



DEVELOPER SURVEY ANALYSIS

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10/20/2022

OUTLINE



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

EXECUTIVE SUMMARY



- Current Technology Usage trends
- Future Technology Trends
- Demographics Survey
- Overall Conclusions
 - Importance of web-based languages and non-relational databases
 - Changing in technology trends
 - Possible gender discrimination

INTRODUCTION



- This presentation will provide insights and analysis of technology trends in software and web development using a survey conducted among developers.
- The market around this field changes rapid, so it's important to stay up-to-date with the latest technology trends as well as future ones.
- The presentation contains charts and dashboards of current and future technology trends, demographics survey and country/gender differences.

METHODOLOGY



- Data Collection
 - The data comes from [The 2019 Stack Overflow Developer Survey](#).
- Data Wrangling
 - Identified and removed duplicate and missing values
 - Imputed missing values
 - Normalized data in the dataset

METHODOLOGY



- Data Exploration and Cleaning
 - Identified the distribution of data
 - Identified and removed outliers from the data
 - Identified the correlation between features in the dataset
- Data Visualization
 - Visualized the distribution, relationship, composition and comparison of data
 - Python matplotlib and seaborn
 - IBM Cognos Dashboard

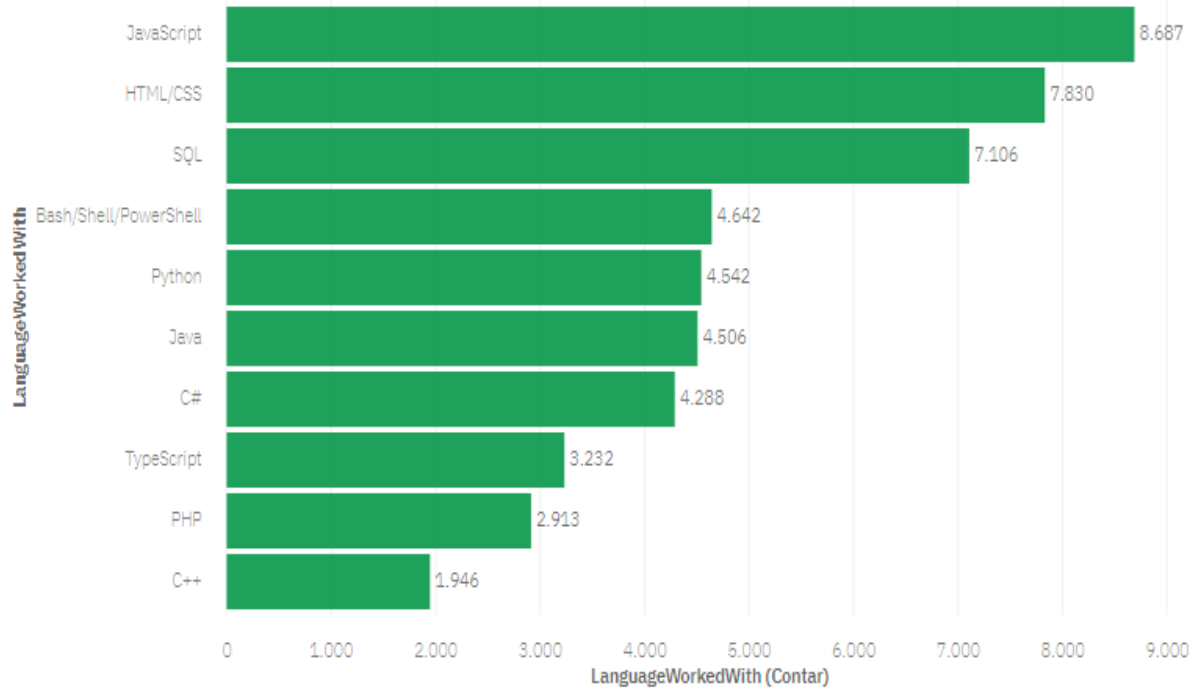
RESULTS

- The results are divided into 5 sections:
 - Programming language trends
 - Database trends
 - Current technology usage dashboard
 - Future technology trend dashboard
 - Demographics dashboard

PROGRAMMING LANGUAGE TRENDS

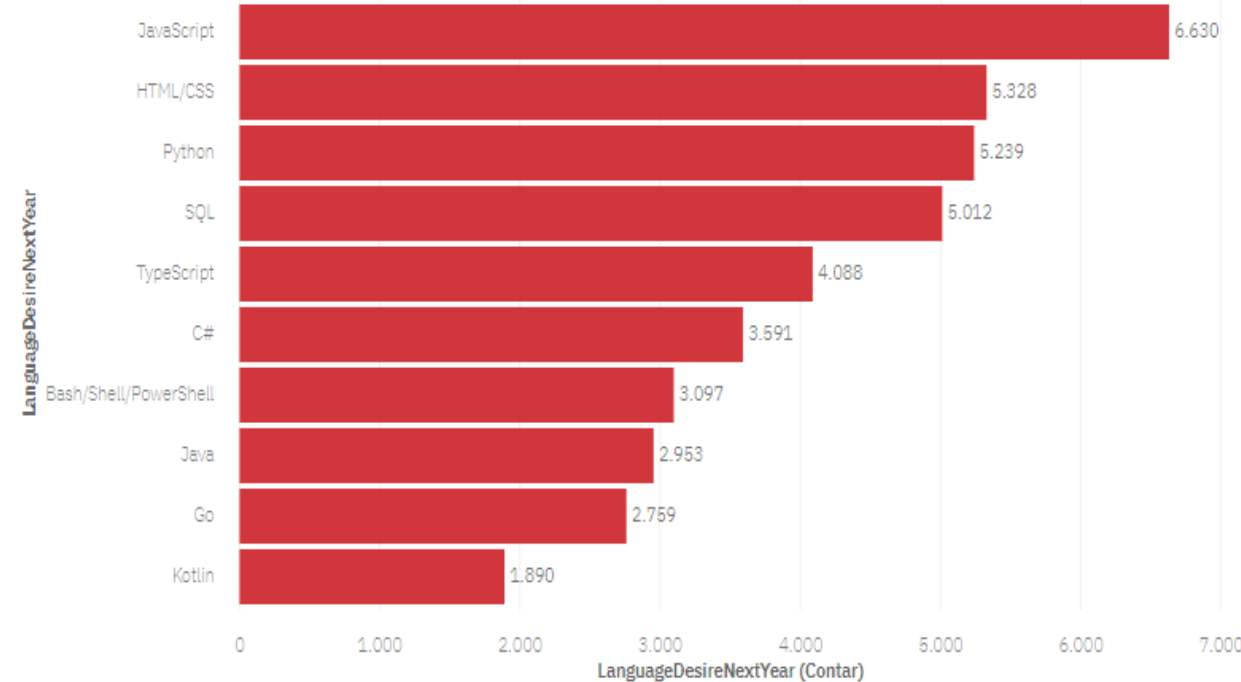
Current Year

Top 10 Language Worked With



Next Year

Top 10 Language Desire Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript and HTML/CSS are the top programming language for the current year as well as the next one.
- Python moves from 5th to 3rd position between both charts.
- C++ and PHP have disappeared from the top 10.

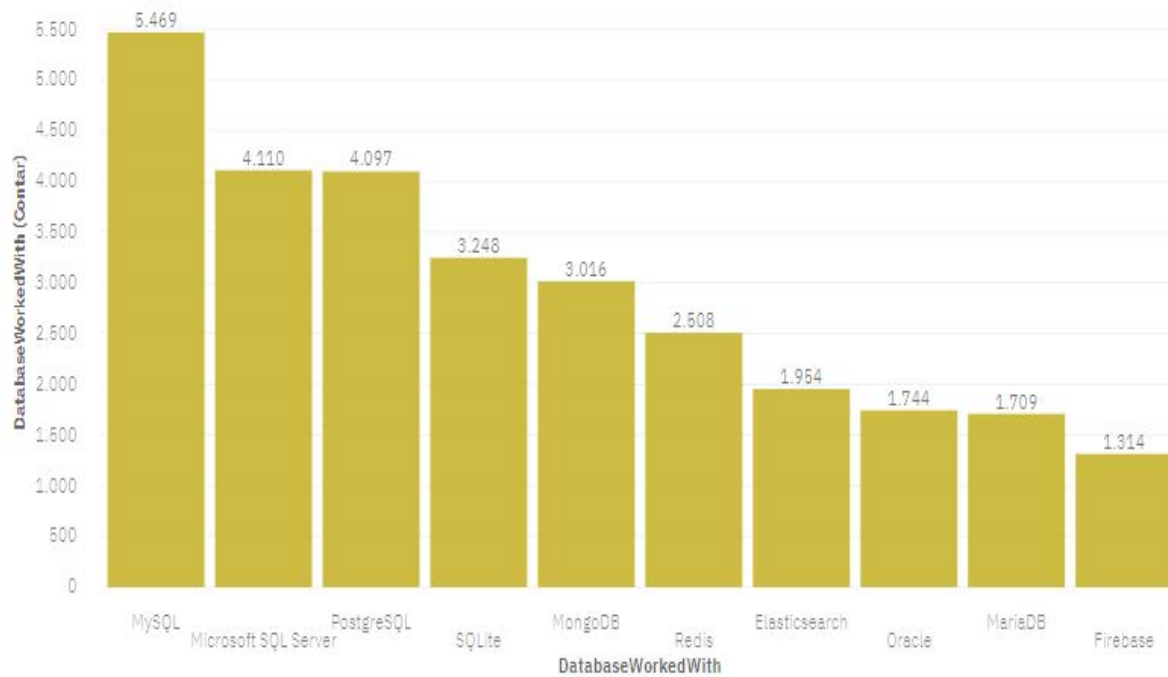
Implications

- Web programming languages are still prevalent and trending, great demand for web developers.
- Python is becoming increasingly important, specially for data science and machine learning.
- Demand/interest for these legacy languages are diminishing.

DATABASE TRENDS

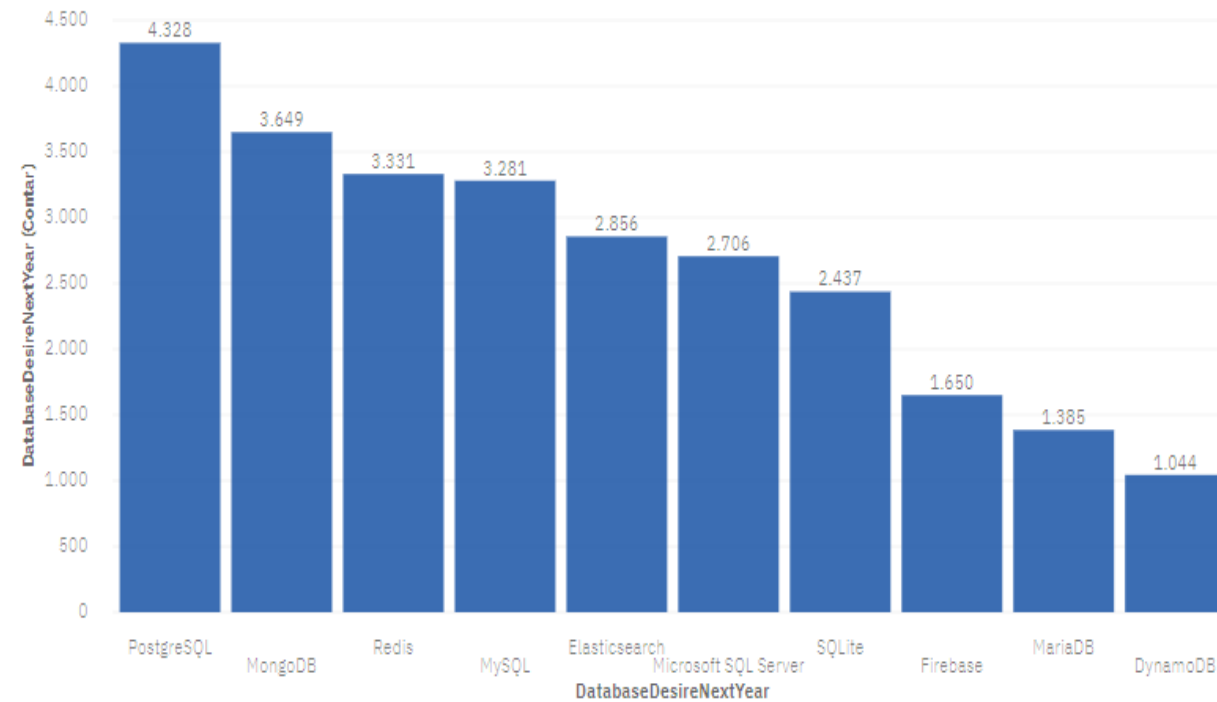
Current Year

Top 10 Database Worked With



Next Year

Top 10 Database Desire Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the current most popular database but PostgreSQL is gaining traction.
- MongoDB and Redis are rapid moving up the charts.
- MicrosoftSQL Server is very popular but may be losing traction.

Implications

- Open-source databases are still preferable compared with commercial ones.
- Non-relational databases are increasingly trending.

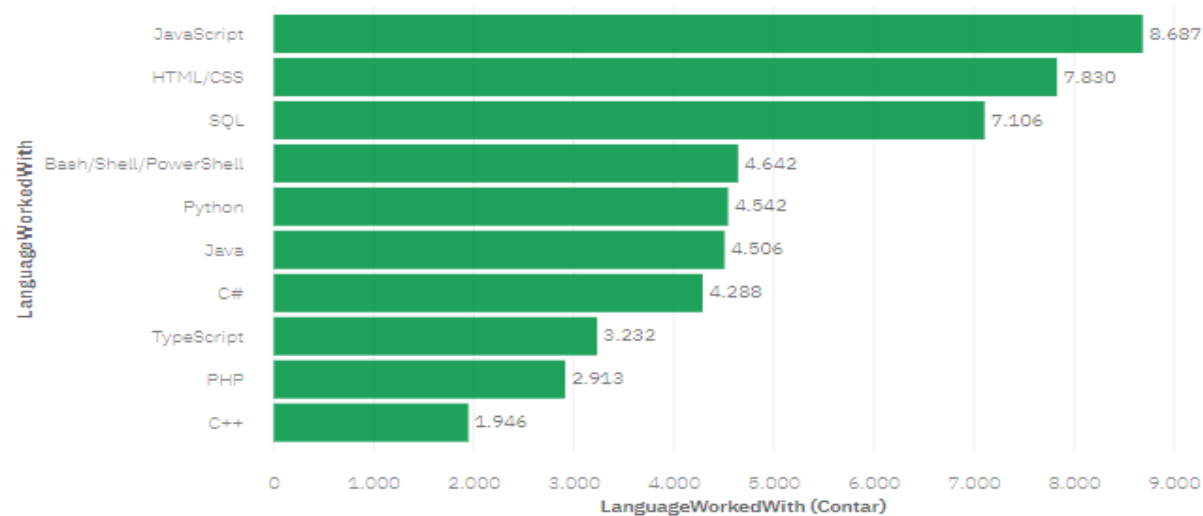
DASHBOARD



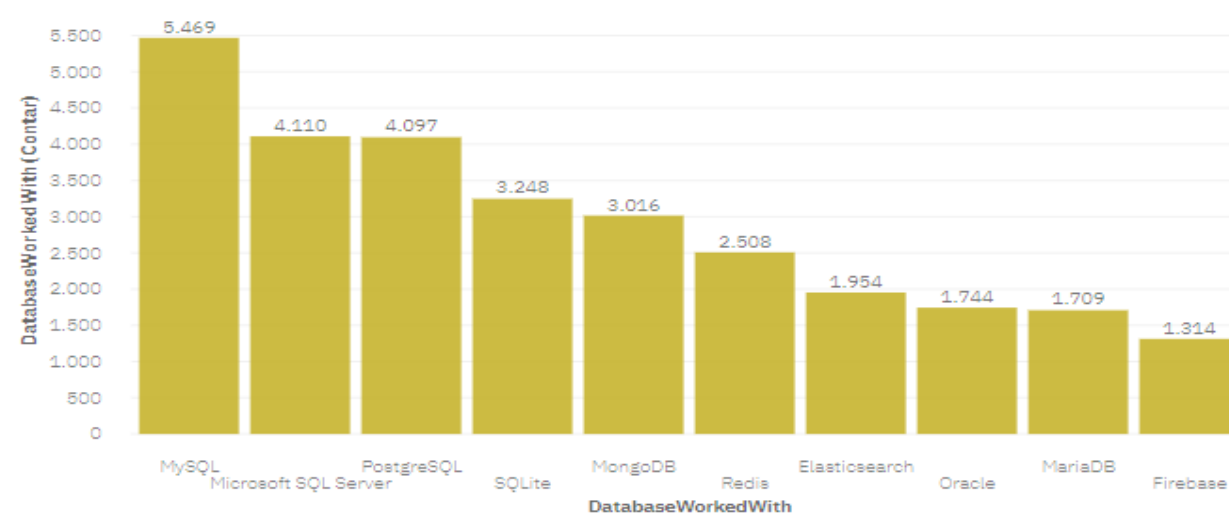
[Link of the IBM Cognos Dashboard used on this presentation.](#)

CURRENT TECHNOLOGY USAGE DASHBOARD

Top 10 Language Worked With



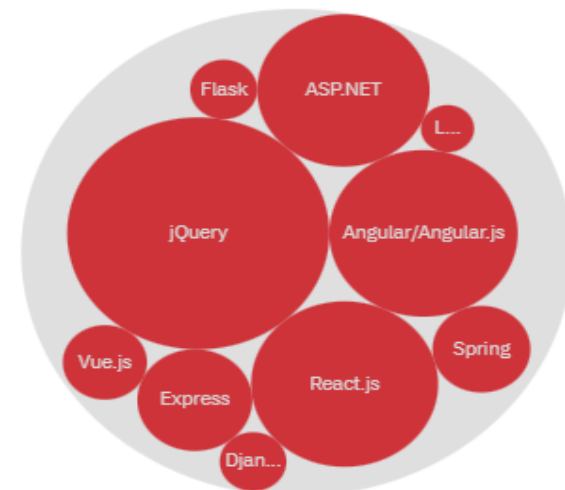
Top 10 Database Worked With



Platform Worked With

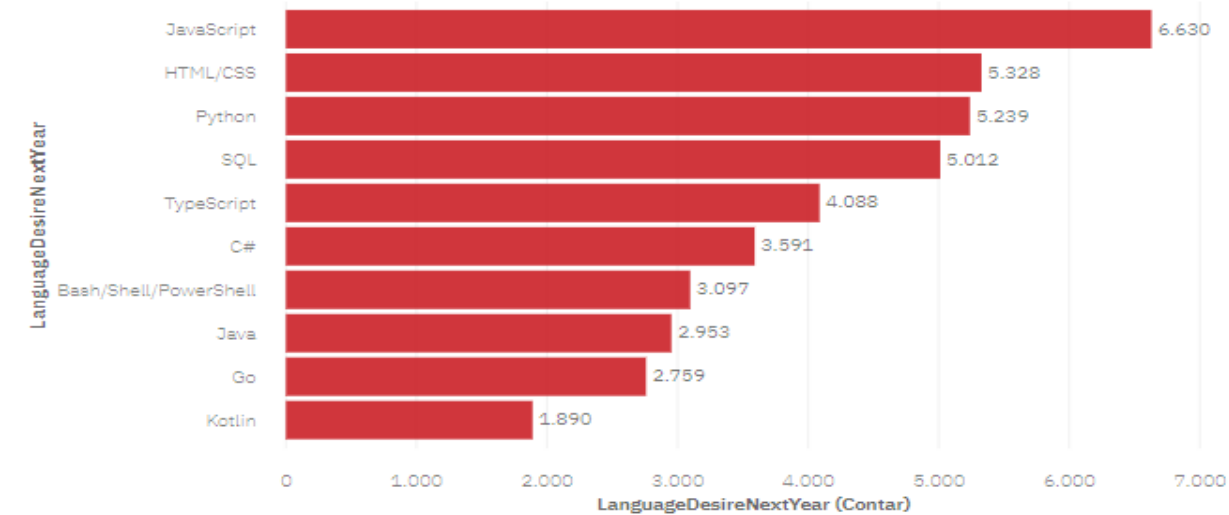


Top 10 WebFrame Worked With

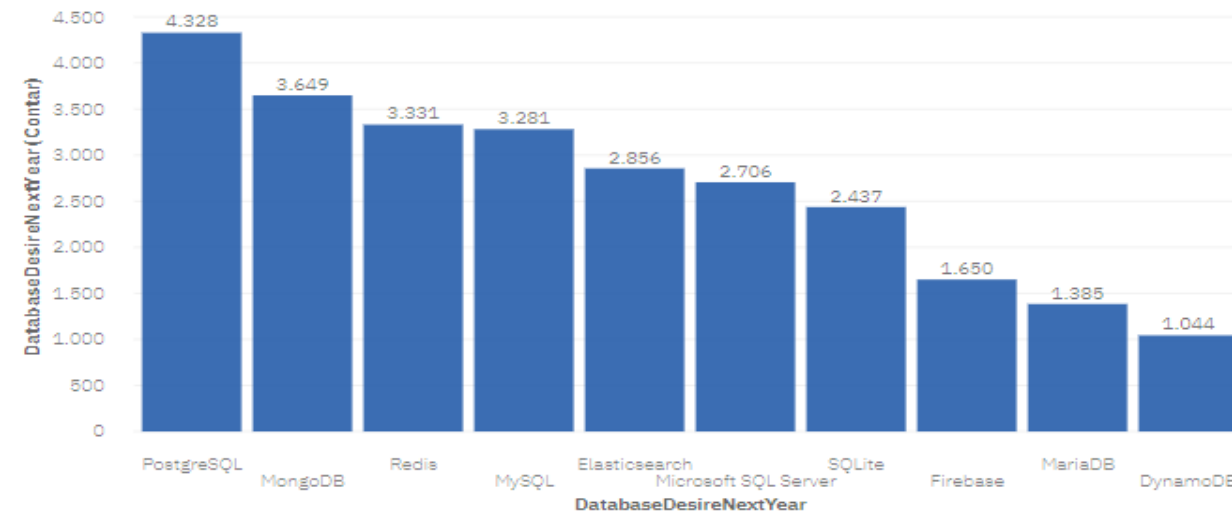


FUTURE TECHNOLOGY TREND DASHBOARD

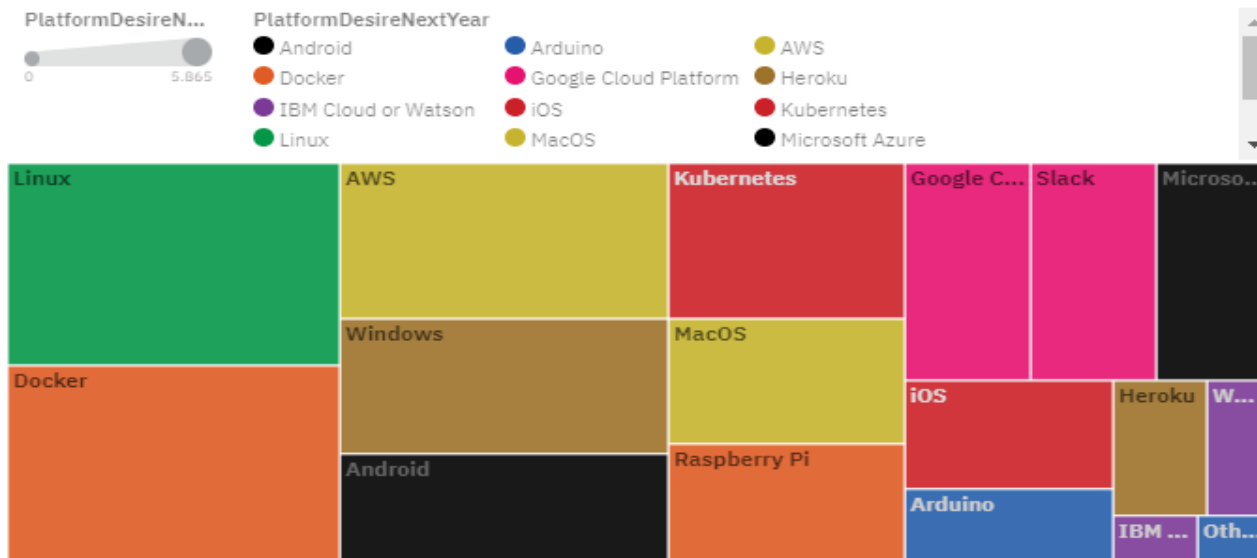
Top 10 Language Desire Next Year



Top 10 Database Desire Next Year



Platform Desire Next Year



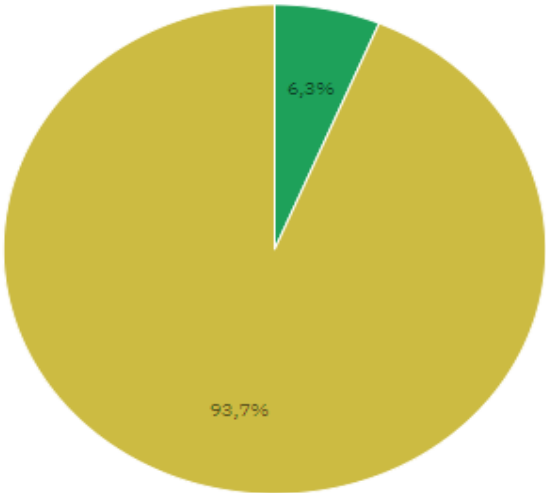
Top 10 WebFrame Desire Next Year



DEMOGRAPHICS DASHBOARD

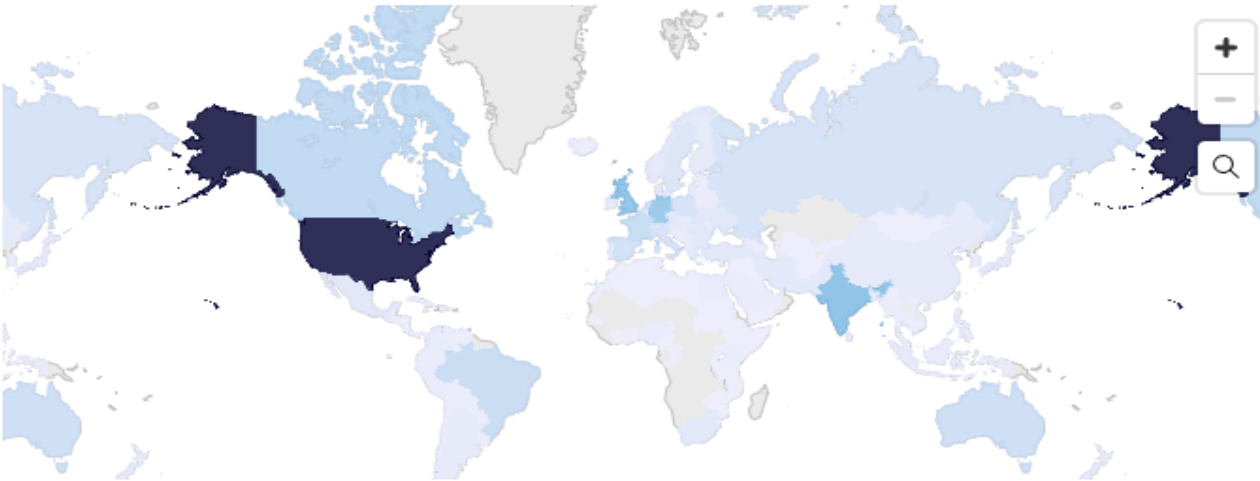
Respondent classified by Gender

Gender
● Woman ● Man

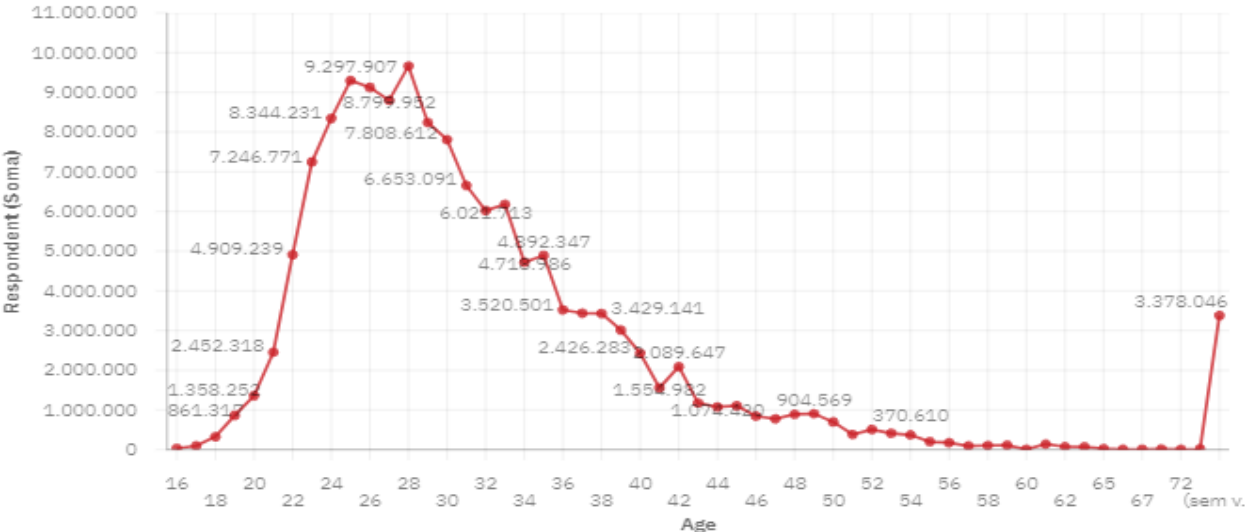


Respondent Count for Countries

Respondent (So...
865 38.170.293

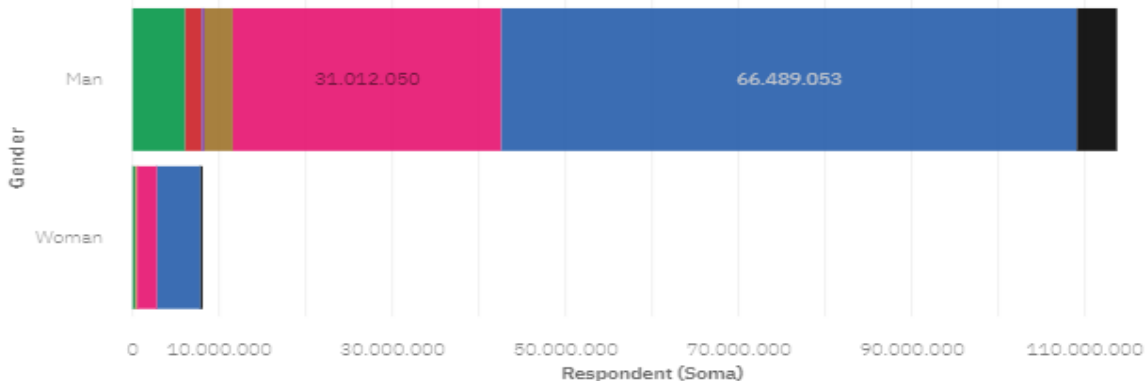


Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level

EdLevel
● Secondary school (e.g. American... ● Professional degree (JD, MD, e... ● Primary/elementary school
● Other doctoral degree (Ph.D, E... ● Master's degree (MA, MS, M.E... ● Bachelor's degree (BA, BS, B.E...
● Associate degree



DISCUSSION



- Technology trends for the future
- Education required to stay relevant in the industry
- Gender discrimination in the industry
- Result bias given the age of the respondents

OVERALL FINDINGS & IMPLICATIONS

Findings

- The top current and near future languages are web based ones. Python is quickly moving up in position.
- While a open source relational database is still in the 1st position, two non-relational databases move to the 2nd and 3rd positions.
- 93,7% of respondents identified as men.

Implications

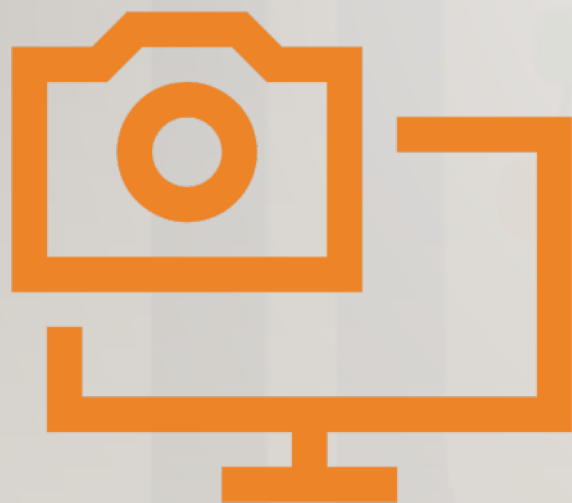
- Great demand for web based developers. Interest for machine learning is rapidly increasing.
- Increased interest and adoption of non-relational databases.
- Possible gender discrimination in the industry.

CONCLUSION



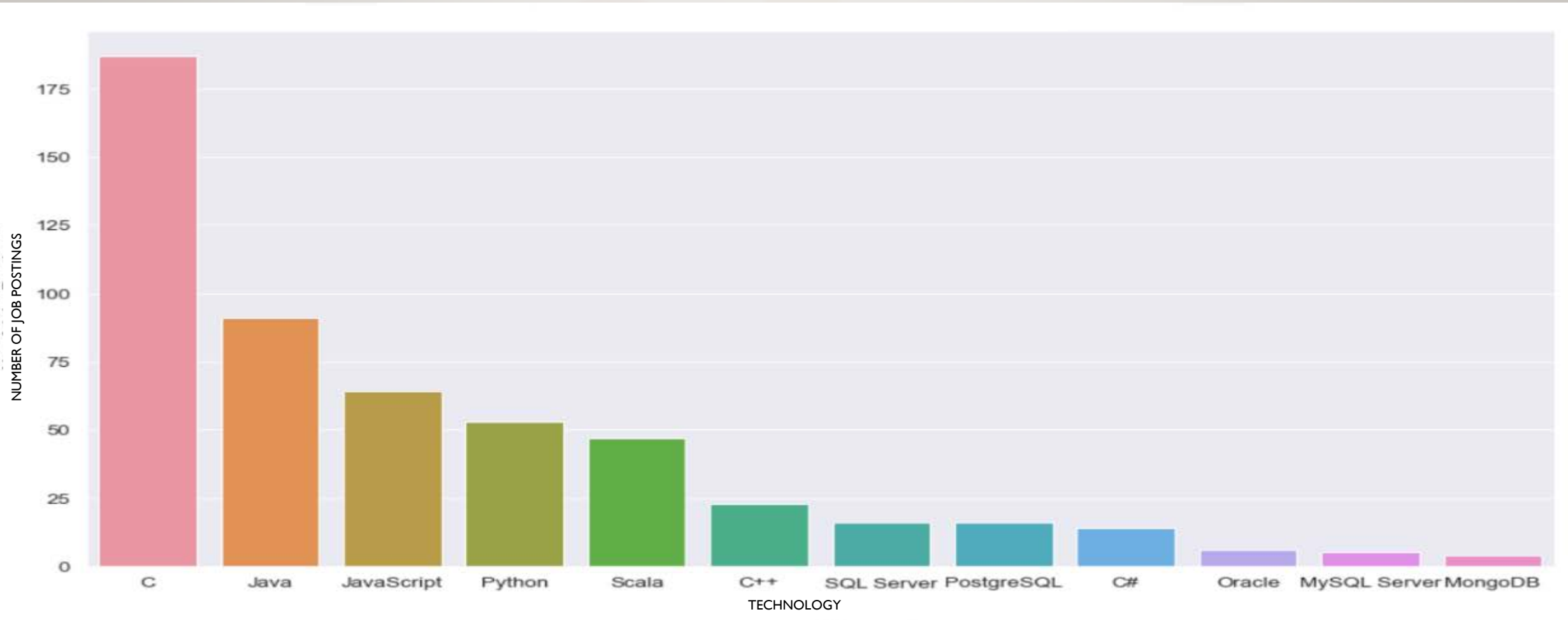
- Web-based languages are extremely important to stay relevant in the industry.
- Non-relational databases are trending and becoming more important by the year.
- Technology trends are always changing, it's important to try and learn new languages, databases, platforms and web frames whenever possible.
- Gender discrimination is a possible issue in the area, exploring this matter is important to try and come up with some solutions.

APPENDIX



	Language	Average Annual Salary
1	Python	\$114,383
2	Java	\$101,013
3	R	\$92,037
4	Javascript	\$110,981
5	Swift	\$130,801
6	C++	\$113,865
7	C#	\$88,726
8	PHP	\$84,727
9	SQL	\$84,793
10	Go	\$94,082

GITHUB JOB POSTINGS



POPULAR LANGUAGES

