



ANALYSIS ON A SURVEY ABOUT PROGRAMMING LANGUAGES AND DATABASES

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OUTLINE

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



EXECUTIVE SUMMARY



Programming languages and databases are widely used across a range of industries as the companies are becoming more aware of the relevance of managing and analyzing their data.

This report presents an analysis carried out on a dataset that contains information about people who have used programming languages and databases at work, so the results we present here are useful in order for getting an insight about which of these tools are in use today, which will be in vogue next year, what wages the market is paying and more.

These results can be used by anyone, in or out of the technology industry who wants to find out which programming language and database they should start learning or become more proficient in.

INTRODUCTION



Databases have played a vital role in managing data in many industries and businesses. The same goes for programming languages. They have all had several breakthroughs over time, some more in vogue than others. This report aims to find out which of these tools are more widely used today and discover trends about where learning interests are heading.

This analysis is based on a dataset that includes data collected through a survey conducted by StackOverflow.

METHODOLOGY



The methodology used to carry out this analysis consisted of several steps applied to a dataset. These steps include, first, data wrangling, which is, the process of converting data to a proper format that may be better for analysis.

Second, we perform a exploratory data analysis to get a deeper understanding of the dataset by summarizing main features, uncover relationships and giving short summaries about the sample and measures.

Then we move to a data visualization step in which we create some charts to visualize and get a clear composition of the data.

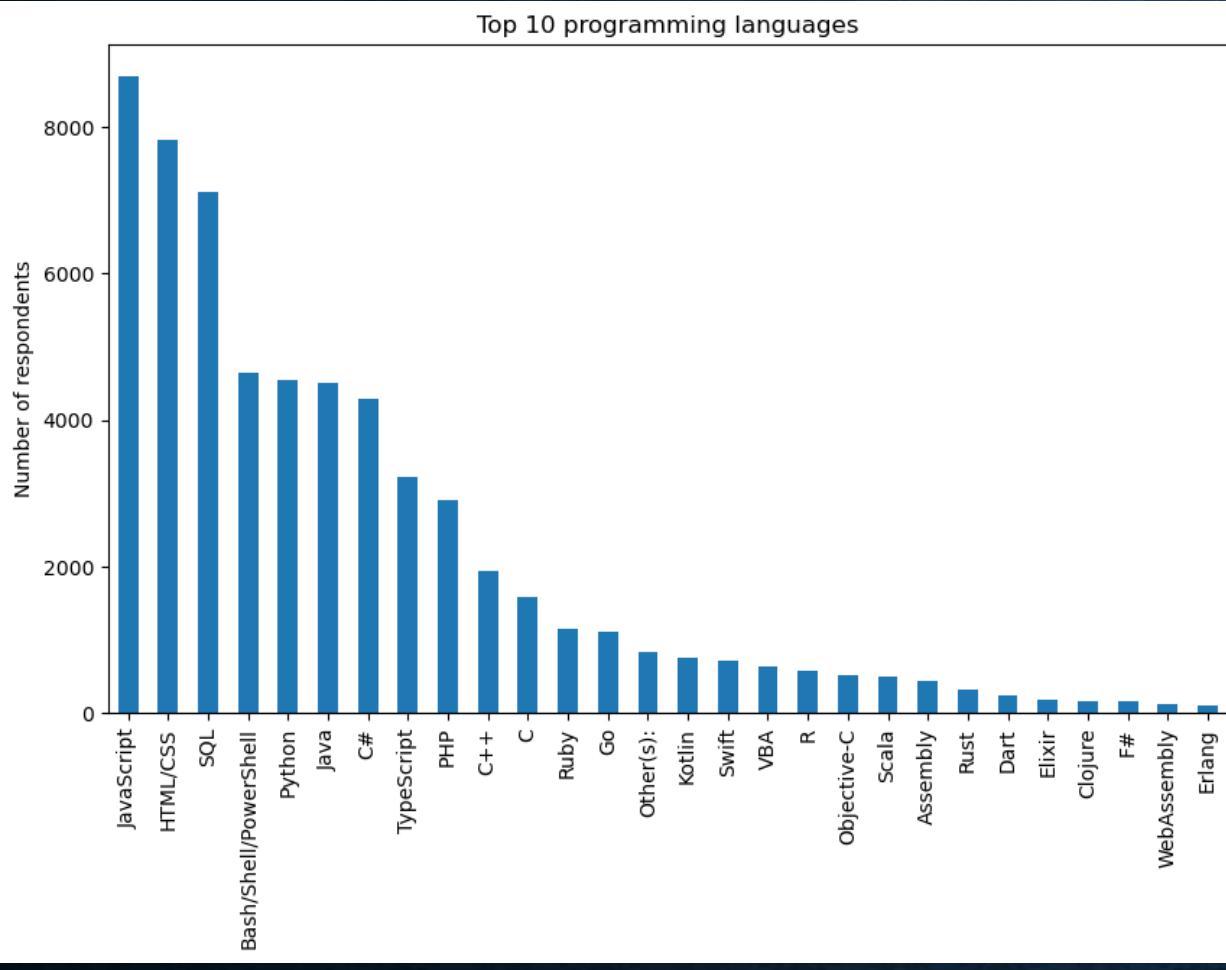
Finally we create a dashboard to summarize some findings.

Tools we've used are Jupyter Notebooks to run Python coding and Cognos to create dashboards.

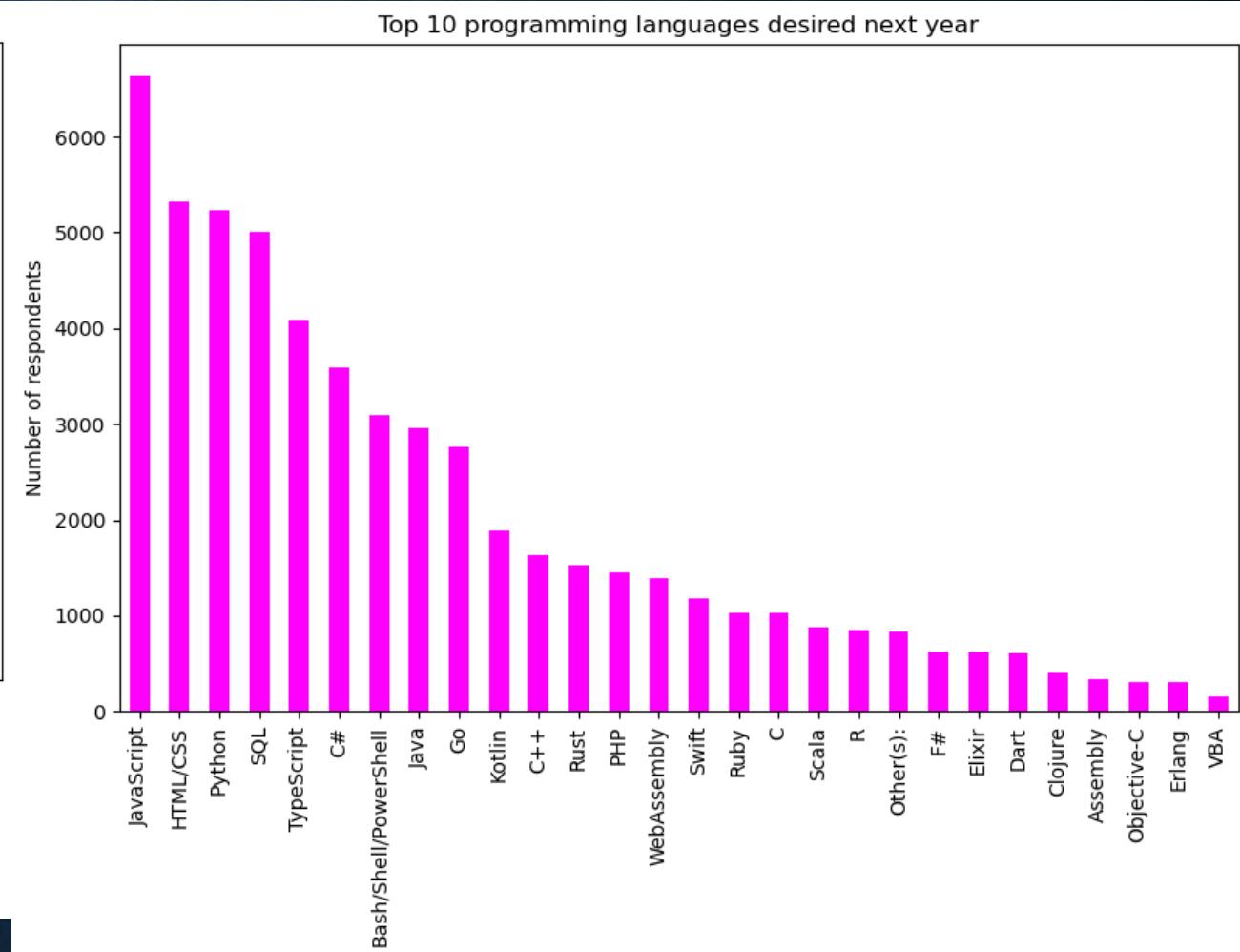
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript remains at the top of the lists of programming languages currently used and desired to work with in the next year.
- Python peaked at number three on the list of programming languages desired to work with next year.
- Both HTML/CSS and SQL remain in the top four of the trending languages for this year and the next.

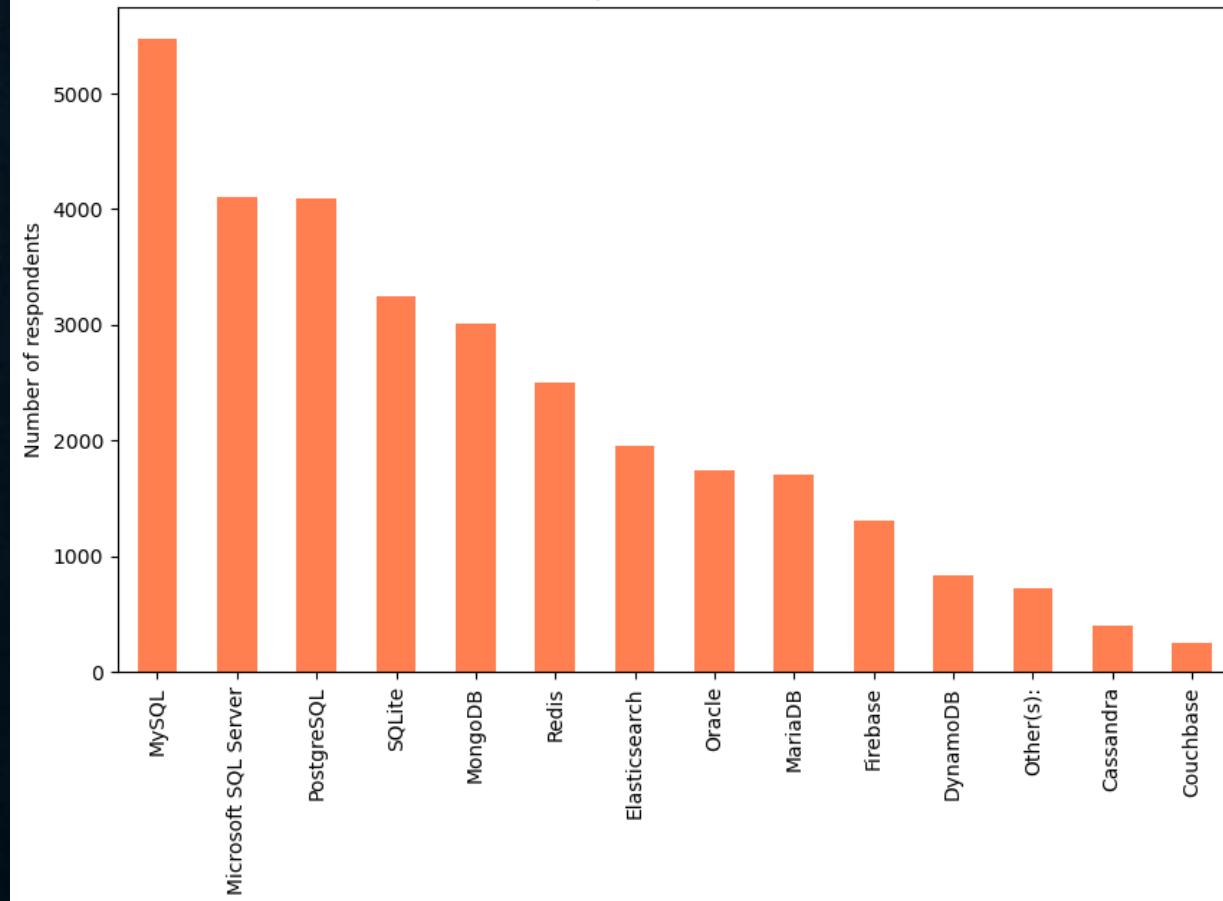
Implications

- As Javascript and HTML/CSS remain at the top of the list of currently used and trending languages, we may state that being skilled in these tools is still in high demand for job vacancies.
- Python's rising popularity may could be explained by the growth of AI and ML.

DATABASE TRENDS

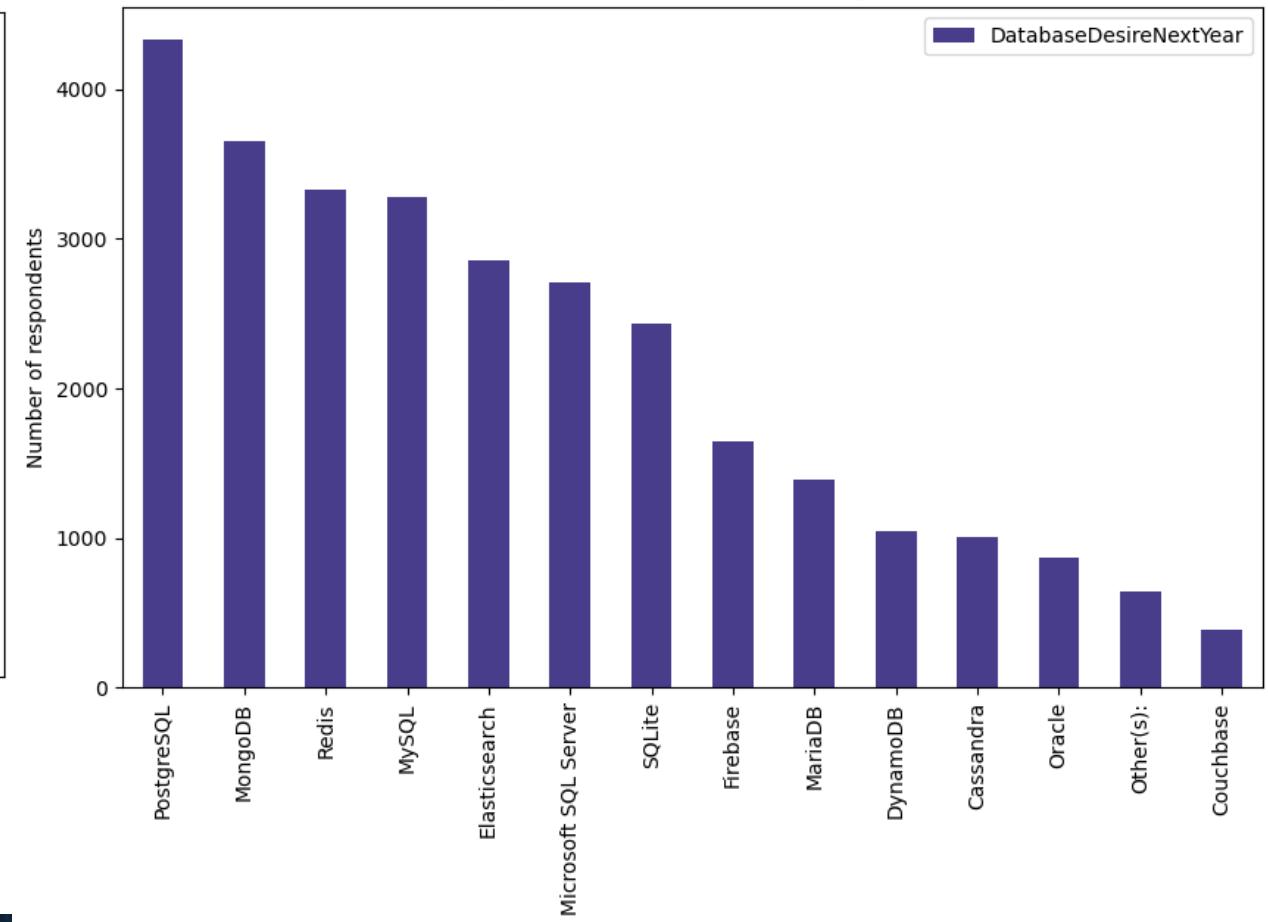
Current Year

Top 10 databases



Next Year

Top 10 databases desired next year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Relational databases are trending right now since MySQL, PostgreSQL and SQLite stand out for being in the top four used databases this year.
- MongoDB, a no-relational database has peaked at number two on the list of most desired databases to work with next year.
- Microsoft SQL Server and PostgreSQL have roughly the same numbers of users this year between the respondents of the survey.

Implications

- Right now job postings may be requiring skilled people in PostgreSQL and MongoDB since both them are becoming trending in the interest of the respondents.
- Current and aspiring data analysts should develop competence in NoSQL in addition to SQL database programs.

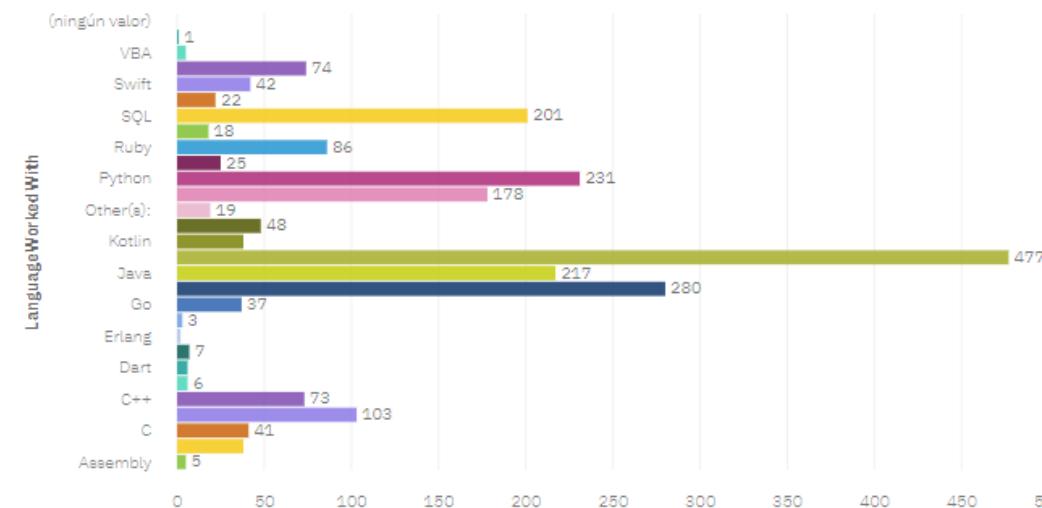
DASHBOARD



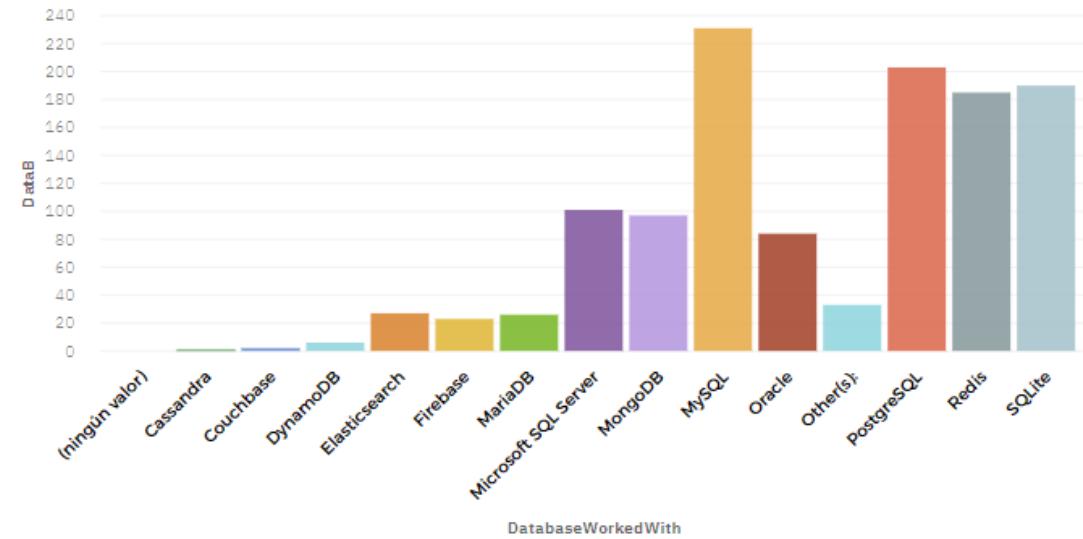
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DASHBOARD TAB 1

Top 10 languages



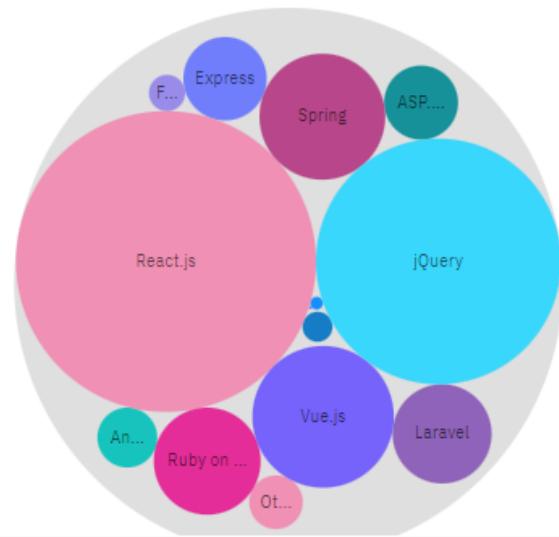
Top 10 Databases Used



Top 10 platforms used

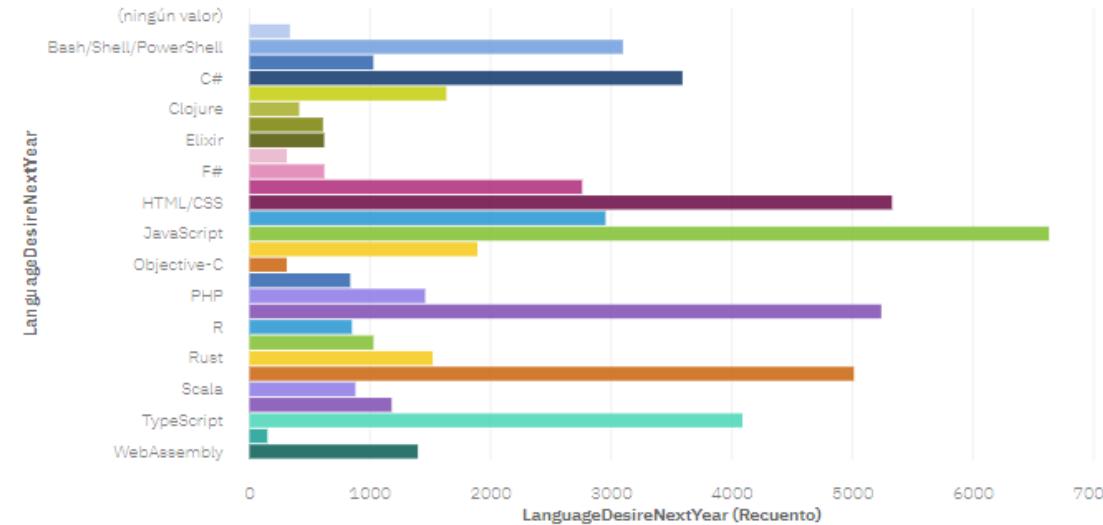


Top 10 WebFrames Used

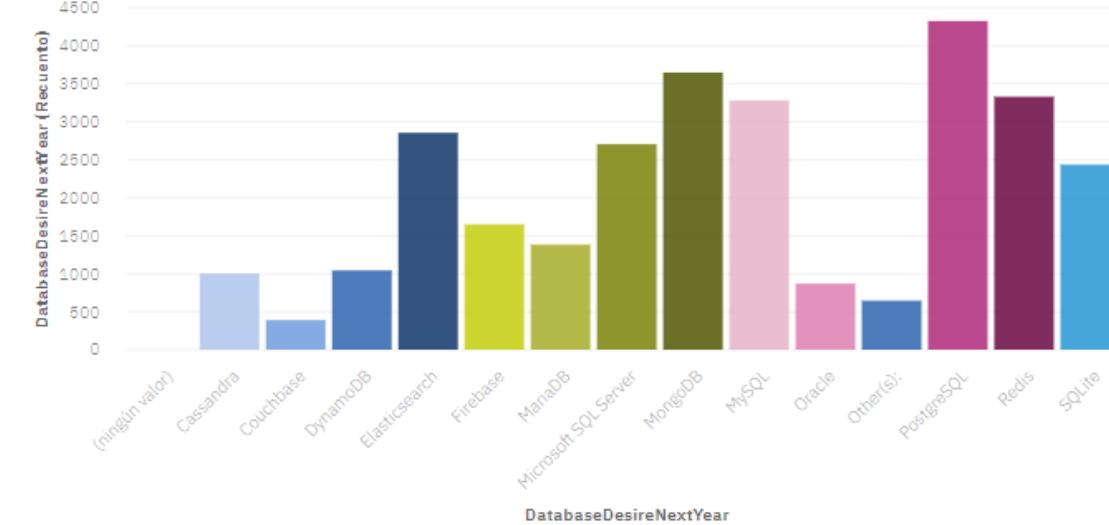


DASHBOARD TAB 2

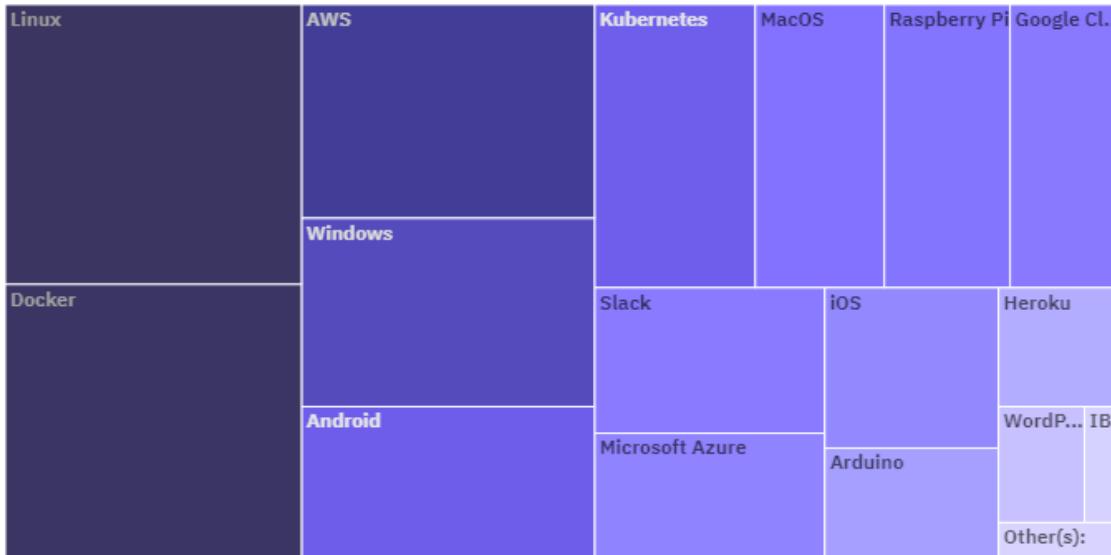
Top 10 language desired next year



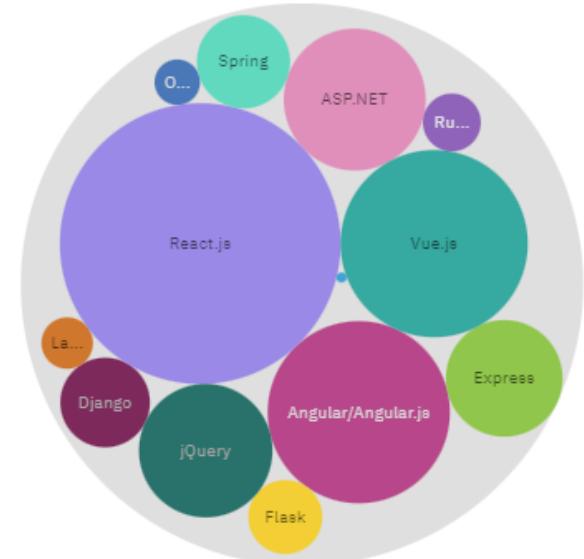
Top 10 Database desired next year



Platform desired next year

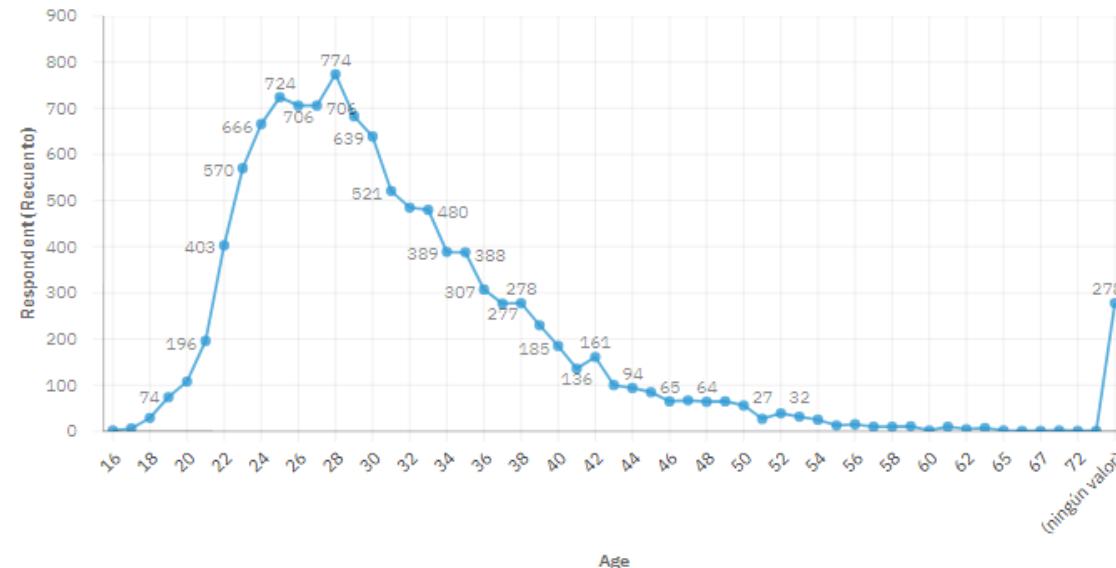
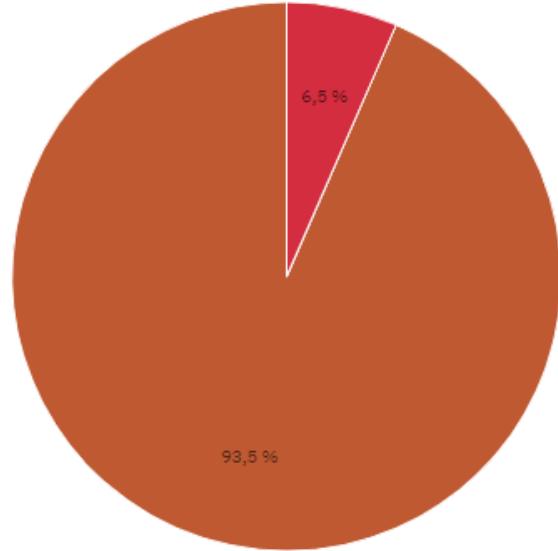


Top 10 webframe desire next year



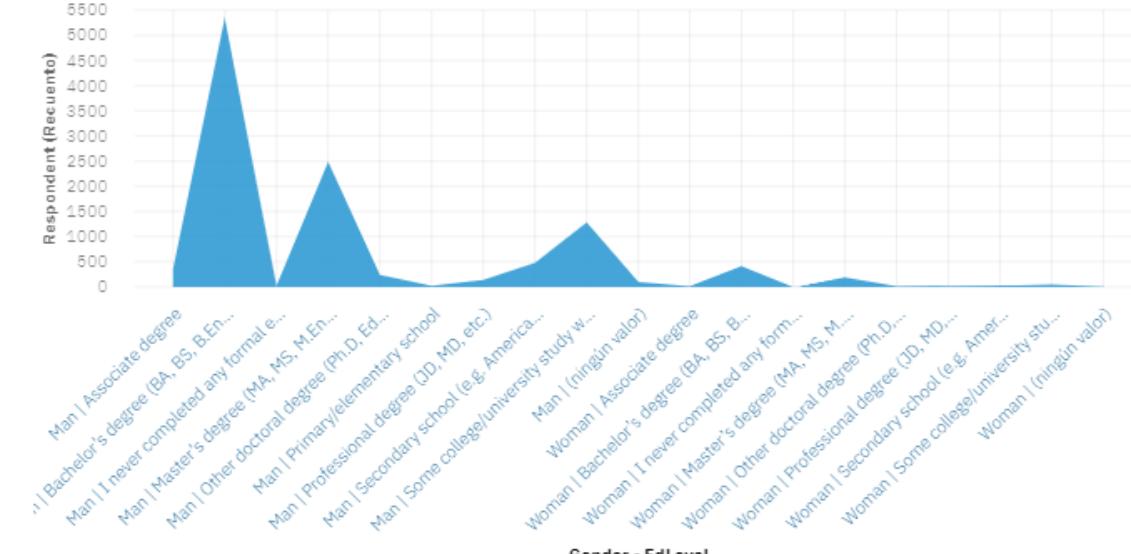
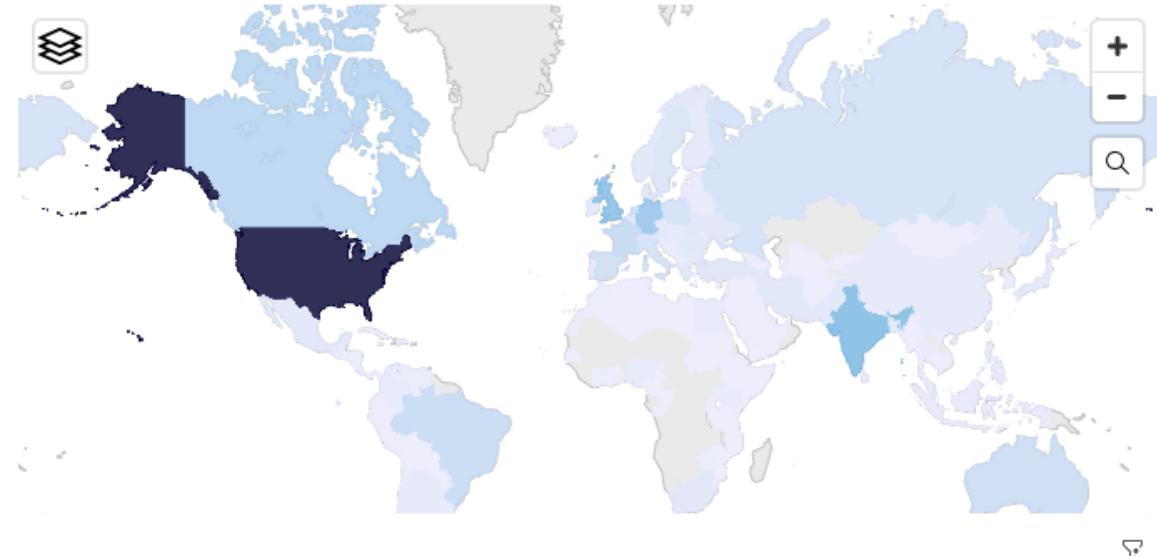
DASHBOARD TAB 3

Woman Man



Country (Recuento)

1 3058



DISCUSSION



The analysis we have conducted had led us to yield insights into the following questions:

- What kinds of developer technologies are in top demand?
- Which technologies should prospective developers and data professionals be learning?
- Which technologies should educators place more emphasis on teaching in upcoming years?
- What does the distribution of annual compensation for developers look like?
- What is the developer demographic like?

OVERALL FINDINGS & IMPLICATIONS

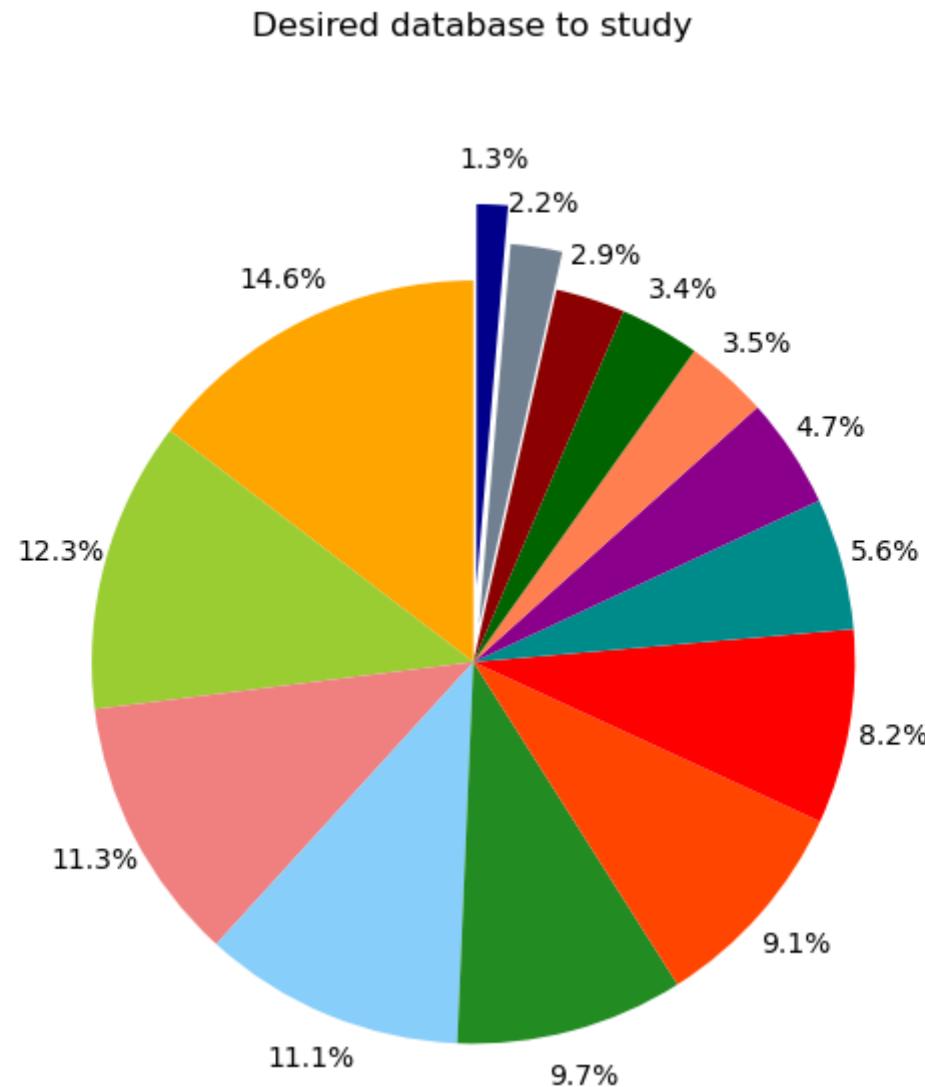
FINDINGS

- DynamoDB, Cassandra and Couchbase remain at the bottom of the list of databases people want to work with.
- Nearly 15% of the respondents want to work with PostgreSQL in the next year.
- Javascript users double the number of people who have used Python up to the date of the survey but the gap is expected to narrow since Python is the third most desired programming language to work with next year.
- There is a positive relationship between the age and compensation (USD) in the 25 – 30 age range.

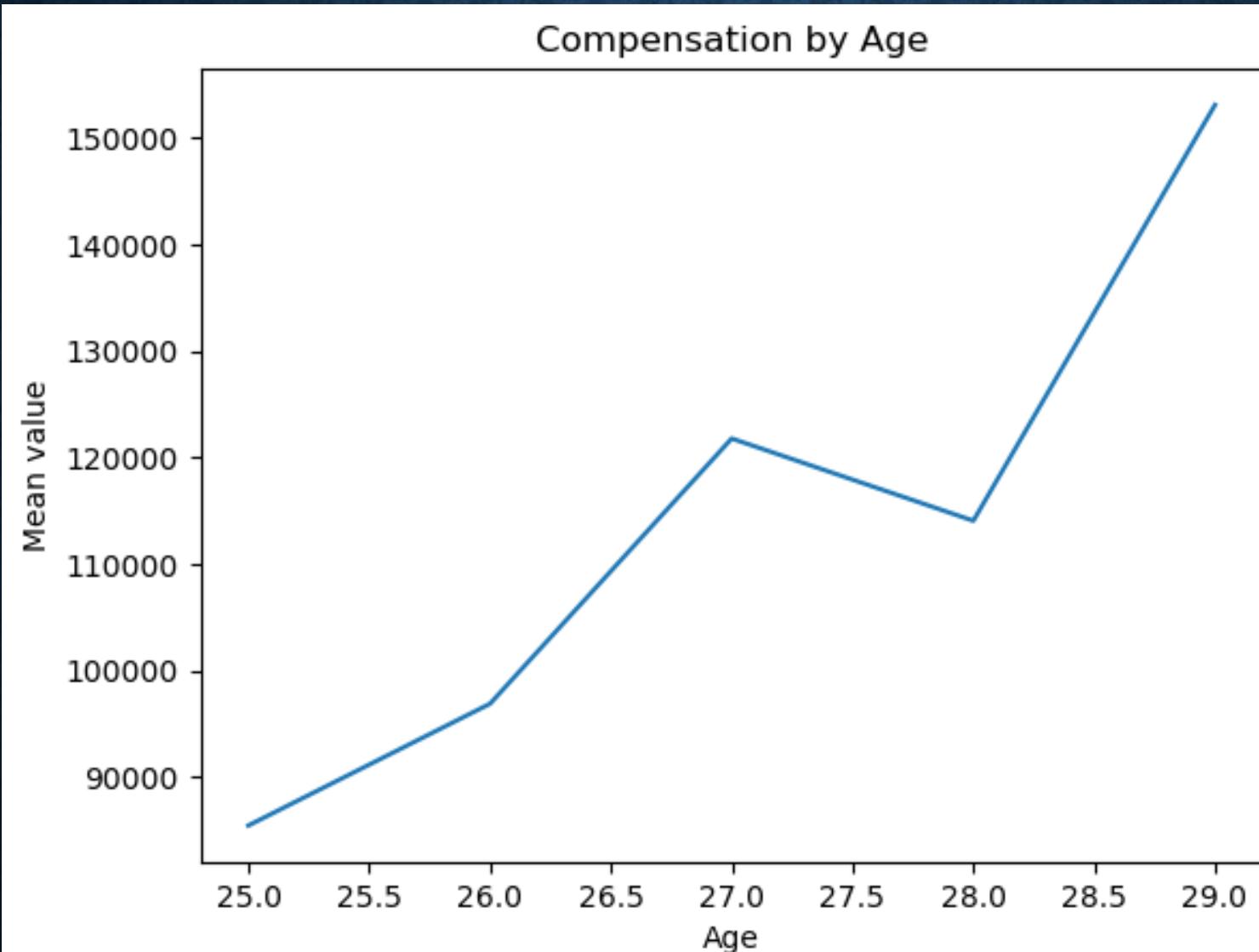
IMPLICATIONS

- With the growing need to handle big data and perform AI work, data professionals should continue to enhance SQL competence but also enhance competence with NoSQL database programs and Python.
- Businesses need to adapt to changing technology preferences, especially in terms of talent acquisition and development

DATABASE DESIRED TO WORK WITH NEXT YEAR



COMPENSATION BY AGE (FROM 29 TO 30)



People aged 30 earn almost 70% more than people aged 25.

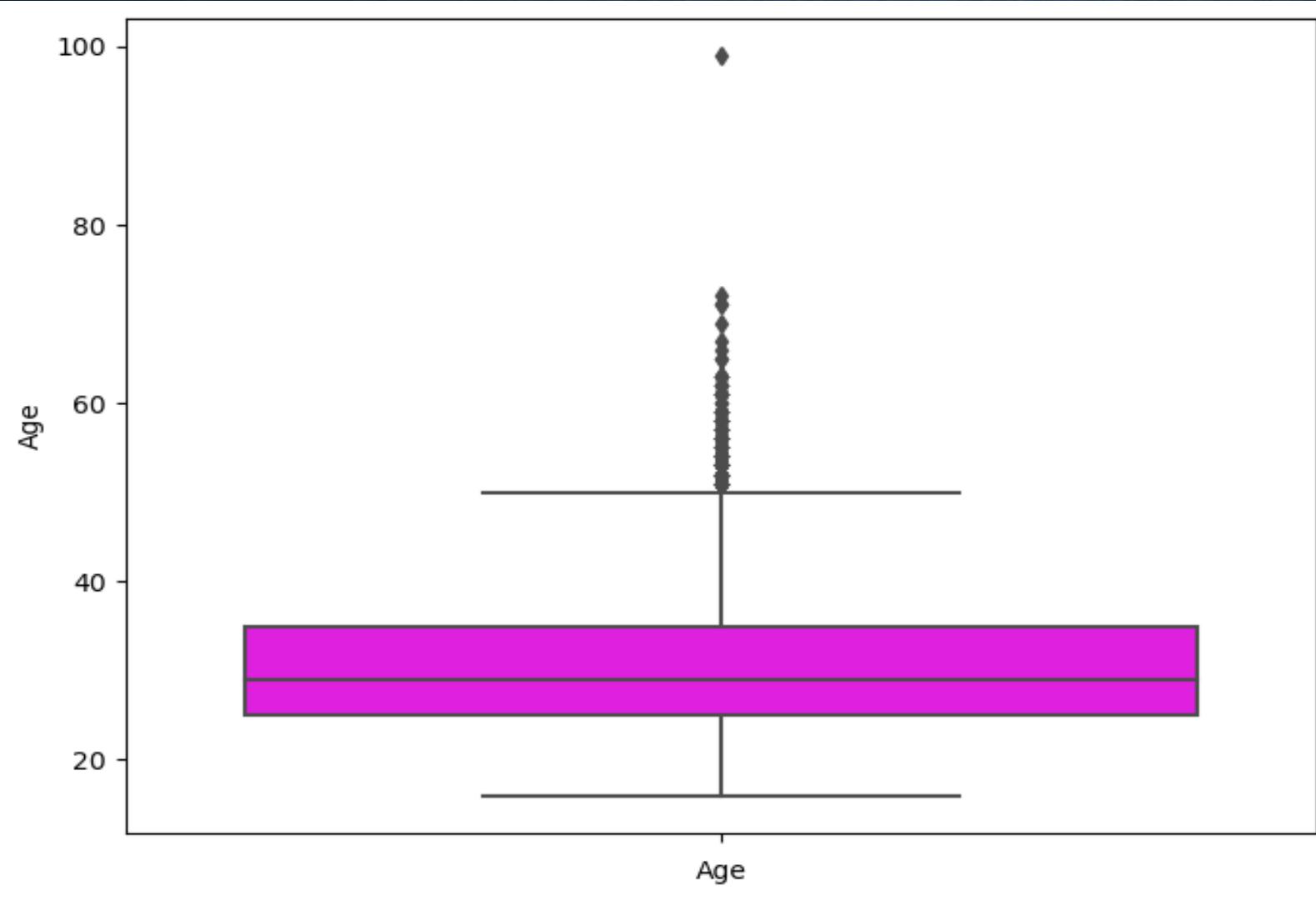
CONCLUSION



These findings should be of particular relevance to current and aspiring developers aiming to stay competitive, companies looking to develop their talent and educators in the field.

The results provided us with many insights into the technologies most used and desired by workers.

APPENDIX

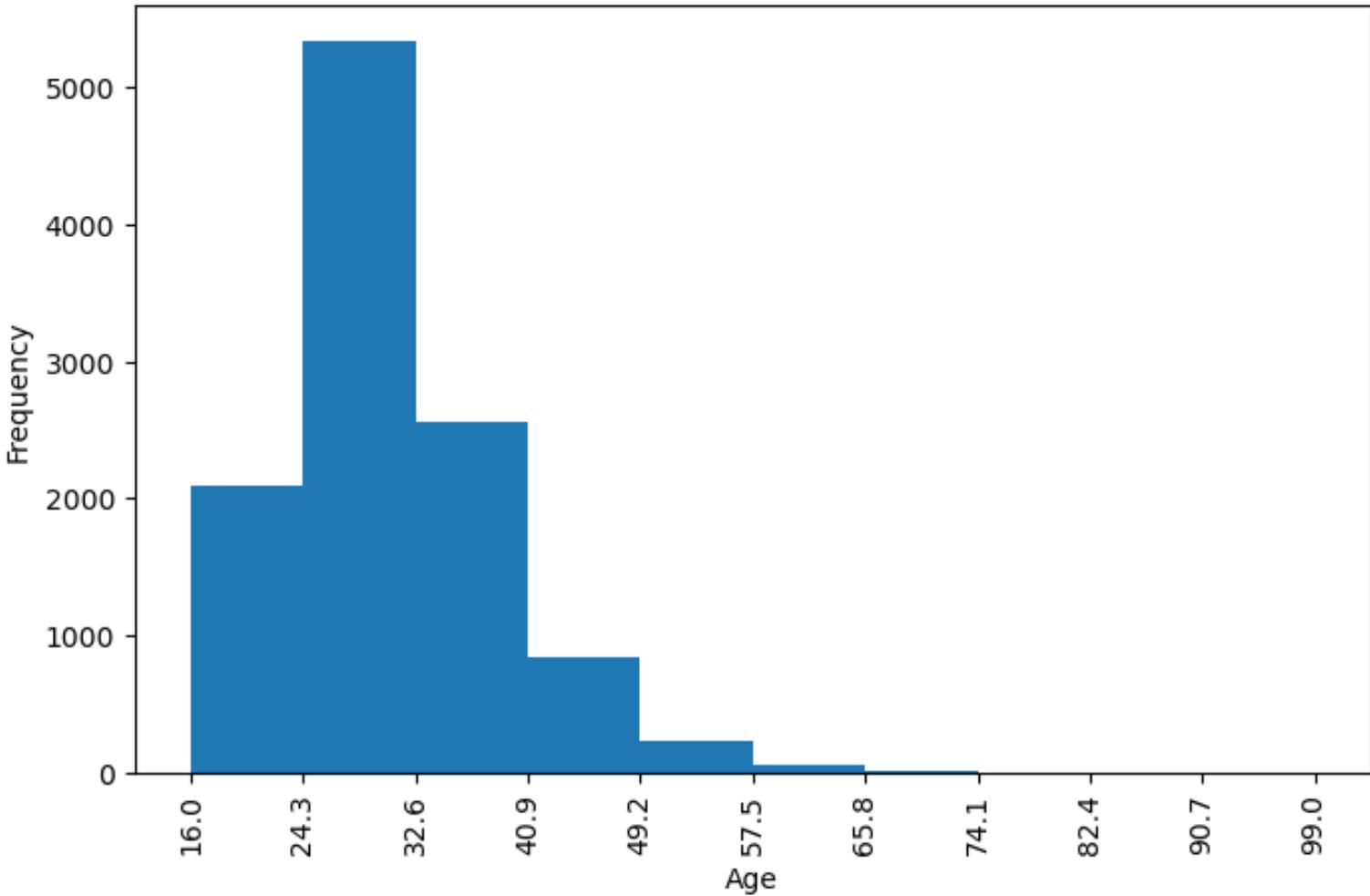


The average age of respondents is around 31 years.

APPENDIX



Histogram of Age



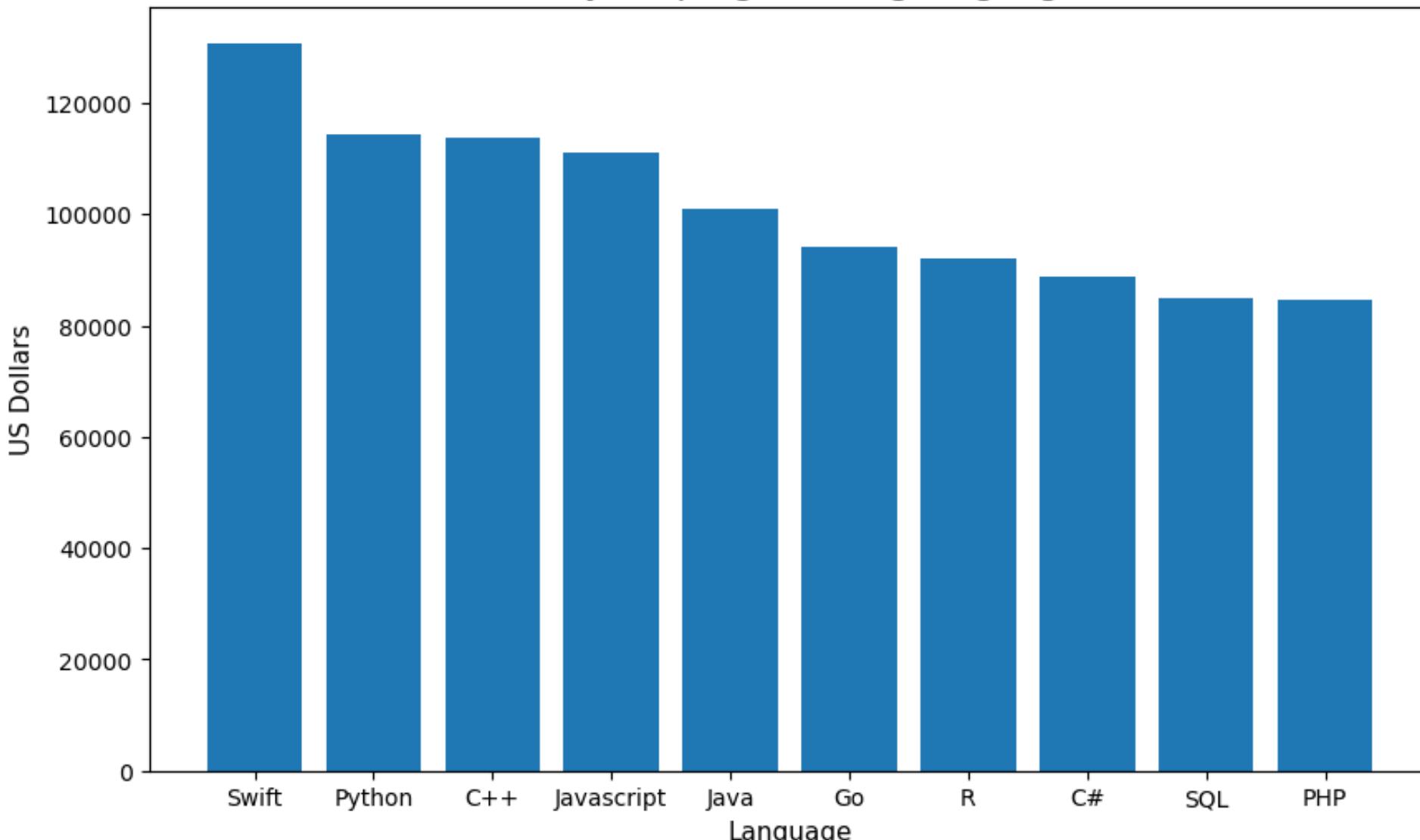
The majority of the respondents are in the 24-30 age group.

JOB POSTINGS

In Module 1 you have collected the job posting data using Job API in a file named “job-postings.xlsx”. Present that data using a bar chart here. Order the bar chart in the descending order of the number of job postings.

POPULAR LANGUAGES

Salary vs. programming language



Present that data using a bar chart here. Order the bar chart in the descending order of salary.