Emerging Technical Skills

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EXECUTIVE SUMMARY

- Our task for this initiative is to identify the top emerging skills within the IT industry as to ensure business relevancy and competitiveness.

- By identifying trends within the sourced data, we can guide the business resources effectively by investing in popular technologies & skills development. This will ensure a focused approach to continuous professional development and more importantly promote innovation within the market.

- We collected data from various sources including:
  - Job Postings
  - Training Portals
  - Surveys

- Once our raw data was converted to structured and organized data without any errors, we were able to ask the following questions: What are the top programing languages in demand/desirable? What are the top database skills in demand/desirable? What are the most popular IDEs in demand/desirable?

- We have discovered that JavaScript is note only most in demand but also the most desirable programming language. But looking at database skills, MySQL is currently most in demand, while PostgreSQL reflecting the most desirable database skill in the market.

- Our recommendation is to focus business resources on the top emerging skills within the market outlined in the findings report.

OUTLINE

- Introduction
- Methodology
- Result
  - Visualization – Charts
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
- Appendix

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INTRODUCTION

- My name is Christian Otto and I have been hired as a Data Analyst investigating changing technologies as well as to help identify future skills requirements within the market.

- My first task was to collect data from various sources relating to market demand for programming, database and popular IDEs. My data also includes the future desirability on these technologies & skills.

- Once the data was ready for analysis, I was able to test multiple hypothesis around the questions we have identified. What are the top programing languages in demand/desirable? What are the top database skills in demand/desirable? What are the most popular IDEs in demand/desirable?

- Finally, I will conclude the presentation with actionable recommendations based on the factual findings of this report.
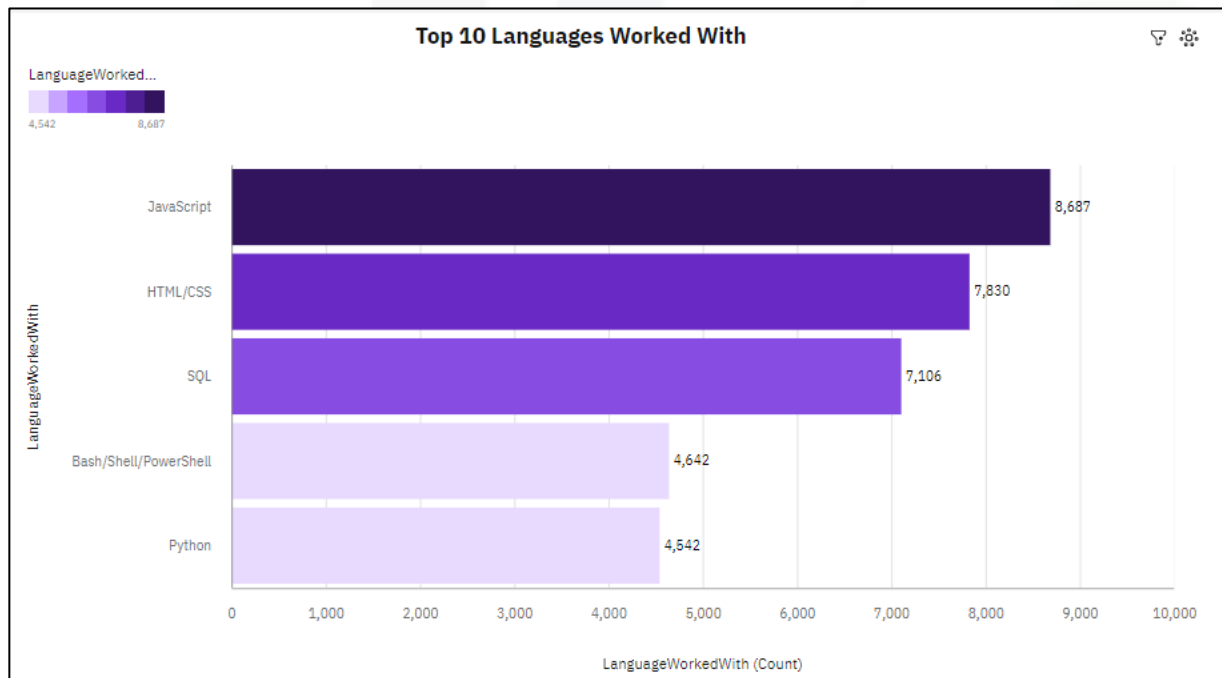
METHODOLOGY

- I mostly made use of a quantitative approach to the data to highlight the top trends on each variable. But for some questions I did make use of qualitative data. All the data is considered as primary data that was sourced by my team.

- How was the data collected?
  - Collect job data from Jobs API
  - Collect job data using Web Scraping (via BeautifulSoup Python library)

- How was the data analyzed?
  - Multiple summary statistics were created on the prepared data.
  - Initial Exploratory Data Analysis we made use of Pearson Correlation to identify valuable relationships between variables. Created multiple distribution plots/graphs during data discovery. Furthermore, box plots was used to identify any statistical outliers within the data set.
  - After the discovery and exploratory phase, we developed a dashboard with the use of IBM Cognos to visualize our findings. Primary visualizations used was bar, column and line graphs for quantitative Analysis. Also made use of word cloud to measure popularity with certain variables.

RESULTS

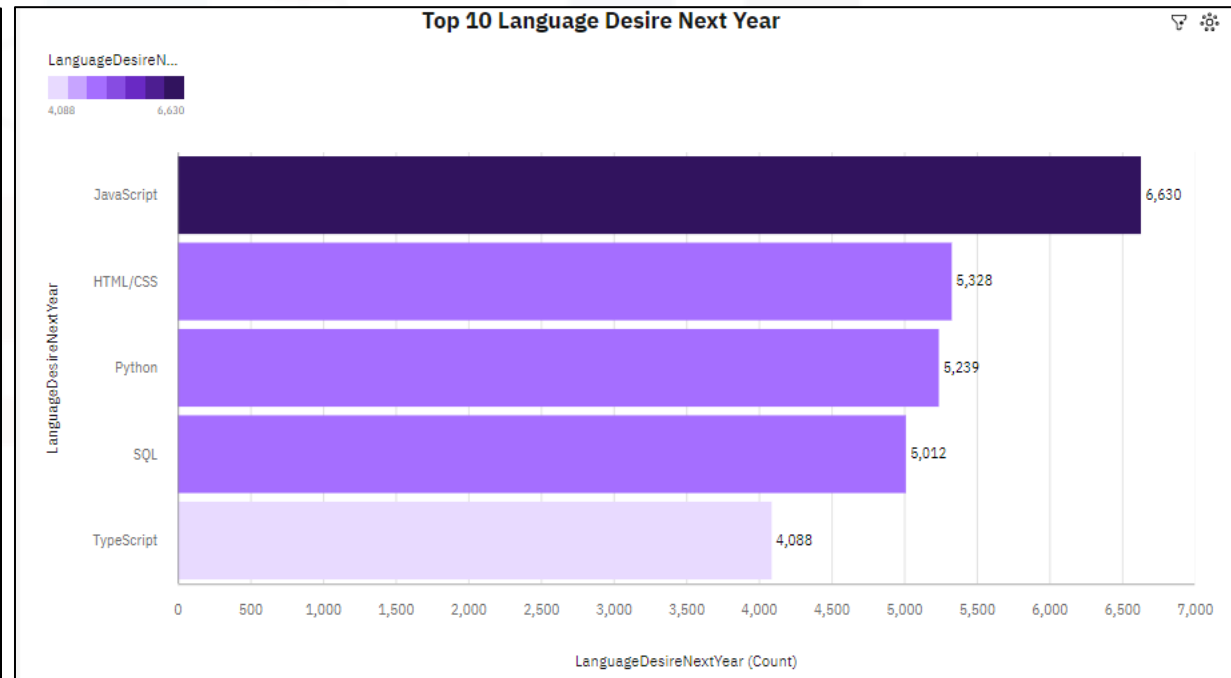- Top Programing Languages & Desired:
  - JavaScrip & HTML/CSS will remain relevant withing the market for the foreseeable future due to both being the top 2 current and most desirable programming language.
  - A special focus on Python might be advisable due to desirability jumping to the 3rd spot compared to the 5th spot in current use.

- Top Database Languages & Desired:
  - MySQL, MS SQL Server & PostgreSQL is currently the most is use but PostgreSQL is most Desirable DB Language.
  - A special focus might be placed on MongoDB & Redis and they take the 2nd and 3rd spot in desirability.

- Demographics:
  - 92% of Respondents are male.
  - Majority of the respondent from the US.

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PROGRAMMING LANGUAGE TRENDS

Current Year (Top 5)

Top 10 Languages Worked With

LanguageWorked...
4,542 8,687

Language	Count
JavaScript	8,687
HTML/CSS	7,830
SQL	7,106
Bash/Shell/PowerShell	4,642
Python	4,542

LanguageWorkedWith (Count)

Next Year (Top %)

Top 10 Language Desire Next Year

LanguageDesireN...
4,088 6,630

Language	Count
JavaScript	6,630
HTML/CSS	5,328
Python	5,239
SQL	5,012
TypeScript	4,088

LanguageDesireNextYear (Count)

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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScrip, HTML/CSS, SQL & Python are being used by many professionals currently with a strong desire in the market.

Implications

- Data indicates that a strong understanding in any one of the 4 languages under our findings will be advantages.
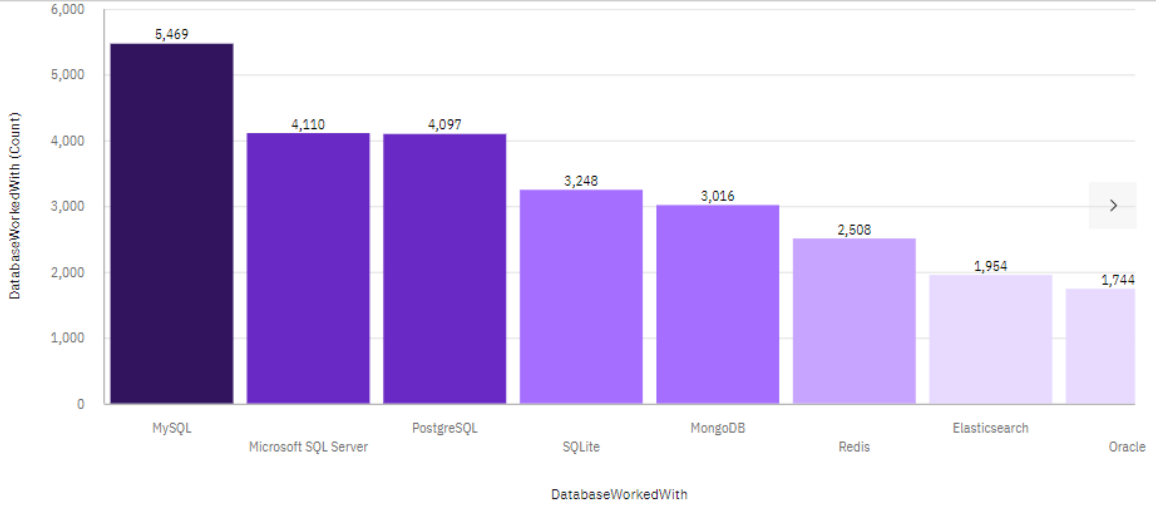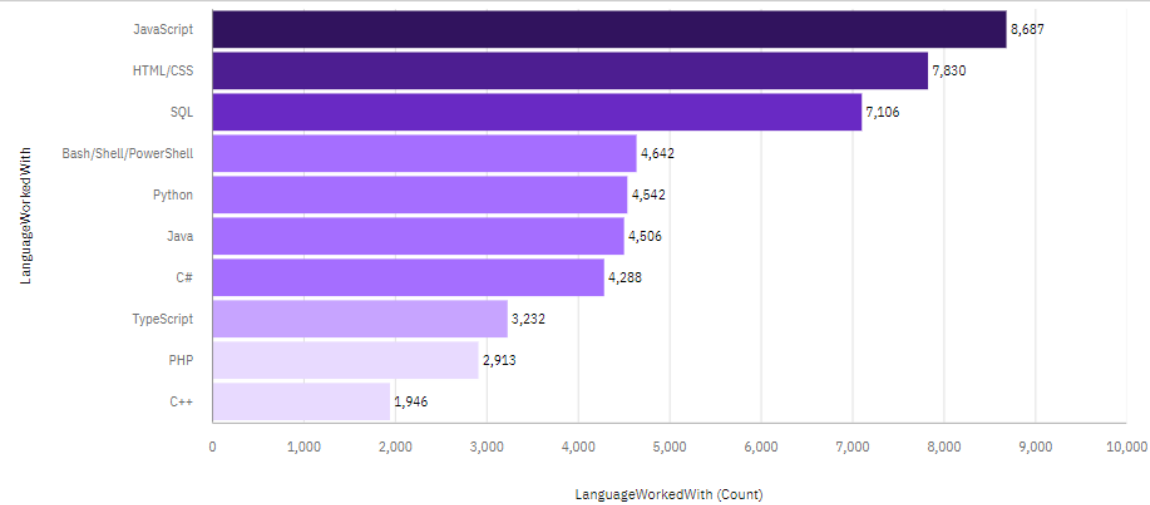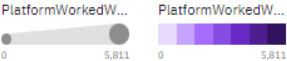
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DATABASE TRENDS

Current Year (Top 5)

Next Year (Top 5)
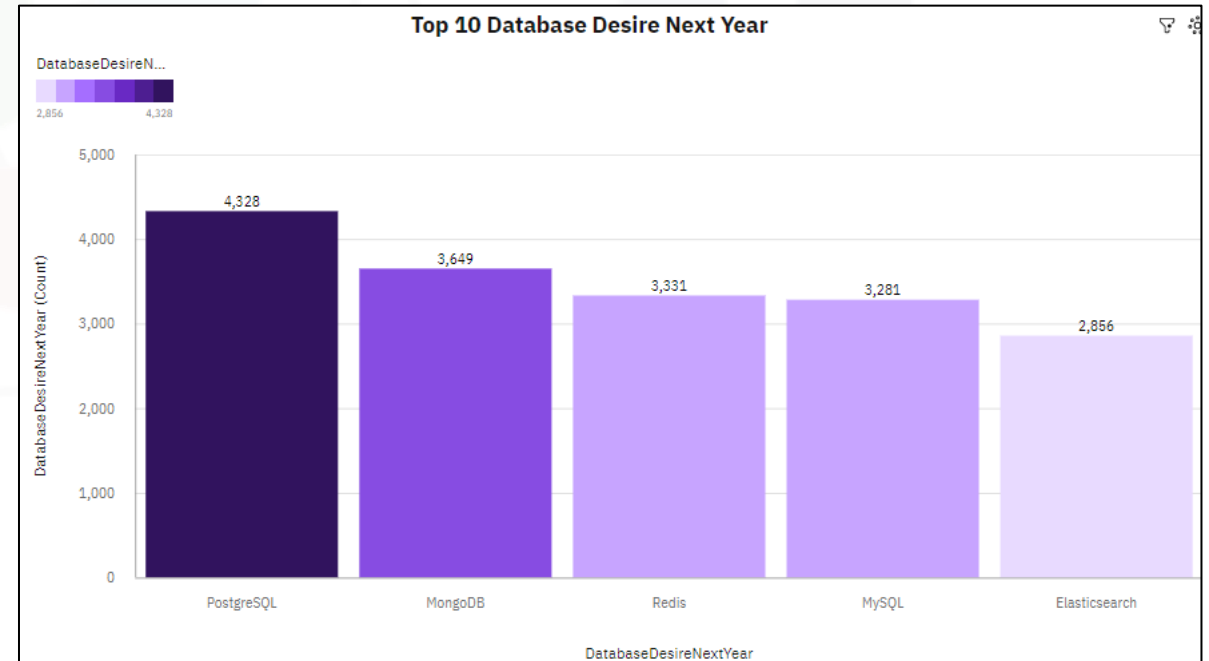
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL, PostgreSQL & MongoDB are being used by many professionals currently with a strong desire in the market.

Implications

- Data indicates that a strong understanding in any one of the 3 DB's under our findings will be advantages.

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DASHBOARD

Dashboard Link

(Click to Follow)

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Current Technology Usage

Future Technology Trend

Demographics
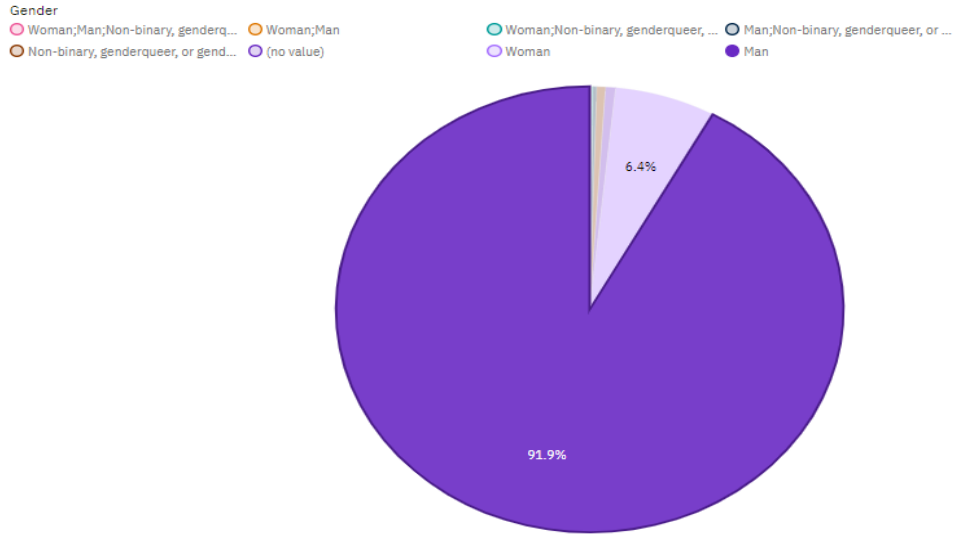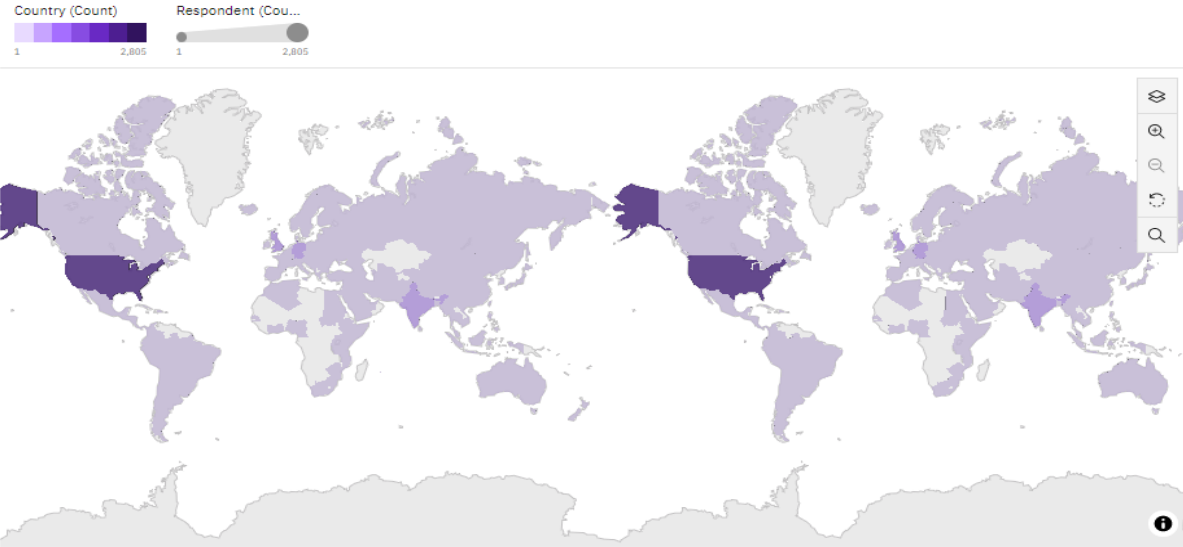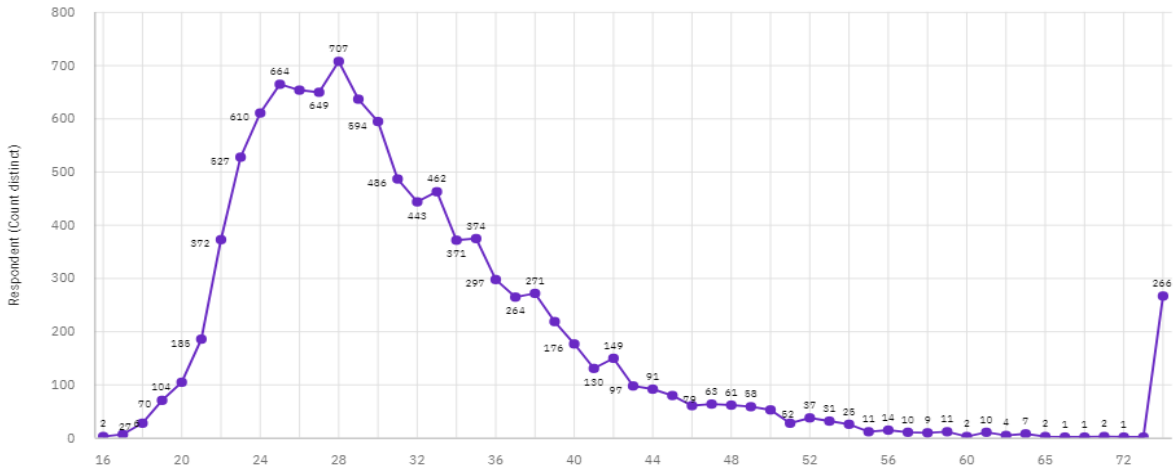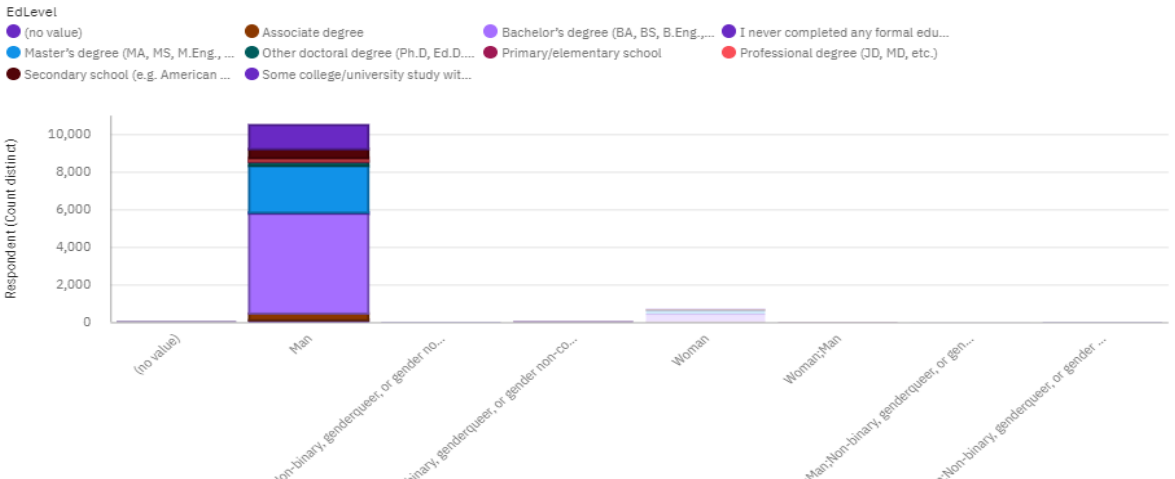
DISCUSSION

- A large focus to be placed on the top Programming Languages & DB skills.

- Linux, Windows and Docker are platforms of focus.

- jQuery, React.js, Angular.js & ASP.net are web frames to focus on.

- Most Respondents are male (92%).

- Most Respondents range between ages 25 & 32.

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScrip, HTML/CSS, SQL & Python (Top Programming Languages)

- MySQL, PostgreSQL & MongoDB Finding (Top DB Skills)

- Linux, Windows and Docker (Top Platforms)

- jQuery, React.js, Angular.js & ASP.net (Top Web Frames)

Implications

- Focus and business objectives needs to be aligned towards the top emerging technologies identified in our findings to reach the goals of our executive summary.

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CONCLUSION

- I have Identified the trends within the sourced data, we can now guide the business resources effectively by investing in the popular technologies & skills outlined in our findings

- We will iterate this process each year to make sure the business stays relevant and competitive within the market.
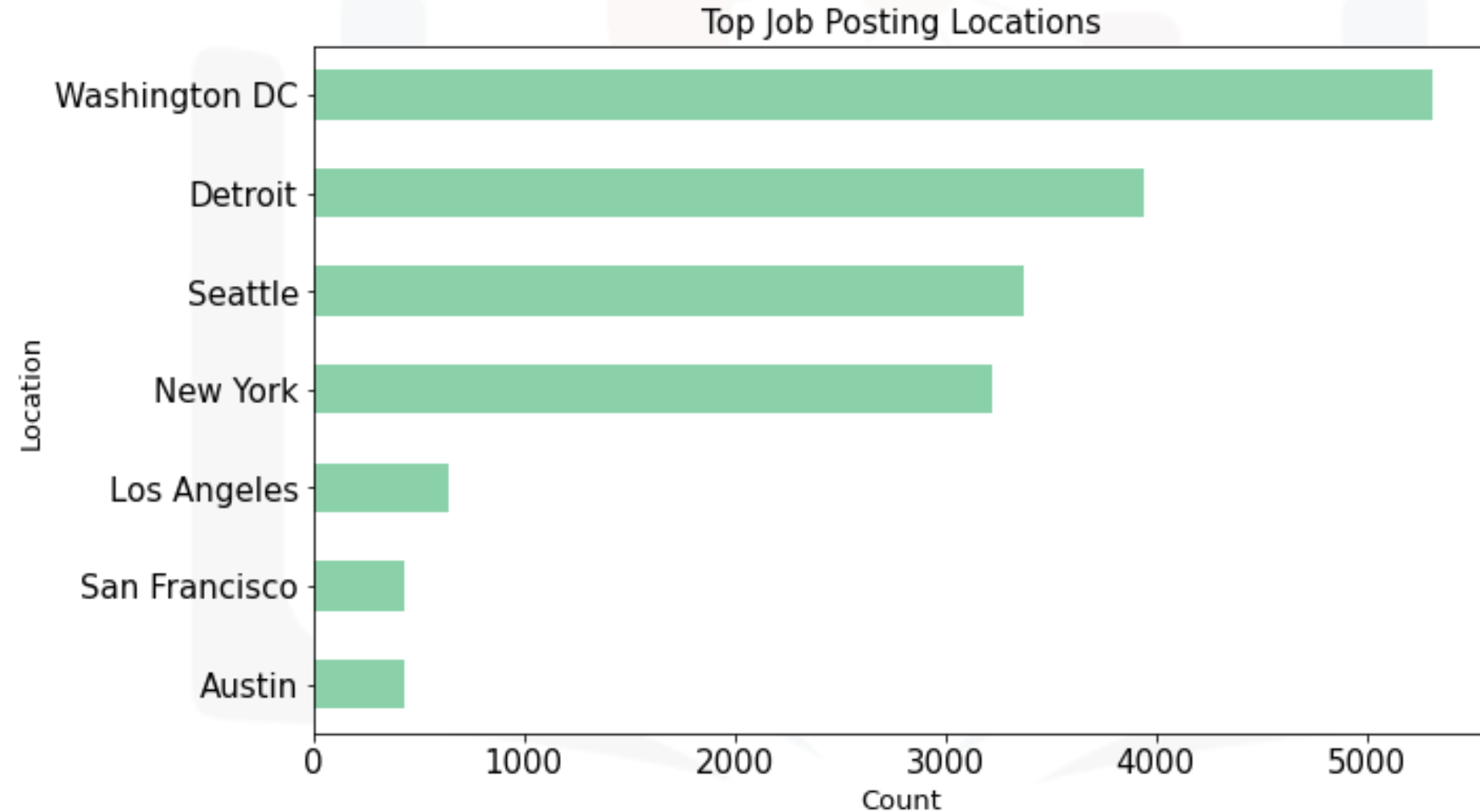
APPENDIX

Recourses used for Project:

- Python & Libraires:
  - Pandas
  - Numpy
  - Seaborn
  - Matplotlib
  - BeautifulSoup
  - API (Jobs API)

- IBM Cognos
  - Dashboard
  - Visualizations

- SQL

JOB POSTINGS

Top Job Posting Locations

POPULAR LANGUAGES

Programming Language by Top Paid Salaries ($)