

IDENTIFICATION OF TRENDS FOR EMERGING TECHNOLOGIES



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OUTLINE



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EXECUTIVE SUMMARY

This analysis covers mainly three of the types of data analysis including; Descriptive, Predictive and Prescriptive Analysis.

- In order to keep pace with changing trends in technologies and stay competitive, analysis of data from different sources was performed, these sources are:
 - Stackoverflow Developer Survey 2019 results (major)
 - Github Job Postings frequency
 - Popular programming languages webpage
- Questions for the purpose of Analysis include;
 - What are the top programming languages that are in-demand?
 - What are the top database skills that are in-demand?
 - What are the most popular IDEs and WebFrameWorks
 - Demographic data like gender and age distribution of developers
- Data was collected via web scraping, sql querying and raw as csv file, analysis was performed majorly on IBM platform with the use of visualizations to capture and reveal findings of exploratory data analysis.
- To bring to fore the purpose of the analysis, the results obtained show prospectively that ;
 - Javascript and HTML/CSS would most likely still be top trending of sought after programming languages
 - Python programmers and enthusiasts are most likely to increase and rise up the ranks
 - TypeScript is another programming language to look out for in the next year
 - NoSQL Databases are on the rise
 - PostgreSQL is most likely to be the top Database for the next year
 - Frequency of use MySQL Database is very likely to fall
 - There are much more male developers than female and more developers have at least a Bachelor's degree amongst both males and females
 - 95% of developers are between the ages of 20 and 45
 - React.js is a WebFrameWork to look out for next year
 - The Linux Platform might be more preferable next year
- Finally, my recommendations are to upskill the company's IT team in Python, invest in NoSQL Database and explore more React.js WebFrameWork and Linux Platform.

INTRODUCTION



- Emerging Technologies and IT services are transforming the way we work, live and play. Yet many organizations struggle to create a digital presence that matters.
- In order to thrive in today's dynamic digital economy, modern enterprises need to embed digital into the core of their core activities. This includes a wide range of things: From remodeling business, digitizing essential processes, integrating technology to core and presenting the brand via digital channels.
- This analysis covers mainly three of the types of data analysis including; Descriptive, Predictive and Prescriptive Analysis.
- The major aim of the overall analysis is to identify trends for emerging technologies, identify future skill requirements and make informed suggestions and decisions by extension as to how to upgrade skills, solutions, and services necessary to stay competitive and increase productivity.

METHODOLOGY



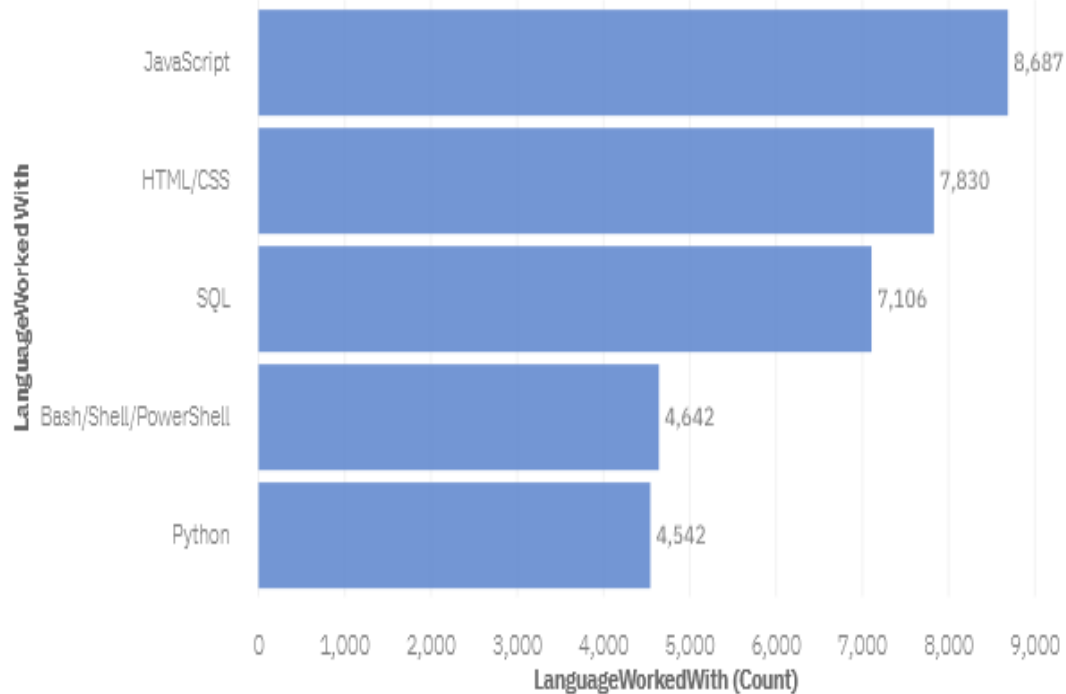
- Collected data for in-demand technology skill from various sources including;
 - GitHub Job Postings
 - StackOverFlow Developer Survey 2019 results
 - Popular programming languages Webpage
- Prepared collected data for analysis by cleaning and mapping data into a convenient and analyzable format; This involved finding and removing duplicates, finding missing values, imputation and normalization.
- Use of Statistical Analysis to analyze data finding correlations, relationships, make comparisons, understand the distributions of the data and also answer data-driven questions relating to this analysis.
- Employed IBM Cognos Analytics interactive dashboards for dynamic analysis and presentation of data.

RESULTS

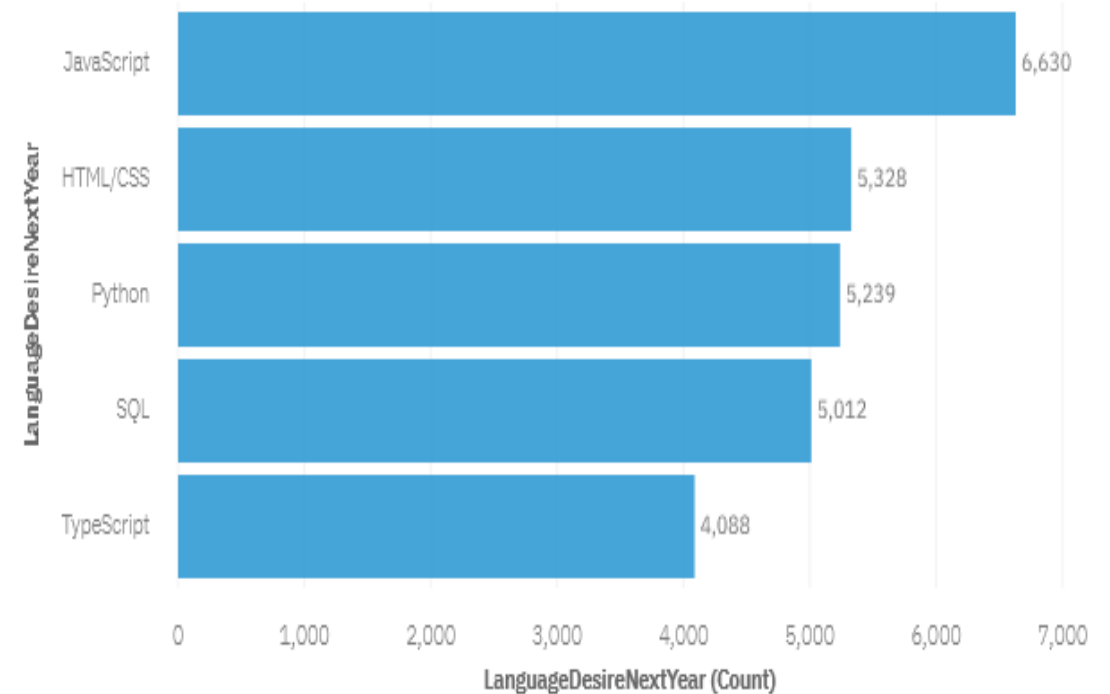
- From the data scraped from github, the C programming language jobs were the most having a frequency of 184 jobs followed by Java, JavaScript and Python.
- Highest paid for language is Swift followed by python, c++ and javascript
- Javascript and HTML/CSS would most likely still be top trending of sought after programming languages.
- Python programmers and enthusiasts are most likely to increase and rise up the ranks.
- TypeScript is another programming language to look out for in the next year
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- React.js is a WebFrameWork to look out for next year
- The Linux Platform might be more preferable next year.
- NoSQL Databases are on the rise.

PROGRAMMING LANGUAGE TRENDS

Top 5 Programming Languages for the current year



Top 5 Programming Languages for the next year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Top Five Programming Languages for the current year are;

- Javascript
- HTML/CSS
- SQL
- Bash/Powershell/Shell
- Python

Top Five Programming Languages for the next year are;

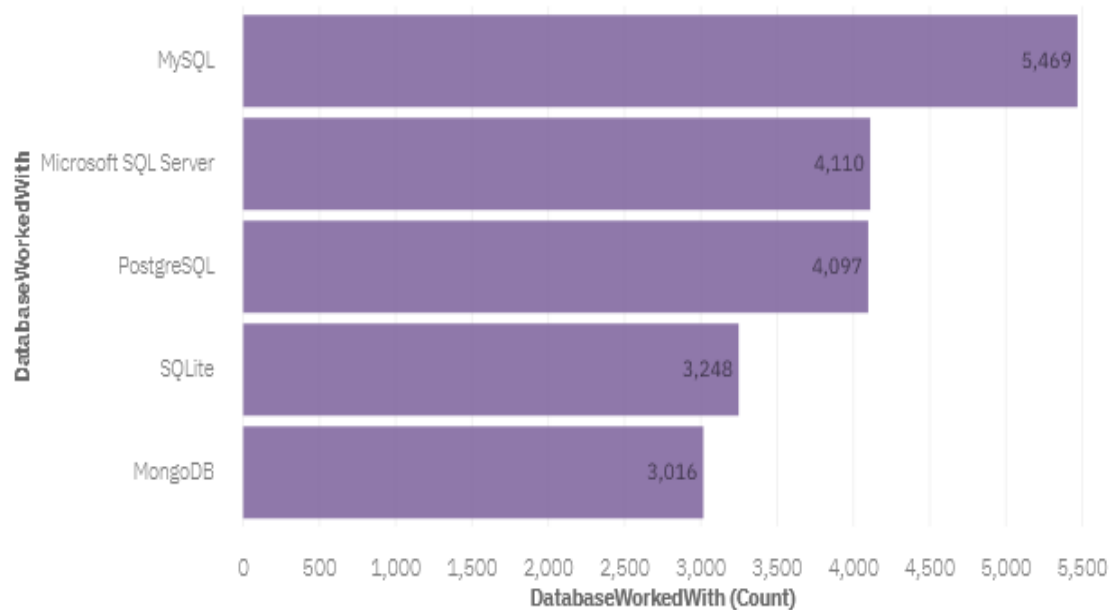
- Javascript
- HTML/CSS
- Python
- SQL
- Typescript

Implications from my findings are that;

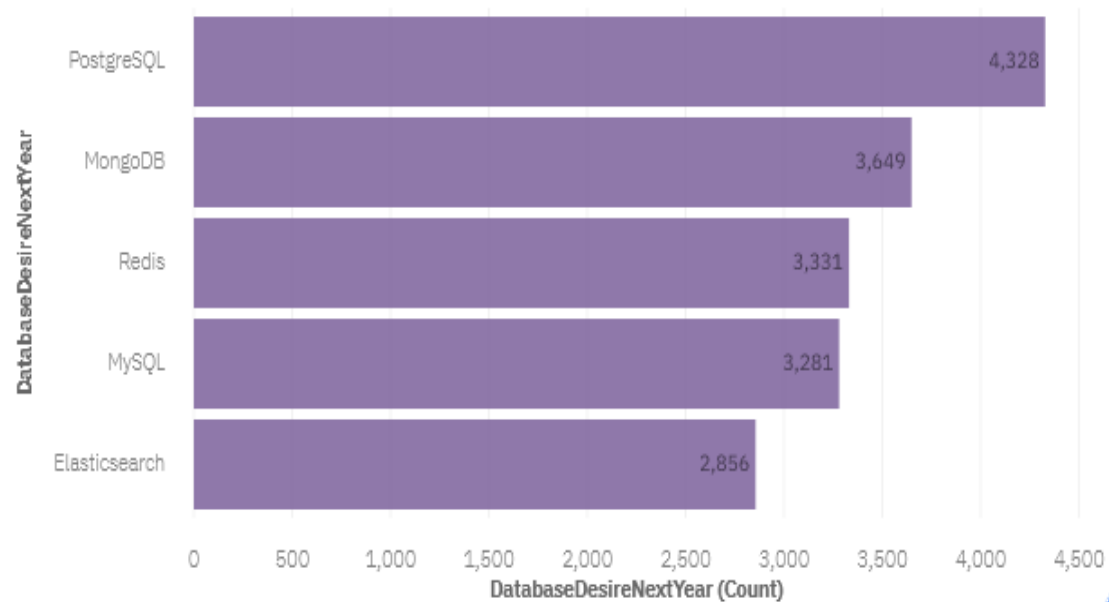
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DATABASE TRENDS

Top 5 Databases for the Current Year



Top 5 Databases for the Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Top Five Databases for the Current Year are;

- MySQL
- Microsoft SQL Server
- PostgreSQL
- SQLite
- MongoDB

Top Five Databases for the Next Year are;

- PostgreSQL
- MongoDB
- Redis
- MySQL
- Elasticsearch

Implications from my Findings are that;

- NoSQL Databases are on the rise
- PostgreSQL is most likely to be the top Database for the next year
- Frequency of use MySQL Database is very likely to fall

DASHBOARD



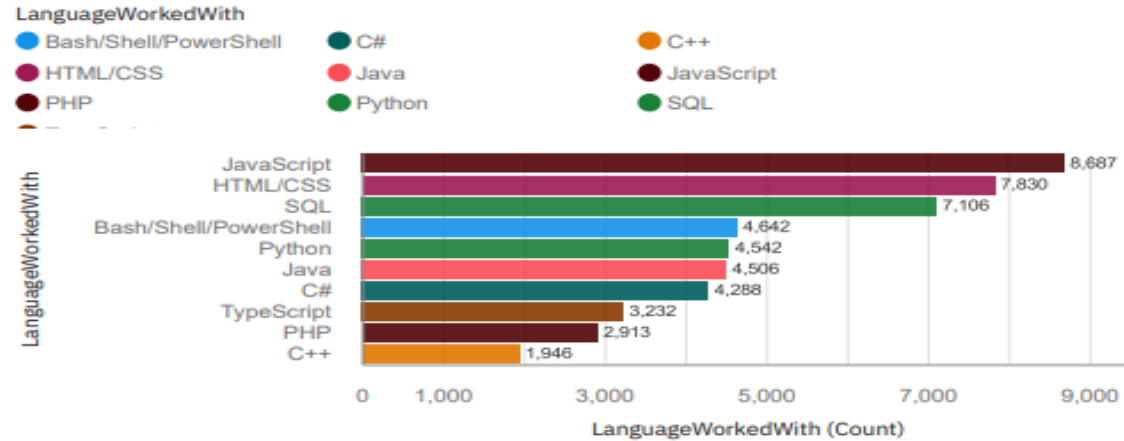
Check

<https://dataplatform.cloud.ibm.com/dashboards/136639b9-6bf7-48d6-92e3-db7d3d3b261b/view/447bc27706a336cd1eb3dce407907d057c3e760fb5bb8a06d2807b490b697797a83f4290c87c4b0cd3165064f6e4410b9d>

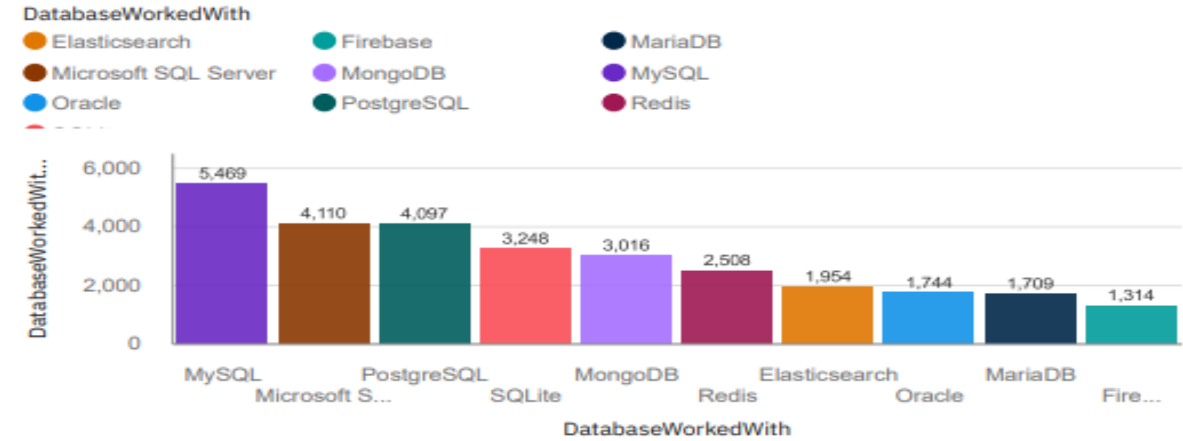
To view the Overall Dashboard including tabs for Current Technology Usage, Future Technology Trends and Demographics.

DASHBOARD TAB 1

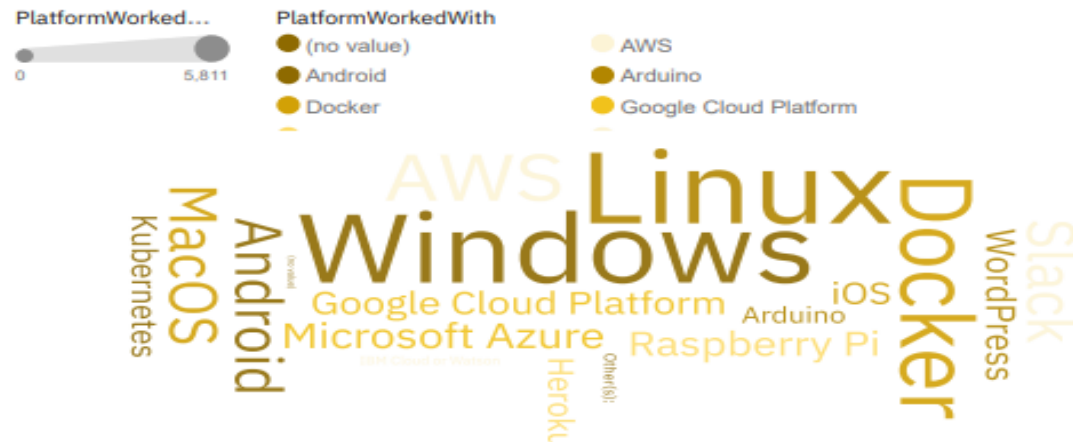
Top 10 LanguageWorkedWith



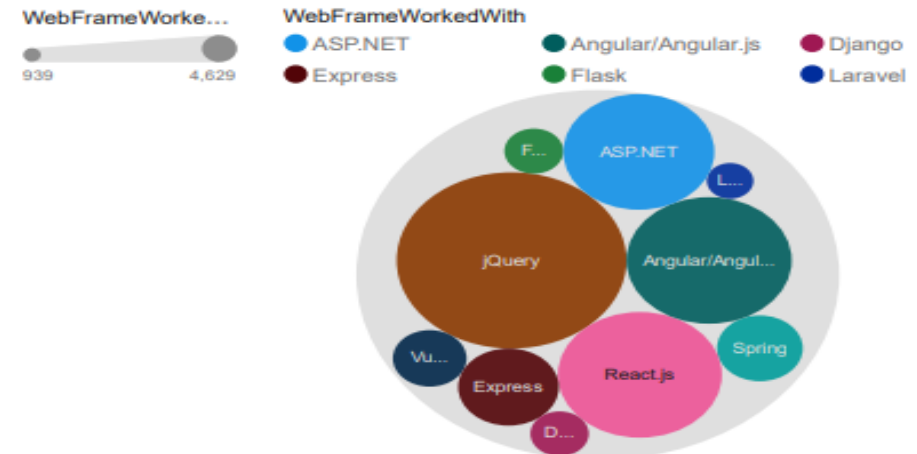
Top 10 DatabaseWorkedWith



PlatformWorkedWith

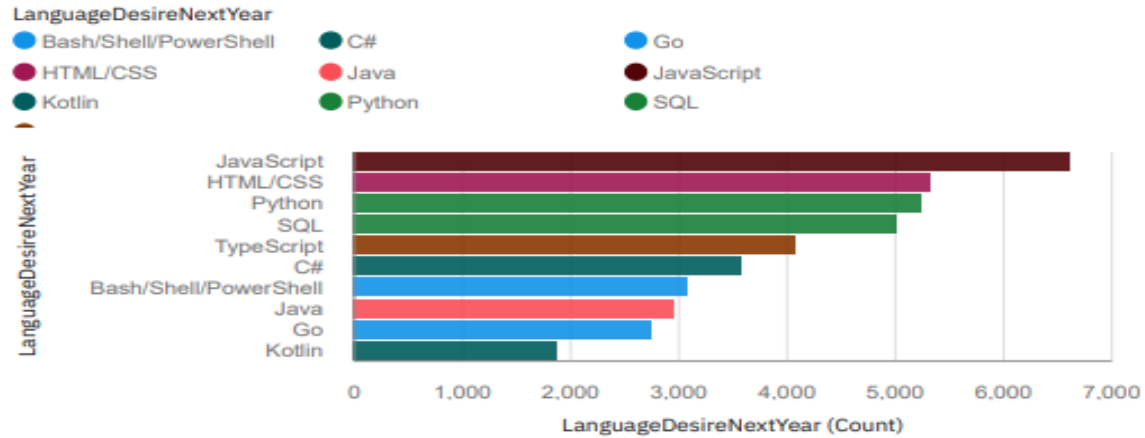


WebFrameWorkedWith

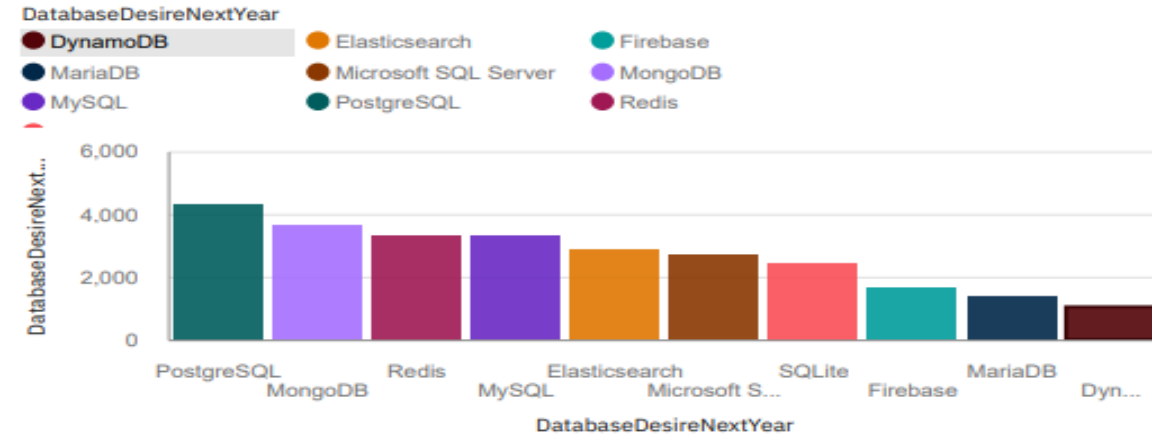


DASHBOARD TAB 2

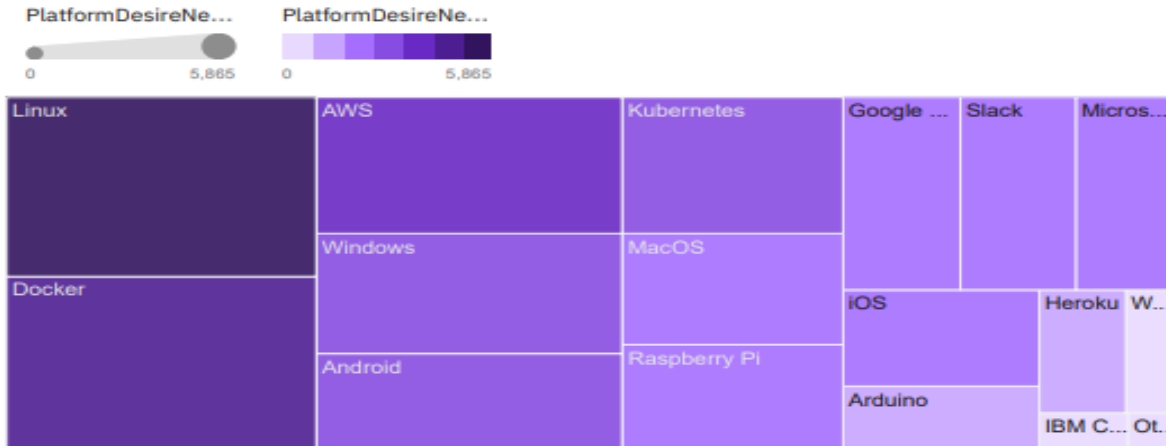
Top 10 LanguageDesireNextYear



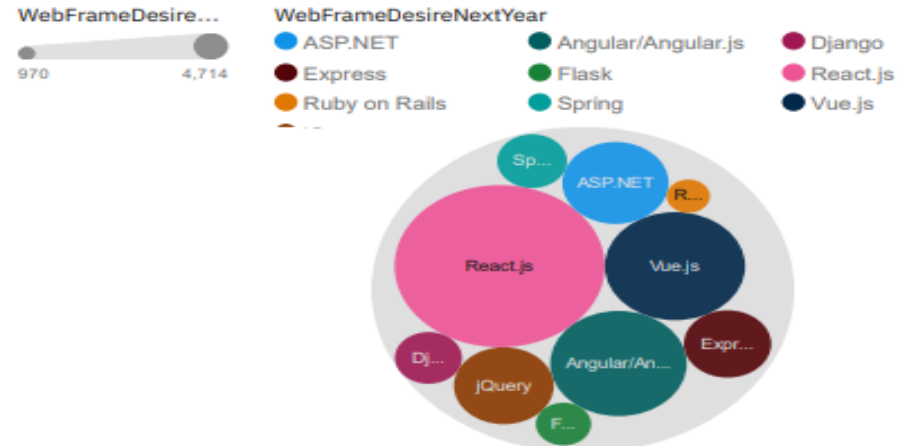
Top 10 DatabaseDesireNextYear



PlatformDesireNextYear



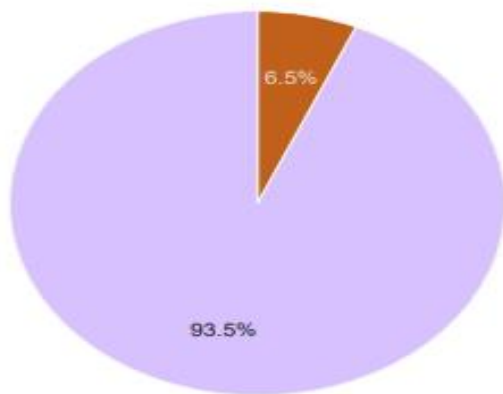
Top 10 WebFrameDesireNextYear



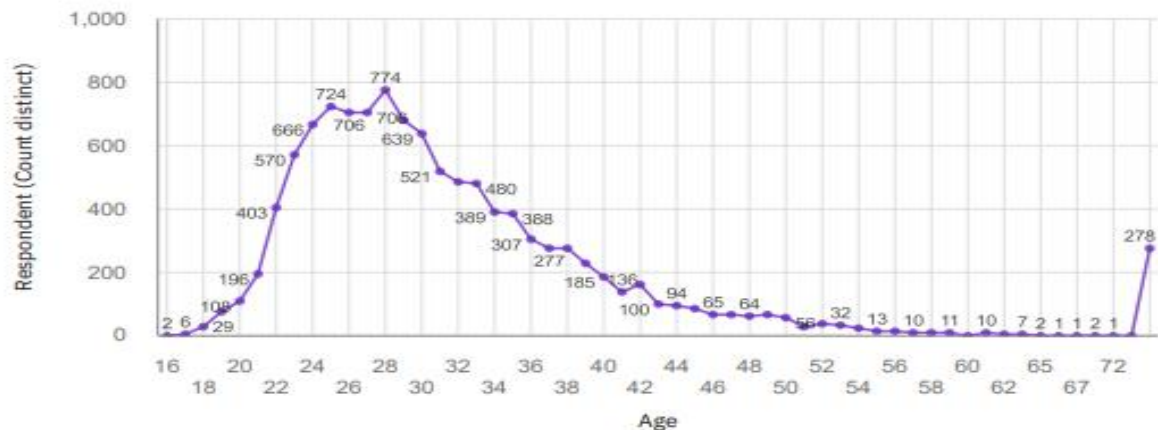
DASHBOARD TAB 3

Respondent by Gender

Gender
● Woman ● Man

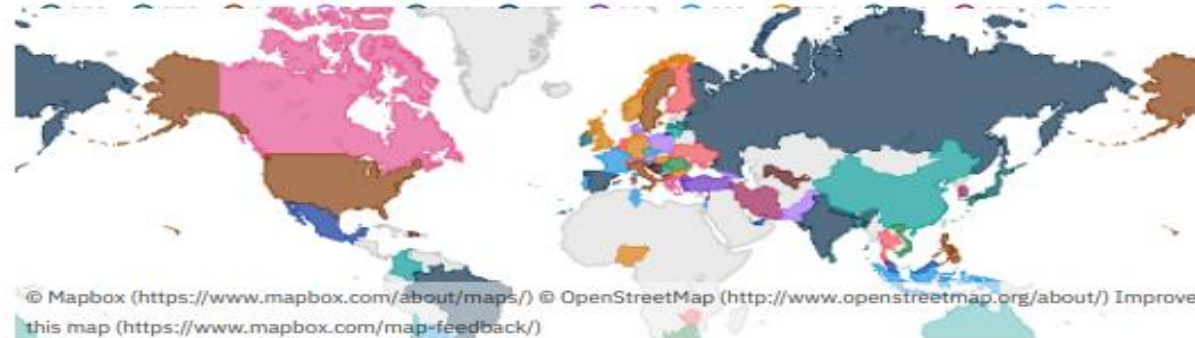


Respondent by Age



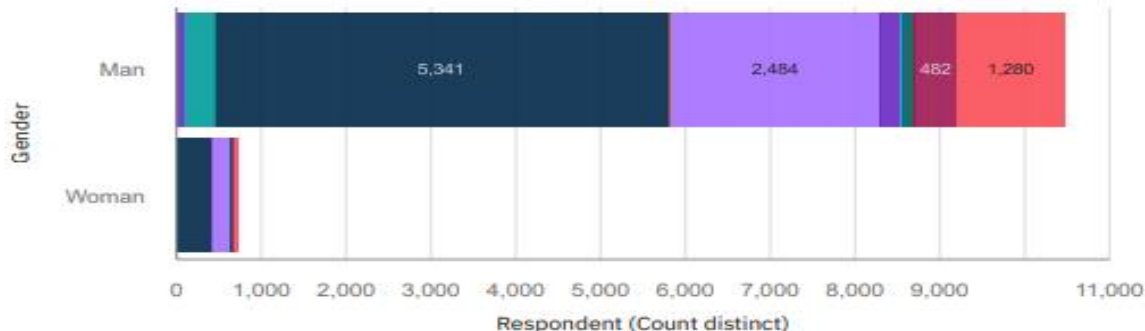
Respondent for Country regions

Respondent
● 16 ● 17 ● 19 ● 24 ● 49 ● 50 ● 53 ● 57 ● 62 ● 67 ● 68 ● 86
● 87 ● 92 ● 109 ● 111 ● 114 ● 117 ● 118 ● 119 ● 140 ● 144 ● 163 ● 174
● 176 ● 188 ● 201 ● 211 ● 213 ● 217 ● 219 ● 224 ● 241 ● 246 ● 254 ● 259



Respondent by Gender colored by EdLevel

EdLevel
● (no value) ● Associate degree
● Bachelor's degree (BA, BS, B....) ● I never completed any formal ...



DISCUSSION

Given the aforementioned results and findings, prospective decisions for upskilling in the aspects of:

1. Programming languages should gear towards mastery of JavaScript, Python, and the TypeScript.
2. SQL Databases such as PostgreSQL, MySQL, NoSQL Databases like MongoDB, and Elasticsearch.
3. React.js and Angular.js WebFrameWorks too should be invested in.
4. Linus and Docker Platforms are prospective platforms for next year

Programs including Women and ladies in IT should be looked into as there is a larger chunk of male in IT than female.

Ages in the range of 20-45 should be more targeted at for recruitment into IT development.

Forums for certifications can be made available for aspiring developers in this age range, 20-45, as well.

OVERALL FINDINGS & IMPLICATIONS

Implications from my findings are that;

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- Python programmers and enthusiasts are most likely to increase and rise up the ranks.
- TypeScript is another language to look out for in the next year.
- NoSQL Databases are on the rise.
- PostgreSQL is most likely to be the top Database for the next year.
- Frequency of use MySQL Database is very likely to fall.
- C Programming Jobs Postings are higher and should be considered as part of the much needed upgrade.

CONCLUSION

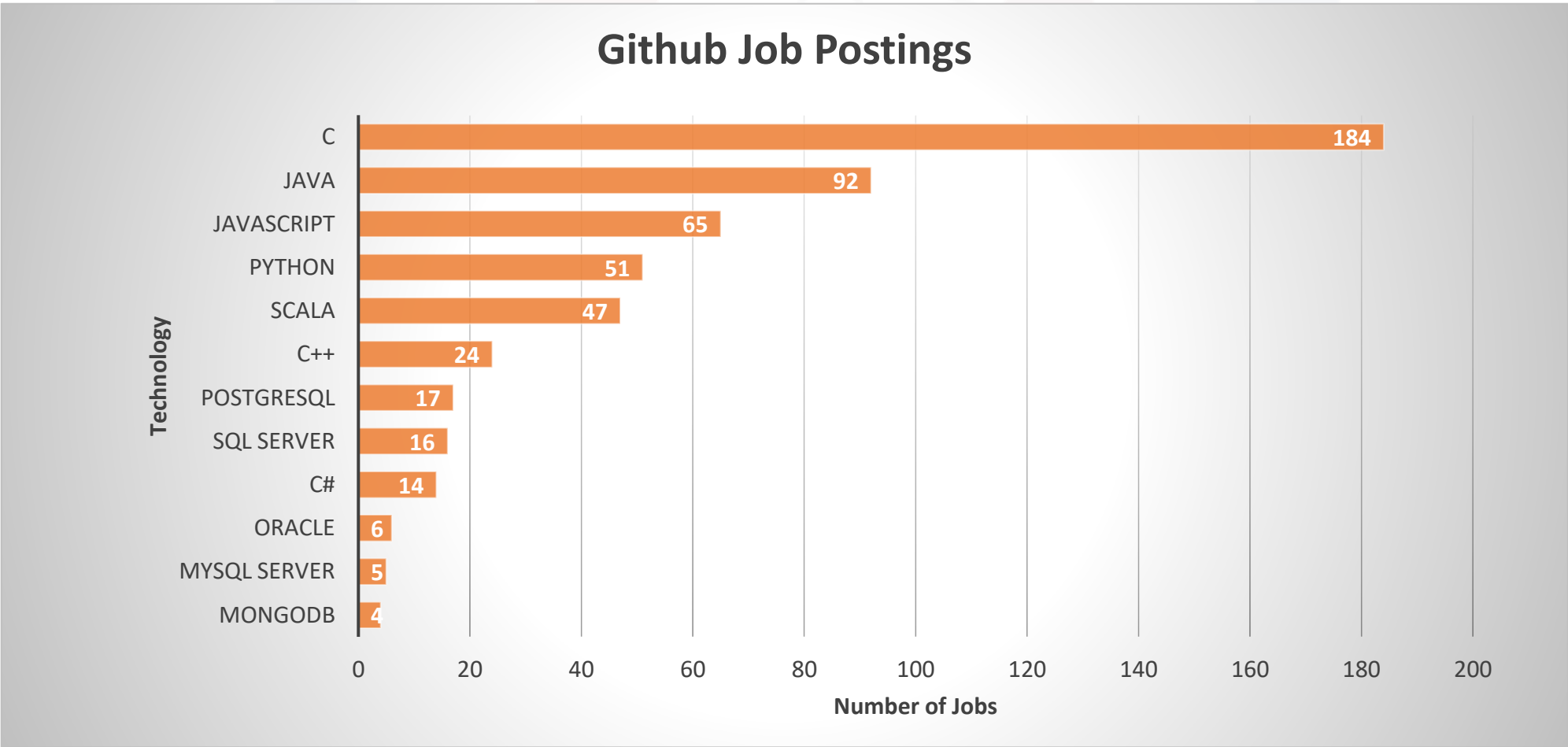
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APPENDIX

Language_name	Annual_average_salary
PHP	\$ 84,727.00
SQL	\$ 84,793.00
C#	\$ 88,726.00
R	\$ 92,037.00
Go	\$ 94,082.00
Java	\$ 101,013.00
Javascript	\$ 110,981.00
C++	\$ 113,865.00
Python	\$ 114,383.00
Swift	\$ 130,801.00

Technology	Number_of_Jobs
MongoDB	4
MySQL Server	5
Oracle	6
C#	14
SQL Server	16
PostgreSQL	17
C++	24
Scala	47
Python	51
JavaScript	65
Java	92
C	184

GITHUB JOB POSTINGS



POPULAR LANGUAGES

