



IBM CAPSTONE PROJECT: EMERGING TRENDS IN TECHNOLOGY FOR DEVELOPERS

DEEPTHI SUDHAKARAN

04/12/2024

OUTLINE



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

EXECUTIVE SUMMARY



- Data contextualization and analysis goal.
- Methodology description.
 - Data gathering.
 - Data analysis.
 - Data visualizations.
- Results presentation supported with graphs and trends.
- Discussion of overall findings and implications regarding the results previously exposed.
- Conclusions of the research.

INTRODUCTION



- This Presentation is an in-depth analysis of trends in Jobs and skills among developers across the globe
- The data collected for the survey consists of Stack Overflow's annual Developer Survey is the largest and most comprehensive survey of people who code around the world and web scraping Job sites.
- The target audience of this research is IT Professionals, HR managers, and anyone with an aptitude towards emerging trends in the field of technology.

METHODOLOGY



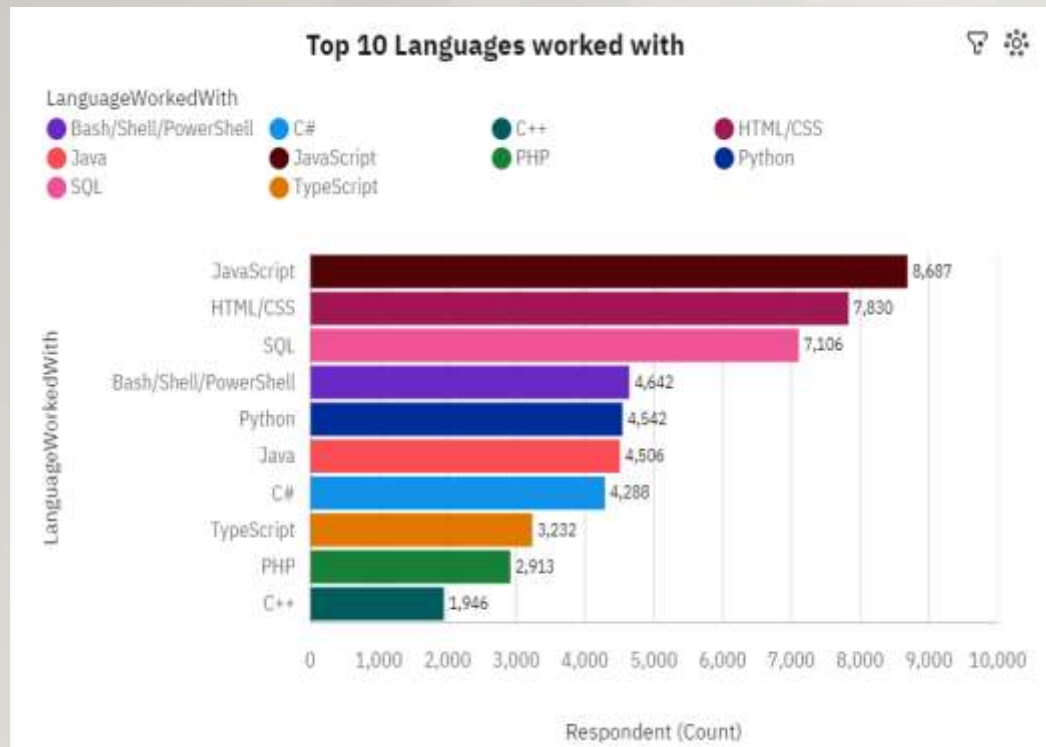
- Data Collection
 - Through Github jobs API
 - Web Scraping IBM Website
 - Exploring the data from the Stack Overflow Developer Survey 2019
- Data Wrangling
 - Use tools like Python and Jupyter Notebooks to clean data
- Exploratory Data Analysis
 - Analyzing Data Distribution , Detecting Outliers ,Identify Correlation of data
- Data Visualization
 - Representing the relationships in charts
- Dashboard Creation

RESULTS

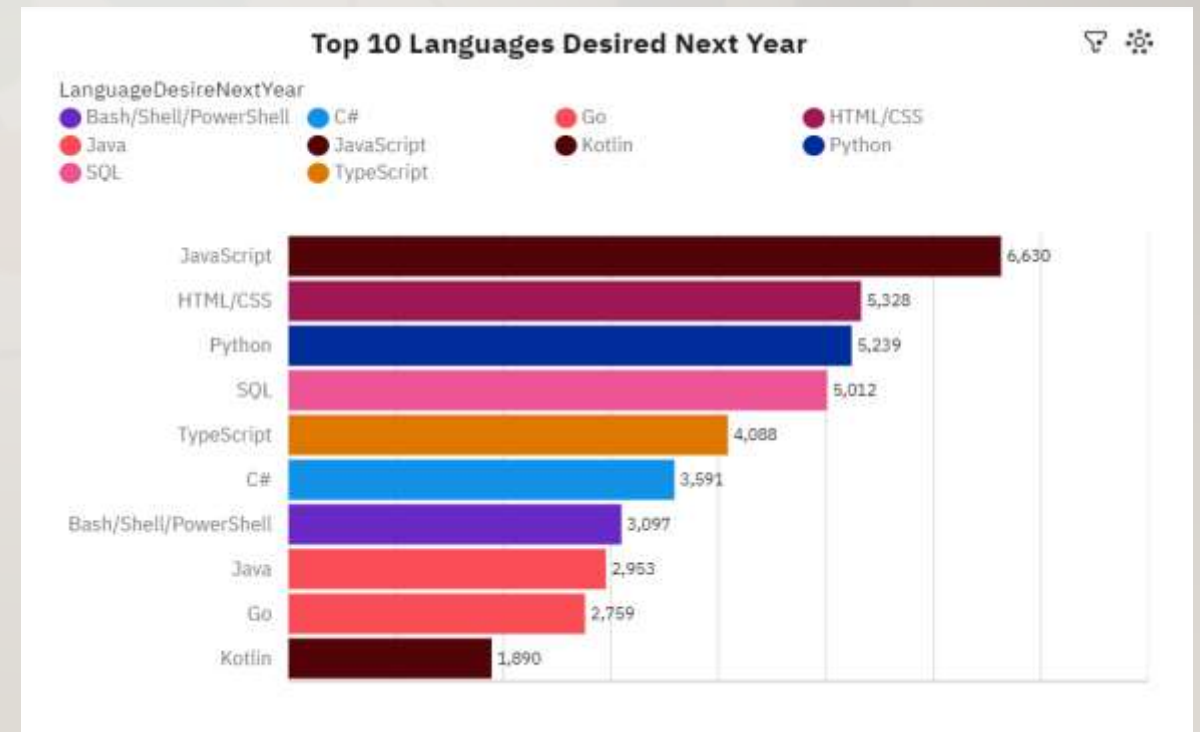


PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

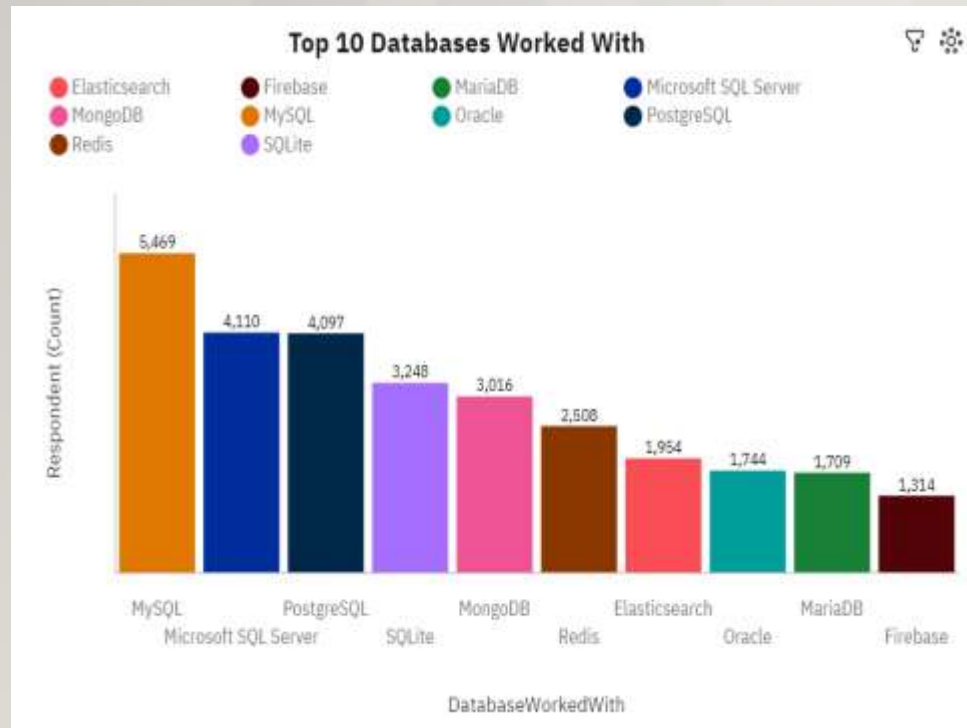
- Java script is the most used and desired language
- Python and Typescript will be used by more users next year
- C++ and PHP is no longer in the top 10 languages next year
- Go and Kotlin will be used by many next year

Implications

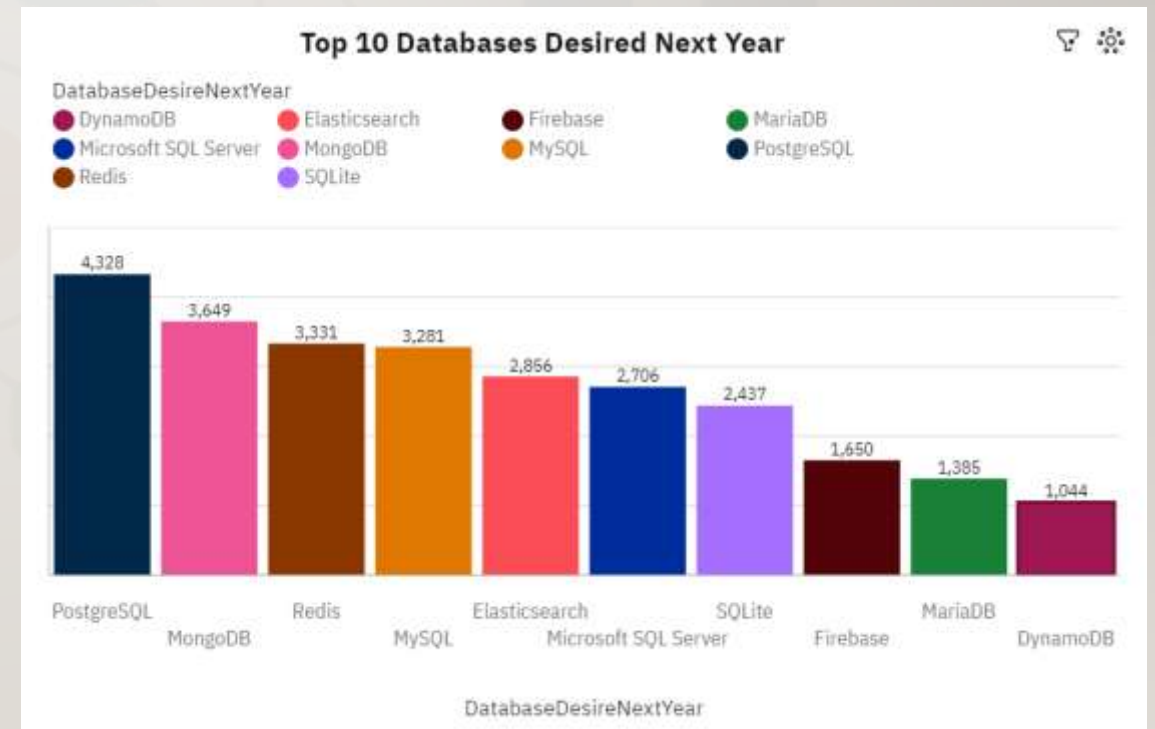
- Java Script will be in demand followed by Python

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- MySQL is the most used database.
- Less users prefer Microsoft SQL Server and SQLite.
- Increasing user base in PostgreSQL and MongoDB.

Implications

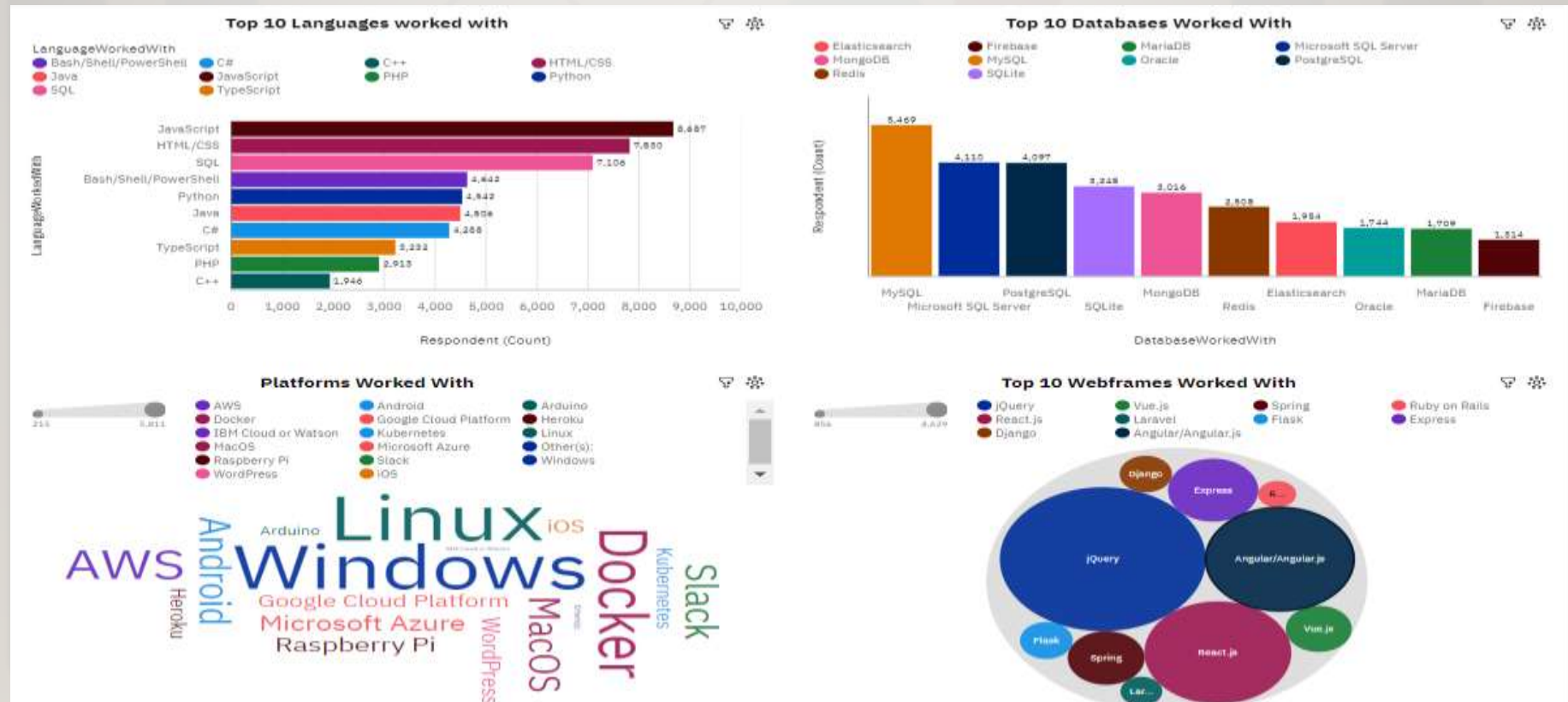
- PostgreSQL and MongoDB will be in demand in the future
- Microsoft SQL Server and Oracle will be less preferred
- Redis and Elastic search has a growing market

DASHBOARD

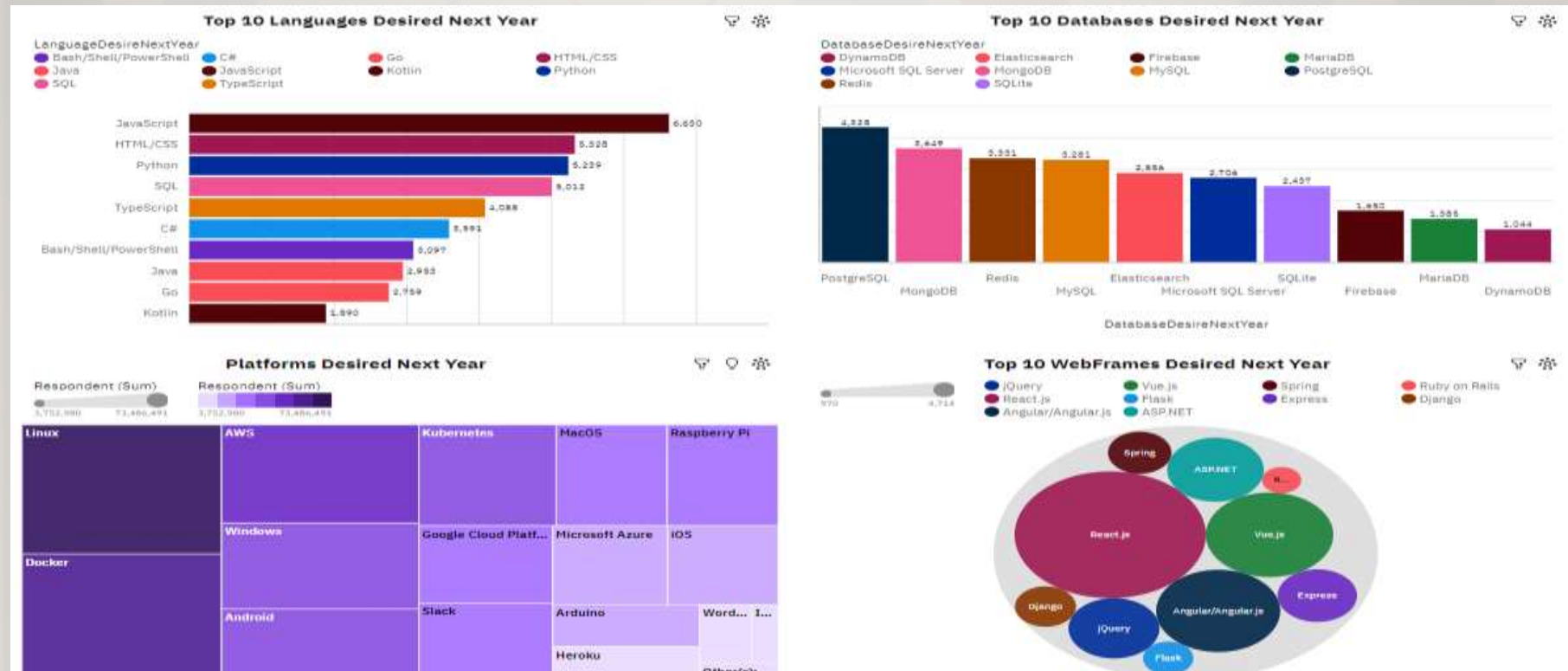


https://github.com/deepthisud/IBM_Capstone_Project/blob/main/_%20IBM_capstone_project_dashboard.pdf

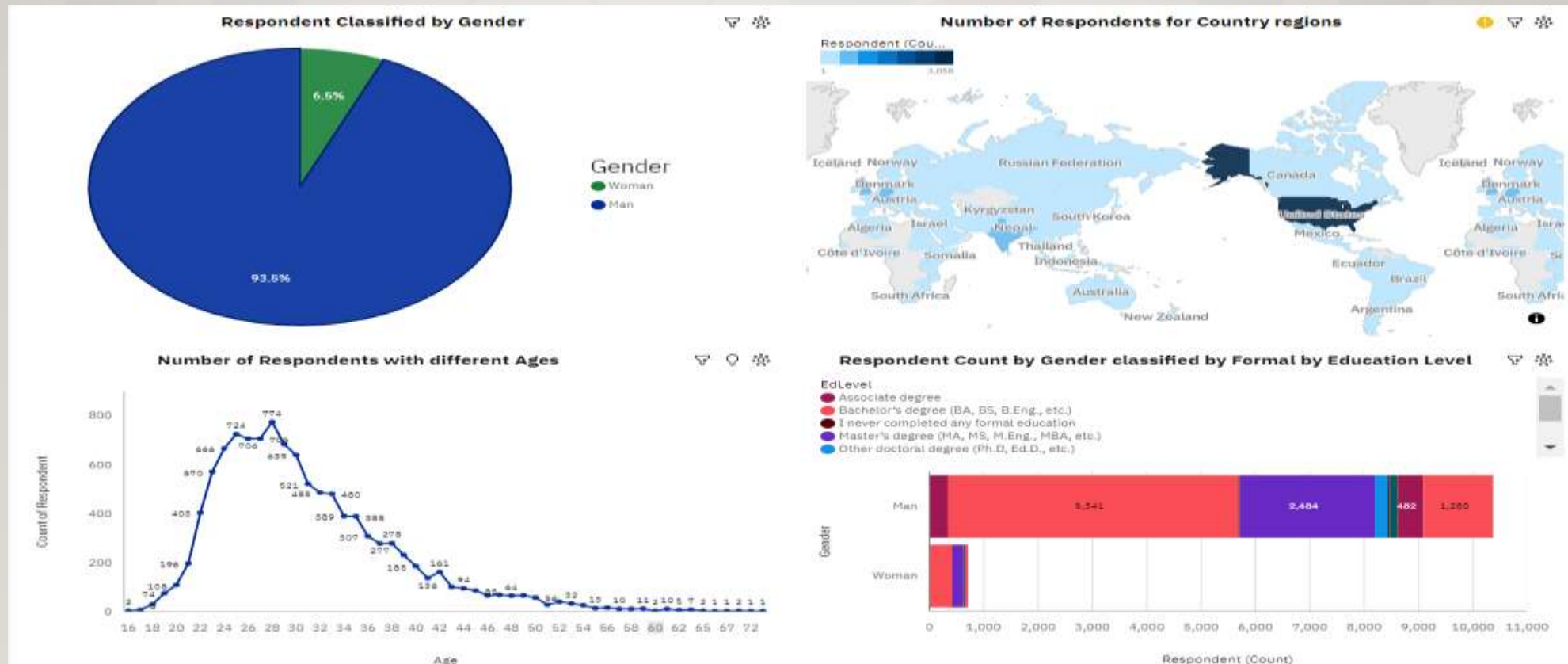
DASHBOARD TAB I



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION



- How to upskill the Tech Sector?
- How to close gender gaps in technology?
- Is a Bachelor's Degree the basic education requirement?
- Given the dynamic nature of the technology industry, how can developers ensure their skills remain relevant and in demand?

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript is widely used and Python getting popular.
- PostgreSQL will be the future database
- Docker and React JS will be popular among developers in the future
- Over 90% of young male developers.
- Developers at least have a Bachelor's degree.
- Developed countries have more respondents

Implications

- Web development will be always in demand
- Less developed countries need more access to technologies
- Java Script, PostgreSQL are more sought-after
- Smaller Women representation in the survey indicates the need to bring more women into technology

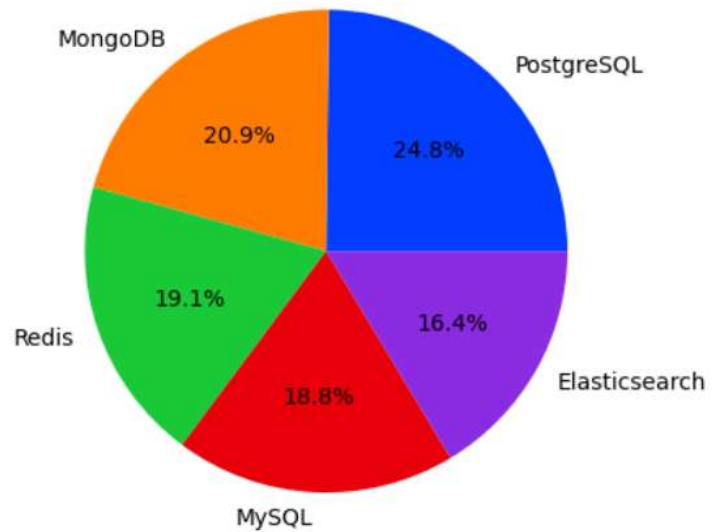
CONCLUSION



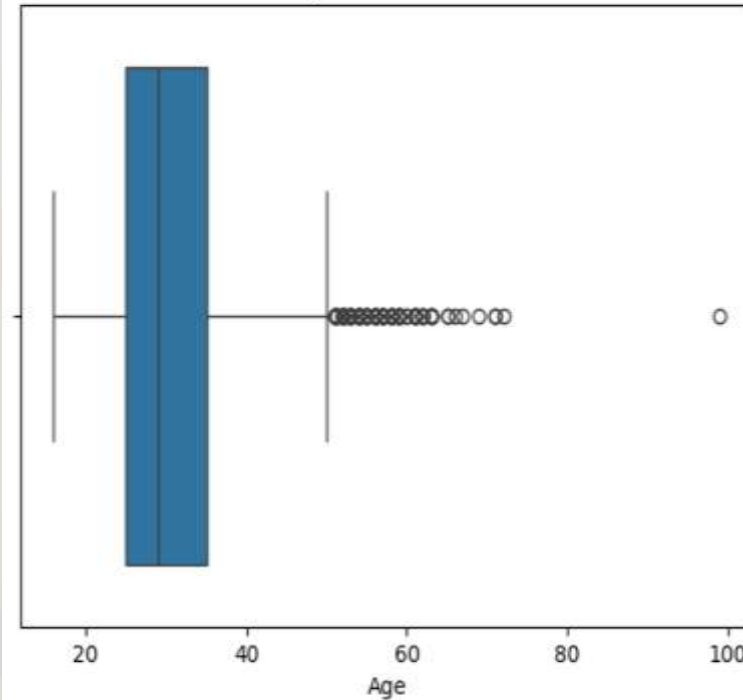
- The changing trend in technology which makes it challenging for developers to stay updated
- Addressing the gender gap in technology plays a crucial role in future industry growth.
- Less developed countries require greater access to technology to bridge the gap and enable their participation in the digital economy.

APPENDIX

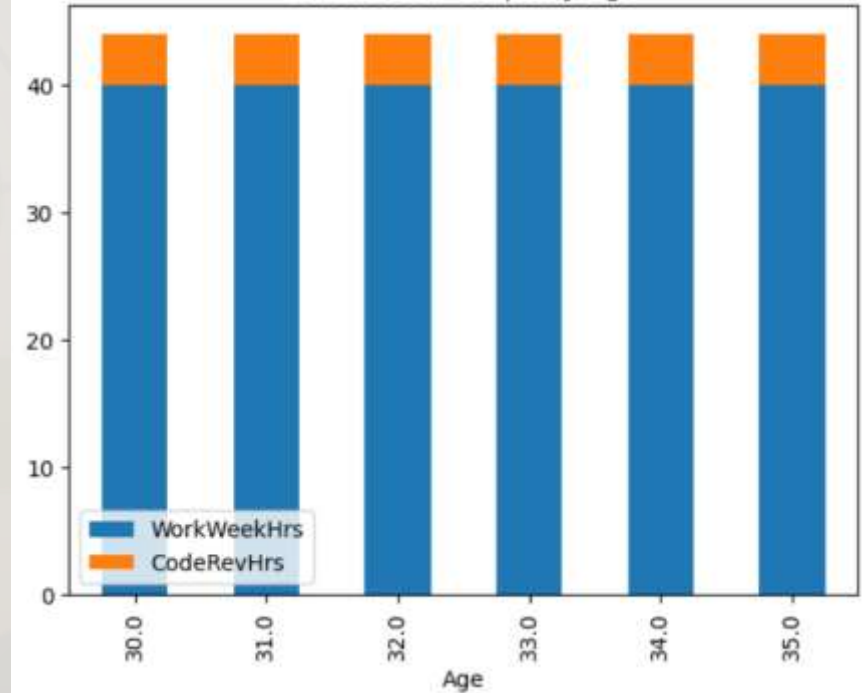
Top 5 Databases for Next Year



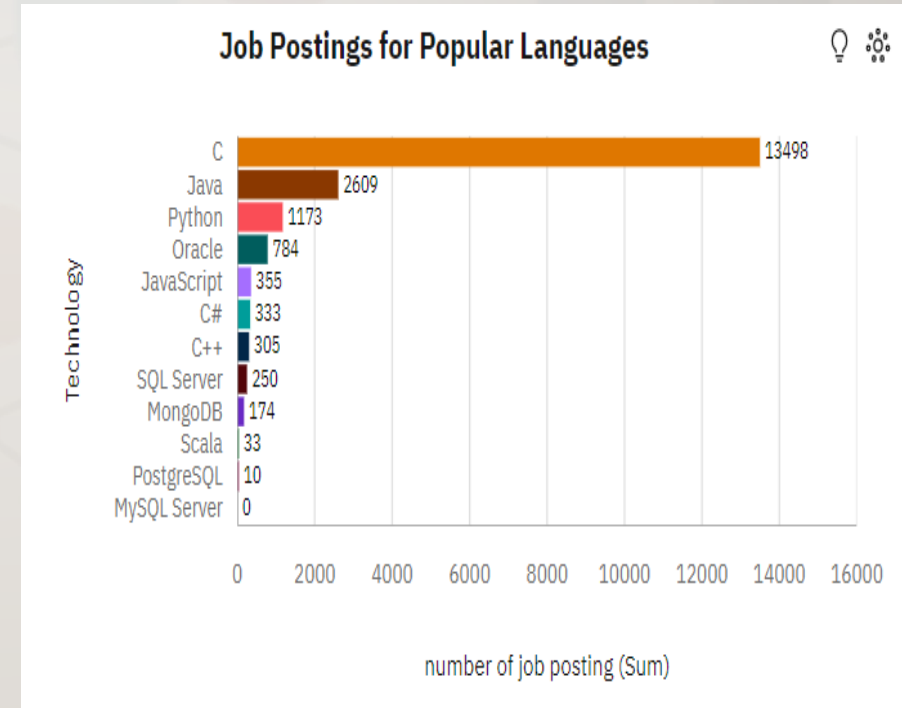
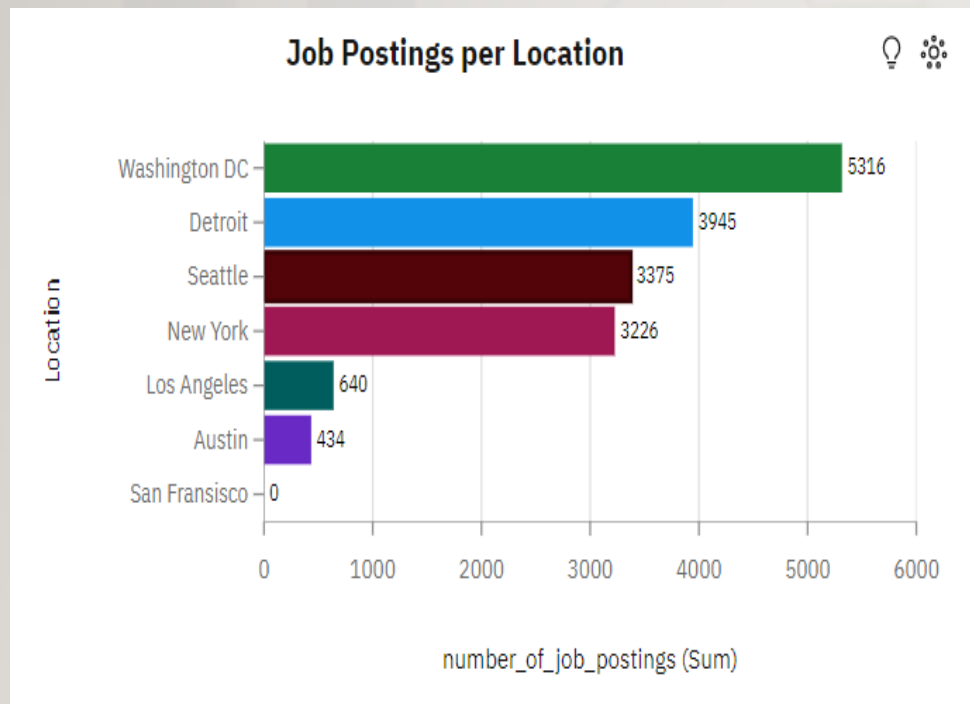
Age Distribution



Stacked Bar Graph by Age



JOB POSTINGS



POPULAR LANGUAGES

