IBM Data Analyst Capstone Project

Iuliia Moroz

11.08.2024

IBM Developer

SKILLS NETWORK

OUTLINE

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

IBM **Developer**

SKILLS NETWORK

EXECUTIVE SUMMARY

- Purpose of data contextualization and analysis.

- Description of methodology.
  - Data collection.
  - Data analysis.
  - Data visualization.

- Presentation of results supported by graphs and trends.

- Discussion of overall findings and their implications based on the presented results.

- Final conclusions of the conducted research.

IBM **Developer**

SKILLS NETWORK

INTRODUCTION

- Stack Overflow's annual Developer Survey is the most comprehensive and detailed survey of programmers worldwide.

- While the results may not fully capture the entire developer community, the survey includes responses from nearly 90,000 developers.

- It highlights trends to predict the future direction of the developer community and offers a thorough overview of developers on a global scale.

METHODOLOGY

- **Data Collection and Exploration**
  - Web scraping techniques
  - Utilizing APIs
  - Employing the Requests library for data retrieval
- **Data Wrangling**
  - Cleaning and transforming data for analysis
- **Exploratory Data Analysis (EDA)**
  - Assessing data distribution
  - Identifying and managing outliers
  - Investigating correlations within the data
- **Data Visualization**
  - Highlighting data distribution, relationships, composition, and comparisons
- **Dashboard Development**
  - Creating interactive dashboards to visualize and monitor key metrics

IBM **Dev**eloper

SKILLS NETWORK

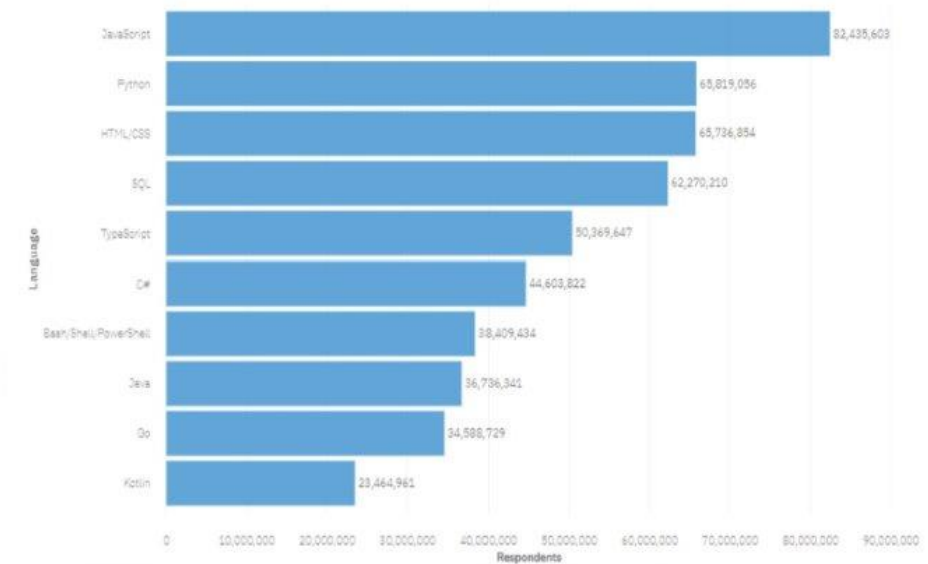# PROGRAMMING LANGUAGE TRENDS

Current Year

Top 10 Languages
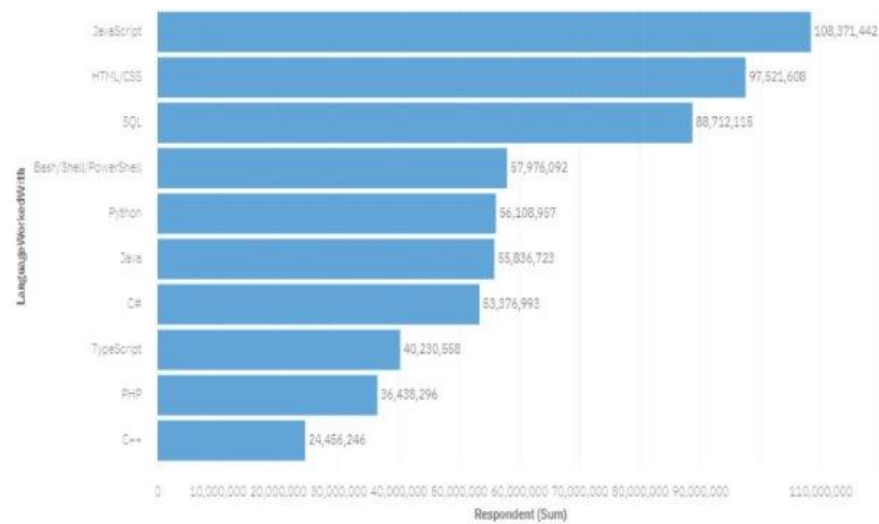
Next Year

Top 10 Language Desire Next Year

PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript remains the leading programming language.

- Python continues to be the fastest-growing.

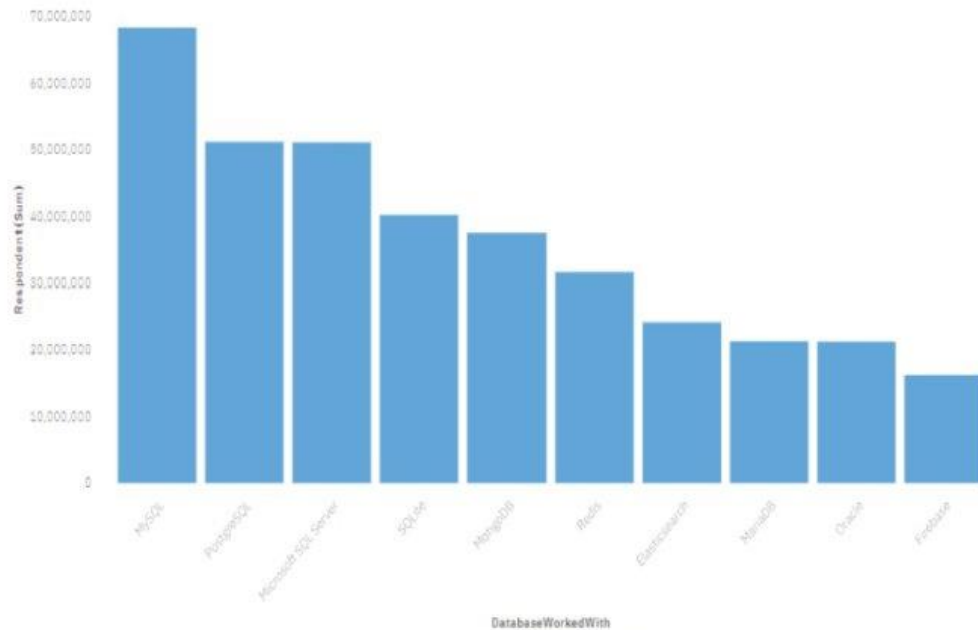- TypeScript is gaining significant interest.

Implications

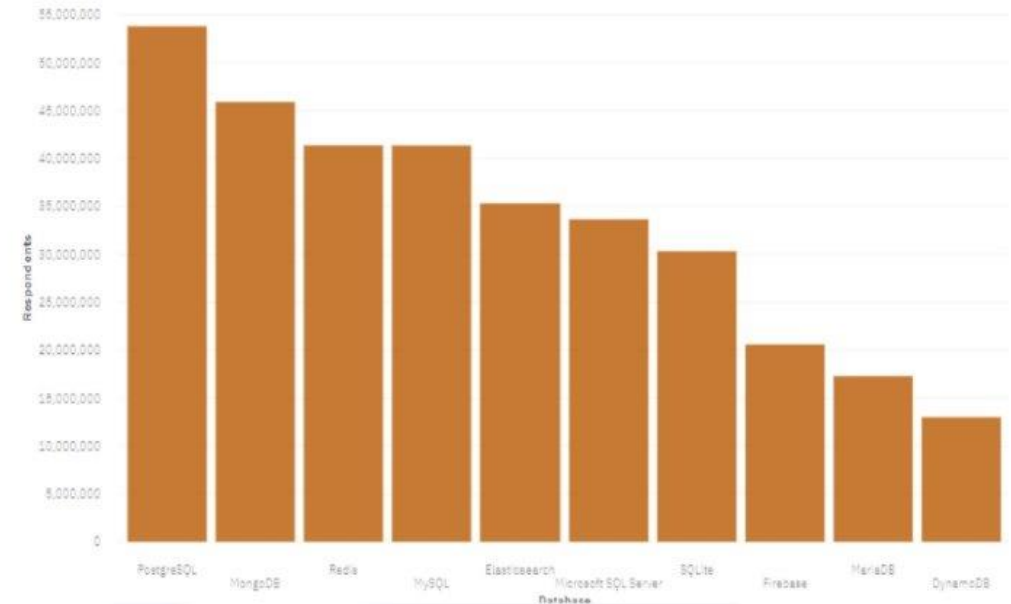- A potential shift of developers from JavaScript to TypeScript.

IBM **Dev**eloper

SKILLS NETWORK

DATABASE TRENDS

Current Year

Next Year

Top 10 Databases

Top 10 Database Desire Next Year
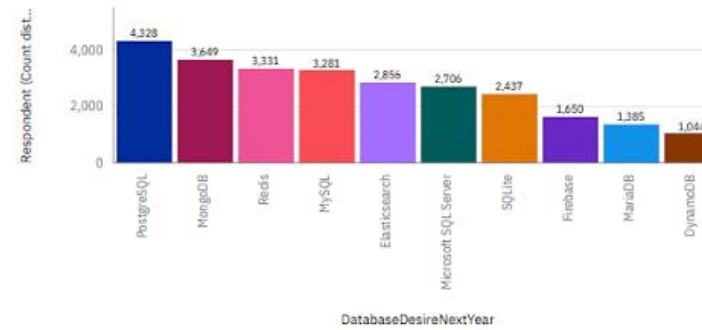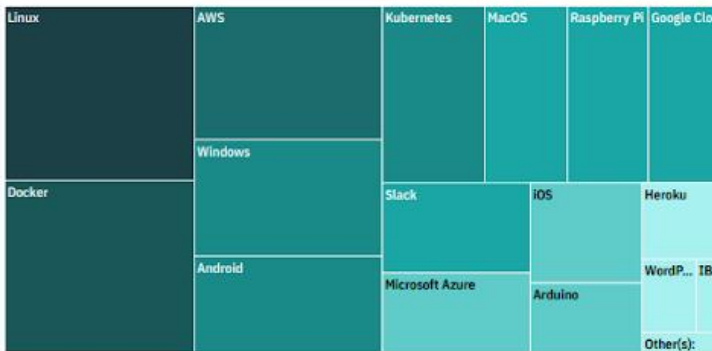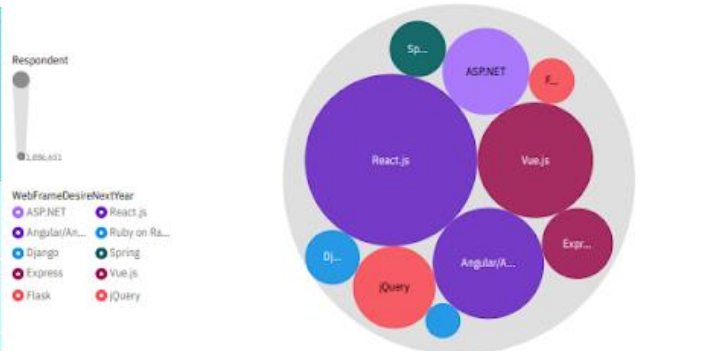
DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL remains the most widely used database.

- Decreased interest in Microsoft SQL Server and SQLite.

- Growing interest in PostgreSQL and MongoDB.

Implications

- Microsoft SQL Server and SQLite are losing ground in the market.

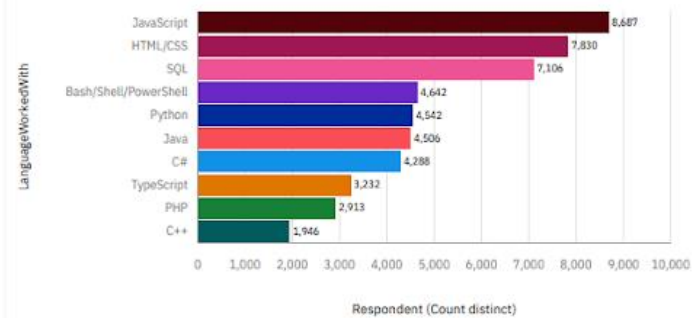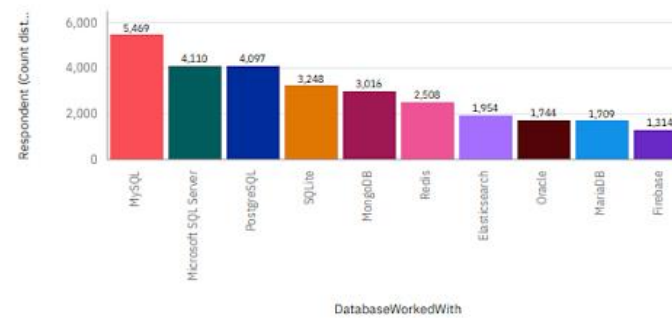- PostgreSQL and MongoDB are establishing themselves as strong contenders.

DASHBOARD

https://github.com/morozjulia111/Peer-Graded-Assignment

DASHBOARD TAB 1

DASHBOARD TAB 2

DASHBOARD TAB 3
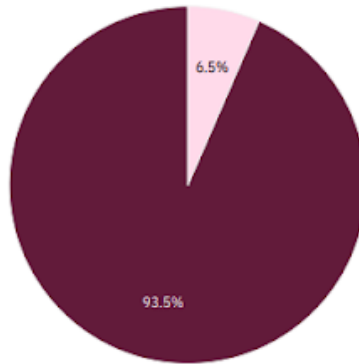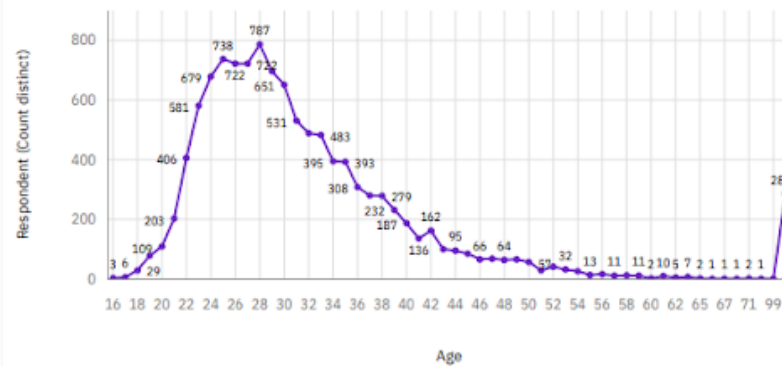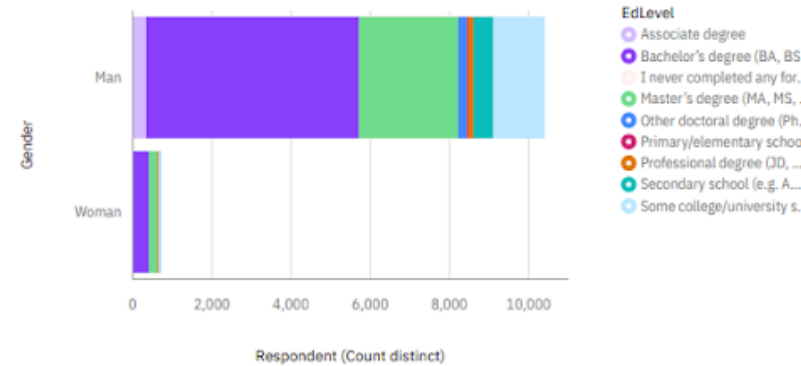
DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is widely used, and TypeScript is gaining popularity.

- Over 90% of developers are young males.

- Developers are predominantly located in developed countries.

Implications

- JavaScript and TypeScript web frameworks are gaining followers.

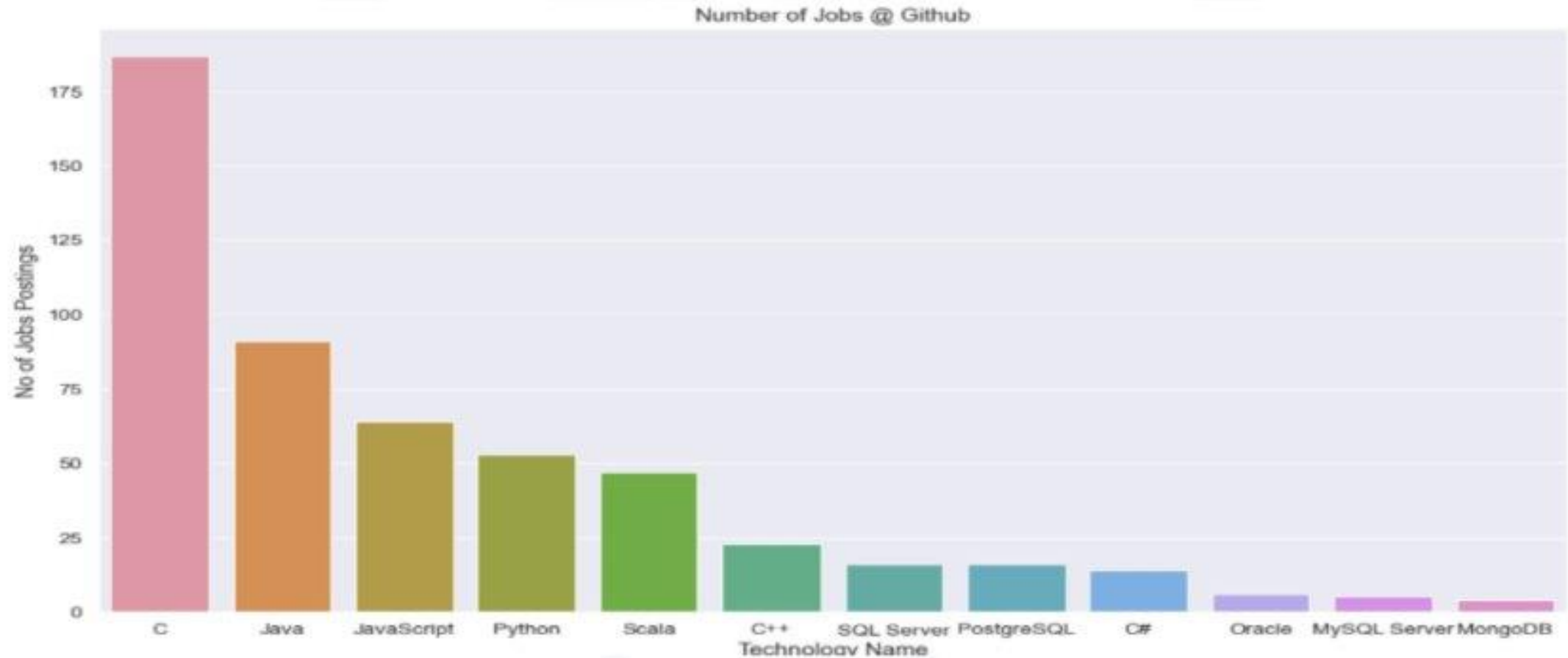- There is a global polarization in developers' locations and gender.

- The majority of developers are young and do not have postgraduate degrees.

IBM **Developer**

SKILLS NETWORK

CONCLUSION

- **Dominance of JavaScript and Growing Popularity of TypeScript**: JavaScript remains the most widely used language, with TypeScript rapidly gaining traction among developers.

- **Shifts in Database Preferences**: While MySQL continues to be the most utilized database, there is a notable decline in the use of Microsoft SQL Server and SQLite, with PostgreSQL and MongoDB gaining increasing interest.

- **Demographic Trends**: The developer community is predominantly young and male, with a significant concentration in developed countries and a trend toward younger developers without postgraduate education.

- **Market Polarization**: There is a global polarization in the distribution of developers by location and gender, reflecting broader industry trends.

- **Framework Adoption**: JavaScript and TypeScript web frameworks are seeing a rise in popularity, indicating a shift towards these technologies in web development.

JOB POSTINGS

Number of Jobs @ Github

POPULAR LANGUAGES