



Programming Languages Trends

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OUTLINE



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- Methodology
- Results
 - Visualization – Charts
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- Discussion
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- Conclusion
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EXECUTIVE SUMMARY



- Data from various sources was used to address future perspectives of Programming Languages and DBMS usage.
- There seems to be a mismatch between what enterprises seek and what programmers want for the future in Programming Languages.
- On DBMS, it seems that it will be a transition to Free to Use software's from Programmers initiative.
- Programmers will need guidance to focus their efforts selecting high cost/efficiency specialized programming languages since experience is a high value asset in the IT Industry.

INTRODUCTION



- The aim is to *identify future skill requirements on Programming Languages and DBMS in the IT Industry.*
- The presentation is for the Stakeholders, HR department and Business Decision Makers.
- In this report it will be found an important asset for seeing:
 - *Which IT trends will be coming for the industry.*
 - *What possible new programmers' profile will be.*

METHODOLOGY



- Using a subset of the [Stack Overflow Developer Survey 2020](#) obtained from a Flask API, and data of [Programming Languages Annual Salary](#) that was web scrapped.
- The data was processed and explored in order to [remove duplicates](#), [impute missing values](#) and determine some [characteristics of the respondents](#).
- Then, we focused in [discovering some of the interest variables distribution](#) and [descriptive statistics](#), like correlations and identifying outliers.
- Finally, the most important variables were [transformed into visuals](#) using [Cognos Dashboard Embedded \(CDE\)](#) for building in a resumed way the story of the insights.

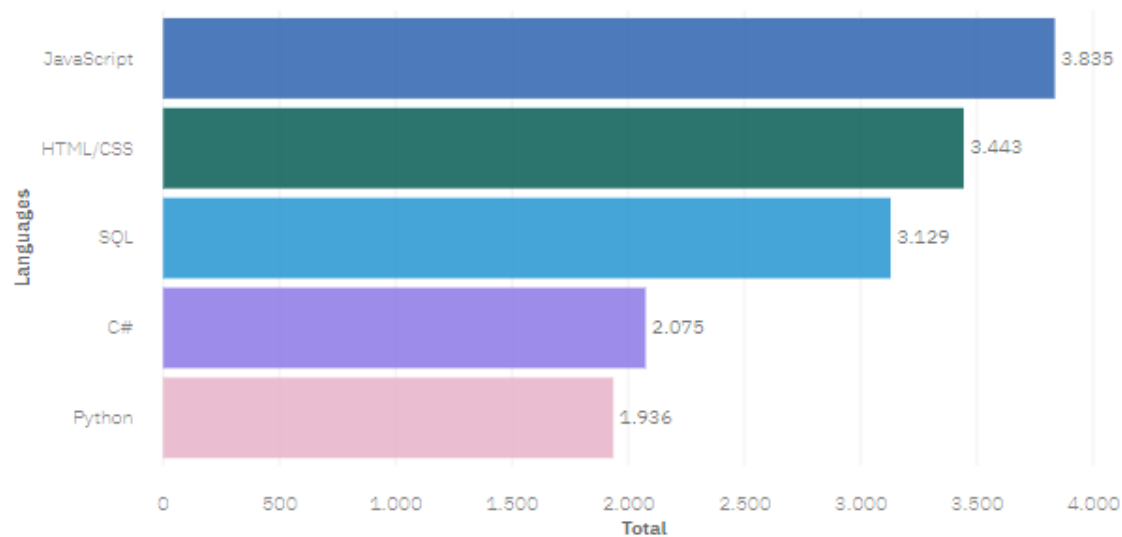


RESULTS

PROGRAMMING LANGUAGE TRENDS

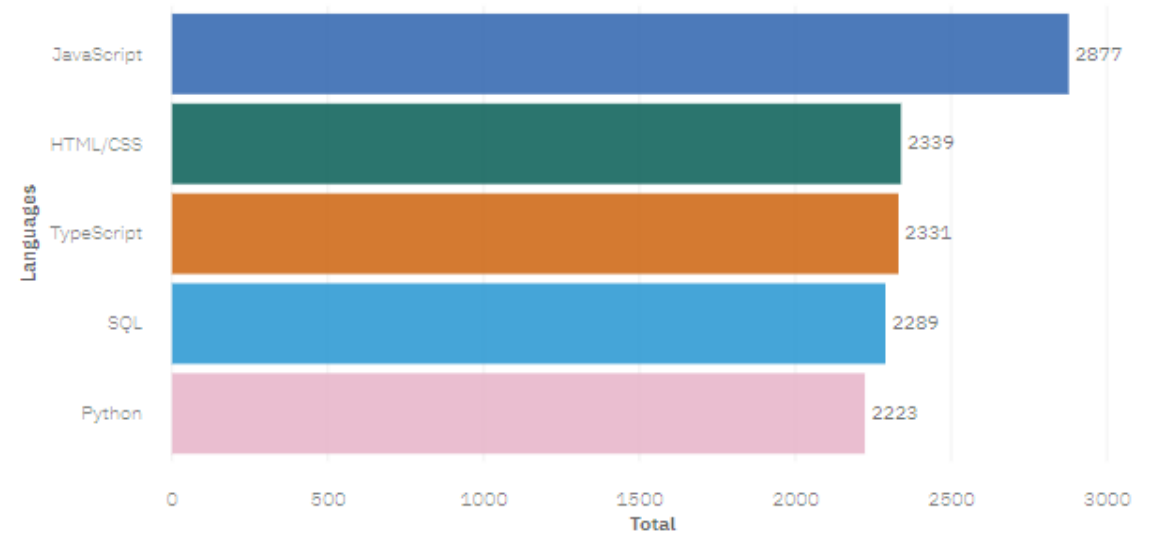
Current Year

Top 5 Languages Mostly Used



Next Year

Top 5 Languages Mostly Desired to Use



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings:

- JavaScript, HTML & SQL are all among the top used and desired to use programming languages.
- TypeScript is the not that popular language which programmers most desire to learn.
- Every other language, either stays in the same position or decreases in desire to learn.

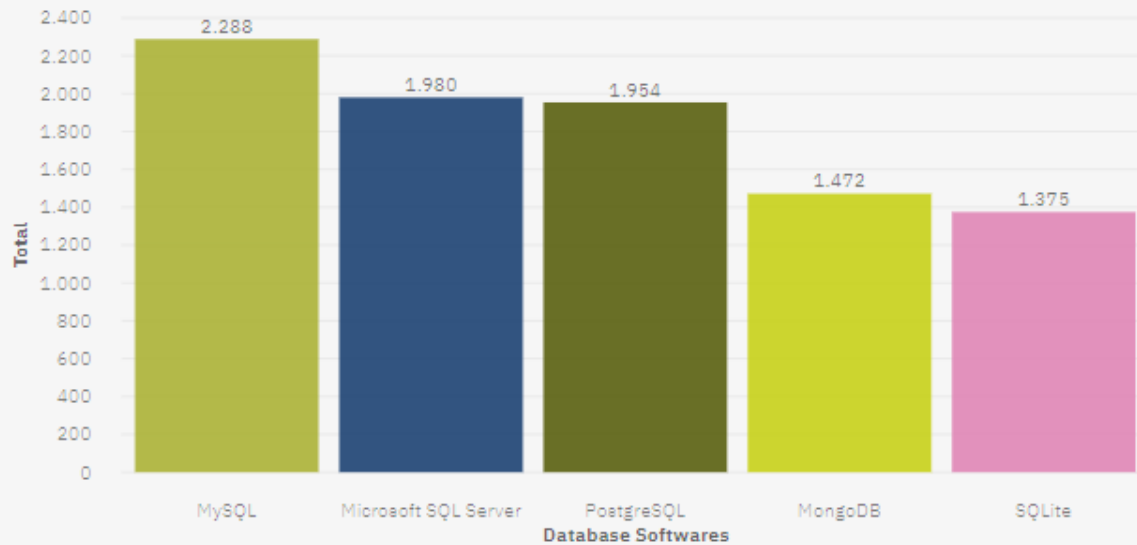
Implications:

- Among programmers, JavaScript, HTML & SQL are a well valued ability.
- Programmers perceive TypeScript Language as a big opportunity for the future.
- Programmers identify languages that would allow them to be more efficient and best rewarded.

DATABASE TRENDS

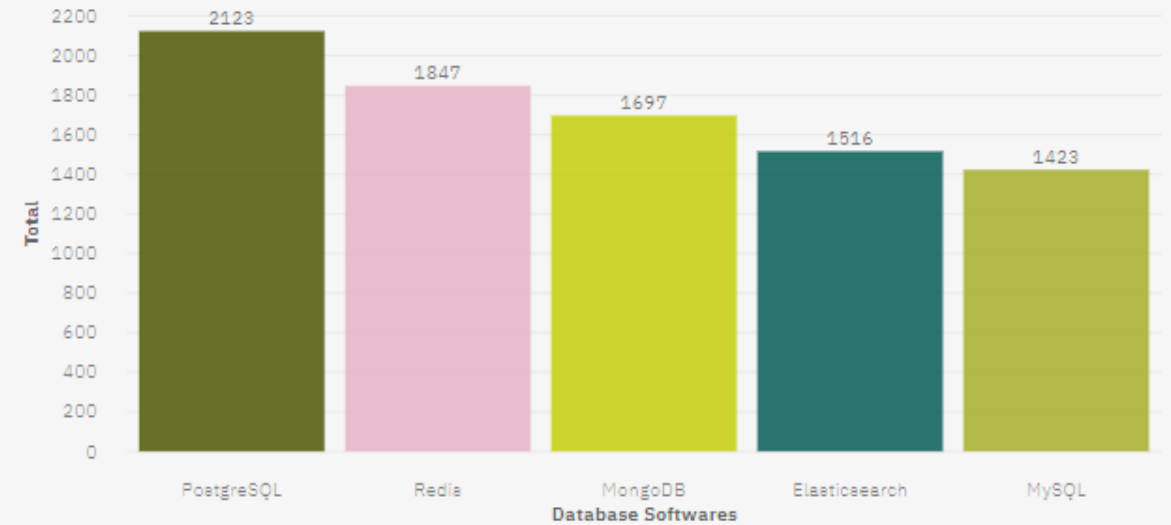
Current Year

Top 5 Database Software Mostly Used



Next Year

Top 5 Database Software Mostly Desired to Use



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Top 2 most used database systems are not even close to be the mostly desired to learn.
- PostgreSQL, Redis & Mongo DB have the higher desired to learn levels compared to his current use.

Implications

- Since MySQL and MS SQL Server are paid to use software's, it seems that
- Not paid to use SQL systems and No SQL software's will take over the IT Industry since they address the same than paid SQL options.

DASHBOARD

For launching the Dashboard, press the following:

[Programming Languages Trends](#)

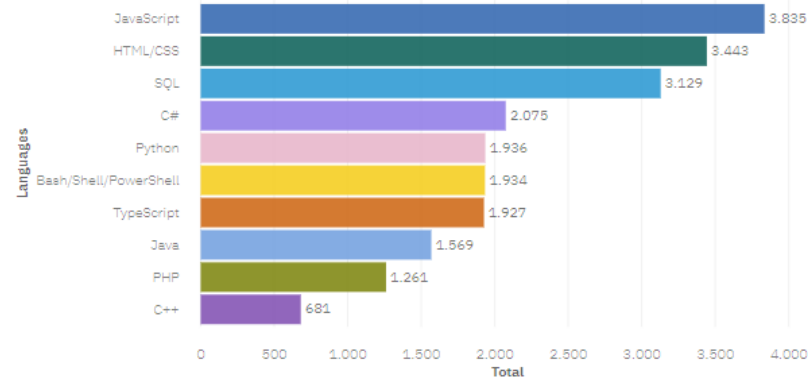
DASHBOARD TAB 1

Current Technology Usage

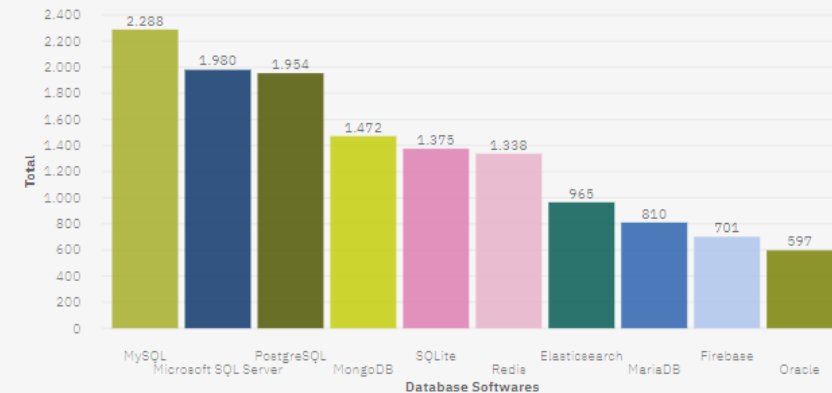
Future Technology Trends

Demographics

Top 10 Languages Mostly Used



Top 10 Database Software Mostly Used



Platforms Used



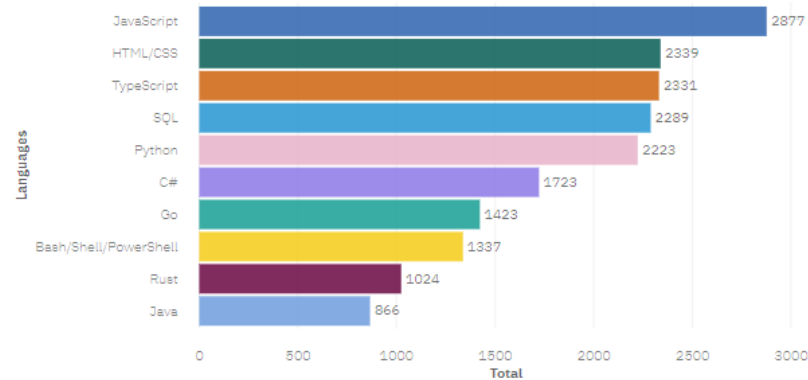
Collab Tools Used



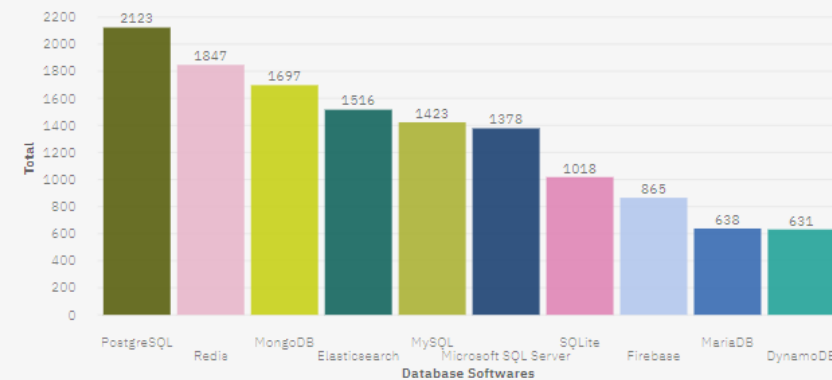
DASHBOARD TAB 2

Current Technology Usage Future Technology Trends Demographics

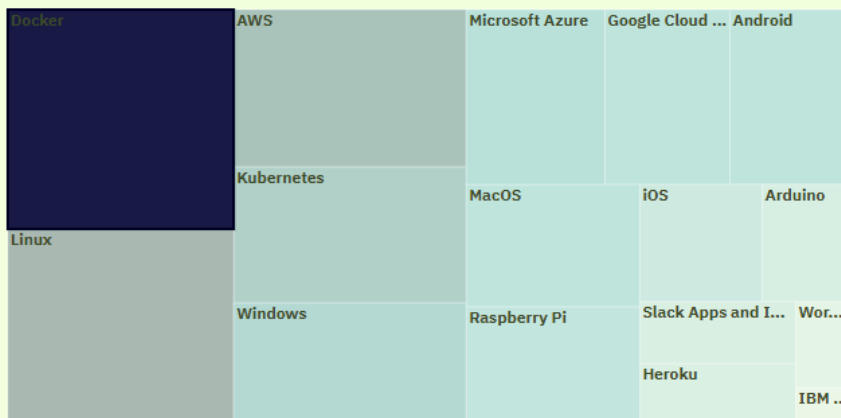
Top 10 Languages Mostly Desired to Use



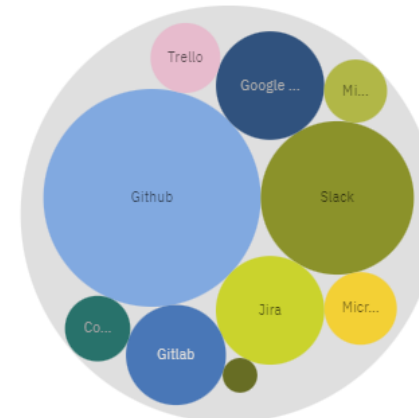
Top 10 Database Software Mostly Desired to Use



Platforms Desired to Use



Top 10 Collab Tools Desired to Use



DASHBOARD TAB 3

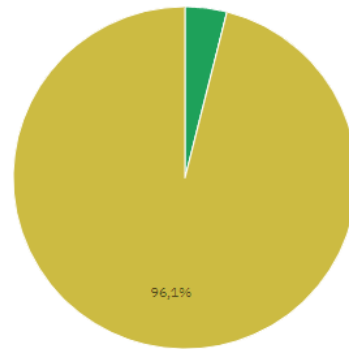
Current Technology Usage

Future Technology Trends

Demographics

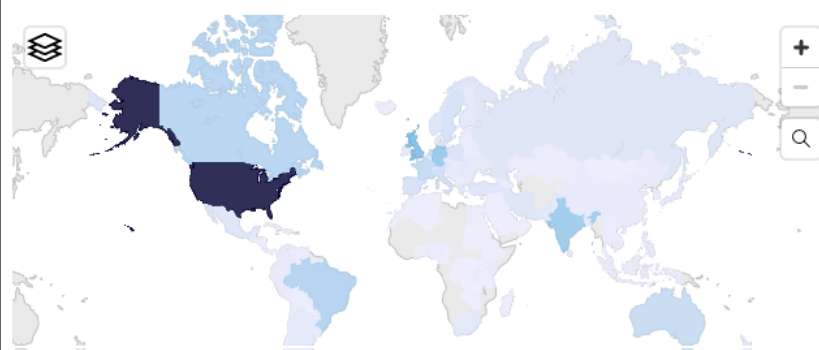
Respondents by Gender

Gender
● Woman ● Man

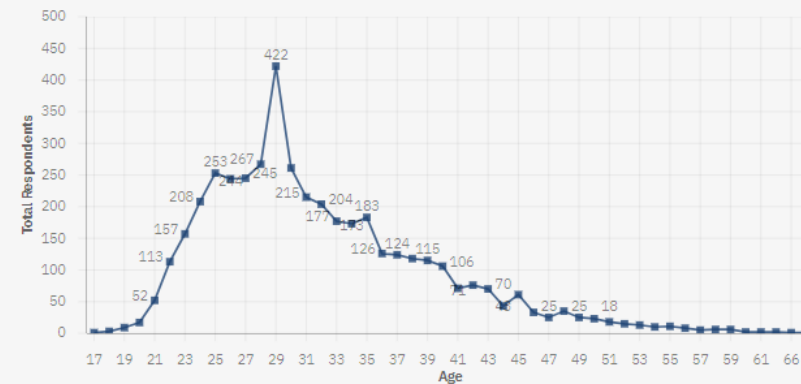


Respondents by Country

Respondent (Con...
1 1117

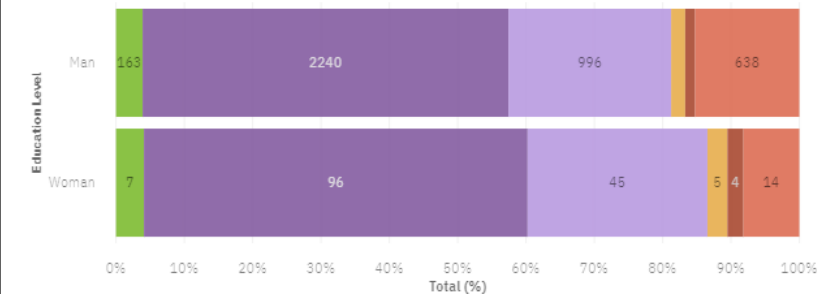


Respondents by Age



Respondent by Education Level

EdLevel
● Associate degree (A.A., A.S., e... ● Bachelor's degree (B.A., B.S., ... ● Master's degree (M.A., M.S., M...
● Other doctoral degree (Ph.D., ... ● Professional degree (JD, MD, e... ● Some college/university study ...



DISCUSSION

- Enterprises seek a single multitasking languages.
- Programmers seek languages specialization for each stage of Data Analytics process for incrementing their job application scope.
- There will be a migration of DBMS software's to Free to Use services from Programmers initiative.
- Enterprises may have the chance to choose and guide programmers in which specialized languages to require the most in the future.



OVERALL FINDINGS & IMPLICATIONS

Findings

- There seems to be an increasing interest in learning multitasking web focused programming languages (JavaScript & HTML).
- Top job offers and average annual salaries' languages requirements seems to favor multitasking programming languages.
- Experience in the IT industry seems to be a high value asset in reward assignment.
- There are not that much of programmers that know how to use Oracle DBMS, despite that most of current job offers that require the knowledge of some DBMS have it among it requirements.

Implications

- Respondents seem to focus in developing specialized languages abilities for each stage of the Data Analytics process rather than learning a multitasking languages.
- There seems to be a complementation dynamic in learning various programming languages since the web design focused (JavaScript & HTML) are a perfect complement to the Data Analysis driven languages (TypeScript, Python & SQL).
- There's going to be a gap in the future of DBMS usage since most job offers prefer the paid access' ones.

CONCLUSION

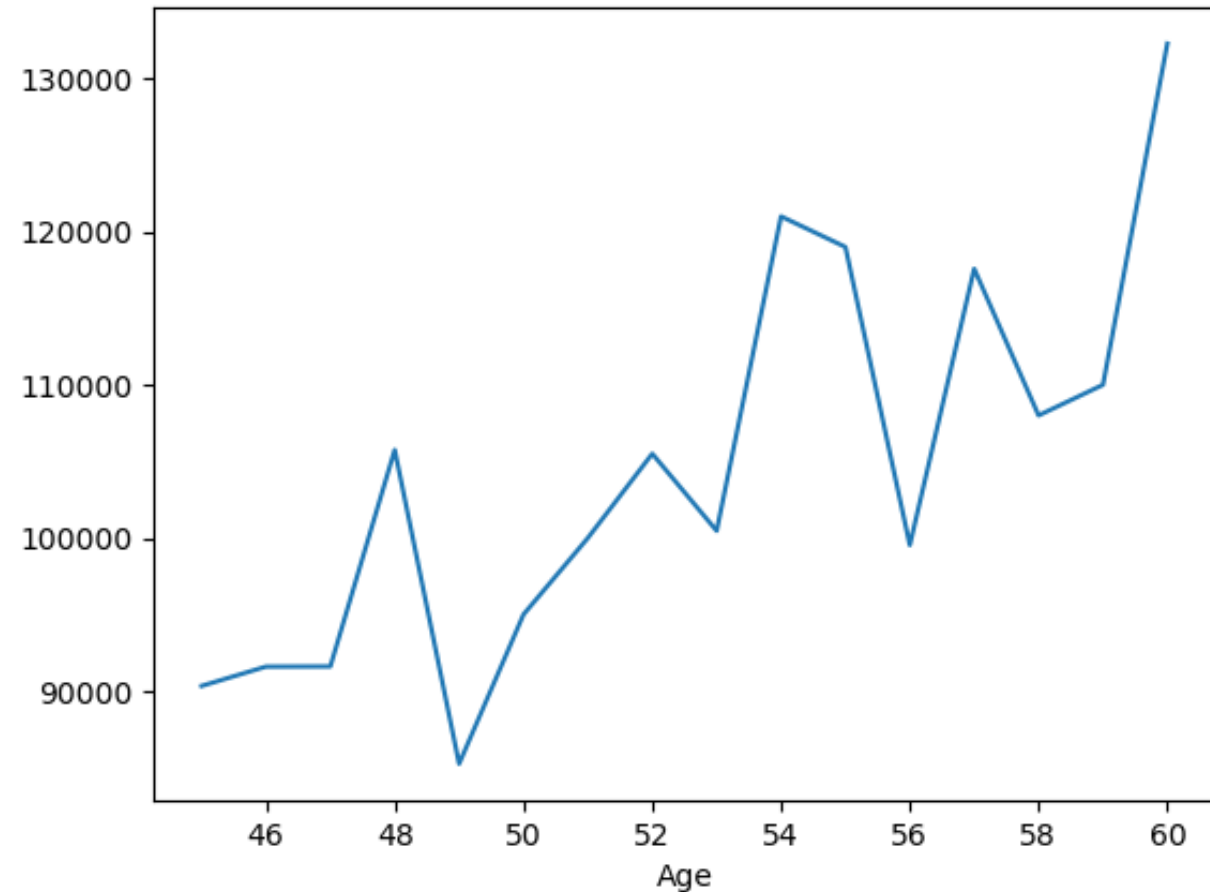


- There are clear differences in what programming languages enterprises seek and what programmers want to learn.
- Programmers seek for variety of programming languages in order to aspire to much more job offers and better reward.
- Since the experience in the sector is a well valued asset, programmers will need guidance to focus in the most cost/efficient languages learning in order to balance their opportunities.
 - Hence, JavaScript, HTML, TypeScript, Python & SQL will be the mostly used Programming Languages in the future.
- Free to use DBMS like PostgreSQL & Mongo DB will be the mostly known by programmers in the future and, in consequence, enterprises will consider changing their current DBMS services.

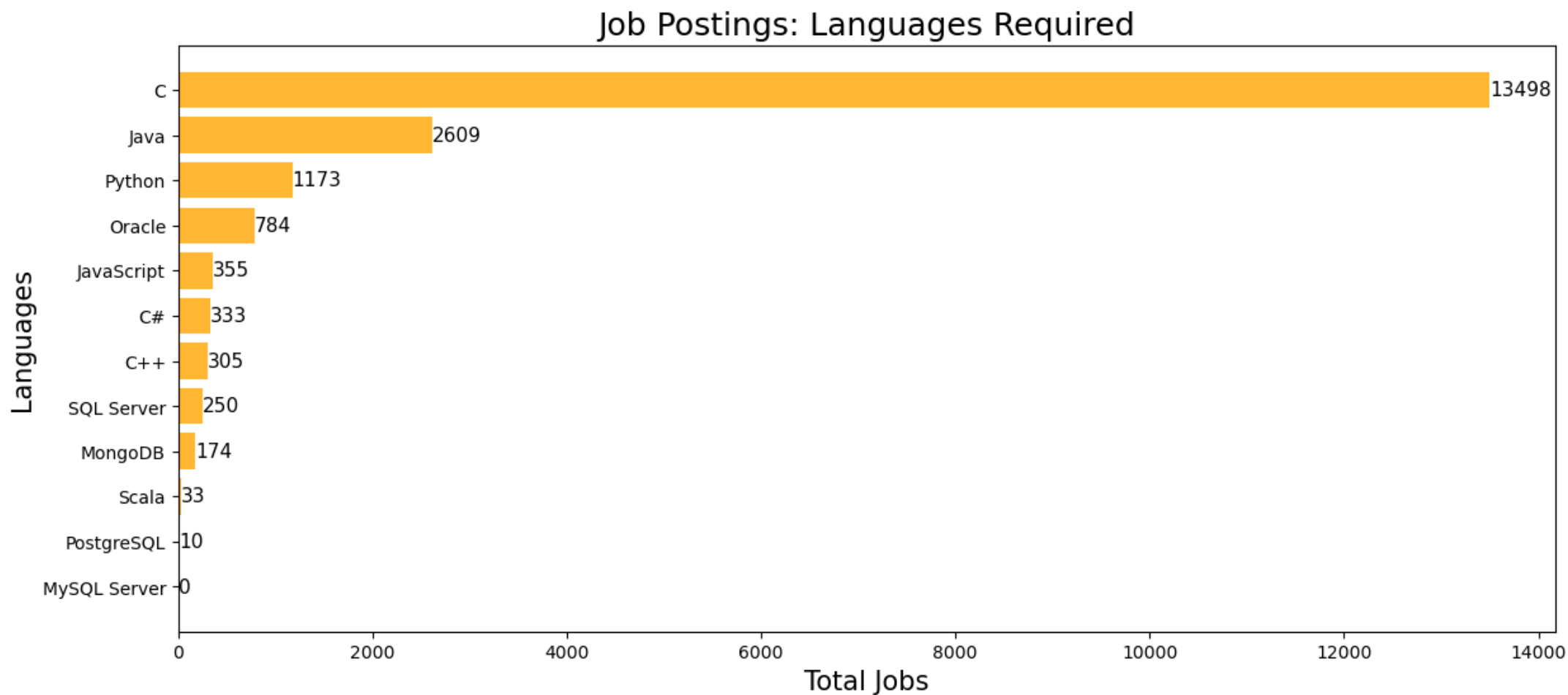
APPENDIX



Median ConvertedComp by Age



JOB POSTINGS



POPULAR LANGUAGES

