Report for Technology Trends

Đào Xuân Đạt

21/03/2023

OUTLINE

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

EXECUTIVE SUMMARY

- Proposal: Develop a Cognos Dashboard Embedded for data visualization.
- Background: The need for efficient and user-friendly data visualization tools.
- Potential: Improved decision-making, increased productivity, and better data analysis.
- Key success factors: User acceptance, clear design, and integration with existing systems.
- Risk & alternative: Cost overruns, low adoption, and exploring alternative solutions.

INTRODUCTION

- Report about to find and analyze the trend of technology usage of data professionals:
  - Current Technology Usage
  - Future Technology Trend
  - Demographics
- Report for:
  - School, Company
  - Student or teacher
  - Target consumers who want to enter the field of data analytics

- Reader gain by reading could quickly
- Understand the trend of data professional technology usage
- Identify what they should learn additionally to better find jobs related to this field

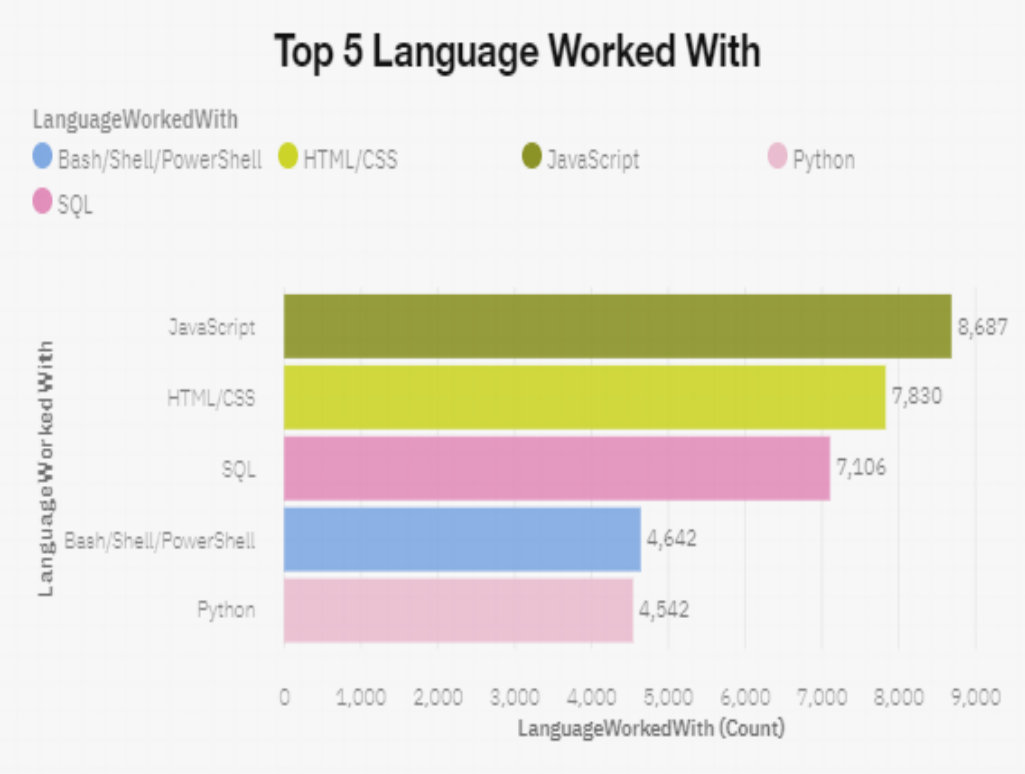
METHODOLOGY

- Data sources: Internal company databases, external APIs, and third-party data providers.
- Data collection: Extracted, transformed, and loaded data into a centralized data warehouse using ETL tools.
- Data cleaning: Eliminated duplicates, missing values, and outliers to ensure data accuracy.
- Data modeling: Designed a star schema model with fact and dimension tables for efficient data retrieval.
- Dashboard design: Used Cognos Dashboard Embedded to create interactive dashboards with charts, graphs, and filters.
- Deployment: Deployed the dashboard to a secure web server and integrated it with existing company systems.
- Maintenance and updates: Monitored and maintained the dashboard, and updated it with new data sources as needed.

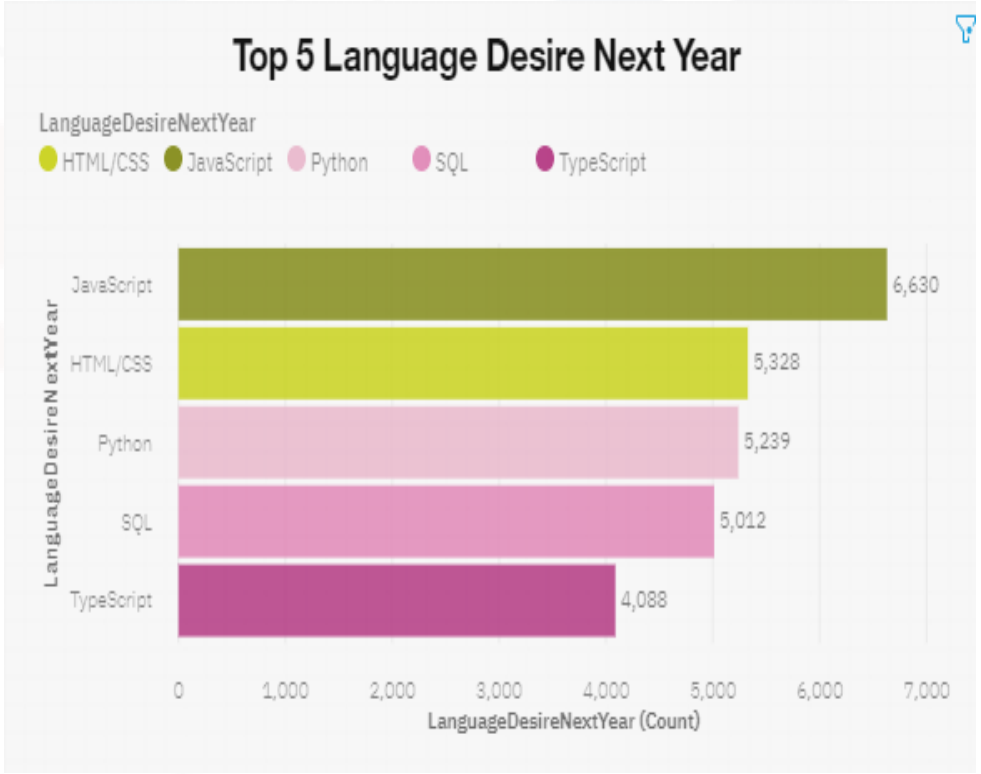
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year

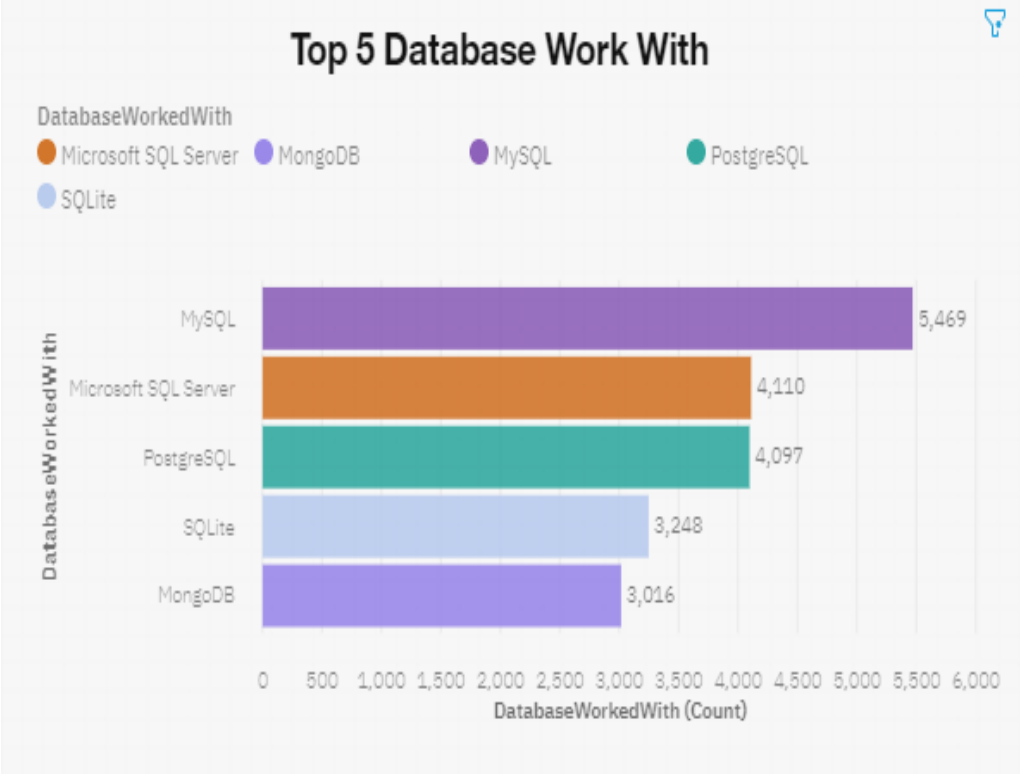


PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

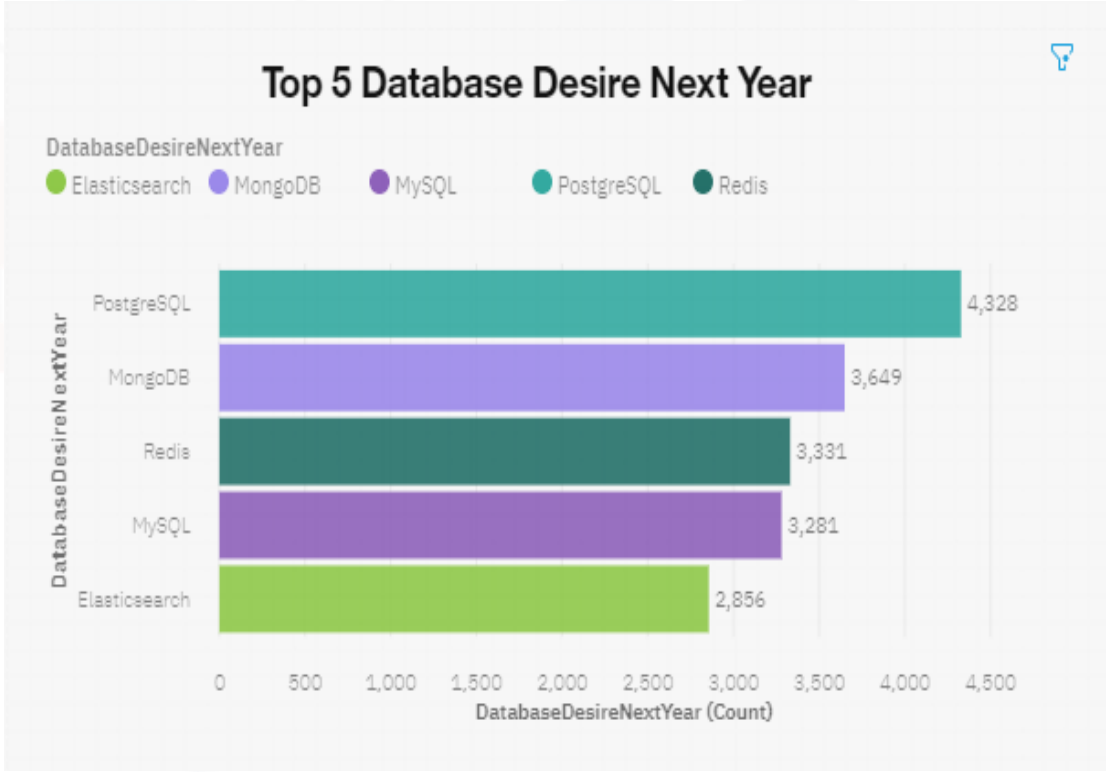
Findings	Implications
JavaScript holds the top spot as the most widely used programming language	• Proficiency in at least one front-end programming language (JavaScript/HTML/CSS) is crucial for those seeking a career in data professional fields.
HTML/CSS coming in second	
Looking towards the future, Python is rapidly gaining popularity and is expected to continue to do so	Learning Python can enhance one's competitiveness in the future job market.

DATABASE TRENDS

Current Year



Next Year



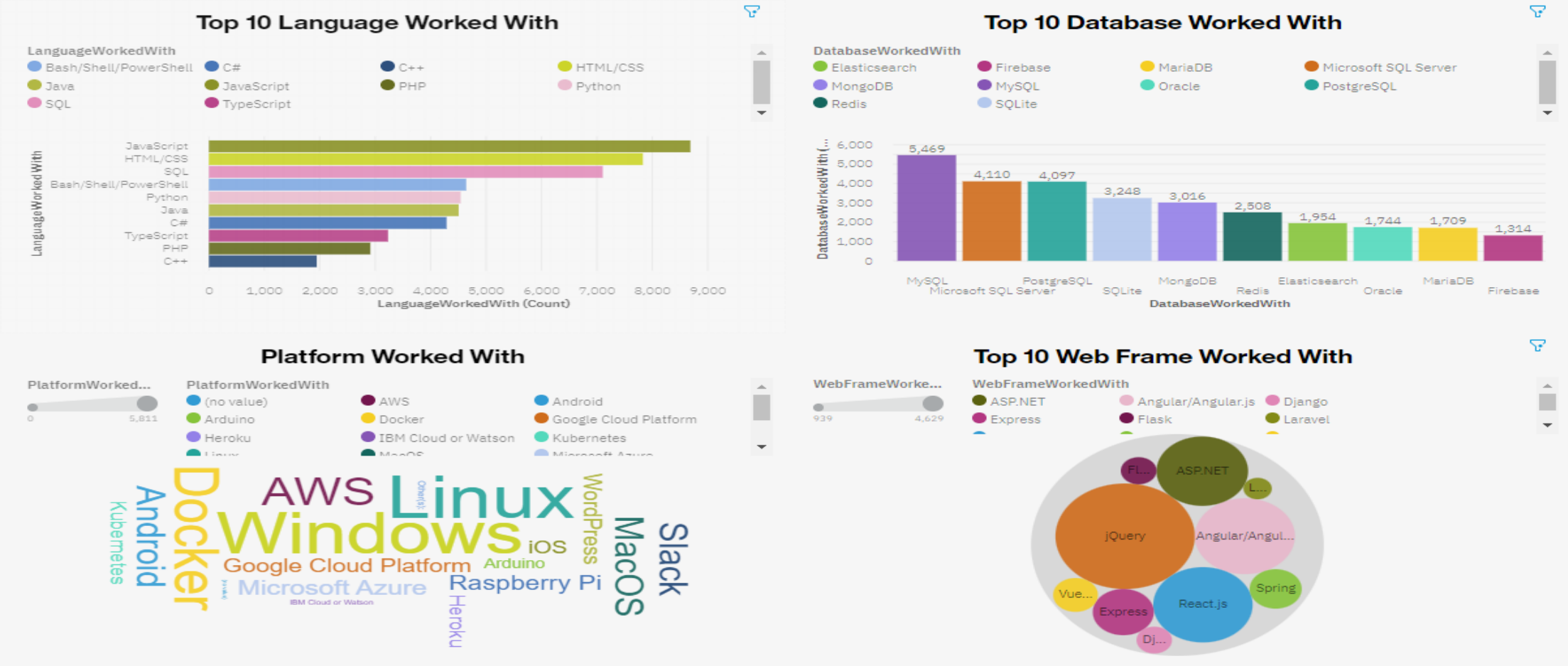
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings	Implications
MySQL is presently the most commonly used database in data professional fields.	Prior to entering the field of data analytics, it is highly recommended to have a strong understanding of MySQL, as it serves as the foundation.
However, PostgreSQL and MongoDB are also gaining popularity and are expected to continue to do so in the future	Additionally, learning at least one of the two databases (PostgreSQL or MongoDB) is beneficial, as they are expected to be used more frequently in the future.
Redis and Elasticsearch are not as widely used as the aforementioned databases, their popularity is on the rise.	Acquiring familiarity with these databases can also enhance one's competitiveness in the job market

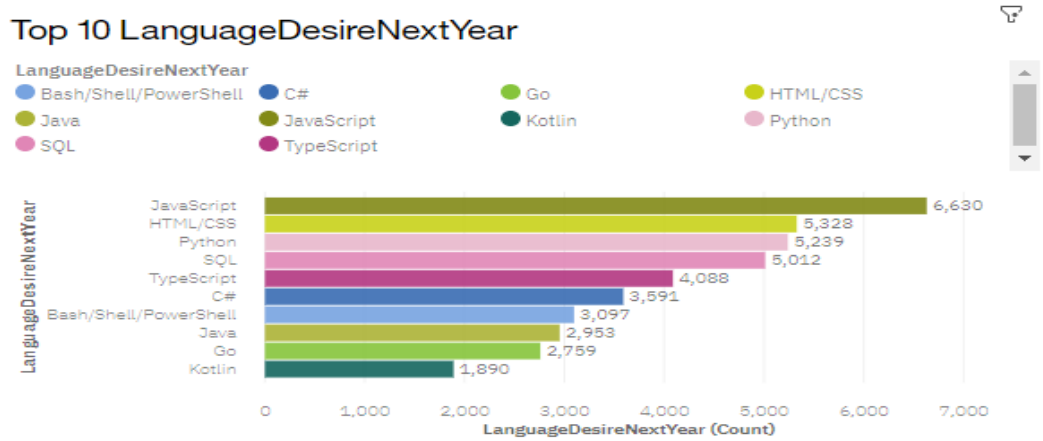
DASHBOARD

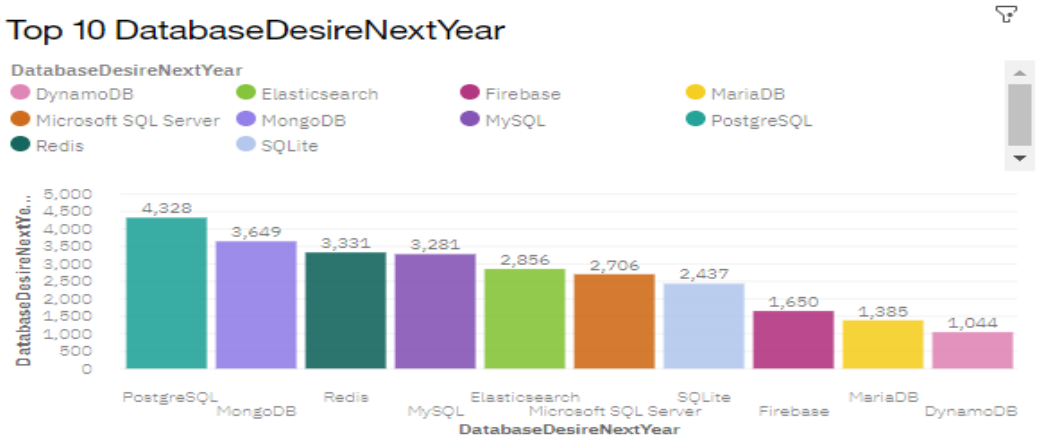
https://eu-de.dataplatform.cloud.ibm.com/dashboards/cb4e40cb-a7c8-44ce-bee5-ae2fc1a5c9a9/view/6e22dc3c0c832fc461e9c4e407c82405753e7008b6bb8452848c7b490a682597a93c4095c8261a5388440635a7ea445d9a

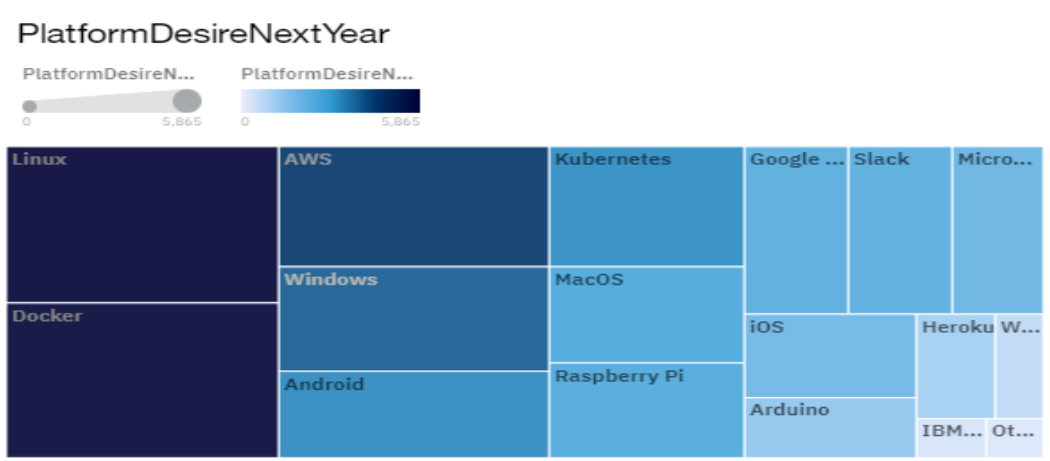
DASHBOARD TAB 1

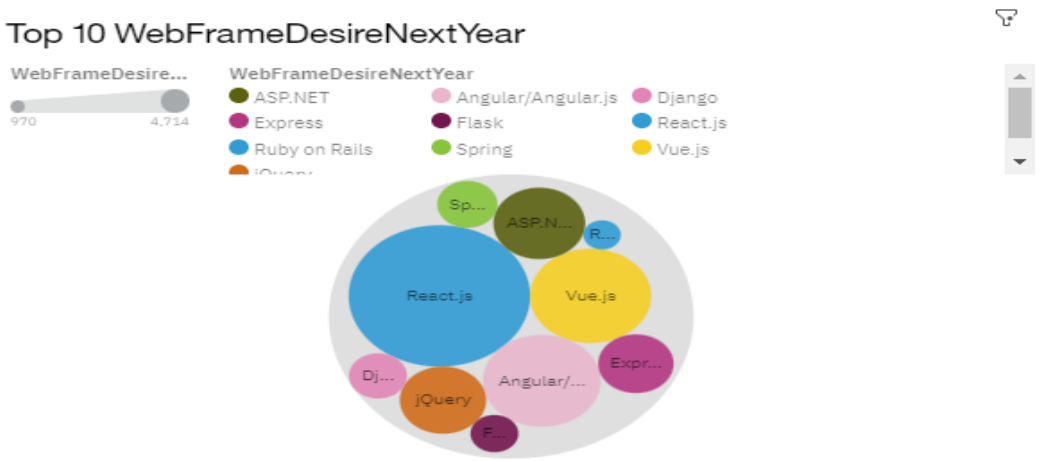


DASHBOARD TAB 2

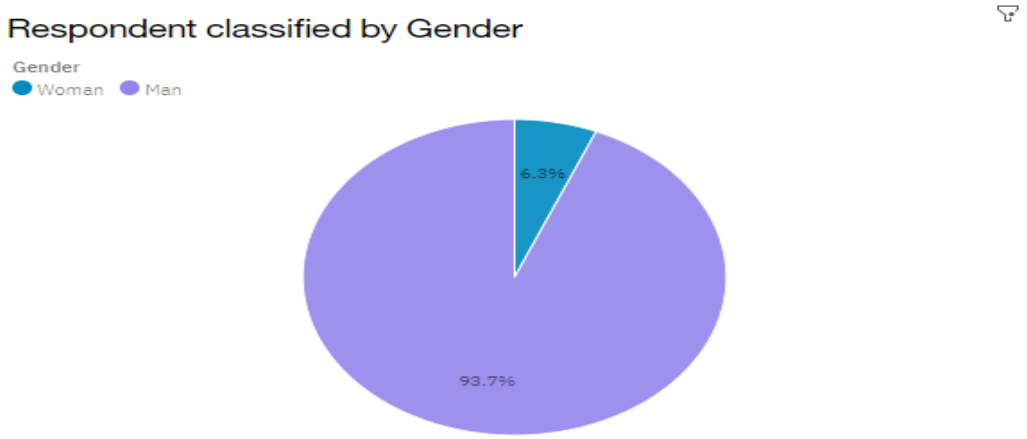


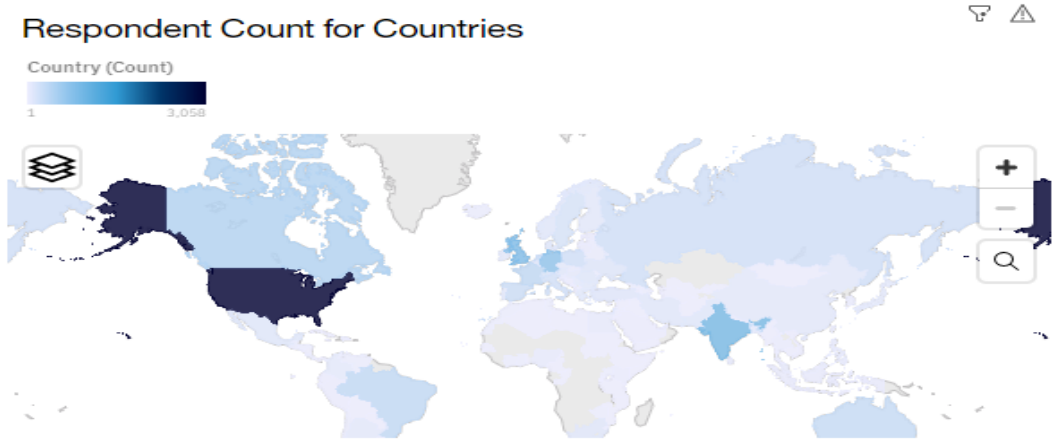


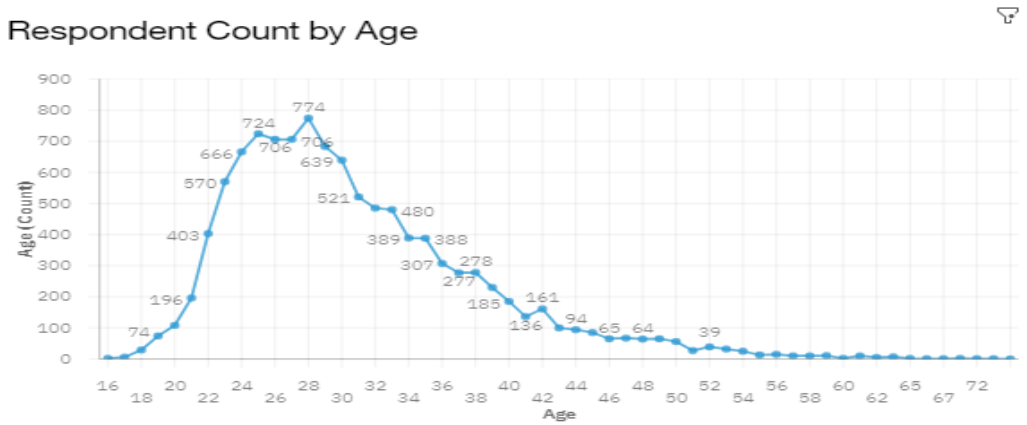


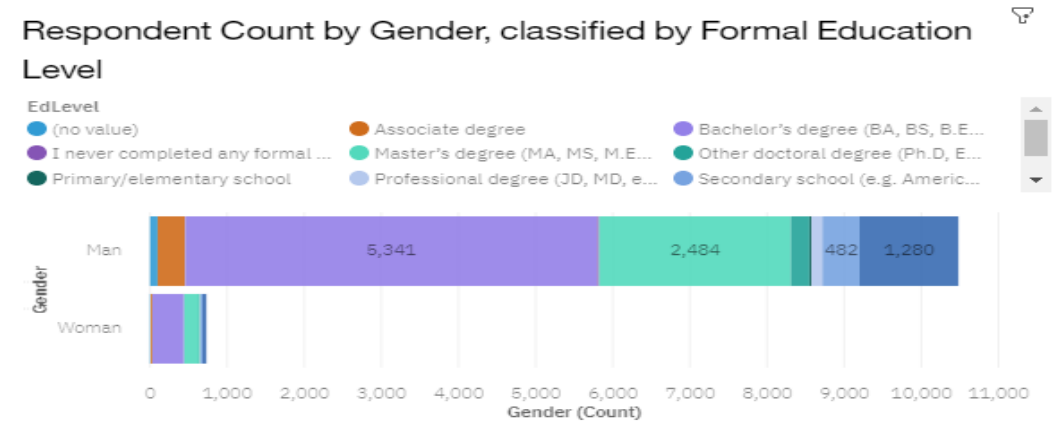


DASHBOARD TAB 3









DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

The prevailing trend in programming languages is the popularity of JavaScript, HTML/CSS, and Python, which are currently widely used and anticipated to continue to be in high demand in the future.

Similarly, MySQL, PostgreSQL, and MongoDB are commonly used and expected to remain popular databases both now and in the coming years.

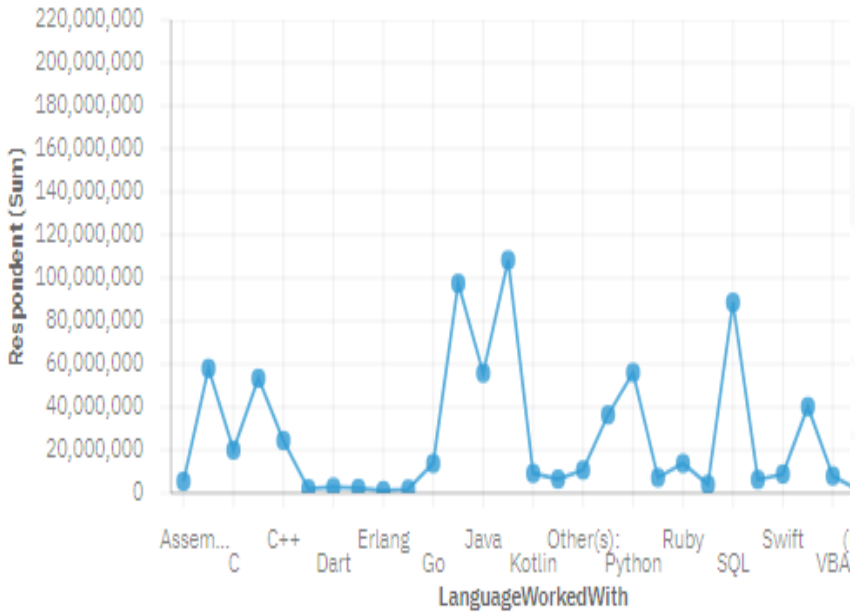
Implications

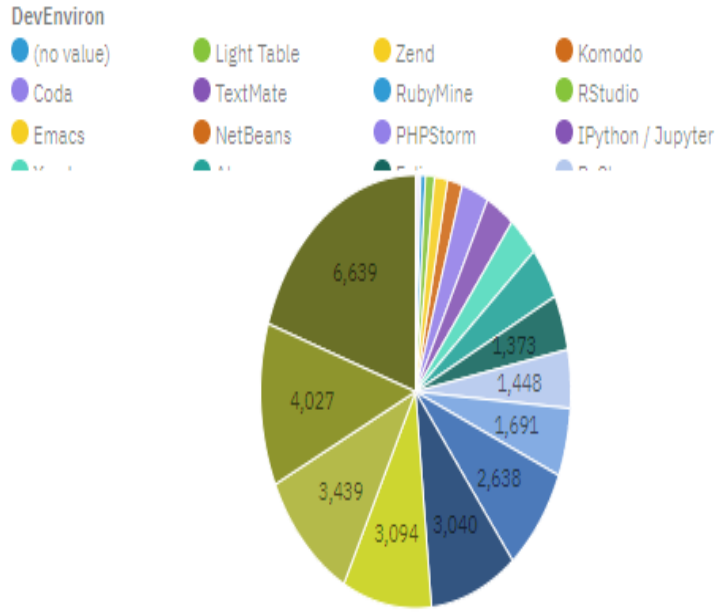
We Strongly Encourage You to Prioritize Learning!

CONCLUSION

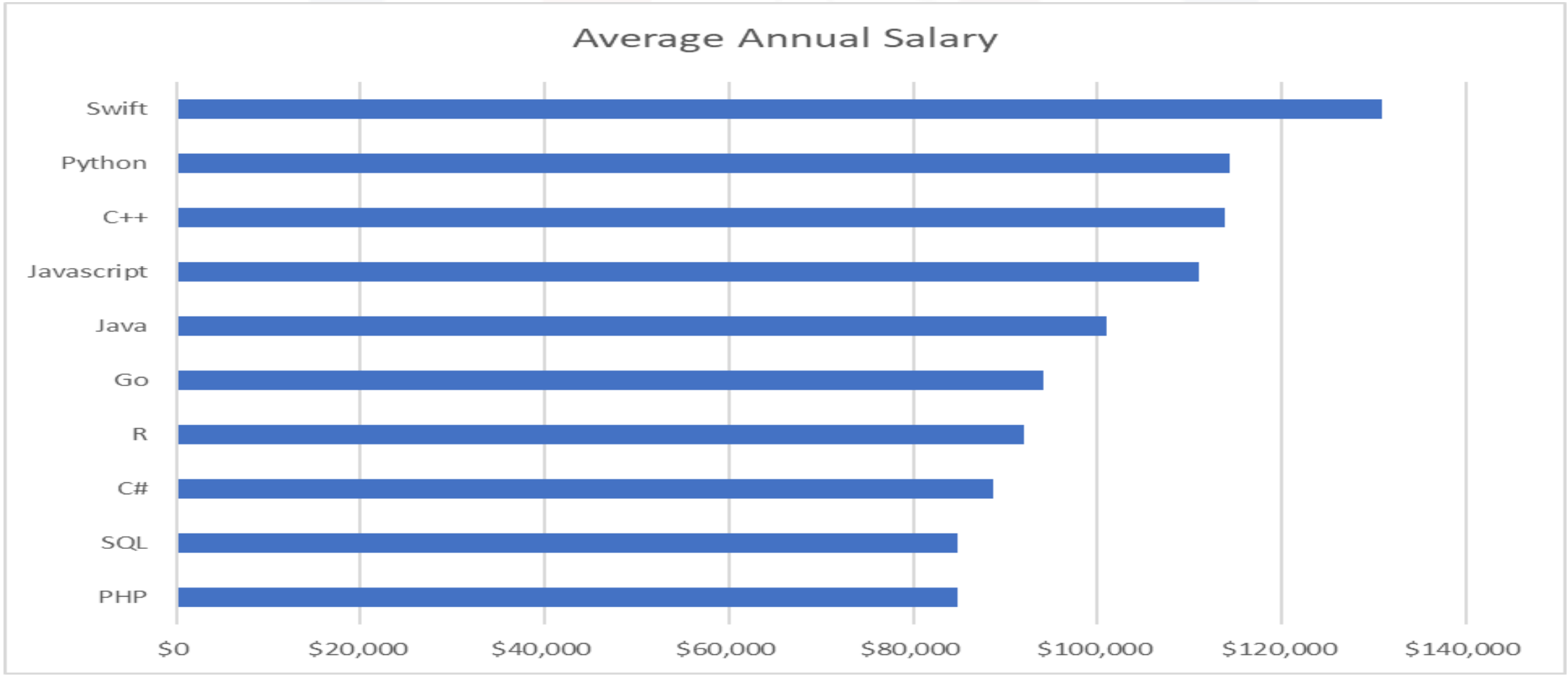
- With the increasing need for data analysis in numerous fields, data analytics has gained popularity.
- To become a proficient data professional, I suggest mastering software skills, which include programming languages and databases.
- My recommendations
  - for programming languages are JavaScript, HTML/CSS, and Python.
  - For databases, we recommend MySQL, PostgreSQL, and MongoDB.

APPENDIX


Respondent (Sum)
220,000,000
200,000,000
180,000,000
160,000,000
140,000,000
120,000,000
100,000,000
80,000,000
60,000,000
40,000,000
20,000,000
0
Assem...
C
C++
Dart
Erlang
Go
Java
Kotlin
Other(s):
Python
Ruby
SQL
Swift
VBA
LanguageWorkedWith


DevEnviron
(no value)
Light Table
Zend
Komodo
Coda
TextMate
RubyMine
RStudio
Emacs
NetBeans
PHPStorm
IPython / Jupyter
6,639
1,373
1,448
4,027
1,691
2,638
3,439
3,094
3,040

JOB POSTINGS



POPULAR LANGUAGES