Current and Future Data Trends

Abraham Palma

08/05/2023

OUTLINE

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

EXECUTIVE SUMMARY

- Trends in programming languages, databases, and platforms for use in Data Analysis
- Methodology
  - Data Wrangling
  - Data Analysis
  - Data Visualization
- Demographics
- Gender and Education disparity
- Geographical disparities

INTRODUCTION

- Using Stack Overflow's 2019 Developer Survey
- Current Technology Usage
- Future Technology Usage
- Global Demographics
  - Gender
  - Education Level

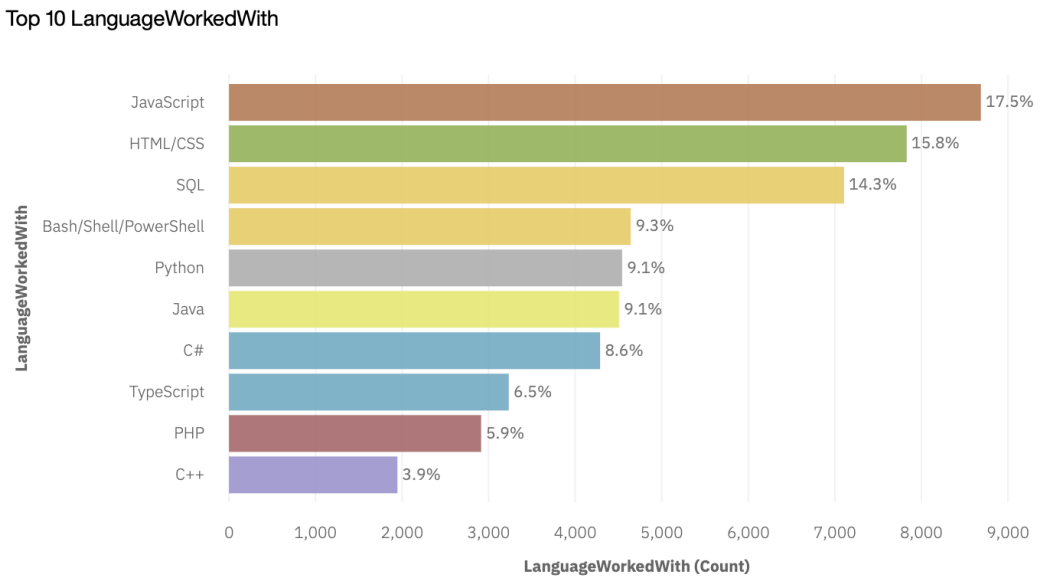
METHODOLOGY

- Collecting data
  - Python APIs
  - Web Scraping
- Data Wrangling
  - Removing Duplicates
  - Handling missing values
  - Normalizing Data
- Data Analysis
- Data Visualization
- Dashboard

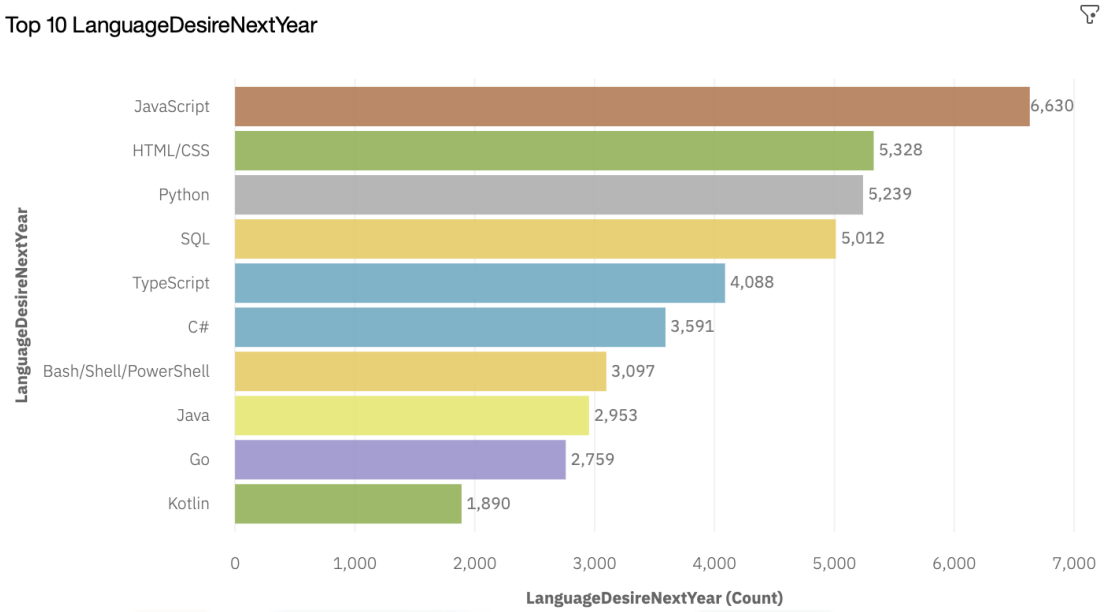
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

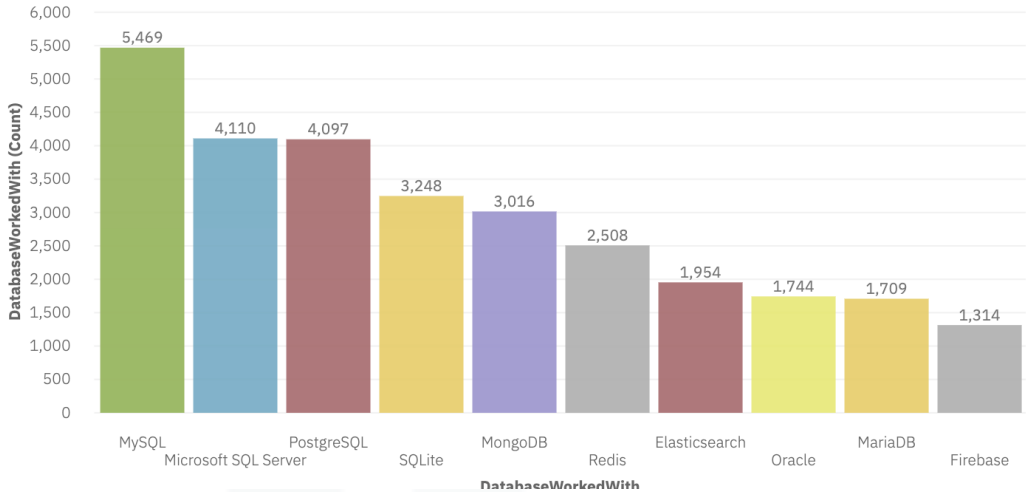
- JavaScript and HTML are top 2
- Python and Typescript rising
- PHP and C++ dropping off top10

Implications

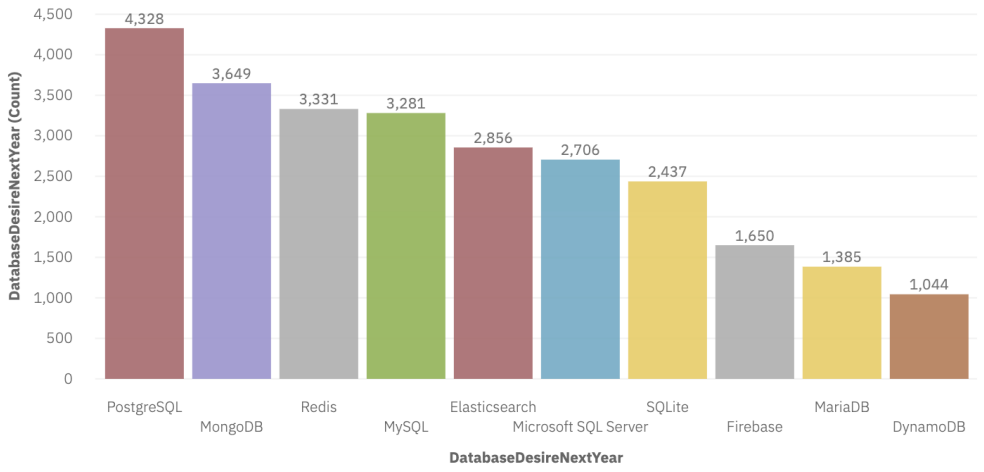
- Big Data still relies on SQL
- Possible shift from JavaScript to TypeScript

DATABASE TRENDS

Top 10 DatabaseWorkedWith



Top 10 DatabaseDesireNextYear



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL based databases still most popular
- SQL databases losing ground
- Open source databases on top

Implications

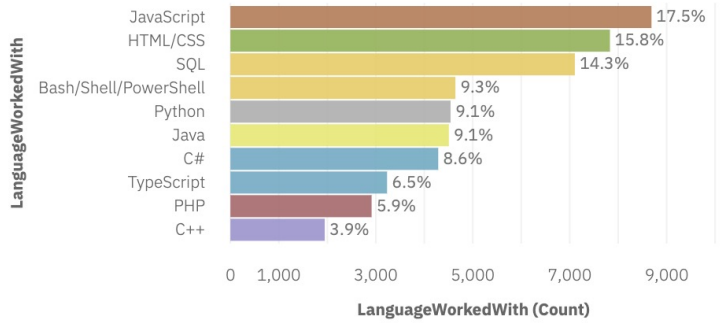
- MySQL and Microsoft SQL Server losing market share
- NoSQL databases gaining ground

DASHBOARD

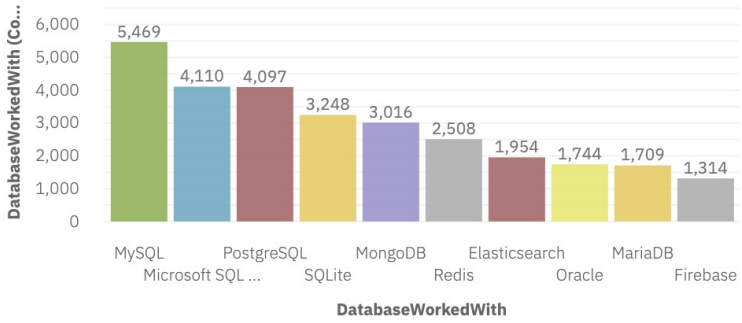
https://dataplatform.cloud.ibm.com/dashboards/3ef067ca-ae7c-4c92-808c-b03c5bd8e942/view/5463ca1d0cf532ce73c6d4e4079d2b0178377759e0bbd15582867b4906337897f33d40c0c82f4908db455666a0ec145f9d

CURRENT USAGE

Top 10 LanguageWorkedWith

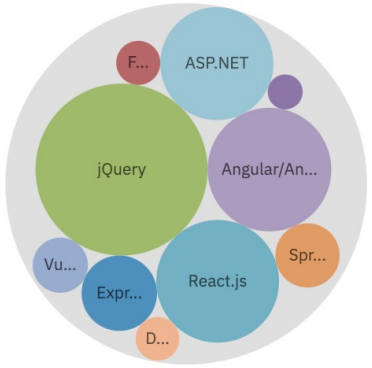


Top 10 DatabaseWorkedWith



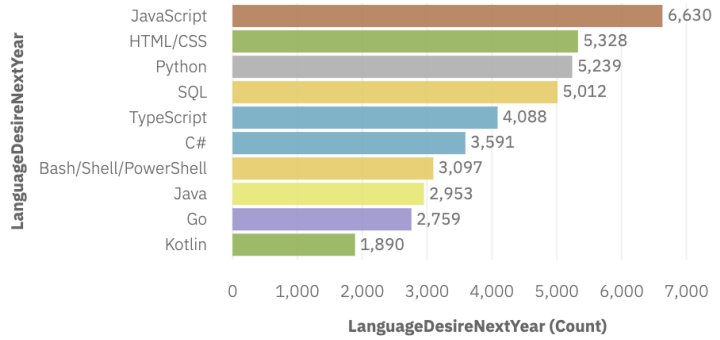
PlatformWorkedWith

Top 10 WebFrameWorkedWith

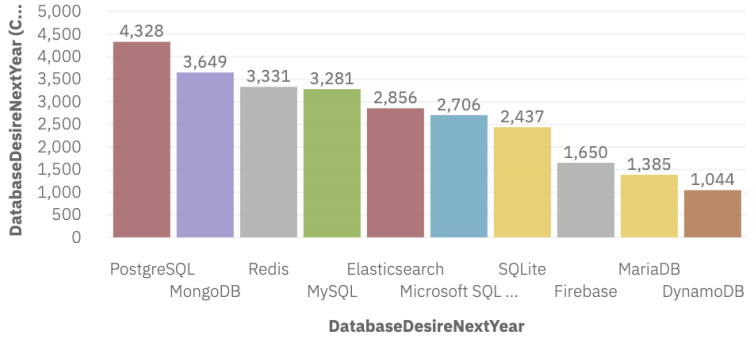


FUTURE USAGE

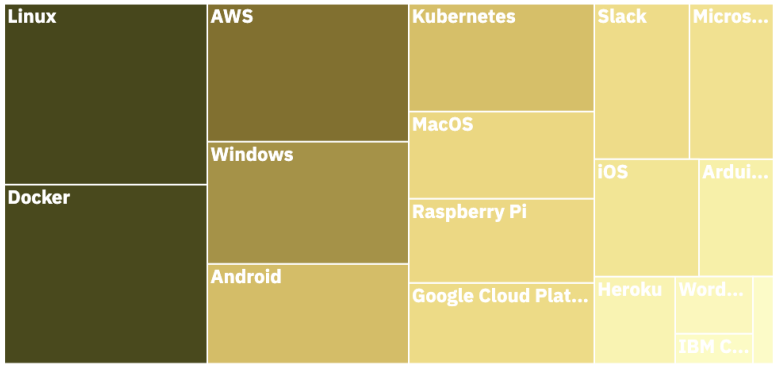
Top 10 LanguageDesireNextYear



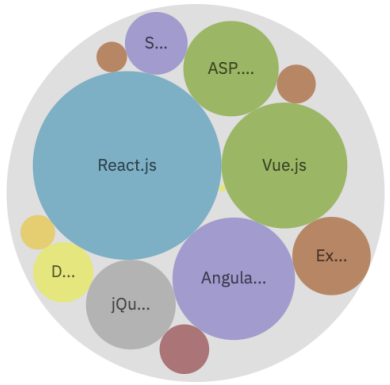
Top 10 DatabaseDesireNextYear



PlatformDesireNextYear

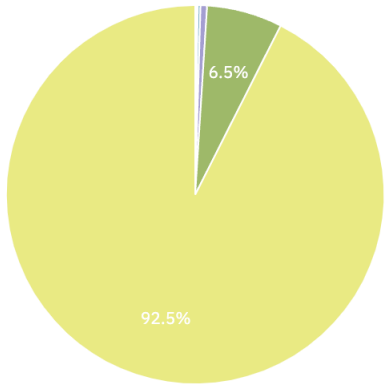


Top 10 WebFrameDesireNextYear

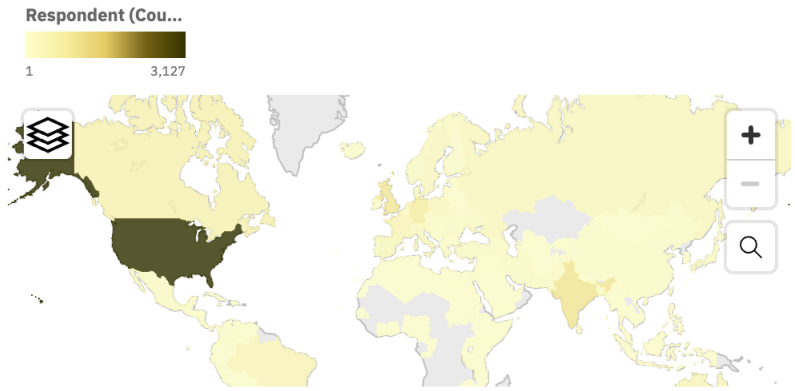


DEMOGRAPHICS

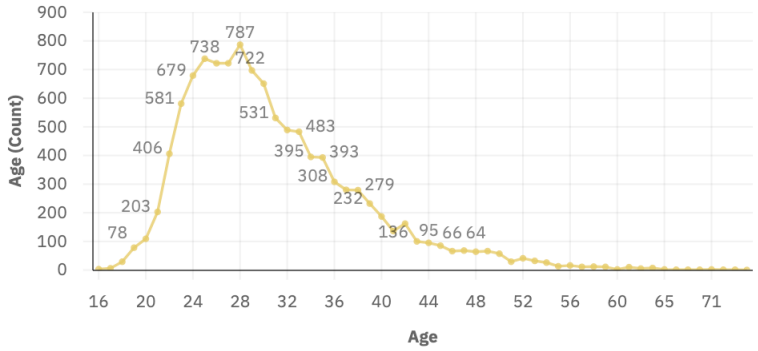
Respondent classified by Gender



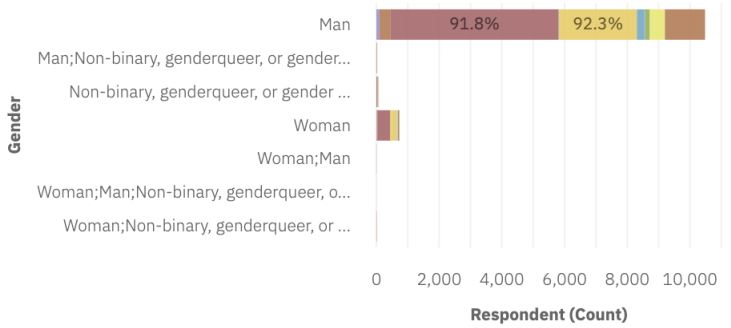
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, by Education Level



DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript losing market share but still on top
- Male dominated field
- Developers located in developed countries

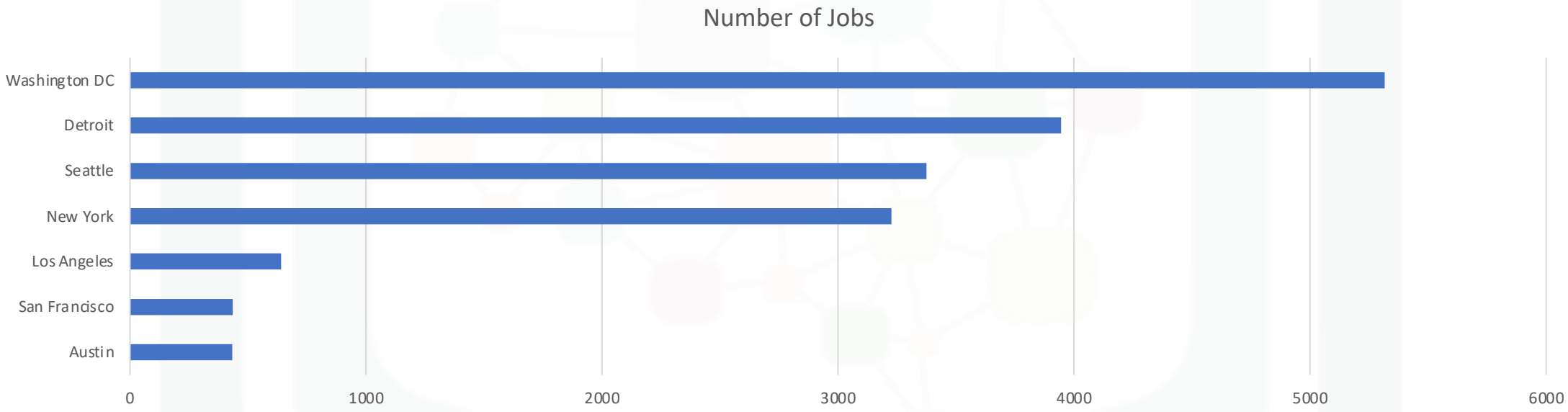
Implications

- Rapid changing technologies, companies need to be flexible
- Developers localized to a few locations worldwide
- Young developers with bachelors degree the majority

CONCLUSION

- Current and Future Technology Trends
- Programming Languages, Databases, and Platform data
- Location, gender, and education demographics
- Future changed due to AI

APPENDIX

JOB POSTINGS

POPULAR LANGUAGES