



Current Technology Usage and Future Trends

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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

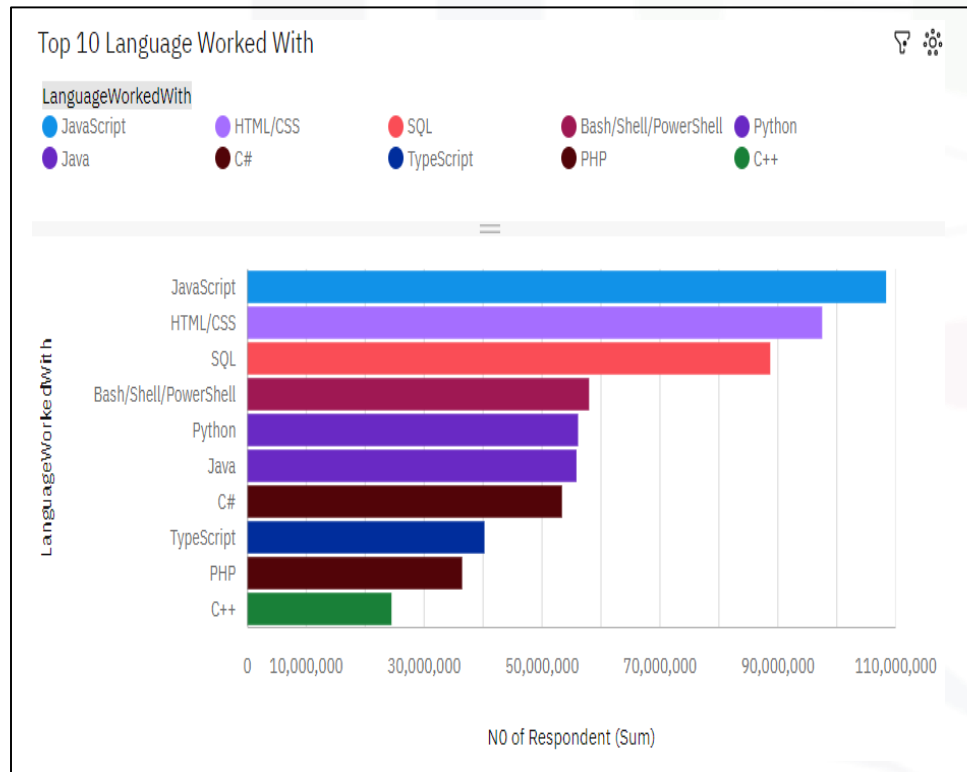
RESULTS

Comparison Results:

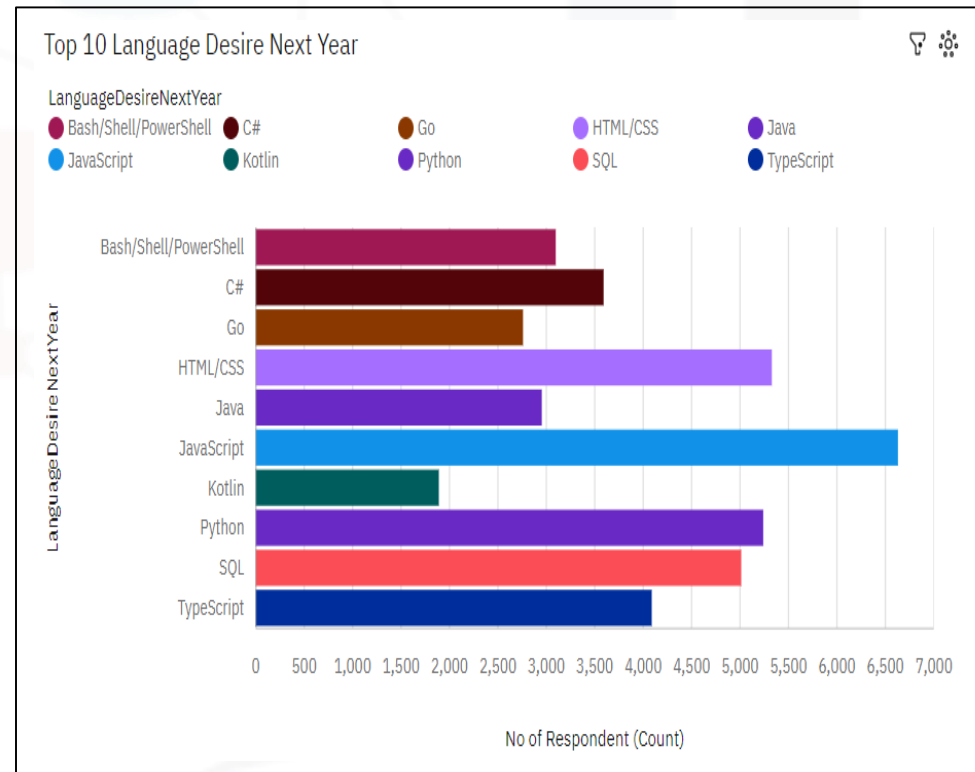
- **Programming Language Trends**
 - Compare current and future trends in programming languages.
- **Database Trends**
 - Analyze current versus future database usage trends.
- **IDE Trends**
 - Evaluate the changes in popularity of IDEs over

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

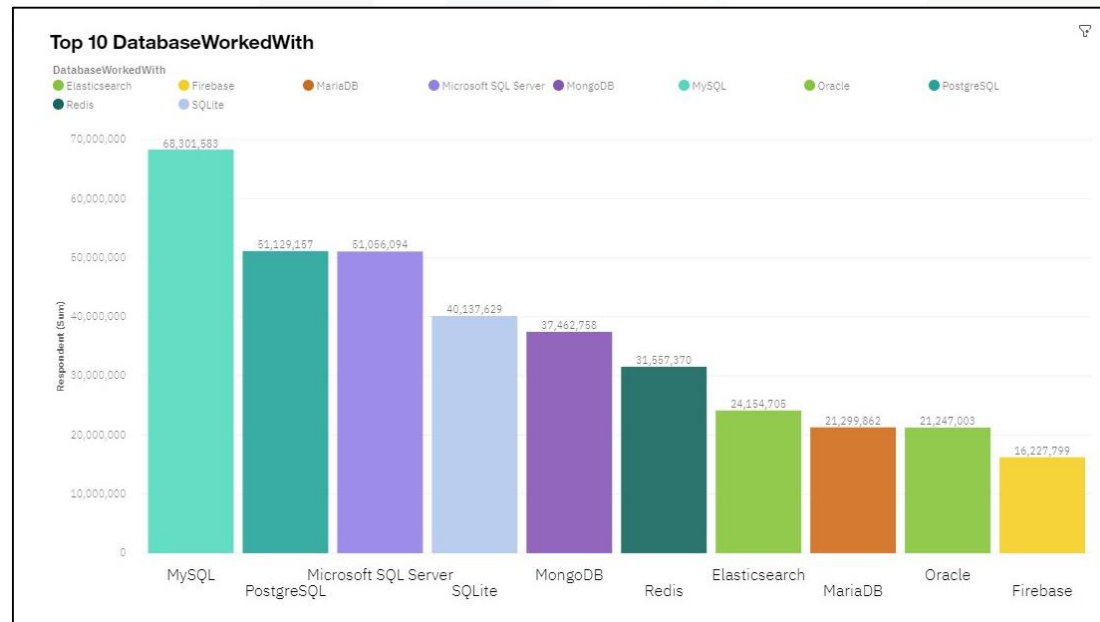
- JavaScript is the top most demanded for current and future programming language.
- Significantly Increasing desire for Python
- The trends of programming language has shifted
- Top 5 language:
 - JavaScript, Python, HTML, SQL, TypeScript

Implications

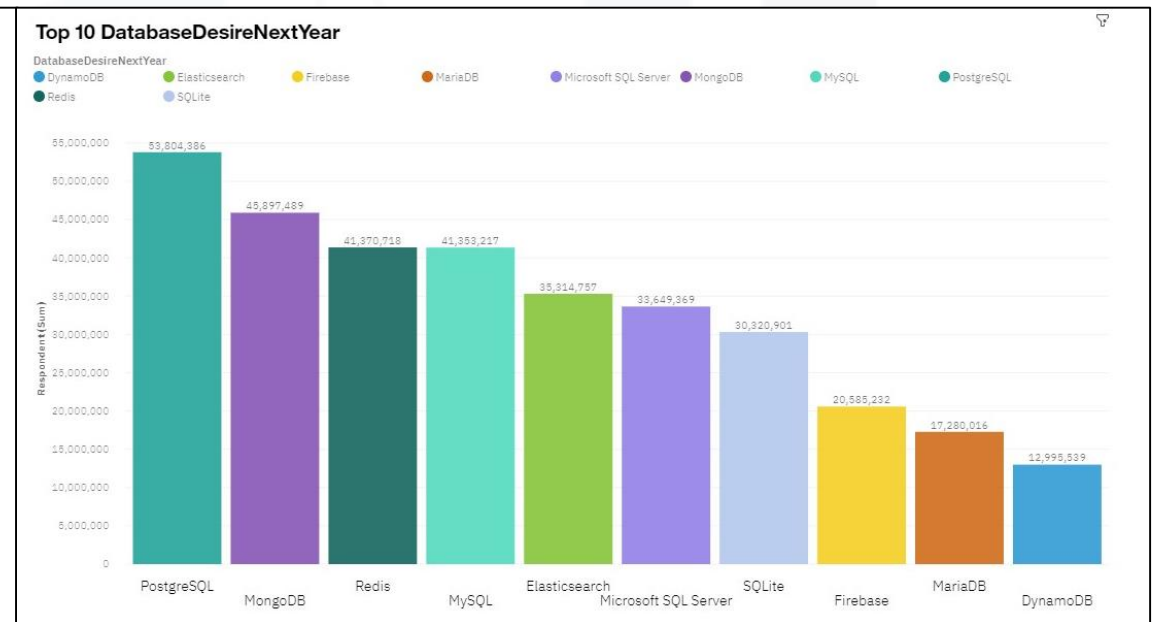
- JavaScript is still most popular and widely used in programming language in IT industry.
- Python has become a new desired and required skills in IT industry.
- The Desire Skill for programming language has certainly Shifted.
- Top 5 desired language:
 - JavaScript, Python, HTML/CSS, SQL, TypeScript

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 desired Database roughly 10,000 increased in respondents.
- Oracle Database has become less popular and less desired
- Drastic increase in the desire database skills especially for MongoDB and DynamoDB

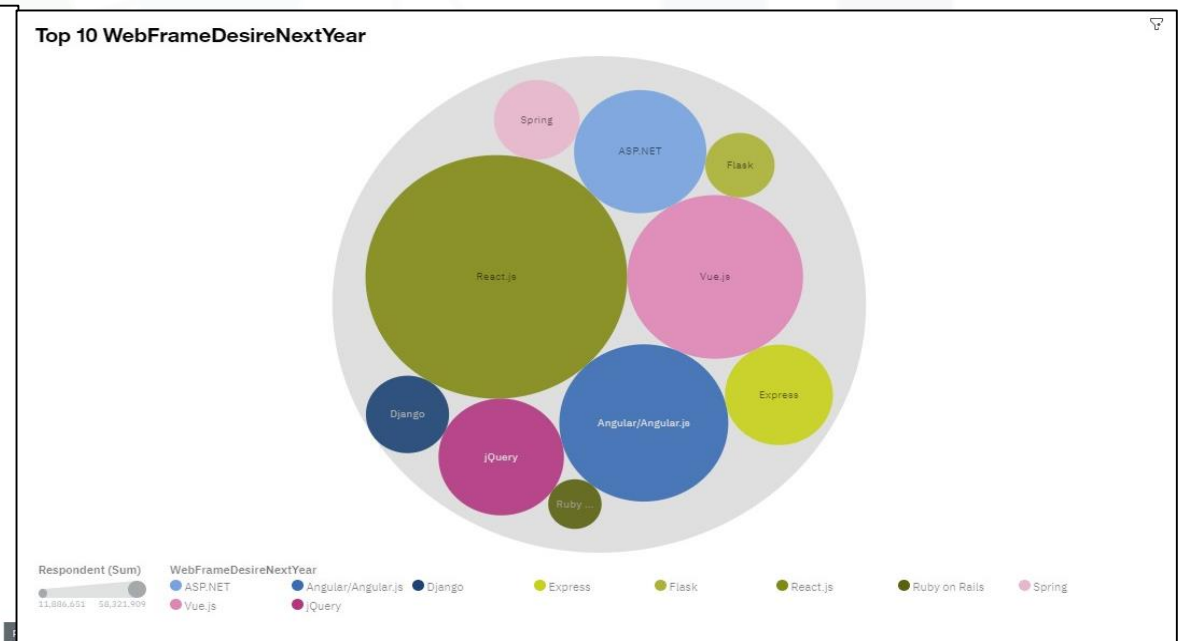
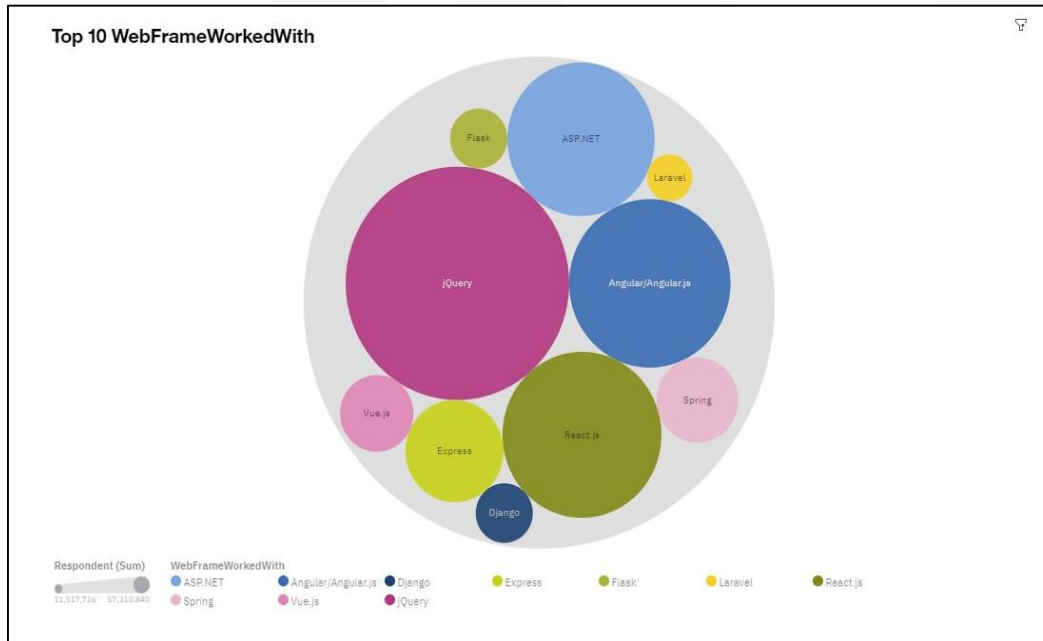
Implications

- 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 DynamoDB 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 bubble.

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



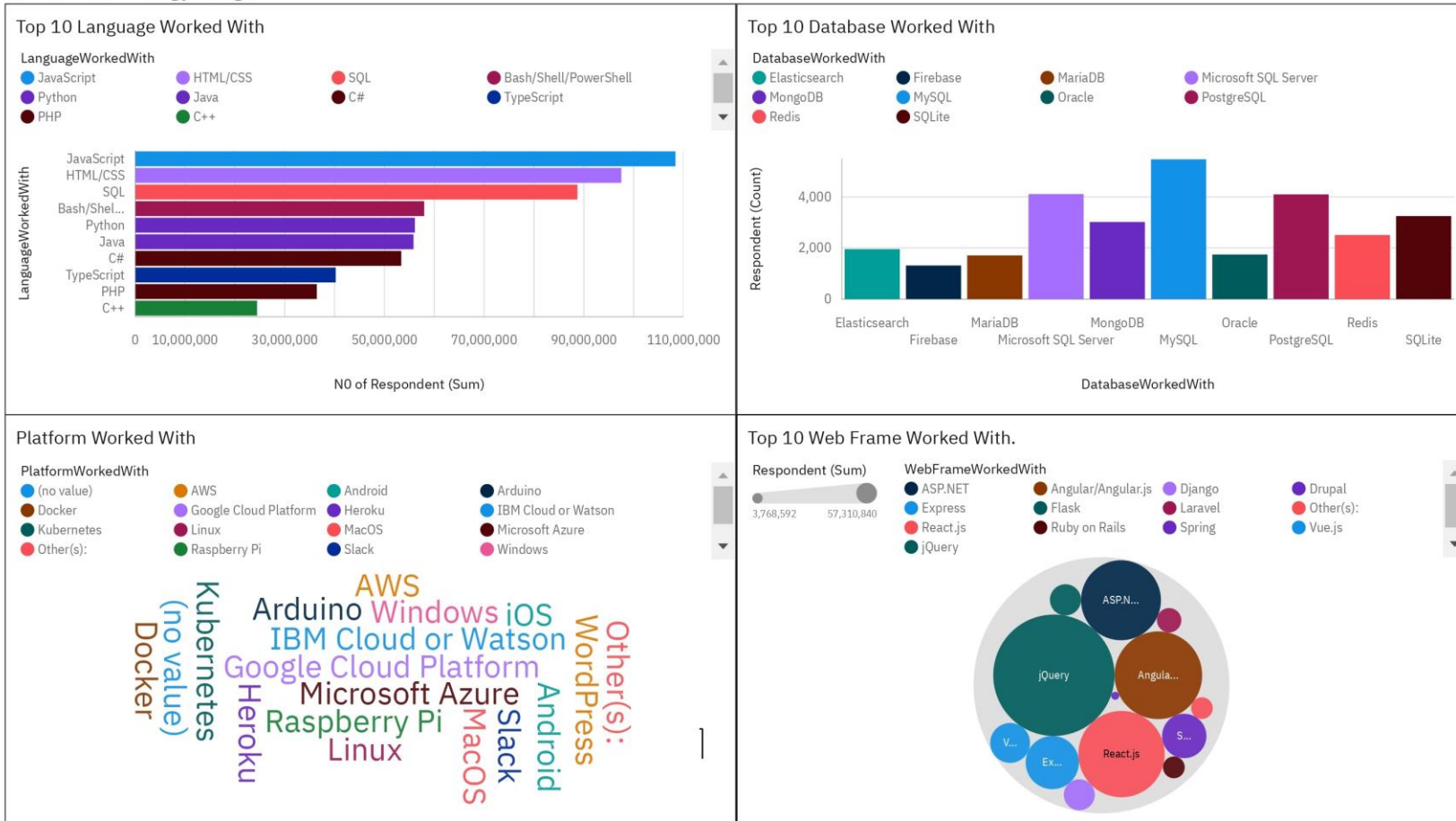
<https://github.com/miteshviradiya/IBM-Data-Analyst-Capstone-Project.git>

DASHBOARD TAB 1 – Current Technology Usage

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IBM Data Analyst Capstone Project Dashboard

Current Technology Usage

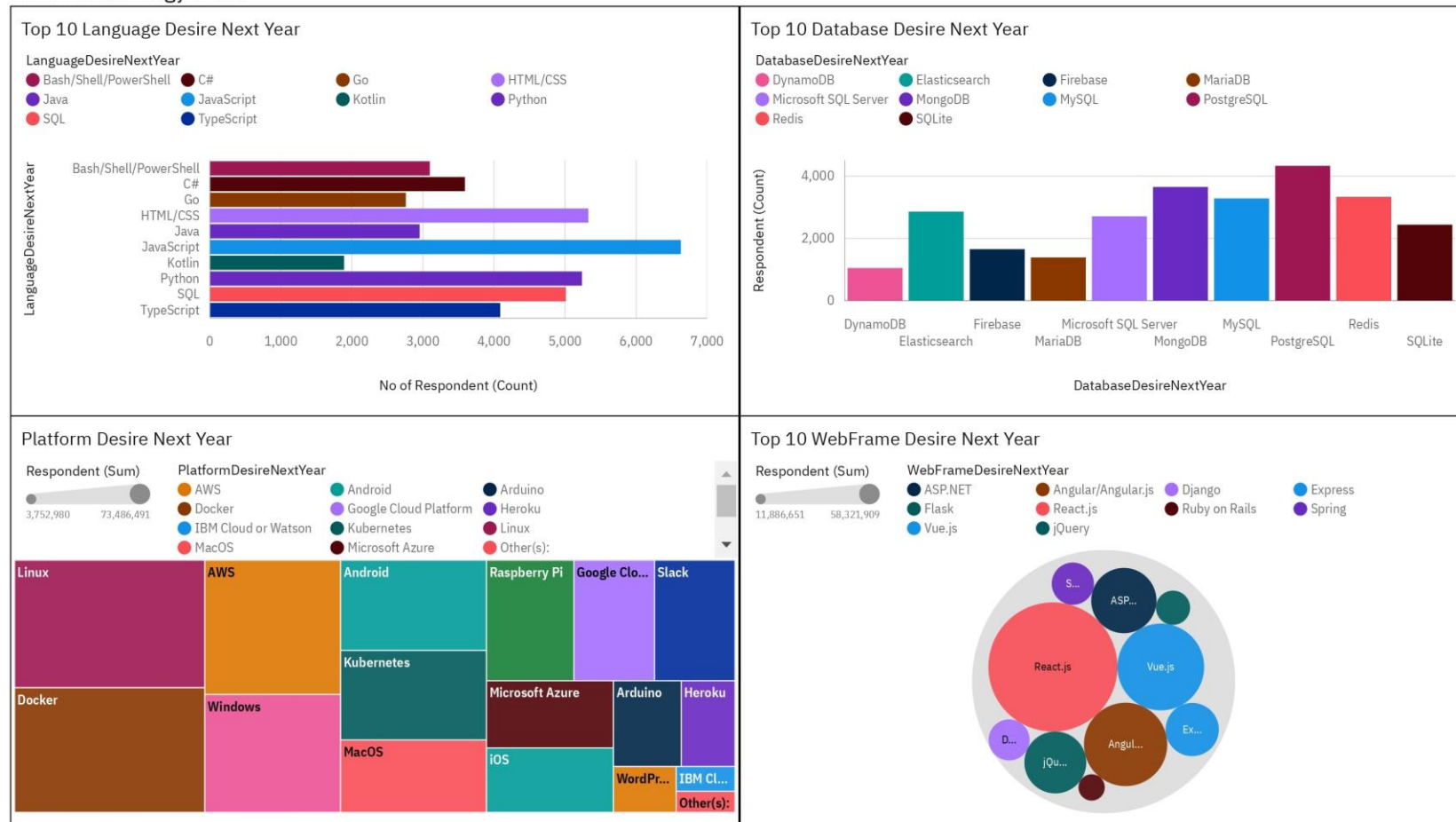


DASHBOARD TAB 2 - Future Technology Trend

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IBM Data Analyst Capstone Project Dashboard

Future Technology Trend

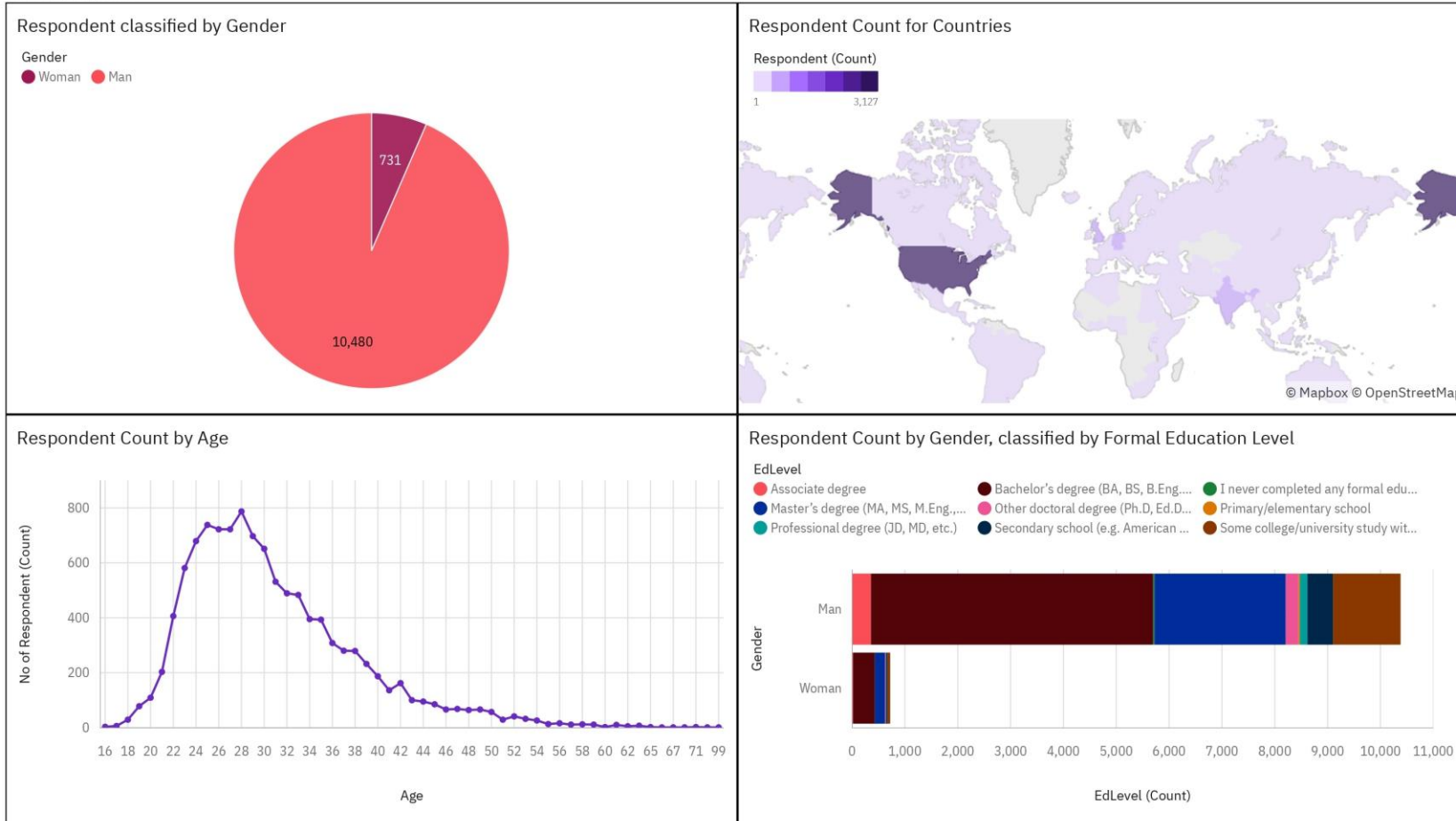


DASHBOARD TAB 3 – Demographics

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IBM Data Analyst Capstone Project Dashboard

Demographics



DISCUSSION

• Must-Have Skills and Desirable Future Trends:

1. Languages are gaining significant popularity
 - JavaScript
 - Python
 - HTML/CSS
 - SQL
 - TypeScript
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

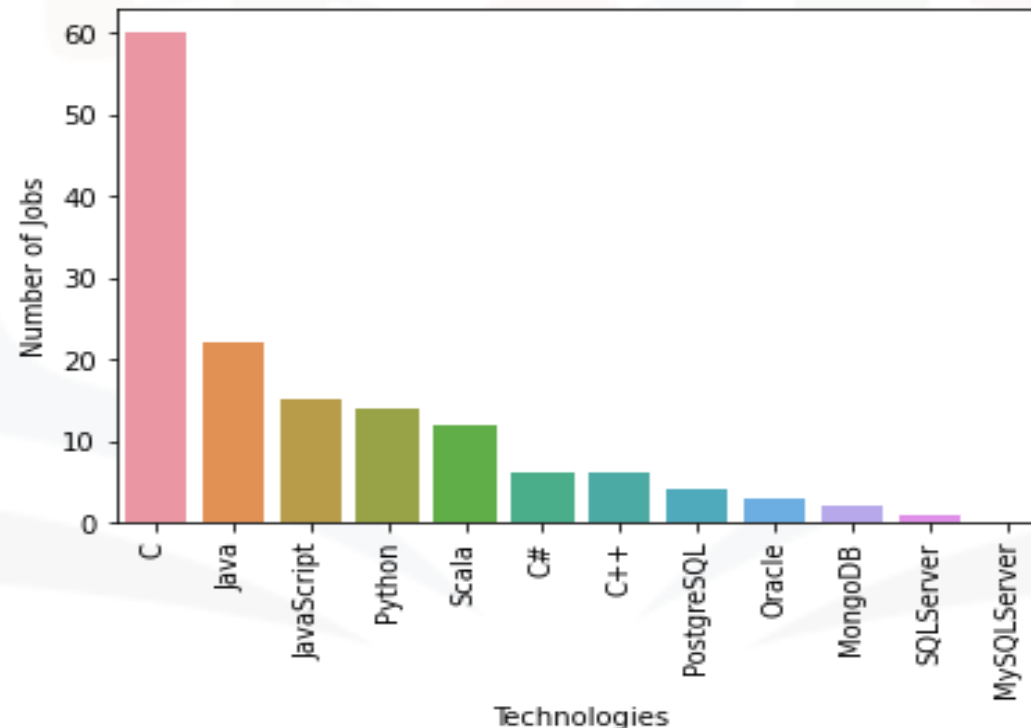
- file named popular-languages.csv



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.

