IBM Data Analyst Capstone Project

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IBM Developer

SKILLS NETWORK

OUTLINE

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

EXECUTIVE SUMMARY

- Analysis of patterns in usage of languages and databases over a period of time
- Assessing the demand for Technology jobs over a period of time

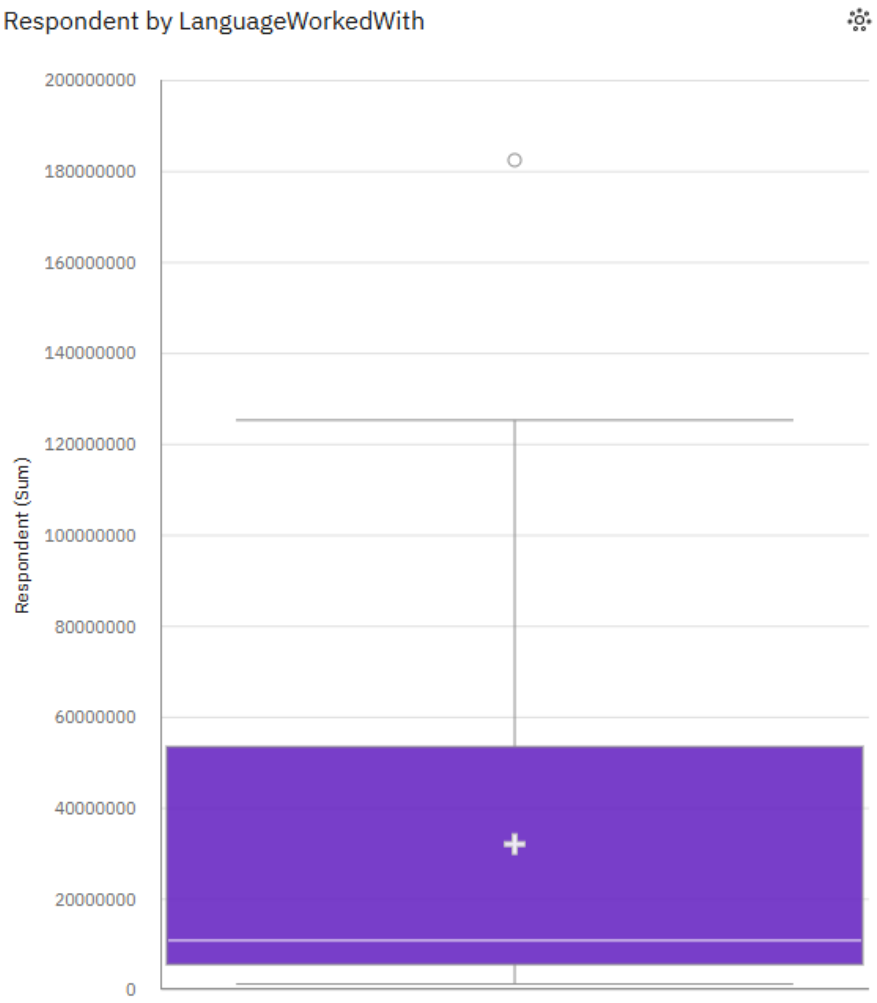
INTRODUCTION

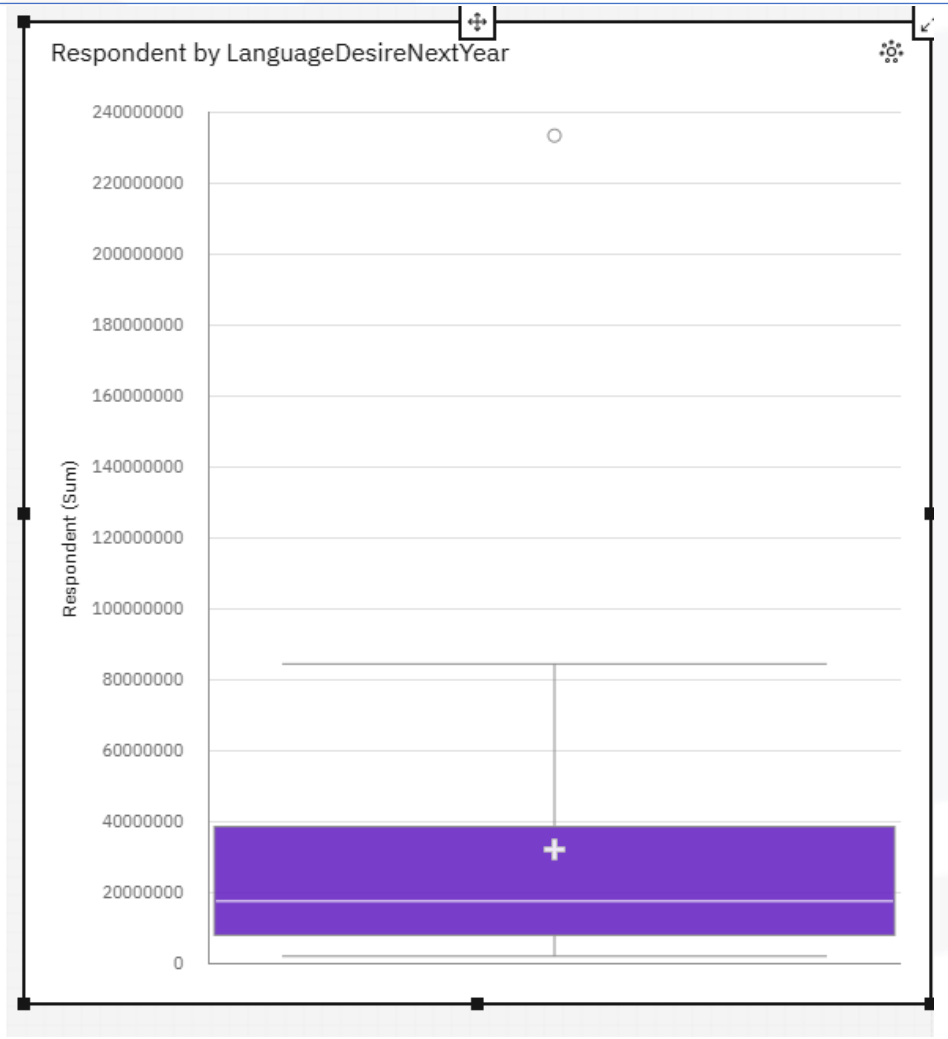
- An analysis of language and database usage over a period of time. This involved reviewing :
  - Future Trends in programming languages and databases
  - Demographics Survey
  - Technology

METHODOLOGY

- Data collection using Web API, Excel
- Data exploration
- Data Cleaning/normalization
- Data visualization using bar charts, pie charts, heat map

RESULTS





The box plots of language being worked with and language desired in the future show a significant decrease in future demand for languages

PROGRAMMING LANGUAGE TRENDS

Current Year

JavaScript (**17.5** %), **HTML/CSS** (**15.8** %), and **SQL** (**14.3** %) are the most frequently occurring categories of **LanguageWorkedWith** with a combined count of **23,623** items with **LanguageWorkedWith** values (**47.5** % of the total).

The total number of results for **LanguageWorkedWith**, across all **LanguageWorkedWith**, is **nearly 50 thousand**.

Next Year

Bash/Shell/PowerShell is the most frequently occurring category of **LanguageDesireNextYear** with a count of **258** items with **LanguageDesireNextYear** values (**20.9** % of the total).

The total number of results for **LanguageDesireNextYear**, across all **LanguageDesireNextYear**, is **over a thousand**.

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Twice as many languages are used than the number of language that is required by businesses

Implications

- Businesses need to make use of Machine learning to accommodate the larger number of languages that are in usage

DATABASE TRENDS

Current Year

PostgreSQL (**22** %), **SQLite** (**18.8** %), **Redis** (**18.1** %), and **MySQL** (**13.4** %) are the most frequently occurring categories of **DatabaseWorkedWith** with a combined count of **952** items with **DatabaseWorkedWith** values (**72.3** % of the total).

The total number of results for **DatabaseWorkedWith**, across all **DatabaseWorkedWith**, is **almost 1500**.

Next Year

MongoDB (**18.8** %) and **Elasticsearch** (**16** %) are the most frequently occurring categories of **DatabaseDesireNextYear** with a combined count of **390** items with **DatabaseDesireNextYear** values (**34.8** % of the total).

The total number of results for **DatabaseDesireNextYear**, across all **DatabaseDesireNextYear**, is **over a thousand**.

DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- A declining trend in the usage of databases

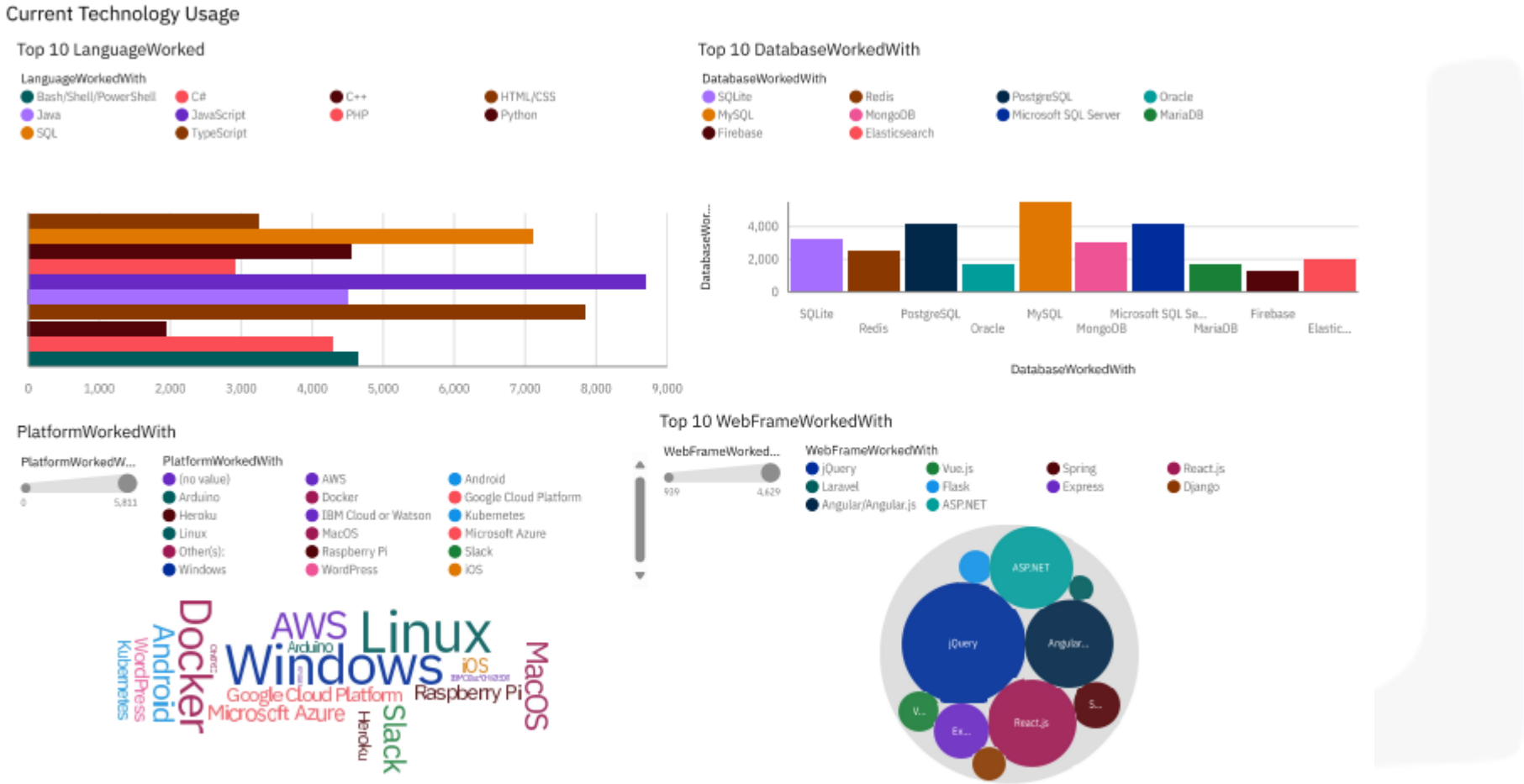
Implications

- Workers need to upskill to address the change in demand for database usage.
- Businesses need to invest in future technology that rendering databases obsolete

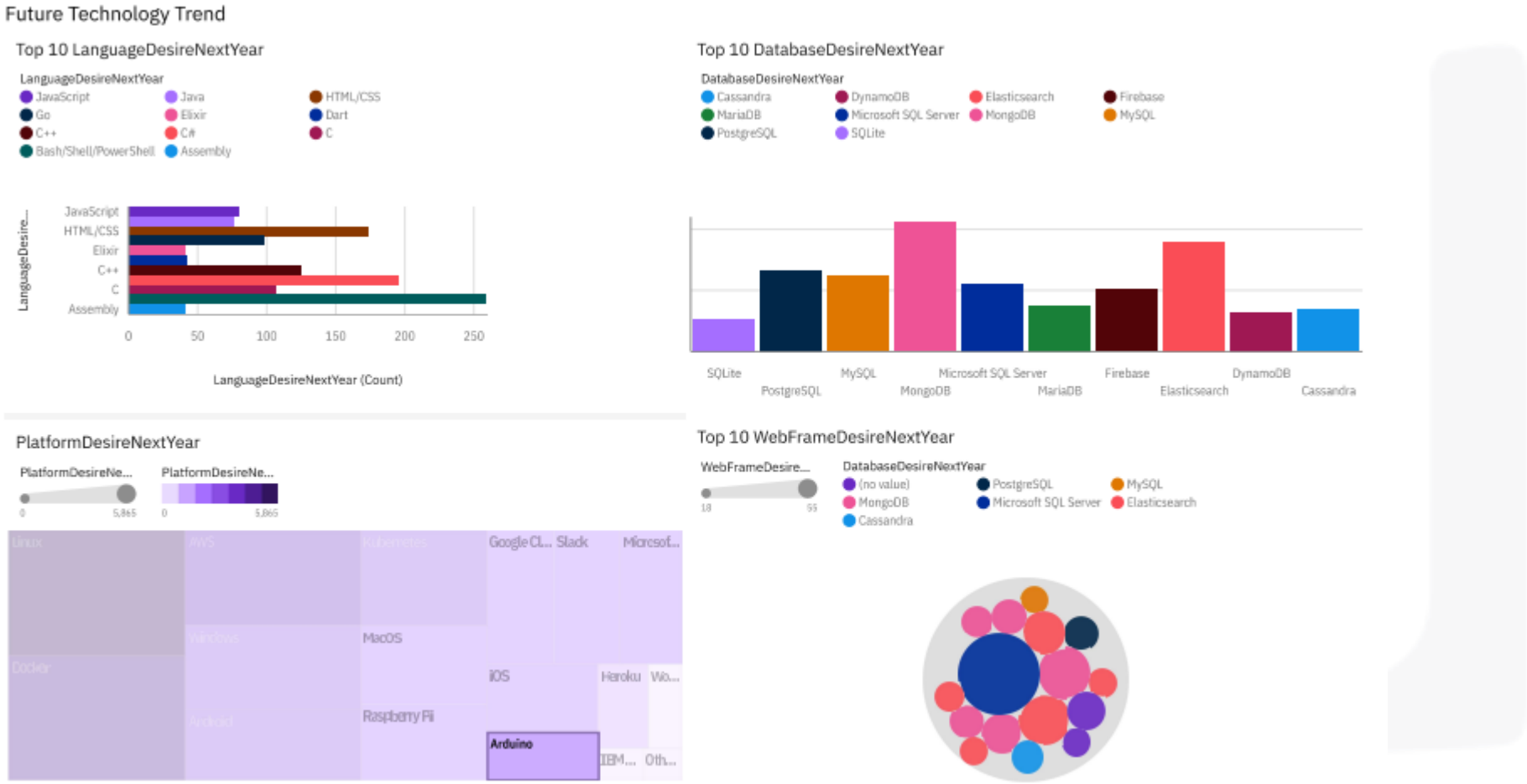
DASHBOARD

chenningham2/JDA-Training (github.com)

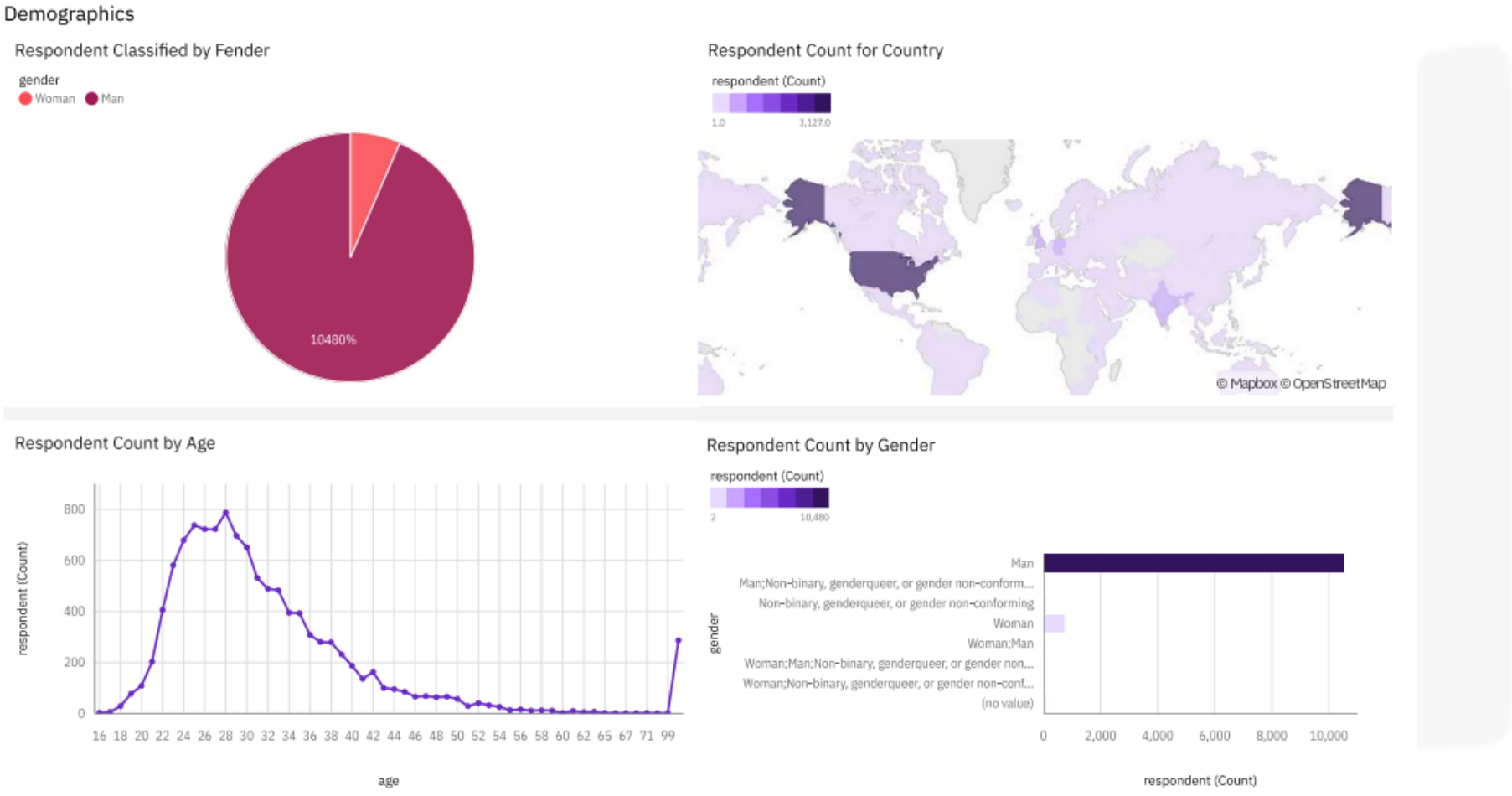
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- Usage of technology dropped over time. This might be the result of the introduction of Artificial Intelligence.
- Types and variety of languages used by developers do not reflect the needs of the businesses. The business appears to have less need for using a large variety of different languages.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Technology usage increases over time

Implications

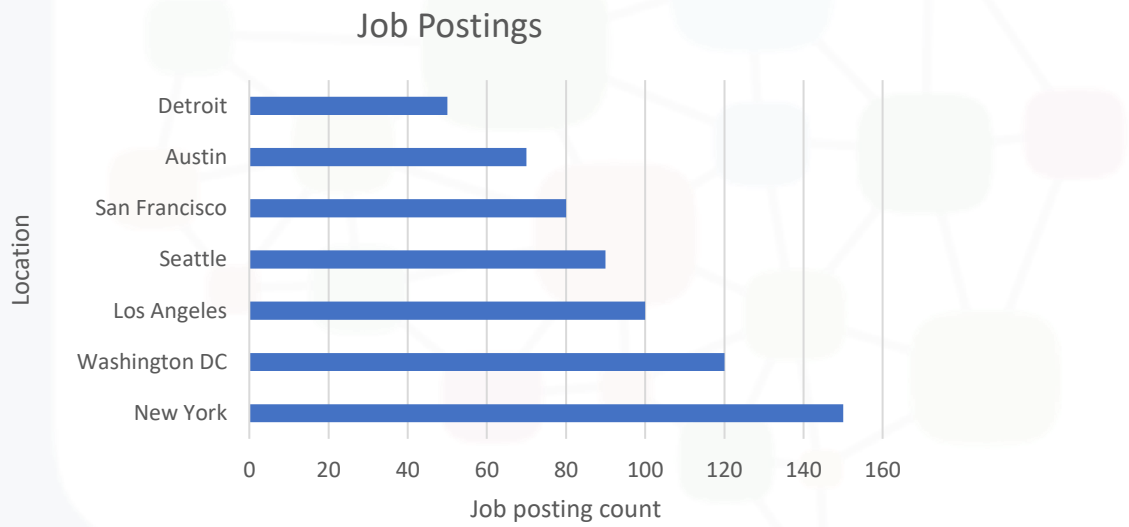
- Businesses need to make use of technology that helps them respond to changes instantaneously to be competitive

CONCLUSION

- Comparing Technology Trends for the current and next year shows that there is a decline in demand.
- Programming Languages, Database, and Platform Overview appear to be on the decline
- Global Demographics review of survey respondents indicates that the decreasing trend is global

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.