Emerging Programming Skills Analysis for Future Skill Requirements

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EXECUTIVE SUMMARY

- This project analyzed emerging programming skills to identify future skill requirements within the IT industry. By collecting data from various sources and applying statistical techniques, we uncovered the top programming languages, in-demand database skills, and popular IDEs. The insights gained empower informed decision-making and enable organizations to stay competitive in the ever-changing IT landscape.

INTRODUCTION

- This project aims to analyze the top programming skills in demand for future skill requirements within a global IT and business consulting services firm. As a Data Analyst, I collected data from various sources, including job postings, training portals, and surveys, to identify trends and insights. By leveraging web scraping, APIs, and data wrangling techniques, I gathered and prepared the data for analysis. Statistical techniques were applied to uncover the top programming languages, database skills, and popular IDEs. The findings were visualized using IBM Cognos Analytics to create an informative dashboard.

METHODOLOGY

- Data Collection
  - API used: http://api.open-notify.org/astros.json
  - For Webscraping: https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html
- Data Wrangling
  - In this process we gathered all the data in order to prepare it, we find null values, duplicated values, normalized some data, this processes were mainly done by pandas dataframe methods to be more practical.
- Data Analysis
  - For data analysis step, we focused on visualizing the data through different charts and with different variables, this step allowed me to check for relationships in the data, along with the visualizations I run some statistical analyses too to see for discrepancies in the data and even to spot outliers.
- IBM Cognos Analytics
  - In this final step many different charts/graphs were used to highlight the insights of the data, and were mainly in this step that was possible to communicate in a way the everyone could understand and set foundations about the data.

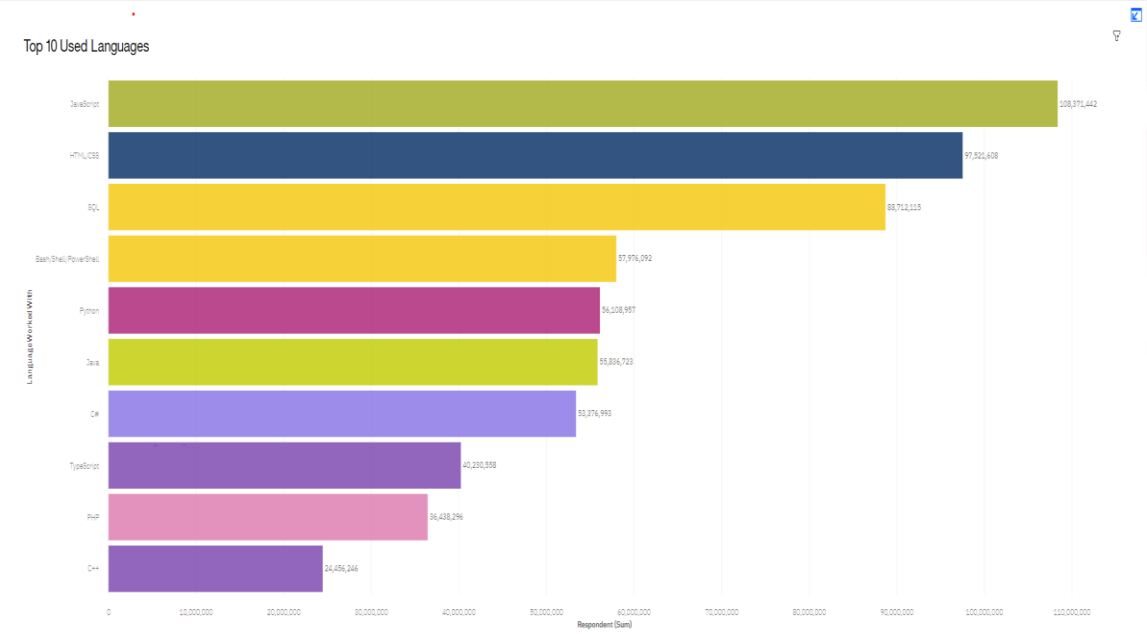
RESULTS

After the final step mentioned in the previous slide we can list some of the results of the project:

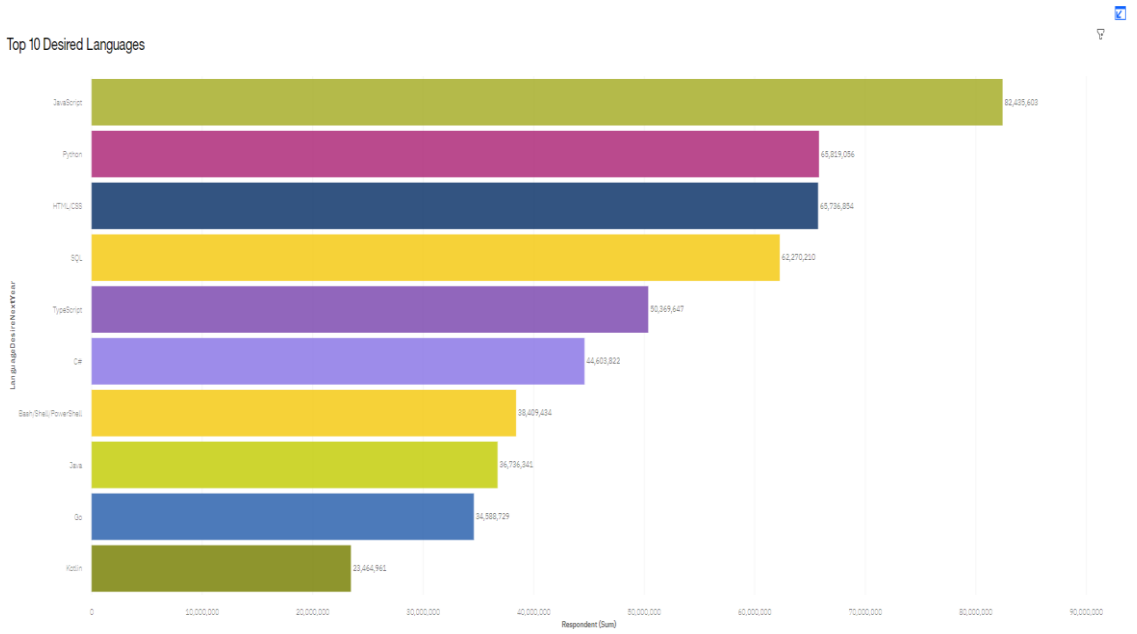
- We could spot the most used programming languages, databases, platforms and webframes nowadays and the most desired ones for the next year according to the respondents of the study.
- Besides of the technical review we had also some a demographics one, so to speak, where we understood how the respondents were grouped according to their country, age, gender, and even education level.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

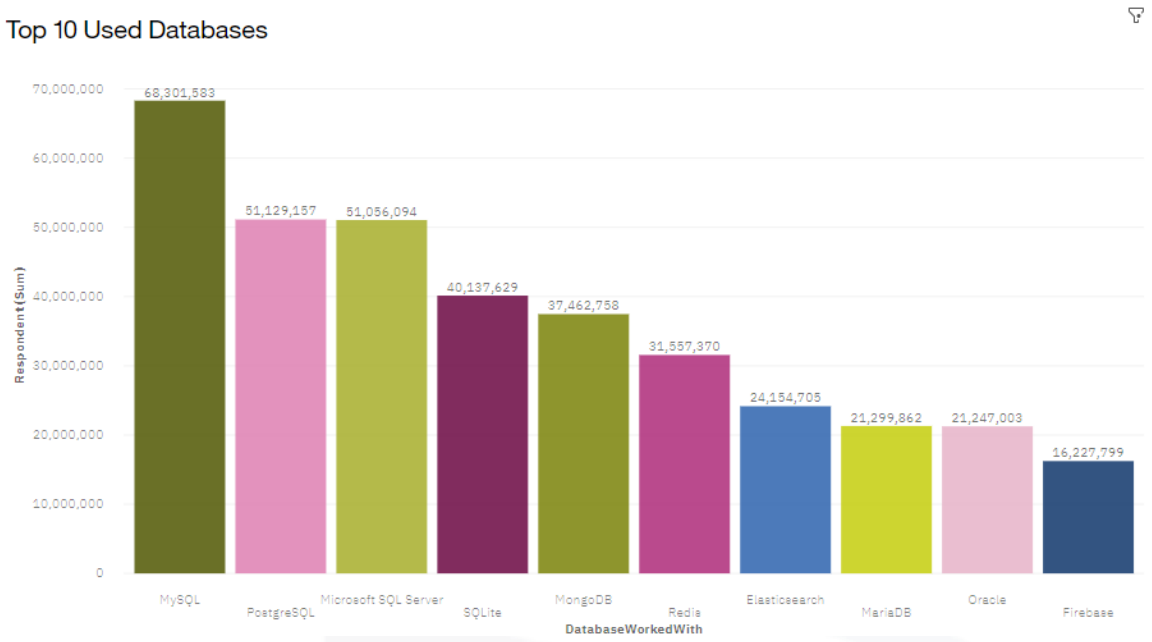
- Python will have significantly more users
- Javascript stills leading
- Languages like “Go” and “kotlin” appeared in trends

Implications

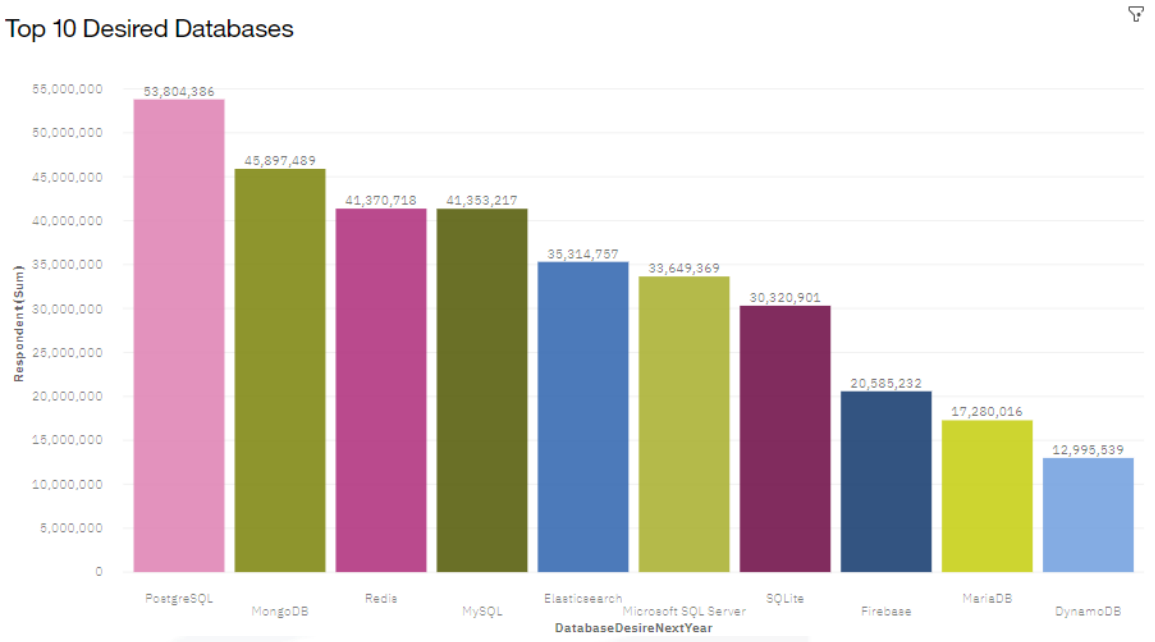
- Individuals who would like to embrace the field should really consider learning python due to its rapidly growth
- Still having Javasctipt assigned to the curriculum still a good idea
- Emerging languages must be taken into account too, to be updated

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- PostgresSQL took the first place
- MongoDB's usage will be increased greatly
- MySQL has been not used compared to nowadays

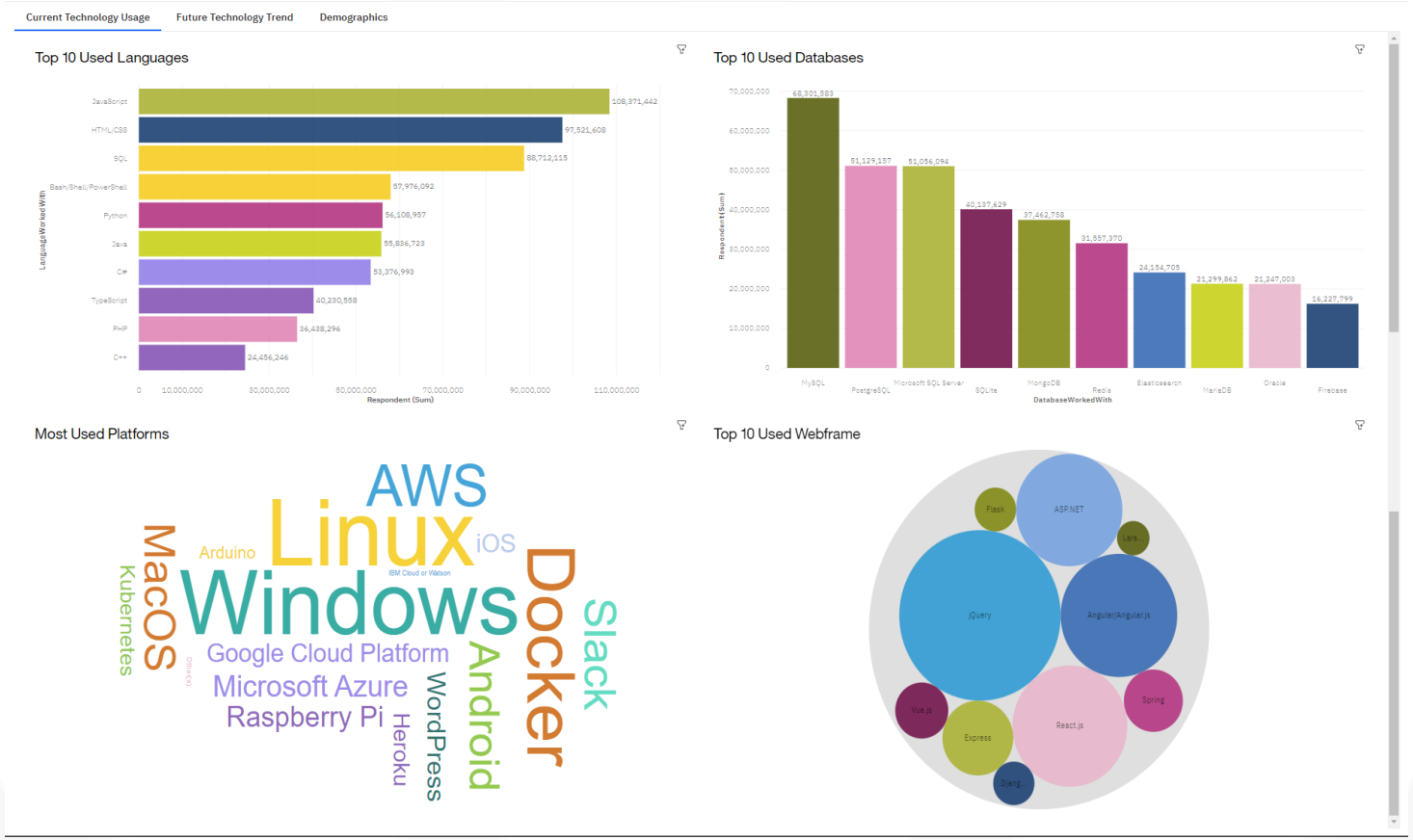
Implications

- It's recommended to learn PostgresSQL for future learners
- As PostgresSQL will be mora valuable
- Otherwise, MySQL lost value, so to speak

DASHBOARD

https://eu-de.dataplatform.cloud.ibm.com/dashboards/bf6736d0-9ac0-4eec-9a34-3625267acd5b/view/441ad529129b0bdc64dcbde407cd2e0279667158e3bbd55082877b490f612097f03b15c3c87e4c088b150532a1bf44089a

DASHBOARD TAB 1



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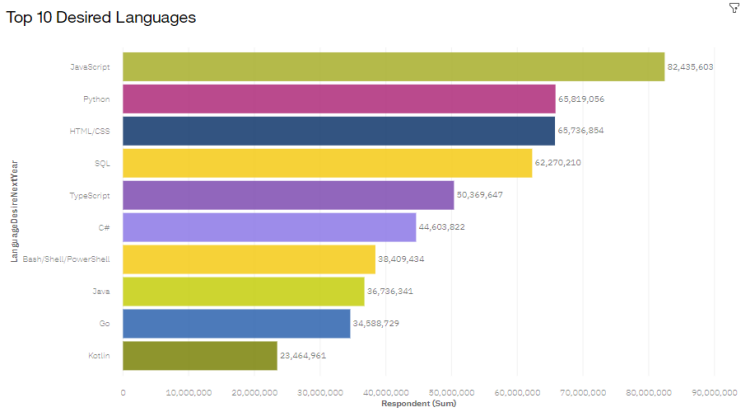

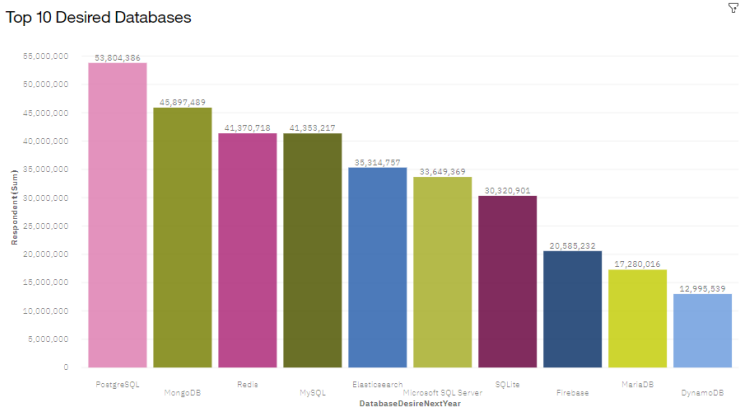

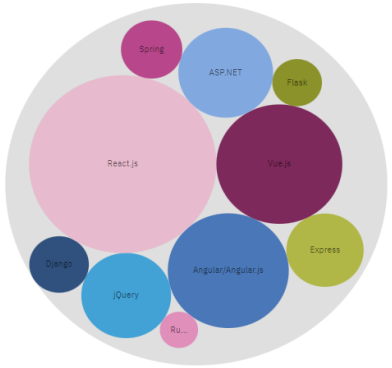

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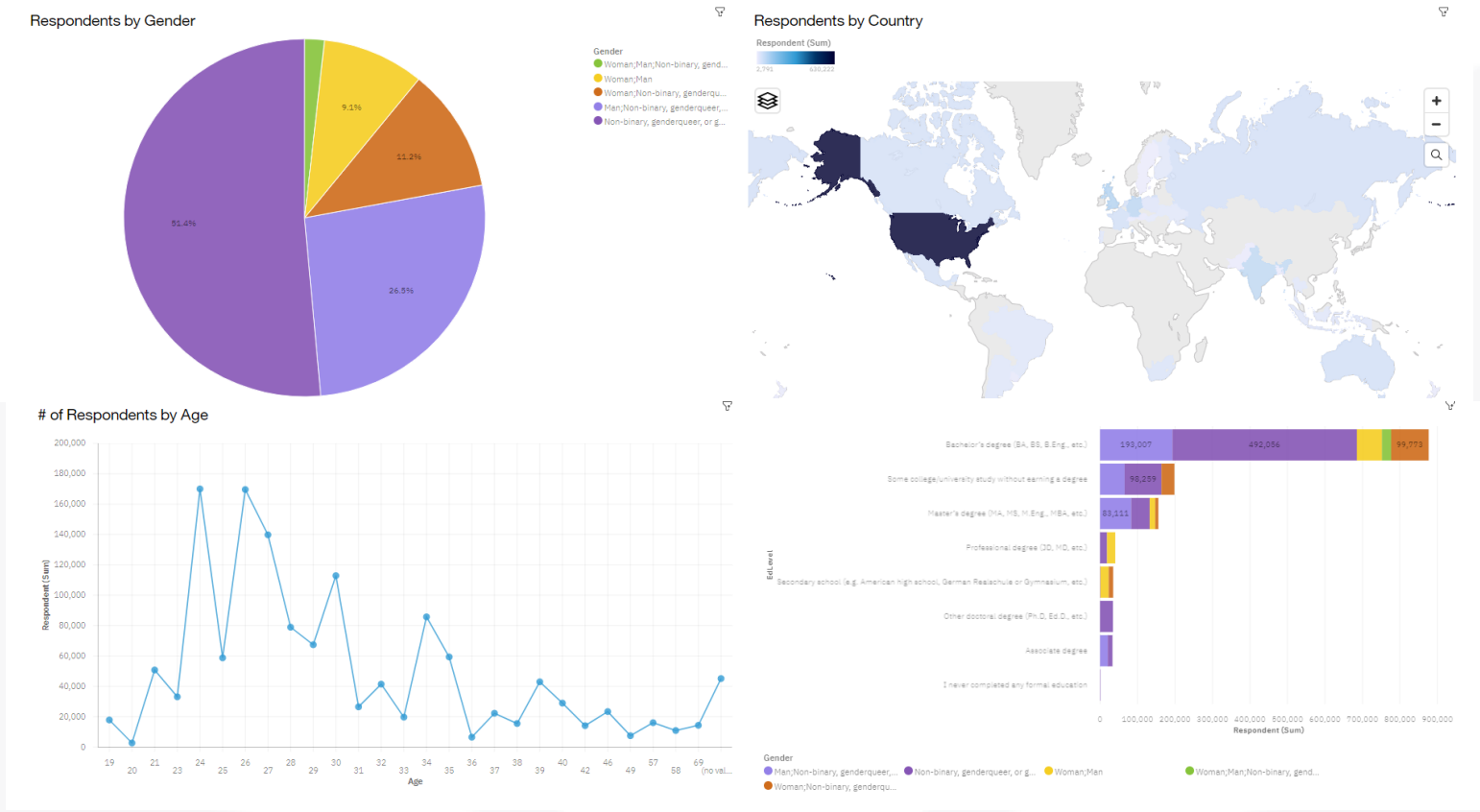

DISCUSSION

- Python's projected growth indicates increasing demand; prioritize learning it for better career prospects.
- JavaScript's continued dominance reinforces its importance; essential for web development and offers abundant job opportunities.
- Emerging languages like Go and Kotlin show potential; consider exploring their unique features for specific domains.

CONCLUSION

Through comprehensive data analysis, we have identified the top programming languages, in-demand database skills, and popular IDEs. These insights enable informed decision-making for future skill requirements. Embrace these trends to stay ahead in the rapidly evolving IT landscape.

JOB POSTINGS