



Technology Survey for Future Skills Requirementst

Sammed Kamboj

July 25, 2021

OUTLINE



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

EXECUTIVE SUMMARY



- A modified subset of two data sets based on the demographics and data technologies were analyzed to identify the present and future data technology trends among people of various different age groups all across the world.
- A dashboard created using IBM Cognos contains 3 tabs
 1. Current Technology Usage
 2. Future Technology Trend
 3. Demographics
- From different visualizations it was clear that data technologies are much popular among millennials having bachelors and master's degree.
- Most of the respondents were from USA, India, Germany and United Kingdom.

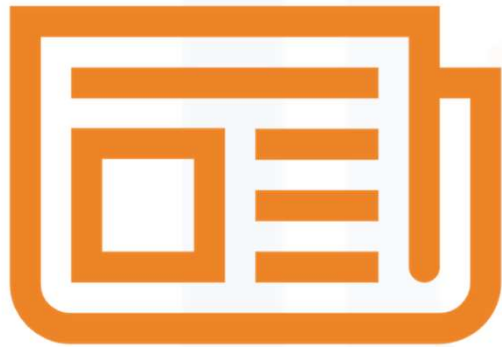
INTRODUCTION



- This analysis is performed to identify trends for this year's report on emerging skills and gives answers to questions like:

1. What are the top programming languages in demand?
2. What are the top database skills in demand?
3. What are the popular IDEs?

METHODOLOGY



1. At the start, data is collected by scraping internet web sites and accessing APIs in various formats like csv files, excel sheets, and databases.
2. Once this is completed, data is processed for analysis using data wrangling techniques. (Finding missing values, finding and removing duplicates, normalizing, detecting outliers etc.)
3. After the data is ready, various statistical techniques are applied to analyze the data
4. IBM Cognos Analytics is used to create dashboard and bring all of the information together

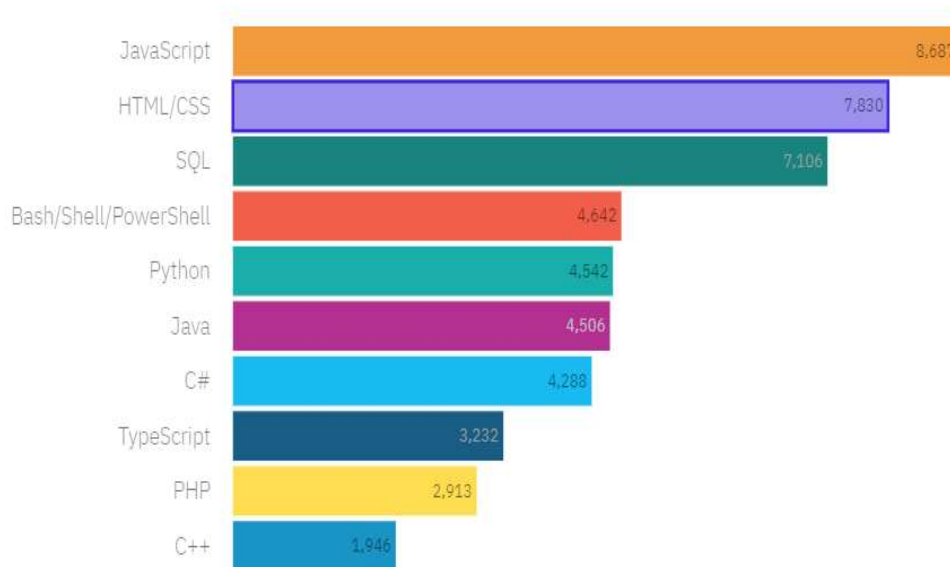
RESULTS

- Data technologies are more famous in USA, India, Germany, and United Kingdom compared to the rest of world.
- The male population is dominant for data technologies.
- Undergrad and graduate millennials occupy most of the population working in data technologies.
- The incline of platforms used for development is shifting from windows and MacOS to AWS, Microsoft Azure, Kubernetes, and Docker. The popularity of Linux stays the same.

PROGRAMMING LANGUAGE TRENDS

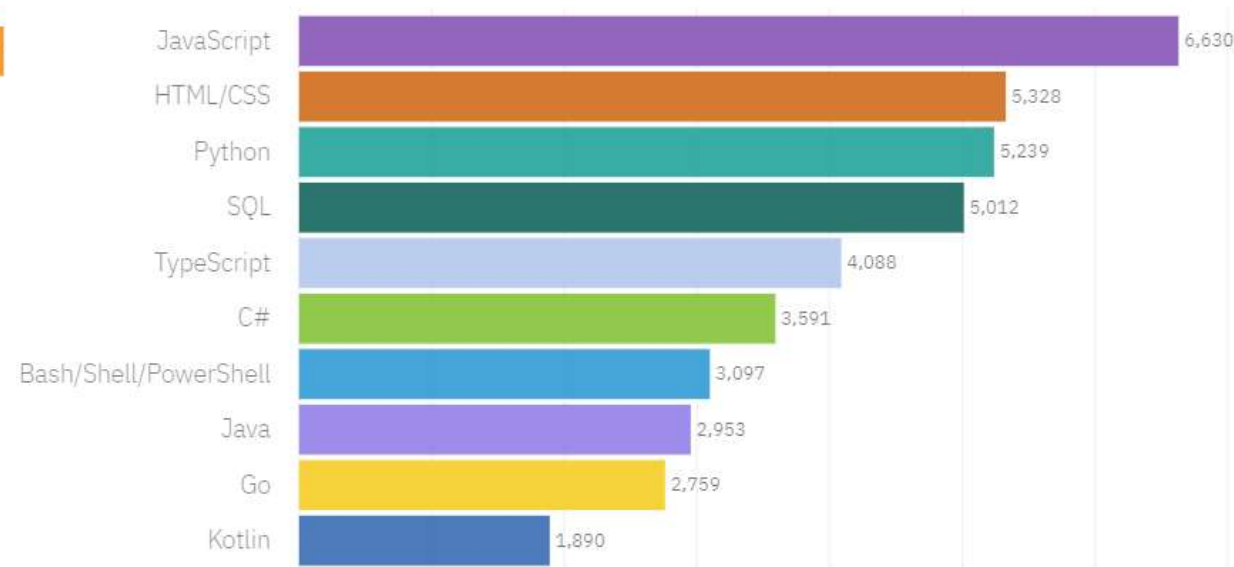
Current Year

Top 10 Languages Worked With.



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS, and SQL continues to be top ranked sought after programming languages.
- There is an increasing demand for programming languages like Python, TypeScript, Go, and Kotlin.
- The demand for SQL and C# remains the same.
- The popularity of Bash/Shell/PowerShell, Java, C++, PHP seems to be decreasing.

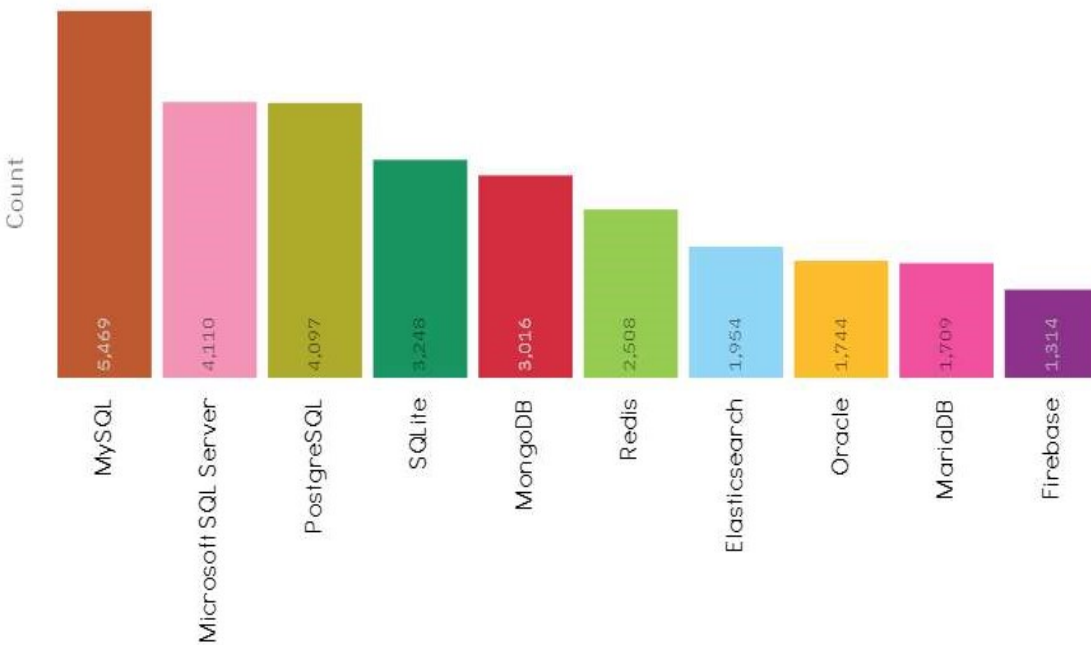
Implications

- More and more people learning Javascript and HTML means the jobs market will see a saturation for these skills.

DATABASE TRENDS

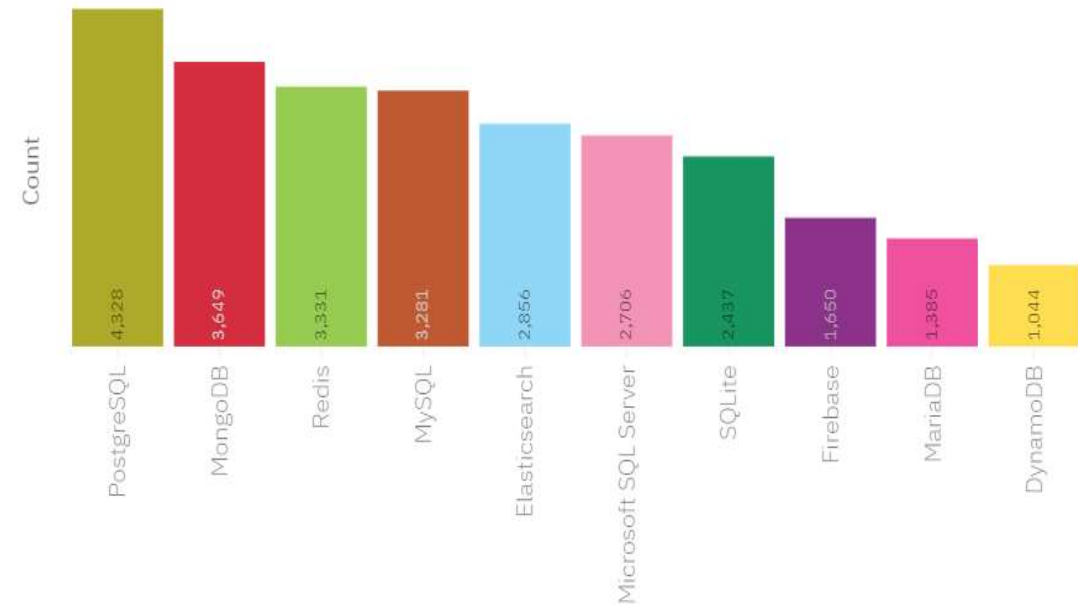
Current Year

Top 10 Databases Worked With



Next Year

Top 10 Databases Desired Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- My SQL dominates the Database platform preferred by developers but in next few years we may see a steep decline in its preferences.
- PostgreSQL and MongoDB would be the most preferred Database platform in future.

Implications

- Increasing popularity of PostgreSQL and MongoDB means more and more organizations will be shifting to these technologies in coming year.

DASHBOARD



Dashboard

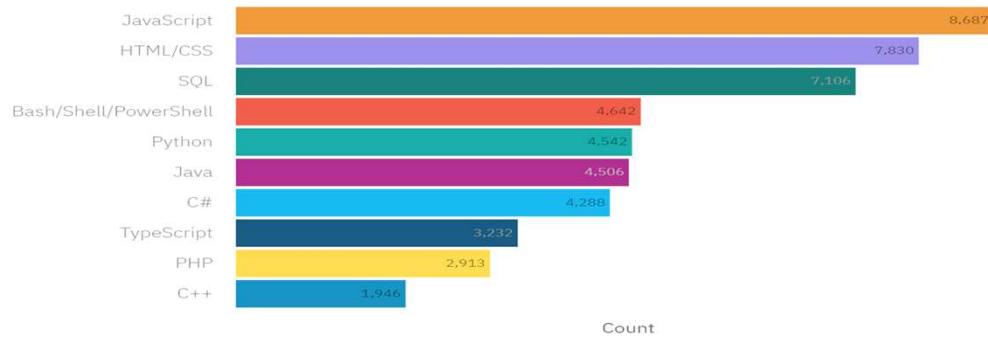
DASHBOARD TAB 1

Current Technology Usage.

Future Technology Trend.

Demographics.

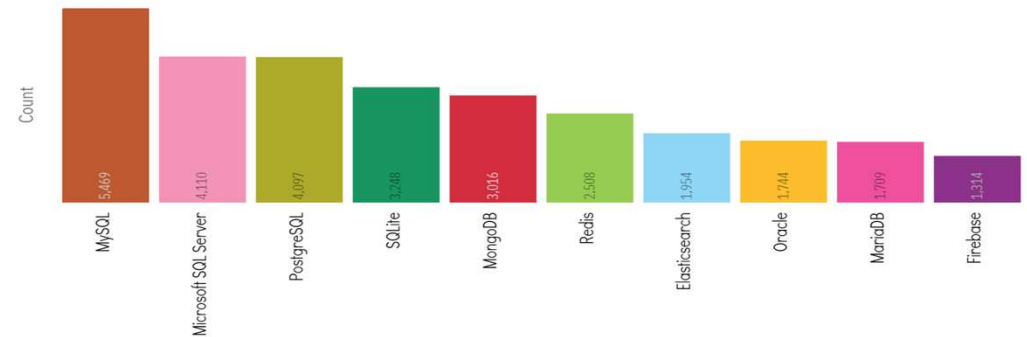
Top 10 Languages Worked With.



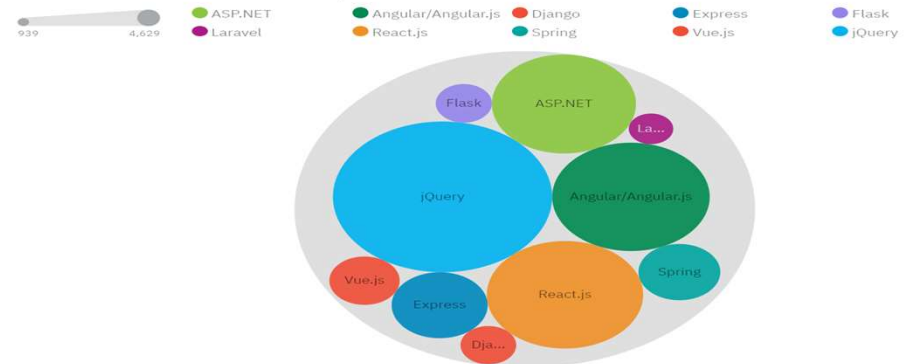
Platform Worked With



Top 10 Databases Worked With



Top 10 Web-Frame Worked With



IBM Developer

SKILLS NETWORK



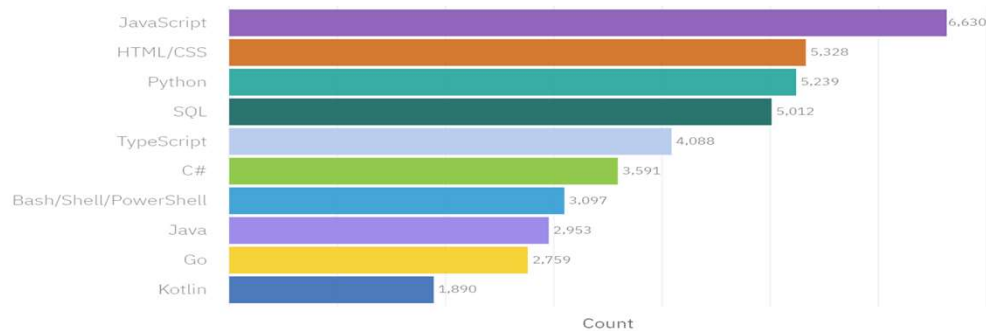
DASHBOARD TAB 2

Current Technology Usage.

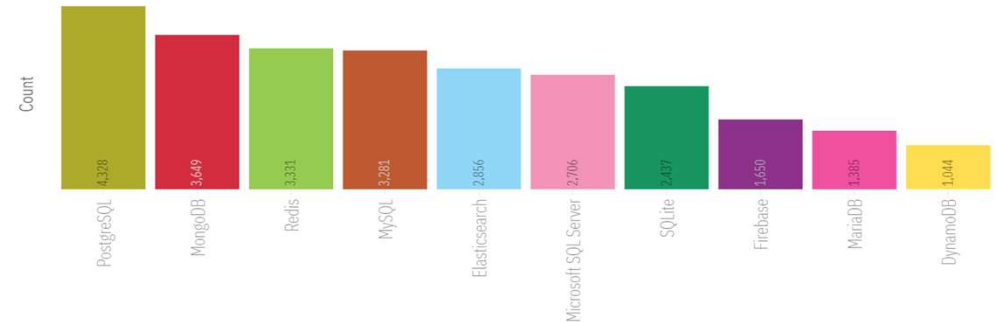
Future Technology Trend.

Demographics.

Top 10 Languages Desired Next Year



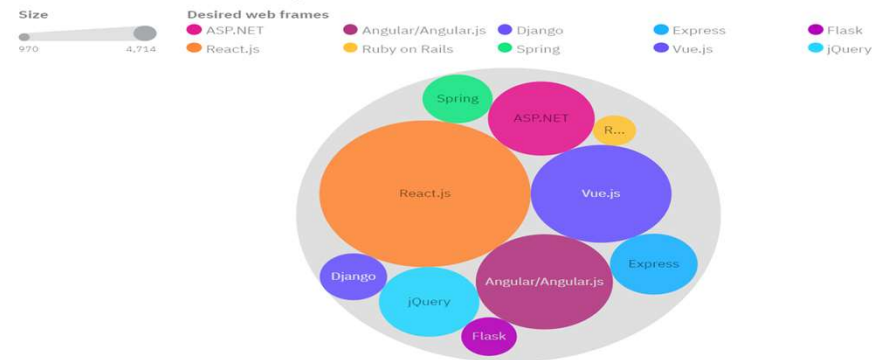
Top 10 Databases Desired Next Year



Platform Desired Next Year



Top 10 WebFrames Desired Next Year.



IBM Developer

SKILLS NETWORK



DASHBOARD TAB 3

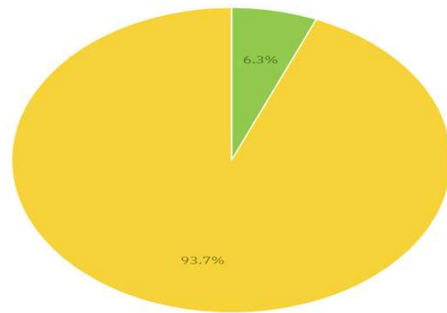
Current Technology Usage.

Future Technology Trend.

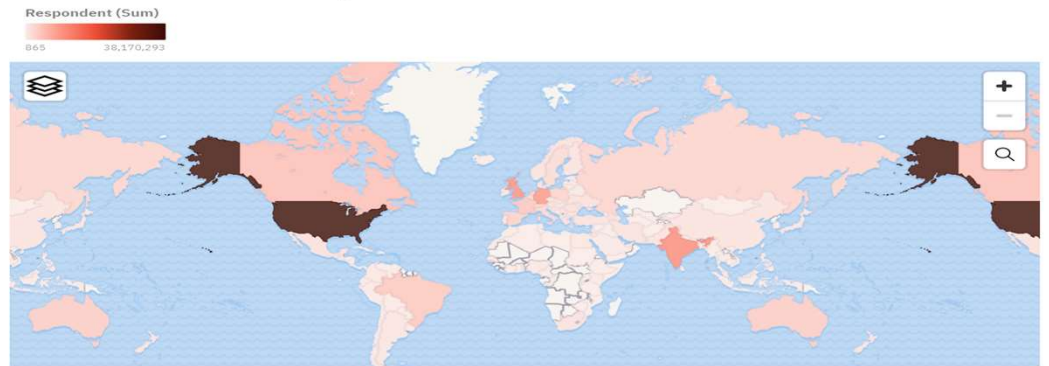
Demographics.

Respondents classified by Gender

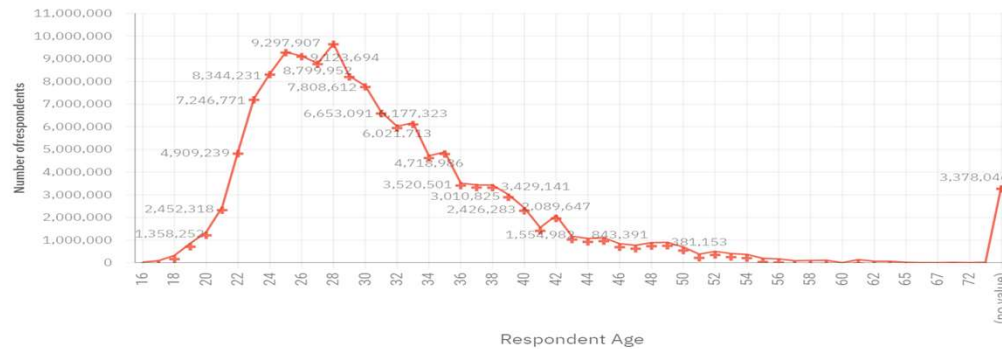
Gender
● Woman ● Man



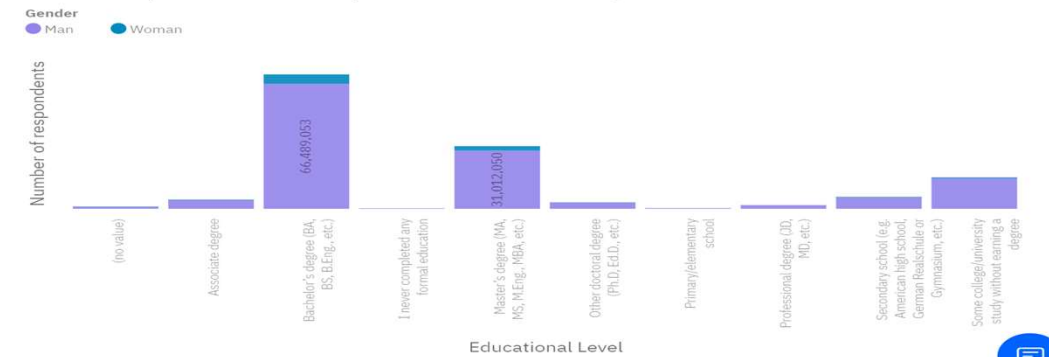
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



IBM Developer

SKILLS NETWORK



DISCUSSION



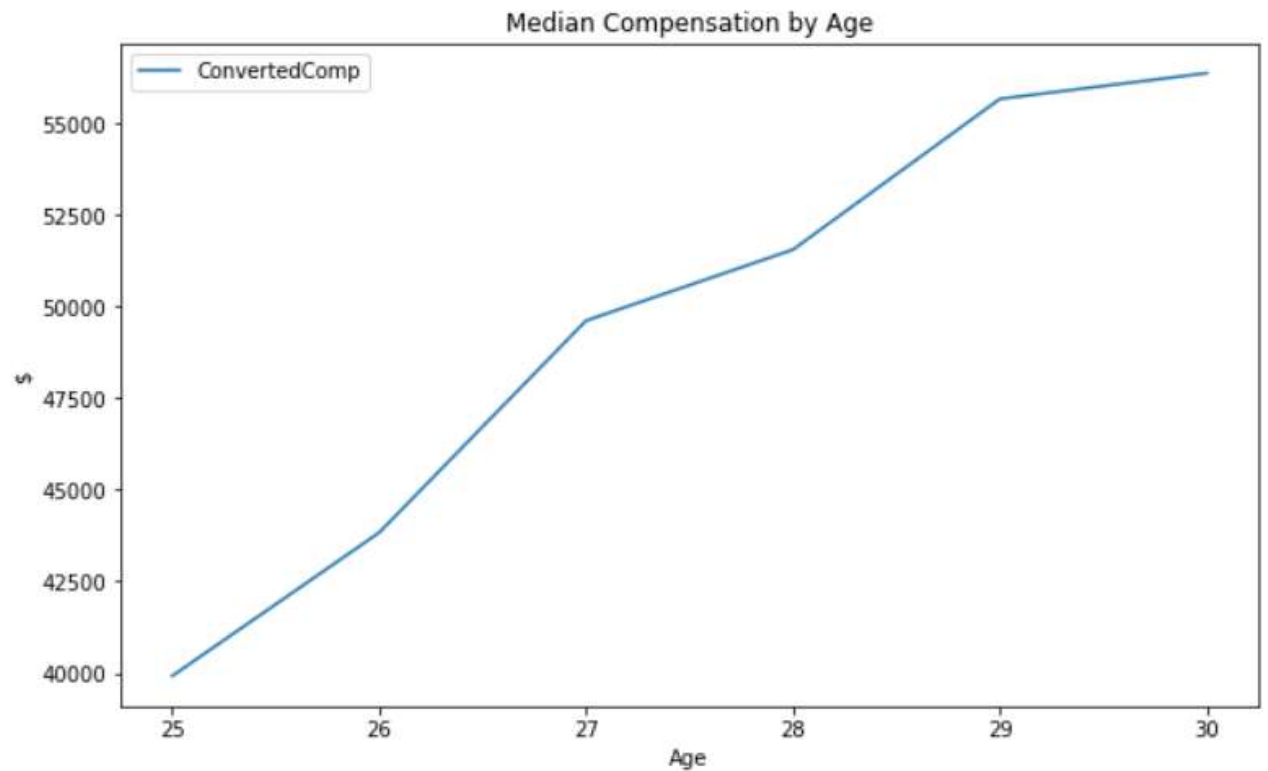
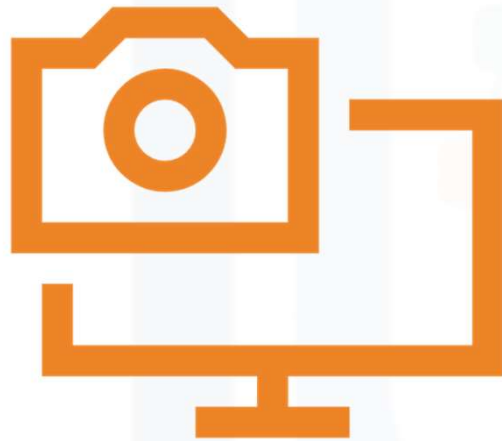
- Will the languages like PHP, C++, Bash/shell/Powershell be extinct in coming future ? Or the scarcity of skills may increase the salary ranges of these skills ?
- Why is popularity of MySQL is seeing an decline ? What flaws in MySQL are overcome by MongoDB ?

CONCLUSION



- Among the languages , HTML/CSS and JavaScript will remain the most preferred.
- Among the Databases, we may see SQL may be replaced by MongoDB and PostgreSQL.
- For platforms, Linux stays the most preferred platform for data technologies, with AWS, Docker, and Kubernetes gaining popularity.

APPENDIX



GITHUB JOB POSTINGS



POPULAR LANGUAGES

