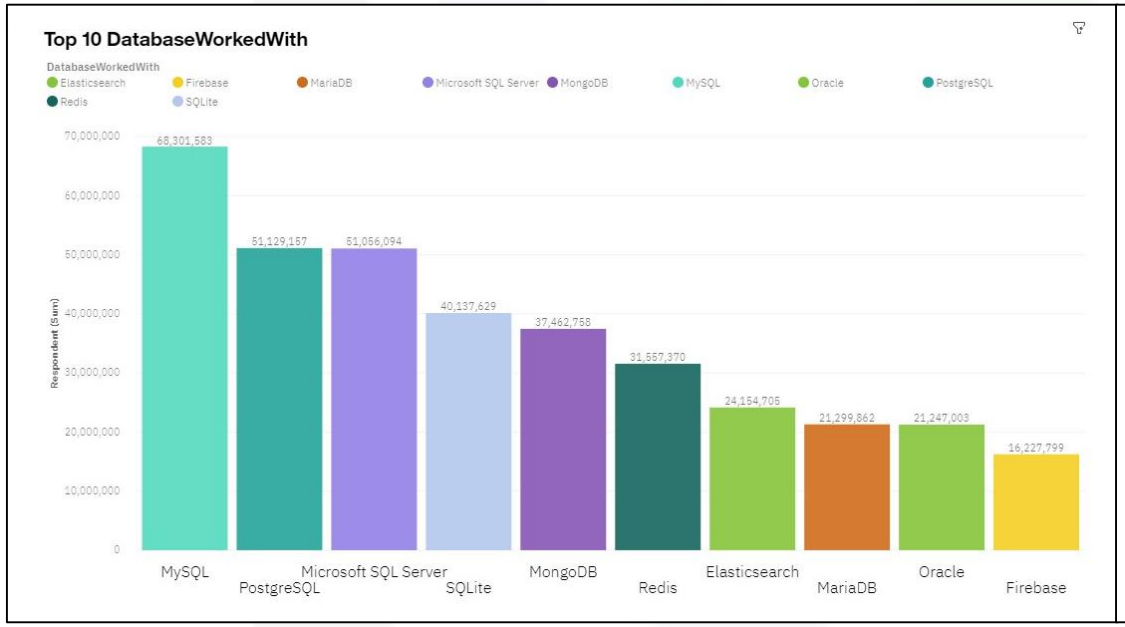
- JavaScript is the top most demanded for current and future programming language.
- Significantly Increasing desire for Python
- The trends of programming language has shifted
- Top 5 language:
  - JavaScript, Python, HTML, SQL, TypeScript

Implications

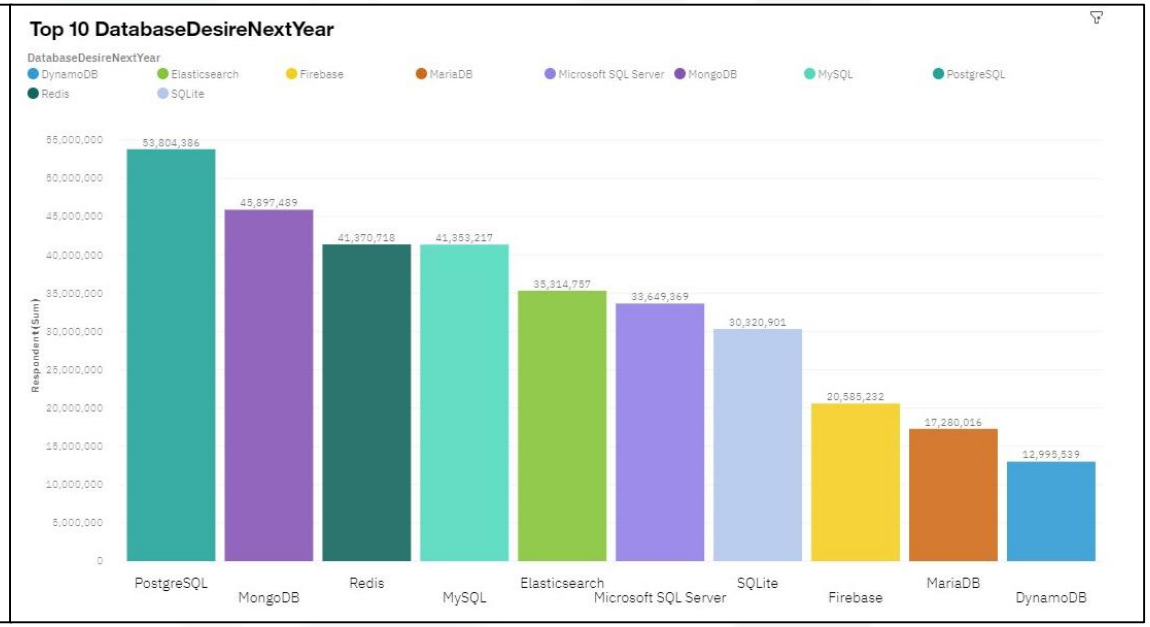
- JavaScript is still most popular and widely used in programming language in IT industry.
- Python has become a new desired and required skills in IT industry.
- The Desire Skill for programming language has certainly Shifted.
- Top 5 desired language:
  - JavaScript, Python, HTML/CSS,SQL, TypeScript

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

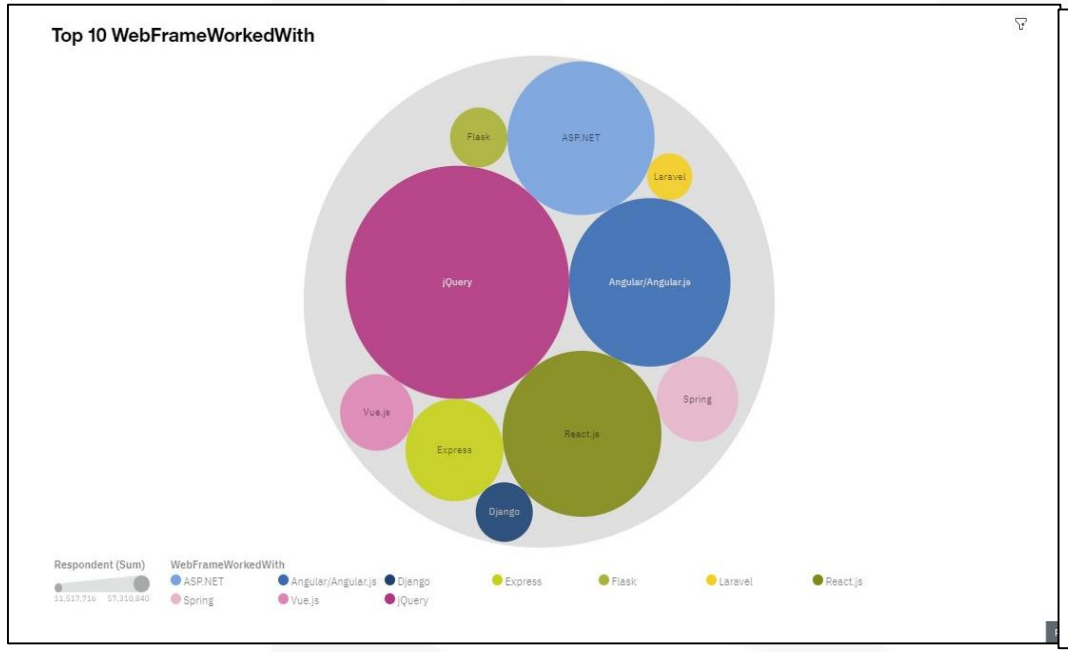
- PostgreSQL, MongoDB, Redis have become the most desired Database.
- MongoDB, Redis, Elasticsearch are becoming increasingly popular for desiredDatabased roughly 10,000 increased in respondants.
- Oracle Database has become less popular and less desired
- Drastic increase in the desire database skills especially for MongoBD and DynamoBD

Implications

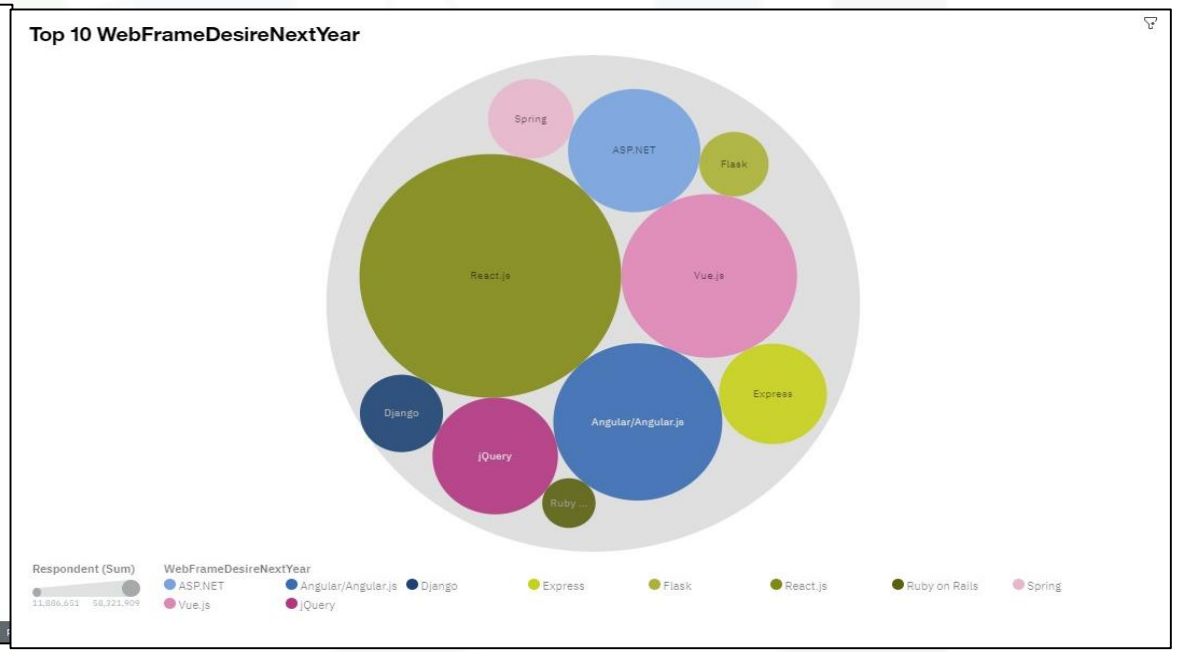
- PostgreSQL, MongoDB,Redis,MySQL,Elasticsearch are the desired and most used Database.
- MongoDb, Redis,Elasticsearch have new and better functionalities or services.
- Oracle Database is to avoid
- Usage of DynamoBD more research may needed.

IDE TRENDS

Current Year



Next Year



IDE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- There shows a trend in IDEs:
- The user for jQuery has drastically decreased.
- React.js and Vue.js have dramatically increase for the desire IDE as compared to current WebFrame worked with as illustrated in the hierarchy buble.

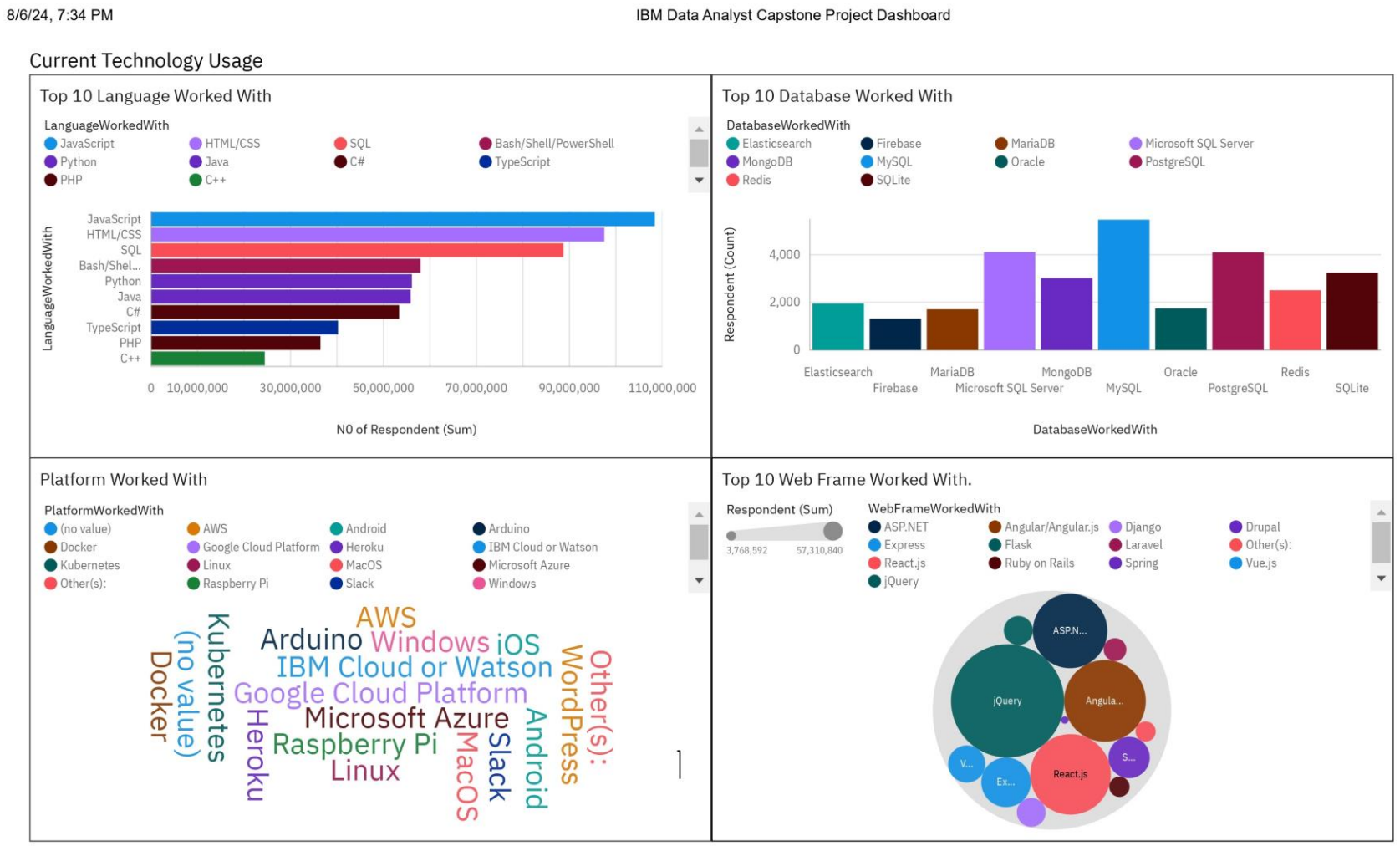
Implications:

- People are shifting to use a better webframe such as React.js or Vue.js
- jQuery might be lacking of some functionality as compare to webframe competitors
- jQuery can be omitted from the new requirements of new technological skills

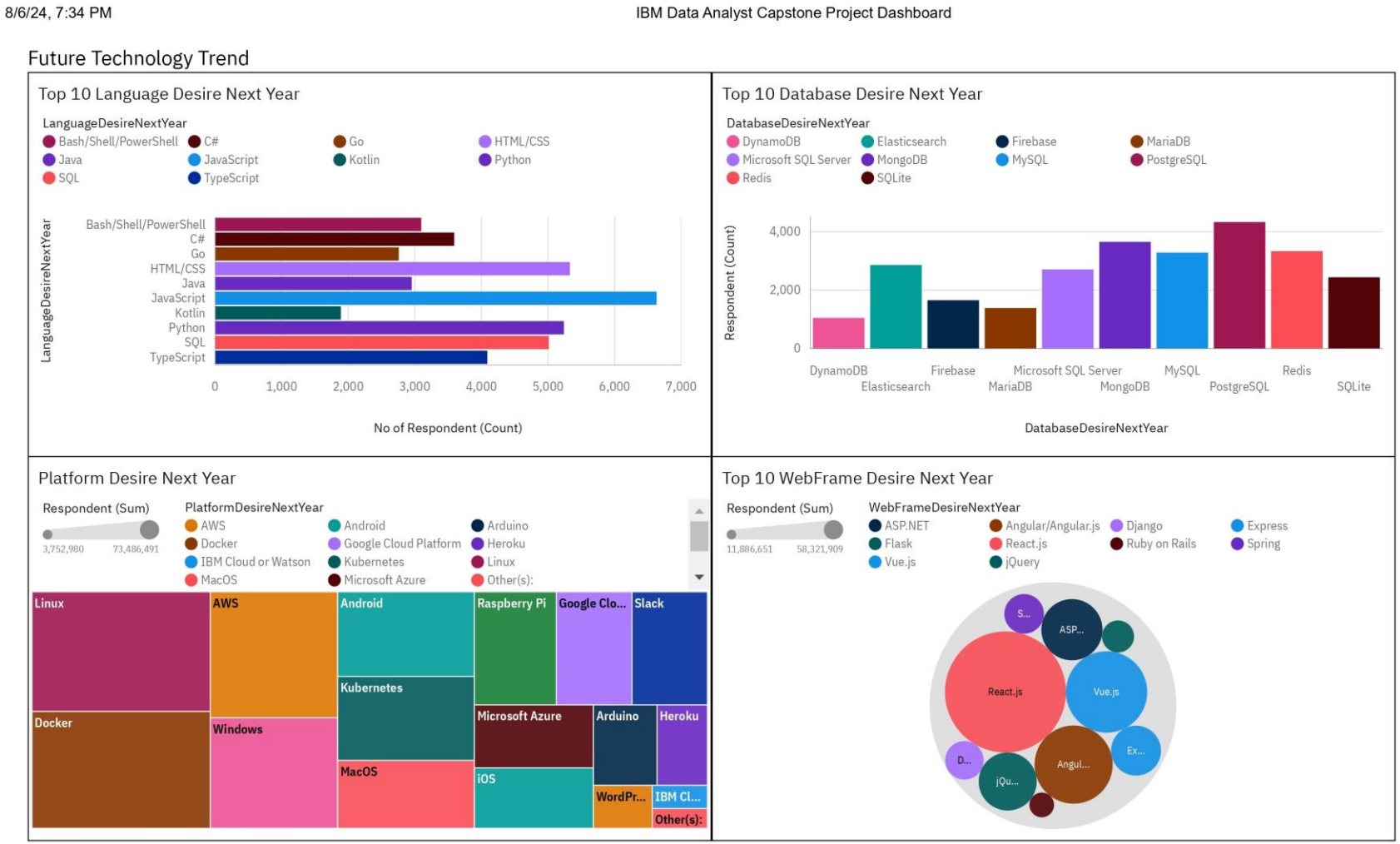
DASHBOARD

https://github.com/miteshviradiya/IBM-Data-Analyst-Capstone-Project.git

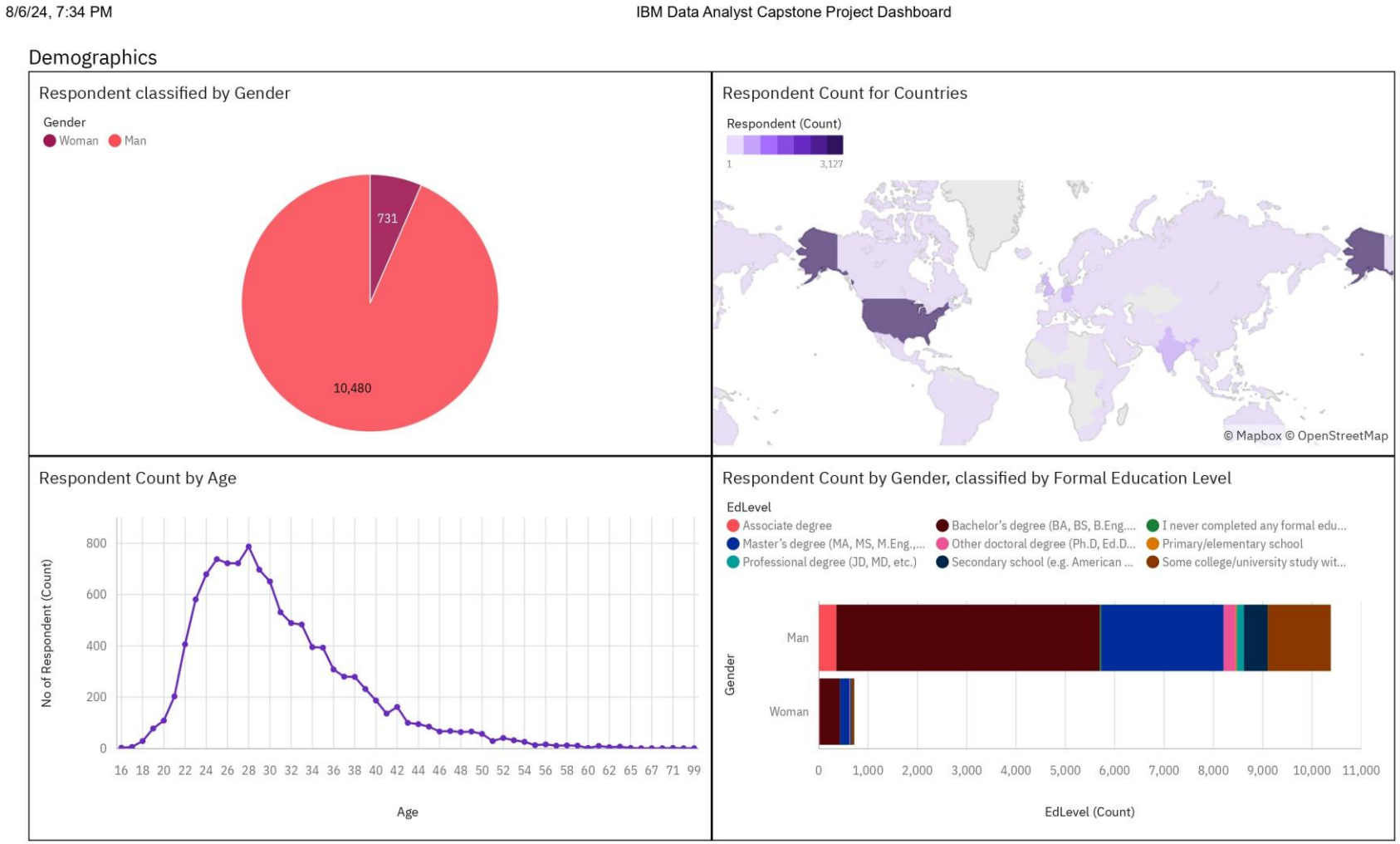
DASHBOARD TAB 1 - Current Technology Usage



DASHBOARD TAB 2 - Future Technology Trend



DASHBOARD TAB 3 - Demographics



DISCUSSION

- **Must-Have Skills and Desirable Future Trends:**
  1. Languages are gaining significant popularity
     - JavaScript
     - Python
     - HTML/CSS
     - SQL
     - TypeScrip
  2. Databases which are becoming more popular options
     - PostgreSQL
     - MongoDB
     - Redis
     - MySQL
     - Elasticsearch
  3. Popular IDEs:
     - React.js
     - Angular/Angular.js
     - Vue.js
     - jQuery
     - ASP.NET

OVERALL FINDINGS & IMPLICATIONS

Findings

- Top Desired Programming Languages:
  - JavaScript, Python, HTML/CSS, SQL, TypeScript
- Top Desired Databases:
  - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
- Popular IDEs:
  - React.js, Angular/Angular.js, Vue.js, jQuery, ASP.NET
- The trends shows a drastic changes in Desire for next year programming languages, Database and IDEs

Implications

Future Skills Requirements implements:

- Programming Language:
  - JavaScripts, Python, HTML/CSS,SQL, TypeScript
- Database:
  - PostgreSQL, MongoDB,Redis, MySQL, Elasticsearch
- IDEs:
  - React.js, Angular/Angular.js,Vue.js , jquery & ASP.net
- There are a few Databases that are also increasingly desire such like DynamoBd
- The numbers of Skills requirements to be able to be competitive in the IT industry has been changing in the vast development and redefine of current technology

CONCLUSION

- Unbiased Data Analysis:
  - Open source data from Stack Overflow helps avoid data bias.
- Shift in Technology Trends:
  - Changes in current technology usage highlight the need for updated skills.
- Updated Skill Requirements:
  - Programming Languages:
    - JavaScript, Python, HTML/CSS, SQL, TypeScript
  - Databases:
    - PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch
  - IDEs:
    - React.js, Angular/Angular.js, Vue.js, jQuery, ASP.NET
- **Key Takeaway:**
  - To remain competitive, IT professionals must adapt to evolving trends in programming languages, databases, and IDEs.

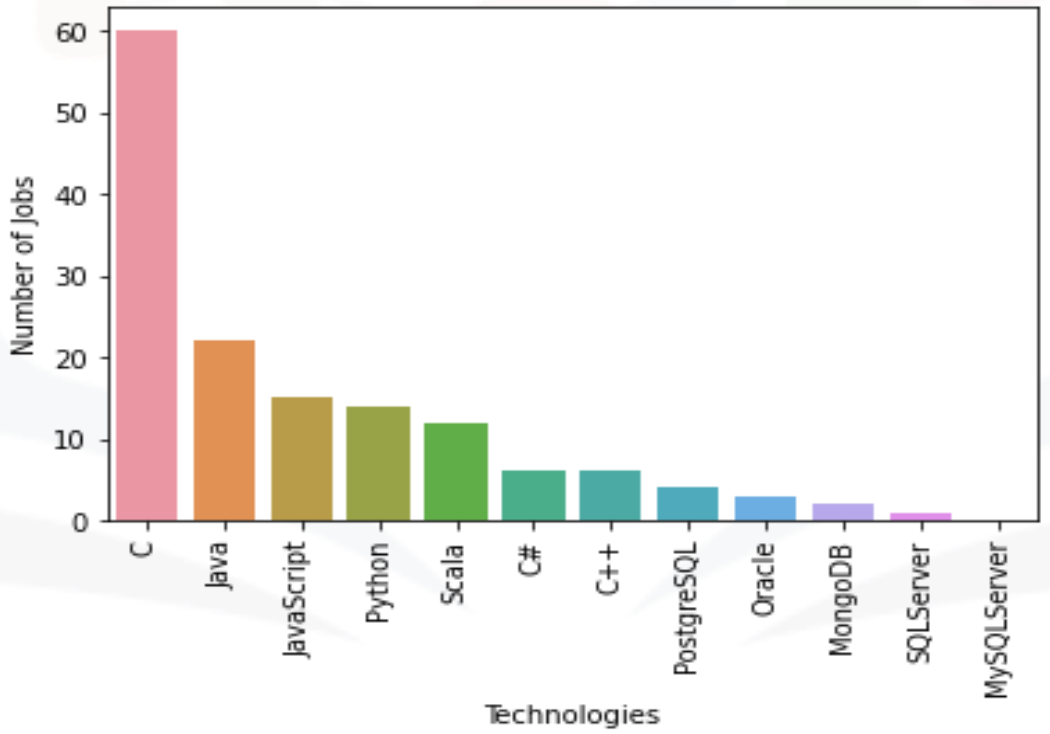
APPENDIX

- file named popular-languages.csv

Language	Average Annual Salary
Python	$114,383
Java	$101,013
R	$92,037
Javascript	$110,981
Swift	$130,801
C++	$113,865
C#	$88,726
PHP	$84,727
SQL	$84,793
Go	$94,082

JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named “job-postings.xlsx”. Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.



POPULAR LANGUAGES

In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.