Technologies Data Survey Report

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EXECUTIVE SUMMARY

- A modified subset of Stack Overflow data consisting of two data sets based on the demographics and data technologies were analyzed to identify the present and future data technologies trends among people of various different age groups all across the world.

- Dashboard are created with three different tabs i.e. current data technologies ,future data technologies and demographics of respondent. IBM Cognos Dashboard Embedded (CDE) platform was used to analyze and visualize the results.

- From the Current technologies dashboard it was clearly visible that Java Script and MySQL were most popular languages and Databased respectively.

- Windows and jQuery were preferred platform and webFrame to worked with

- From the future trend technologies dashboard it was clearly visible that HTML/CSS and Elasticsearch languages and Databased respectively were most popularly desired to be worked for the next upcoming year
- Python and HTML were preferred platform and webFrame to be worked for the next upcoming year .

- Lastly, Demographics analysis was done in the third tab and it showed that:93.7% respondent were male with majority of them being from USA and India in the age group of 21 to 43.

- From last visualization on Demographics Dashboard it shows varied types of data technologies are preferred by students pursuing bachelors and master's degree. Among young generations we may see most of the population gravitating towards languages easy to learn and help automation tasks ex:- Python, HTML

- Most of the BIG Four/Five also affects the general behavior of majority of population

INTRODUCTION

- To visualize the data ,dashboards were created to emphasis on the present and future trends of data technologies.

- Here are some approaches
  - Problem: From such a clustered data ,we need to analyze the present data technologies and future data trends considering the various different demographics of the respondents
  - Through creating dashboards using IBM Cognos Dashboard, we would be able   to visualize our data based on top 10 present and future data technology trends based on respondent gender ,formal education ,age and countries.
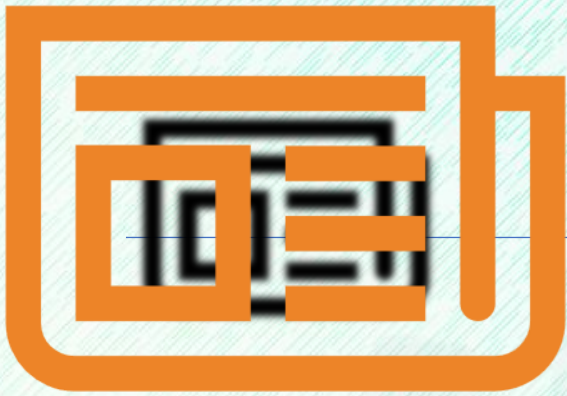
METHODOLOGY

- A modified subset of Stack Overflow data consisting of two data sets based on the demographics and data technologies were used to visualize the present and future data trends based on their demographics

- As these data sets were subsets of data sets and therefore they did not require a lot of cleaning . Hence no particular methodology was used to visualize the data. We only used filtering option to ignore the nulls values from data

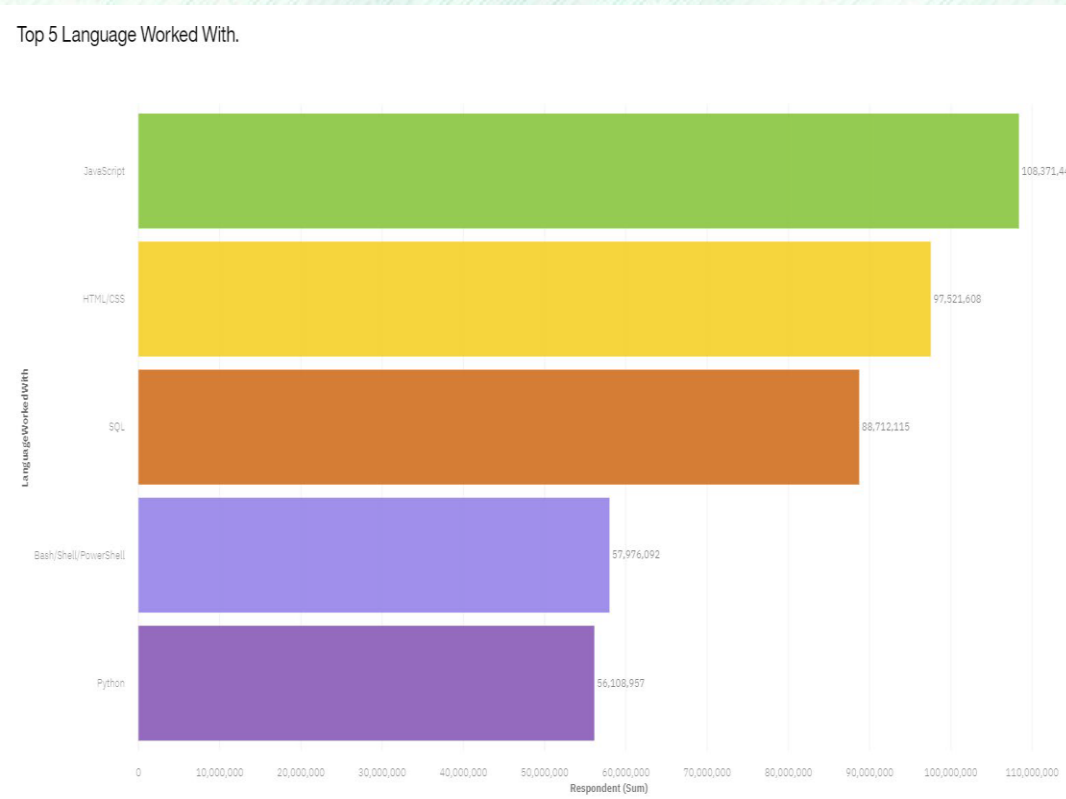- IBM Cognos dashboard was used to create interactive Dashboards

RESULTS

The data was collected from stack overflow blog under ODBI: Open Database License .It was further modified and use for the analysis purpose.
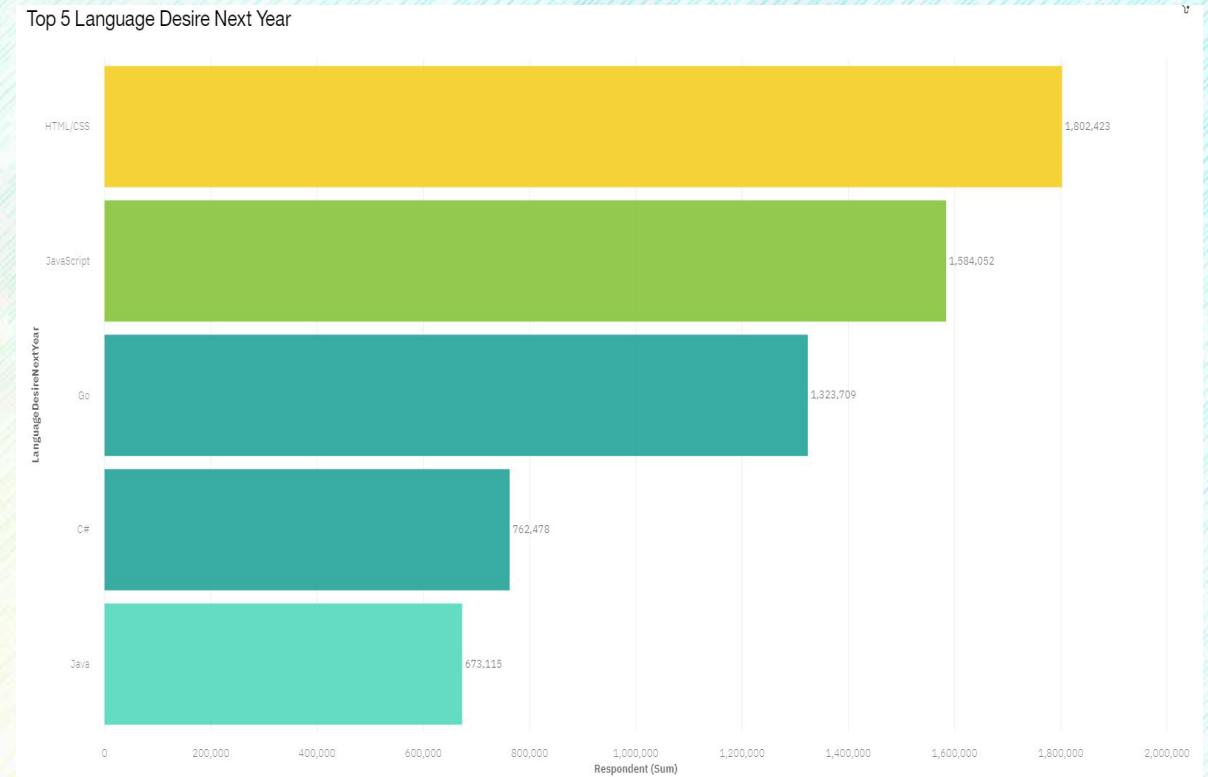
- It consisted of two data sets :Survey data technology normalized consisted of approximately 75K respondents querying them about the present and future data technologies interest . Then using visualization tools such as bar, columns graphs along with tree maps and hierarchy trees were used to analysis the top trending present and future technologies trends.

- Survey data demographics was more clustered data set a which involved around 11K respondents answering about various demographics questions such as country , age , education level, ethnicity, gender etc. The results of these finding were visualized in form of bar ,line charts along with maps.

- In next few slides we will be discussing the crucial findings from the data sets for present and future technologies trends

PROGRAMMING LANGUAGE TRENDS

Current Year

Next Year

Top 5 Language Worked With.

JavaScript — 108,371,442
HTML/CSS — 97,521,608
SQL — 88,712,115
Bash/Shell/PowerShell — 57,976,092
Python — 56,108,957

Top 5 Language Desire Next Year

HTML/CSS — 1,802,423
JavaScript — 1,584,052
Go — 1,323,709
C# — 762,478
Java — 673,115

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PROGRAMMING LANGUAGE TRENDS – FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML were the languages are most preferred due to growing internet and friendly syntax.

- Followed by SQL, Bash/Shell and Python for current trends as these are mostly used in a backend process or data analysis
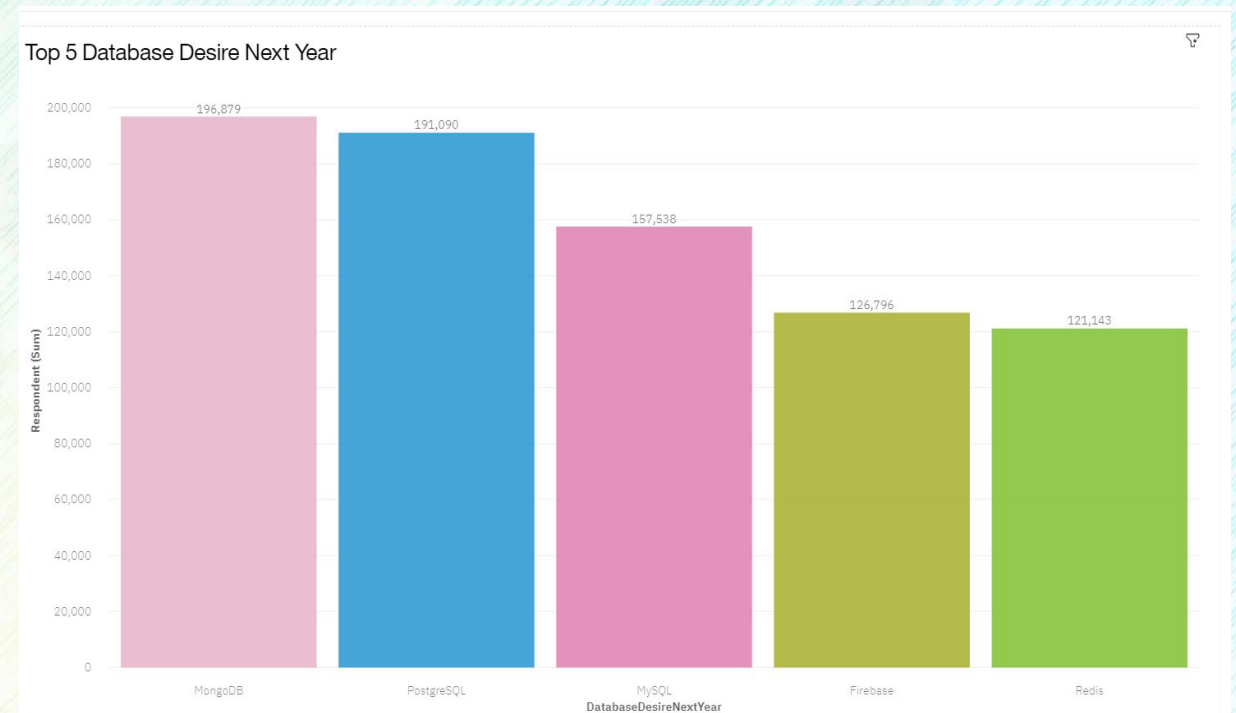
Implications

- The job market would see a higher influx of JavaScript and HTML programmers along with Python for task automation using Django

- In upcoming years there might be growth in Highlevel languages like R and Python and slump in C and C++

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DATABASE TRENDS

Current Year

Next Year

Top 5 Database Worked With
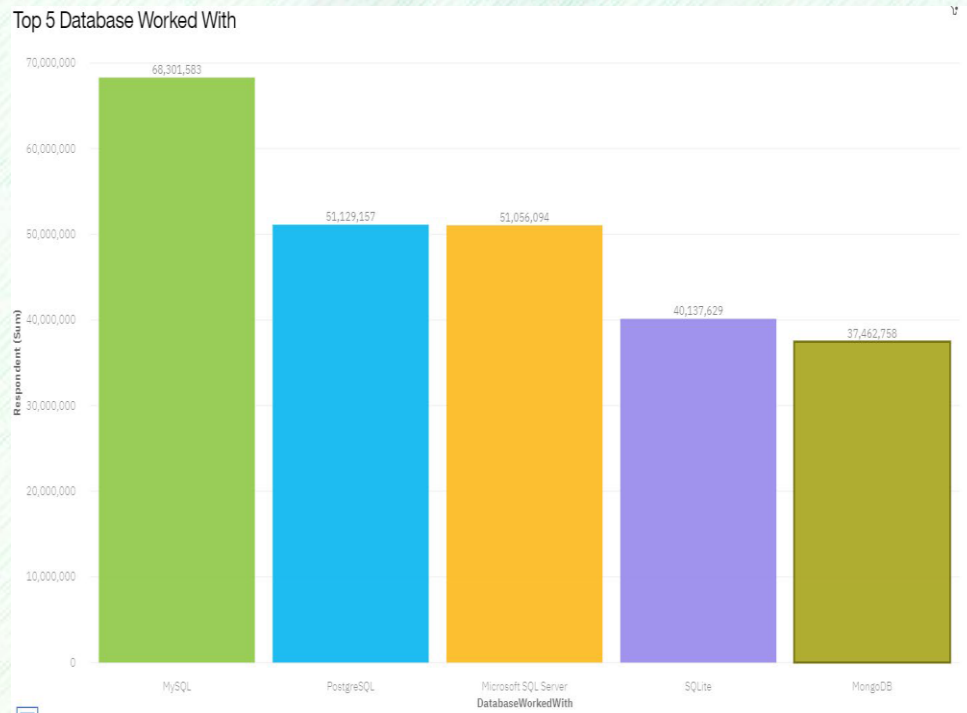
Top 5 Database Desire Next Year

DATABASE TRENDS – FINDINGS & IMPLICATIONS

Findings

- My SQL dominates the Database platform preferred by developers as used officially by MNC's

- PostgreSQL is the next most preferred database platform due to it increase functionality and open license

- MongoDB as a database platform is expected to show more growth in future.

Implications

- We may see more organization preferring towards MongoDB and PostgreSQL, as there popularity among users

- MongoDB and PostgreSQL as the next essential databases skills to have in resume

- MySQL in upcoming years seems to be falling behind principally due to its cost factor.

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DASHBOARD
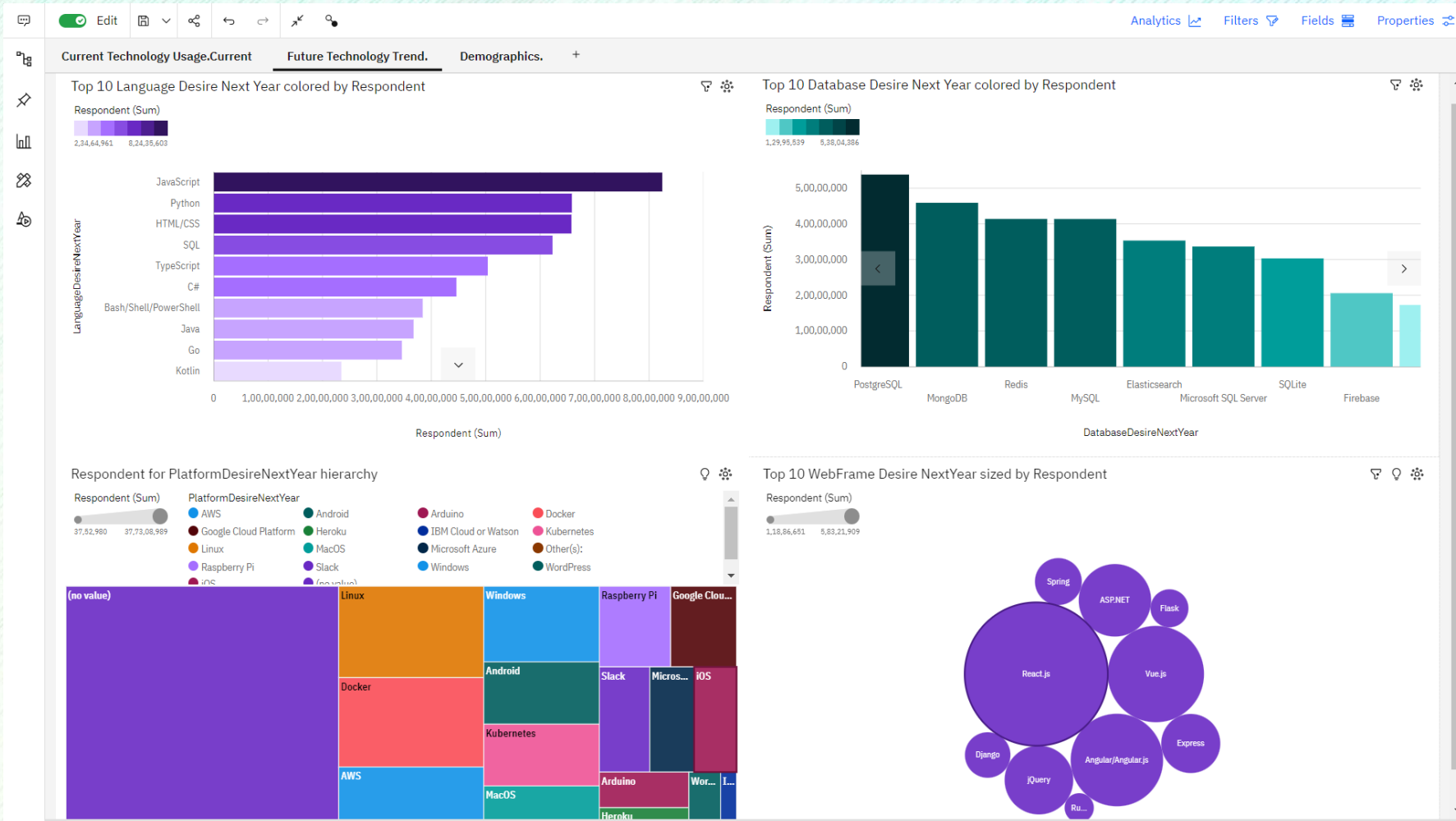
IBM PROJECT DASHBOARD

The above dashboard link will redirect to the sources of the visualizations shown in upcoming **DECKS :**

https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FFinal%2BCapstone%2BProject&action=view&mode=dashboard&subView=model000001860434a591_00000002
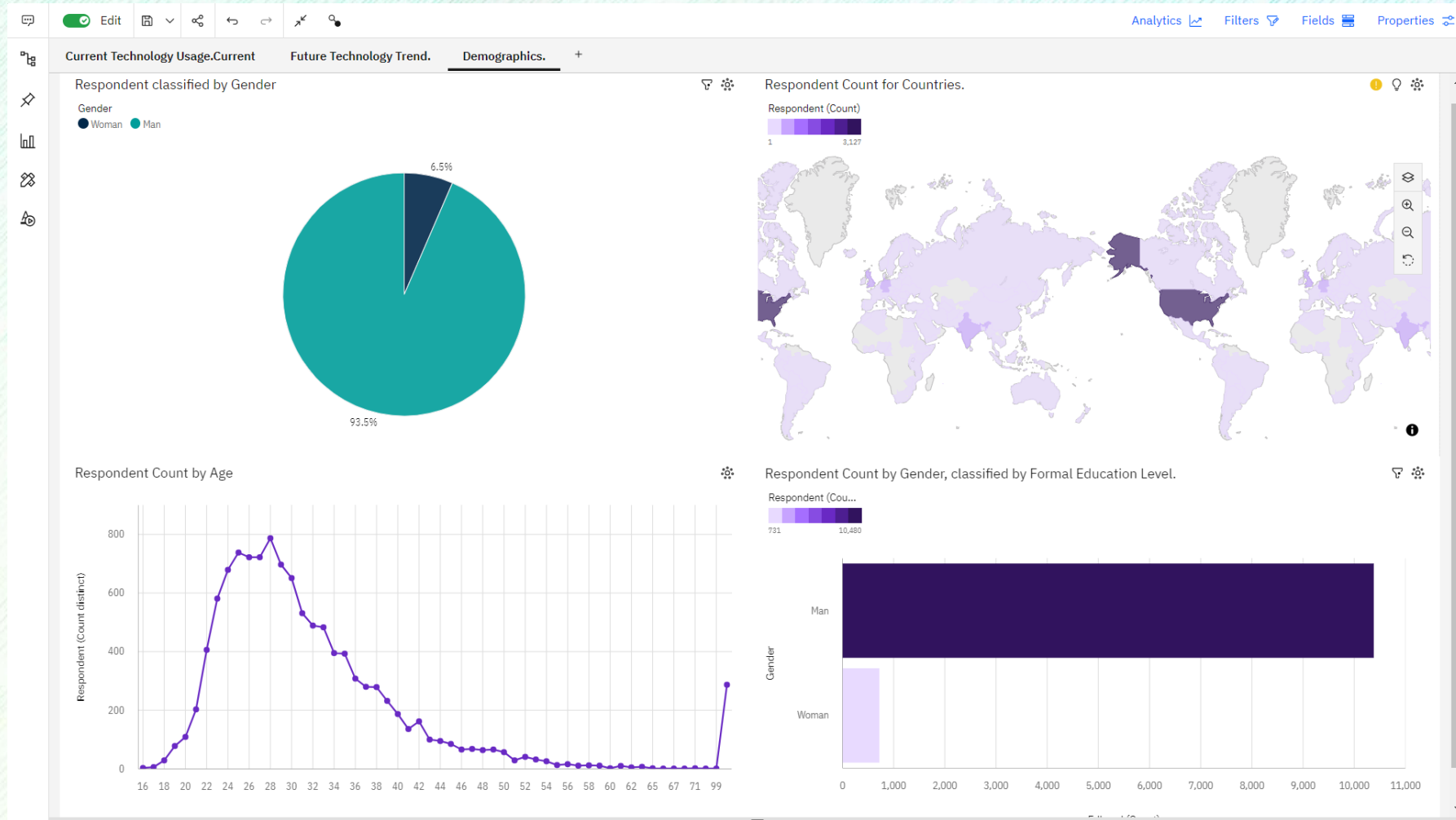
Current Technology Usage
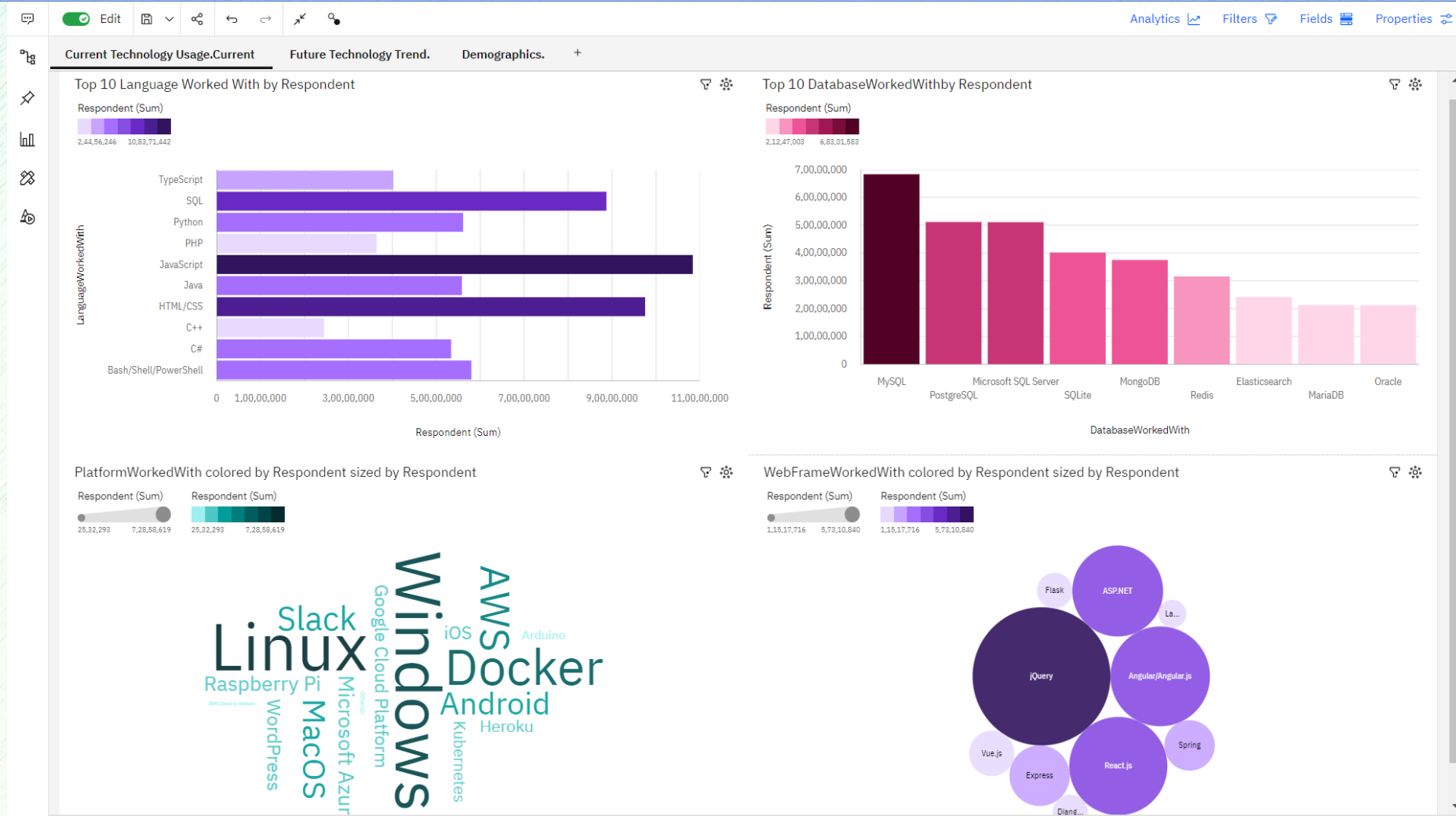
Future Technology Trend

Demographics

DISCUSSION

- Languages: Will SQL exist and if so who will be the major market player?

- Will Python would continue to grow or be replaced with languages like Julia or some other new language in the new future emerging languages?

- MongoDB and PostgreSQL might be able to replace MySQL in emerging times can Oracle help to improve and hold its position

- MySQL declining is so drastically can it be due to external factors?

- How MNC's will play major role in replacing future languages like GO,PHP,C++ and other current major languages?

OVERALL FINDINGS & IMPLICATIONS

Findings

- The database technologies surveys results shows a domination by male population, majority of them between age group 21 to 45.

- Bachelor's and Master's students highly prefer doing a specialization in data technology.

Implications

- Seeing the popularity among youth, we can see more bootstrap camps than ever in past due to increased demand.

- The popularity trends may be similar in other countries too and we may see various MNC's diversifying into this sector.

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CONCLUSION
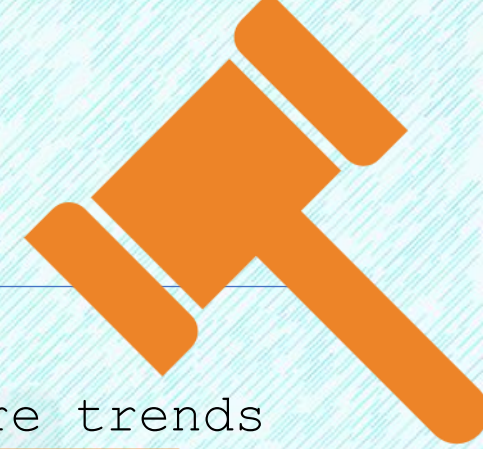
Analyzing dataset we are able to understand current and future trends in technologies application and usage

- From the data visualization in demographics it is clear that the data technologies trends are majorly affected by young age groups

- Popular languages like HTML and JavaScript will remain the most preferred languages to be worked with. Even in the future due to its multipurpose use on the internet and applications.

- Among Databases, the popularity of MySQL decreasing and which may be replaced by MongoDB and PostgreSQL which are easy to use and cost effective.

- Enhancing skills and Upskilling may come across in many MNC's diversifying into data technology to be competitive.

- Though there is a major contribution of male but in upcoming trends, women are showing steep growth.

APPENDIX
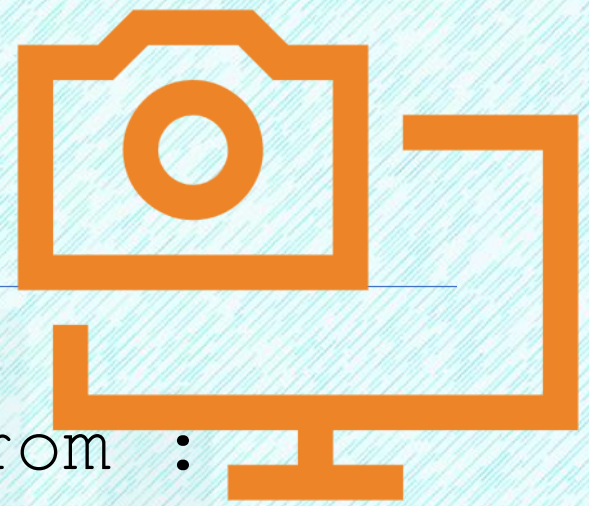
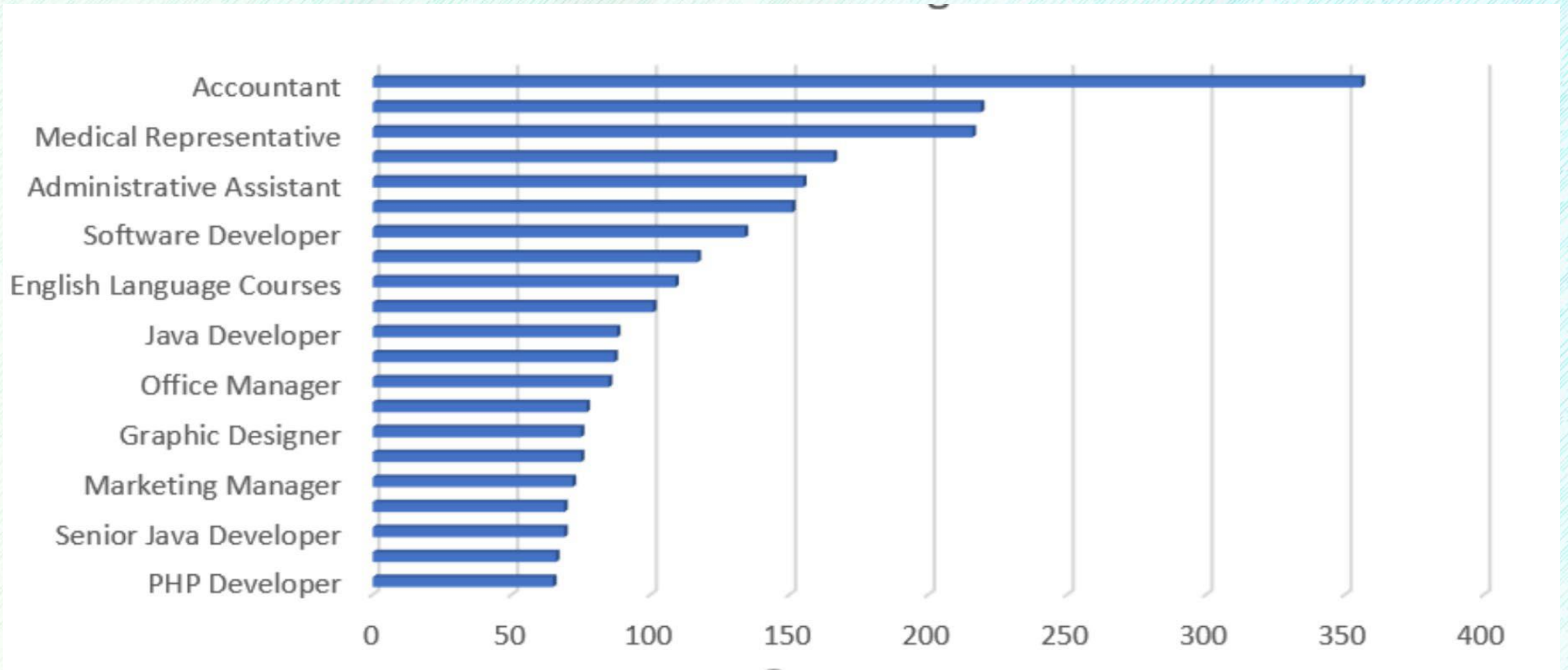## Resources used : Database taken from :

- Stack Overflow for hosting dataset as **ODBL:** Open Database License
- **IBM Cognos dashboard** were used for creating Dashboards
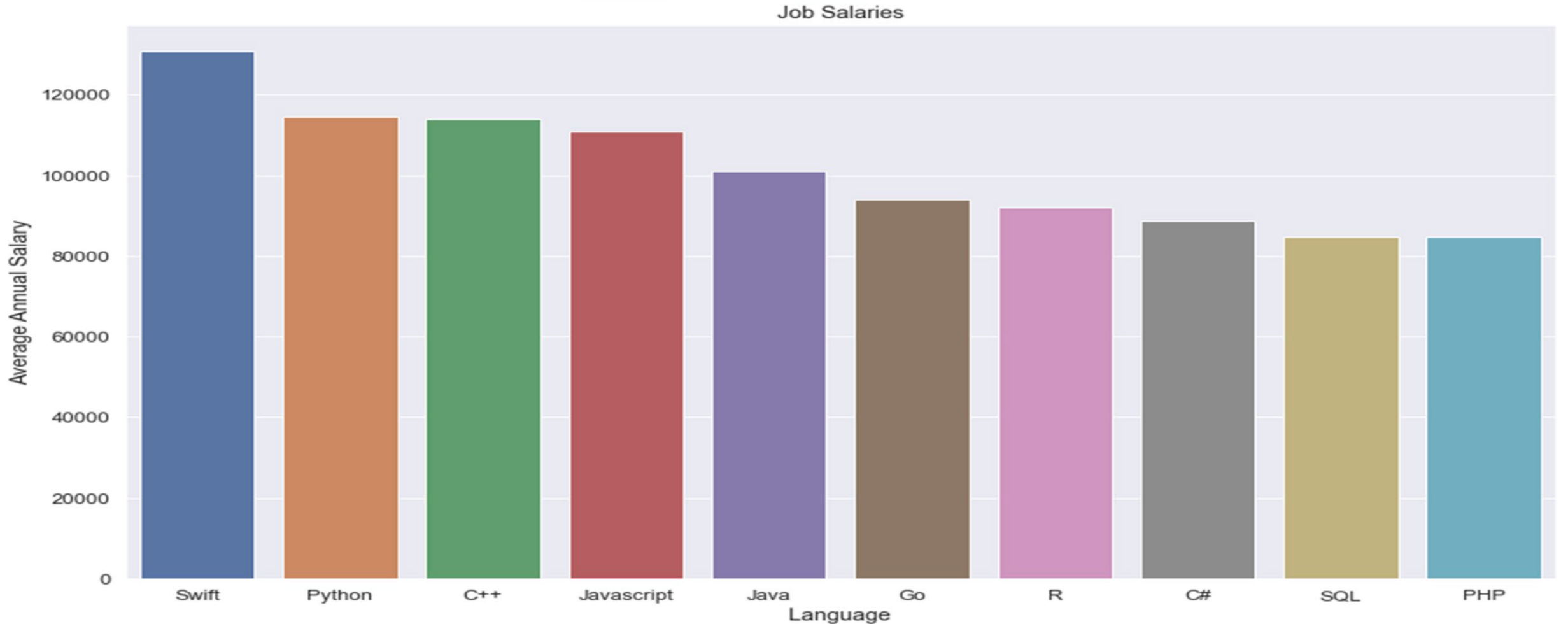
Acknowledgement:

Coursera and IBM Skill Network for making these specialization possible

Also would like to thank platform like cognitive.ai for making these hands in labs exercise and there support to all learners

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GITHUB JOB POSTINGS

POPULAR LANGUAGES

Job Salaries

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APPENDIX

Additional Notes

Data will null or no value has been dropped to make standardized and appealing visual

- At least 5 languages are a must for a developer or programmer to work in challenging environments with ease, flexibility

- Using contrast colors, a similar color schema presentation is made homogeneous and easy to read

- Varied Visualizations has been used to capture the crux of the survey and key insights

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