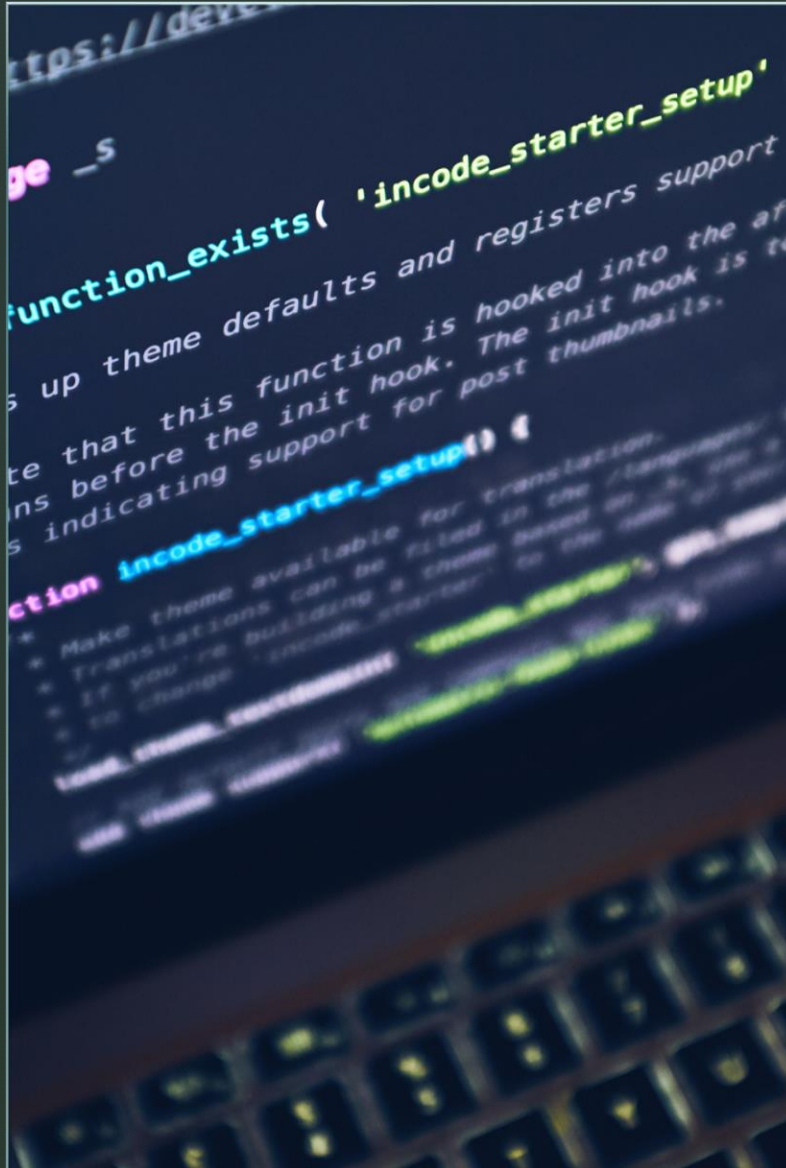


# Trends in Data Analysis Of Today's Technology

By Jayasree Krishna Prasad



# Outline

- Executive Summary
- Introduction
- Procedure
- Insights by Data Visualization Using Charts and Dashboards
- Conclusion
- Appendix

## Executive Summary: Insights from data analysis of current and future technology survey

1. Data Collection: Web scraping websites and accessing APIs to collect data in various formats.
2. Data Wrangling and Exploratory data analysis.
3. Data Visualization with charts and dashboards
4. Studying inferences from trends by comparing results
5. Extracting meaningful insights
6. Conclusion of the research project







# Introduction

- The data set used in this project is a subset of the original data set of Stack Overflow's survey on nearly 90000 software professionals
- The purpose of the survey was to help predict future software trends based on current use and the developers' desire to learn of newer technologies

# Methodology

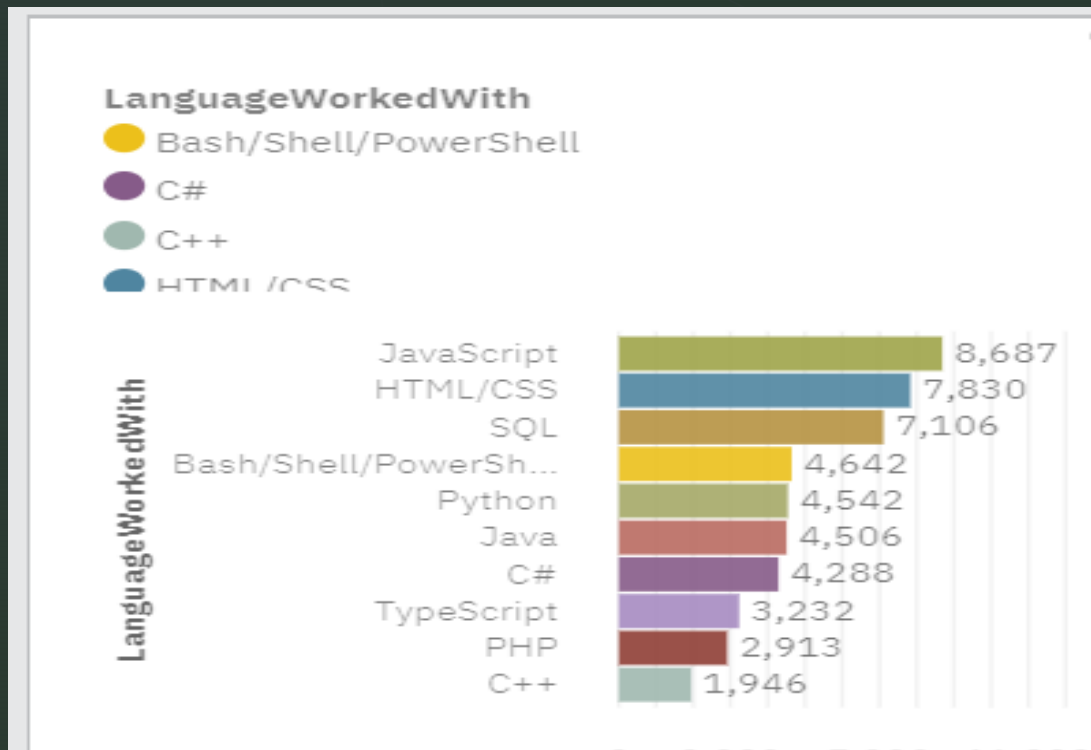
1. Data Collection: Web Scraping, REST APIs and Request library
2. Data Wrangling: Identify and remove duplicate and missing values, impute missing values, normalize data
3. Data Exploration: Analyzing data distribution, handling outliers, finding correlations, and visualize data distribution and composition
4. Data Visualization: Visualize relationship between two features, distribution, composition and comparison
5. Building Dashboards with Cognos Analytics
6. Making inferences and arriving at meaningful insights

# RESULTS

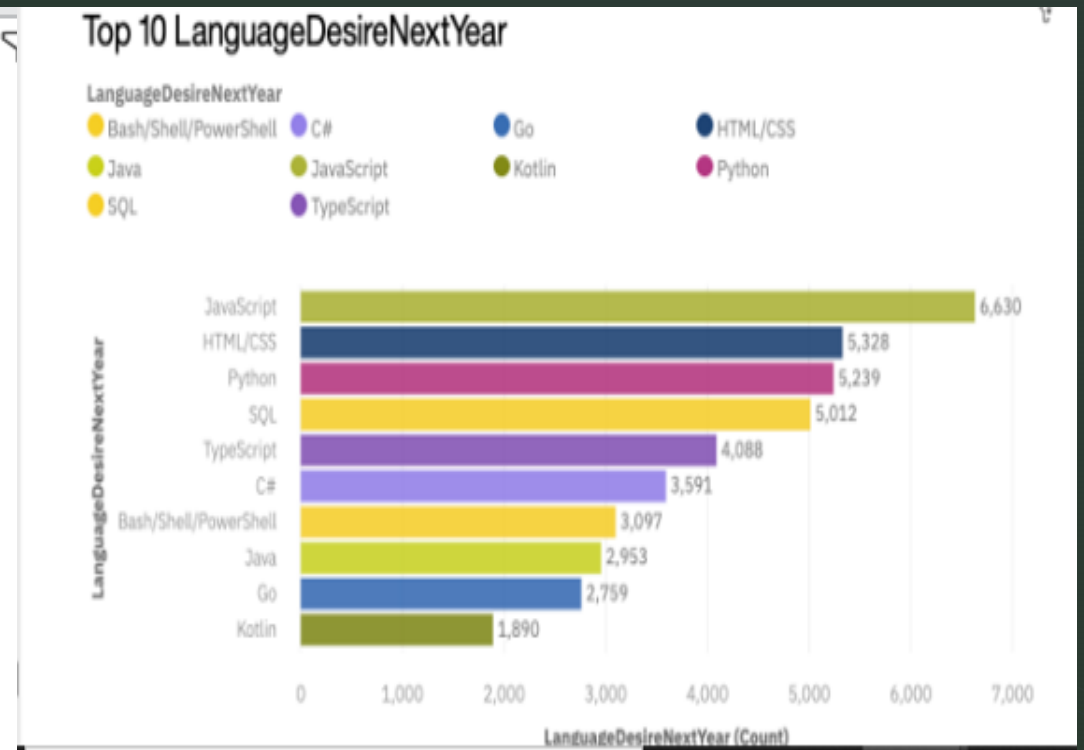


# Trends in Programming Languages

## Current Programming Languages



## Next Year's Programming Languages



# Programming Language Trends and Inferences

## Findings

- JavaScript is the most preferred language, followed by HTML/CSS both the current year and next year
- Python is fast gaining ground, rising from the fifth rank to third rank

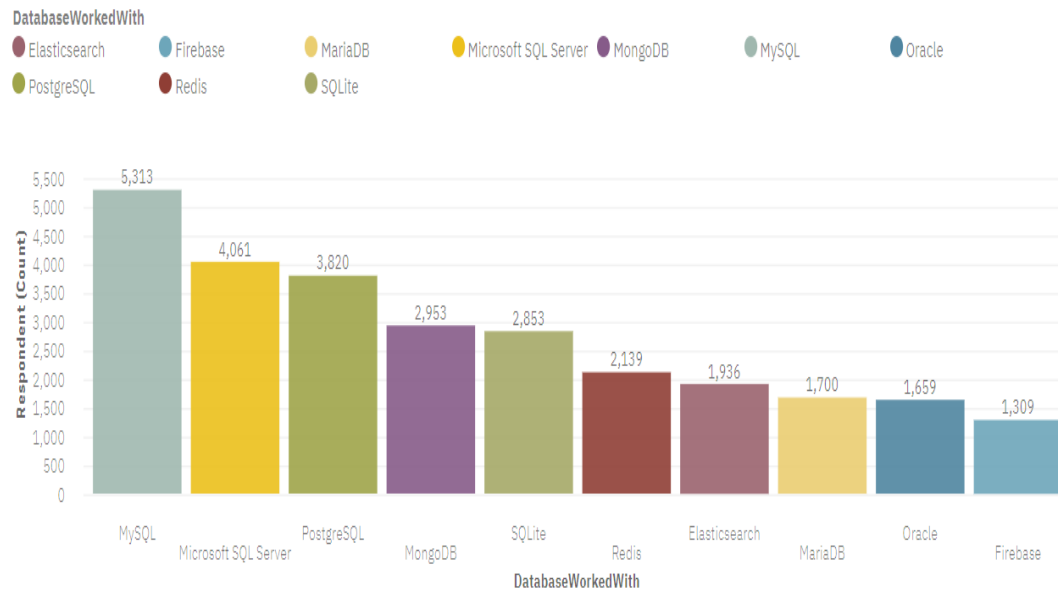
## Implications

- The preference to Type Script has increased almost 50% while JavaScript has fallen about 25%.
- Type Script might become the most preferred language for developers soon

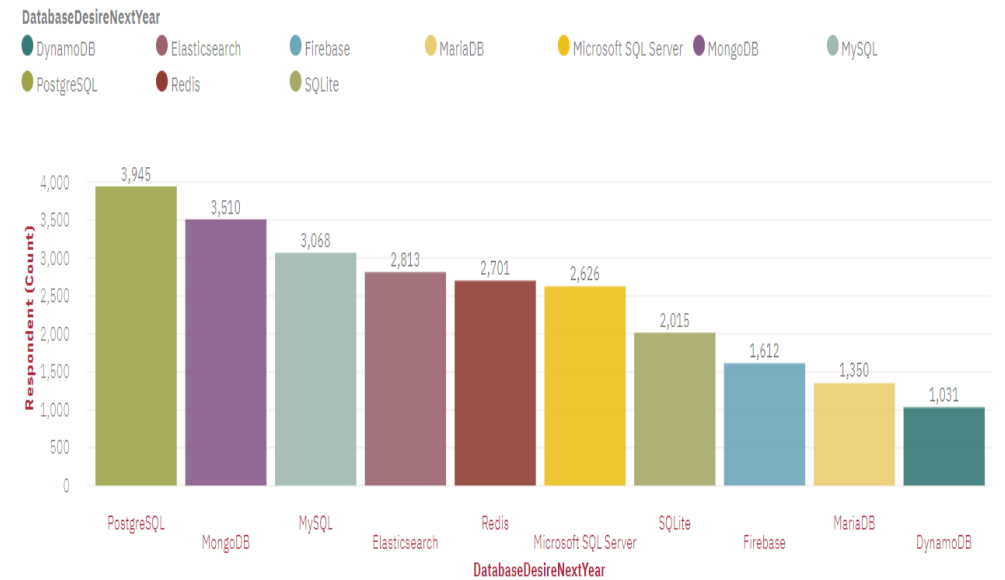


# Database Trends

## Current Databases



## Next Year's Databases



# Database Trends and Inferences

## Finding

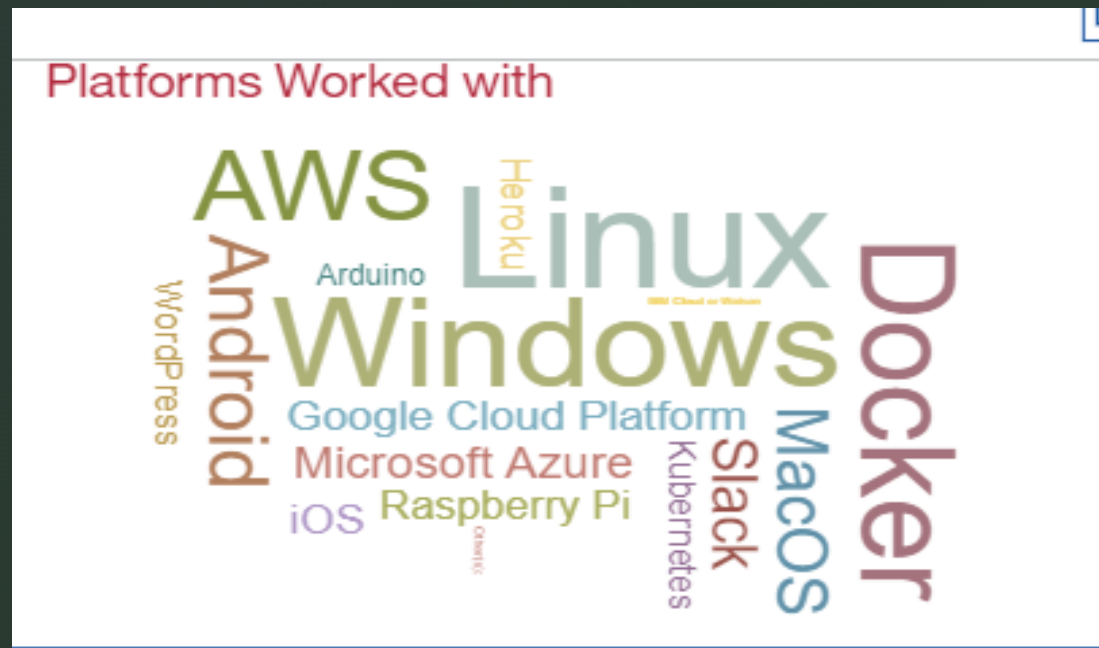
- MySQL was the leader for the current year, followed closely by Microsoft SQL server
- For the coming year, the most preferred choice is PostgreSQL and MongoDB

## Implications

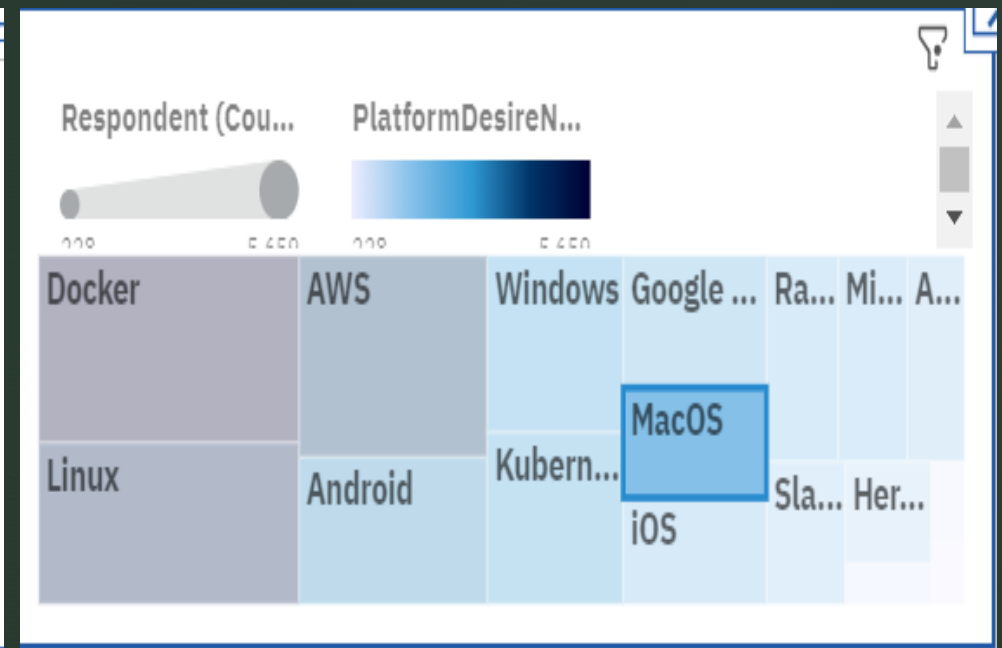
- The popularity of MySQL and Microsoft SQL server has fallen considerably and the most sought out databases are PostgreSQL and MongoDB

# Trends in Platforms

## Current Platforms



## Next Year's Platforms



# Platform Trends and Inferences

## Findings

- The most sought out platforms are Linux, Docker and Windows for the current year
- For the next year, although Linux and Docker have maintained their lead, the popularity of Windows has decreased

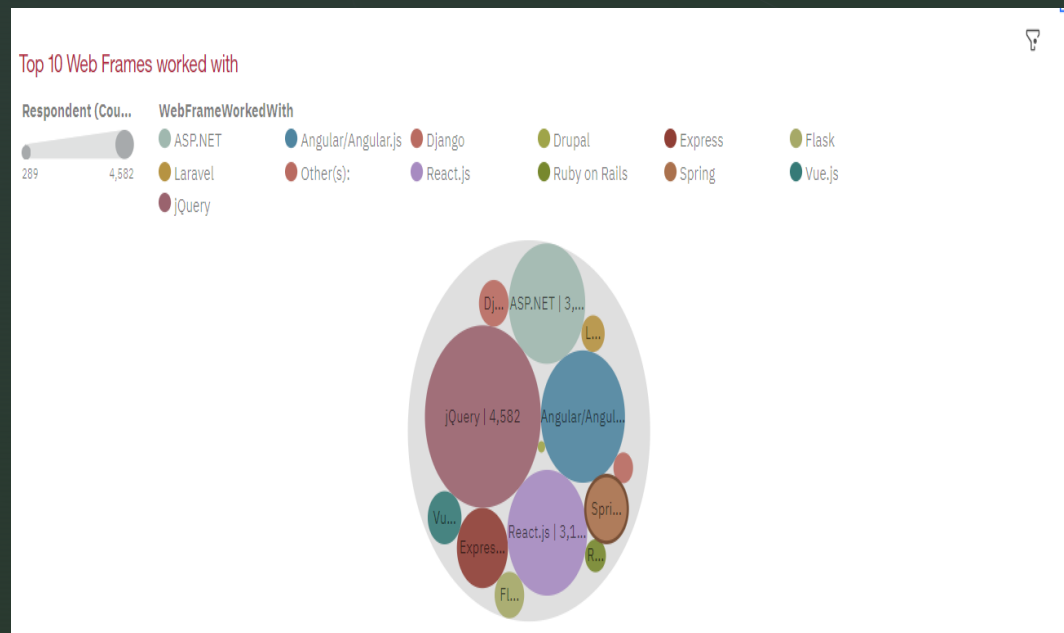
## Implications

- AWS and Android are rapidly gaining ground for the coming year overtaking the position of Windows

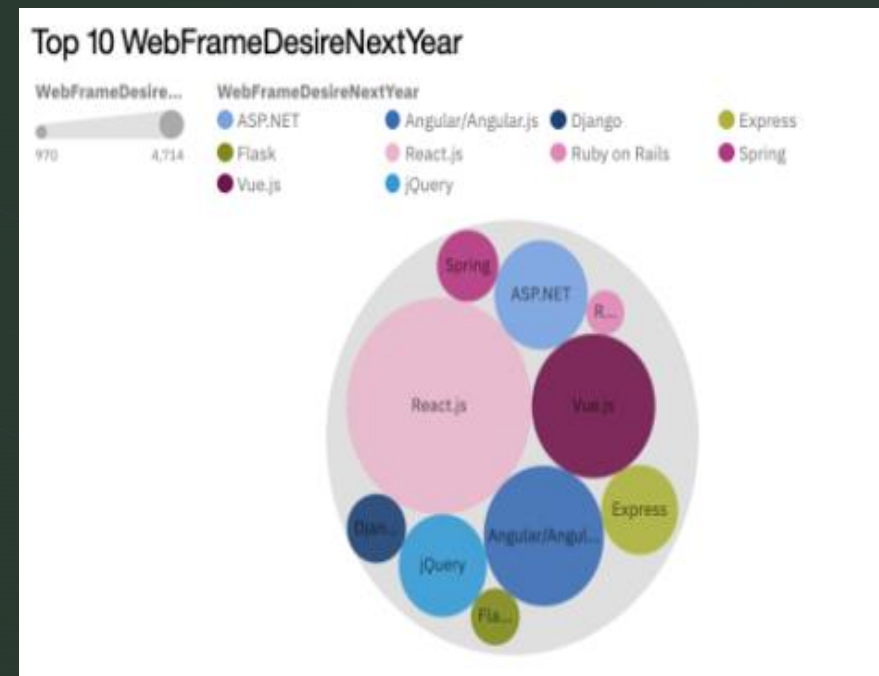


# Trends in Web frames

## Current Web Frames



## Next Year's Web Frames



# Web Frame Trends and Inferences

## Findings

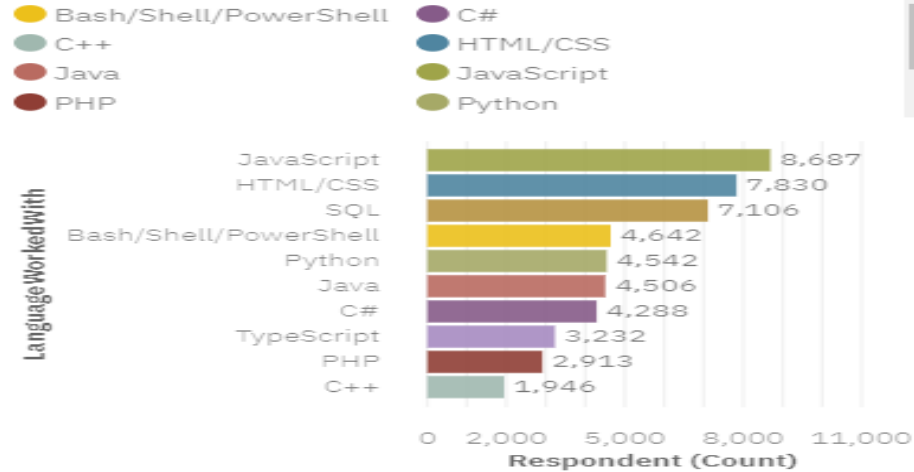
- jQuery, React js, ASP.NET and Angular js have almost maintained their popularity in the current year.
- For the coming year, Reactjs is the most popular

## Implications

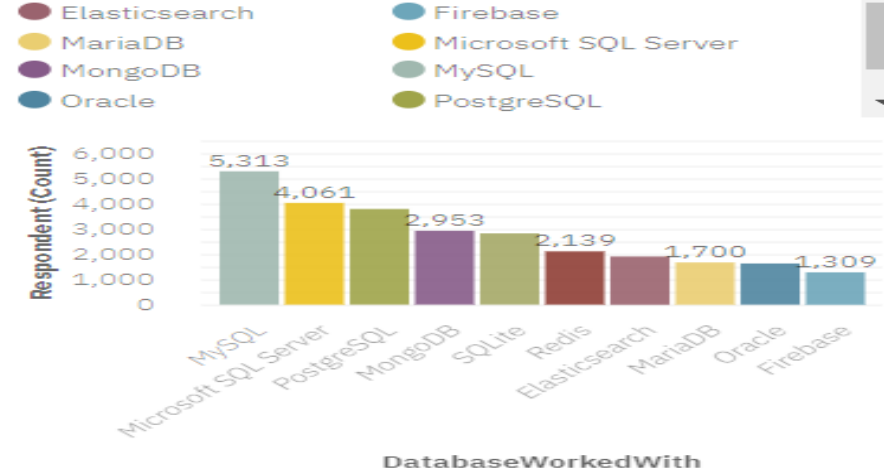
- The preference to Reactjs almost doubled while Angular js maintained its lead.
- Vue js is a rapidly-growing Web Frame compared to the previous year

# Current Technology Usage

LanguageWorkedWith



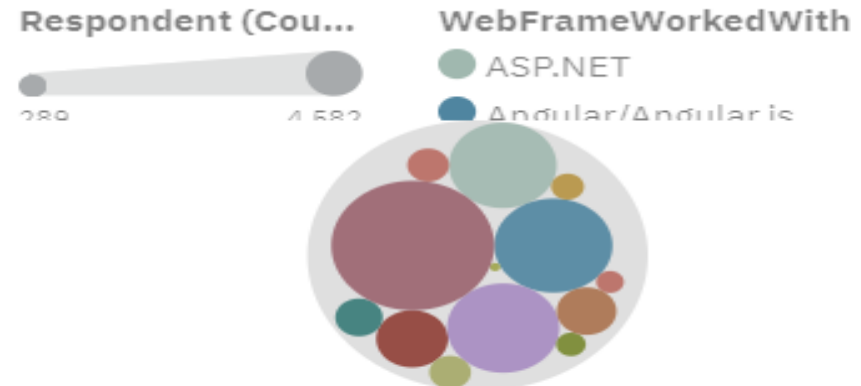
DatabaseWorkedWith



Platforms Worked with



Top 10 Web Frames worked with

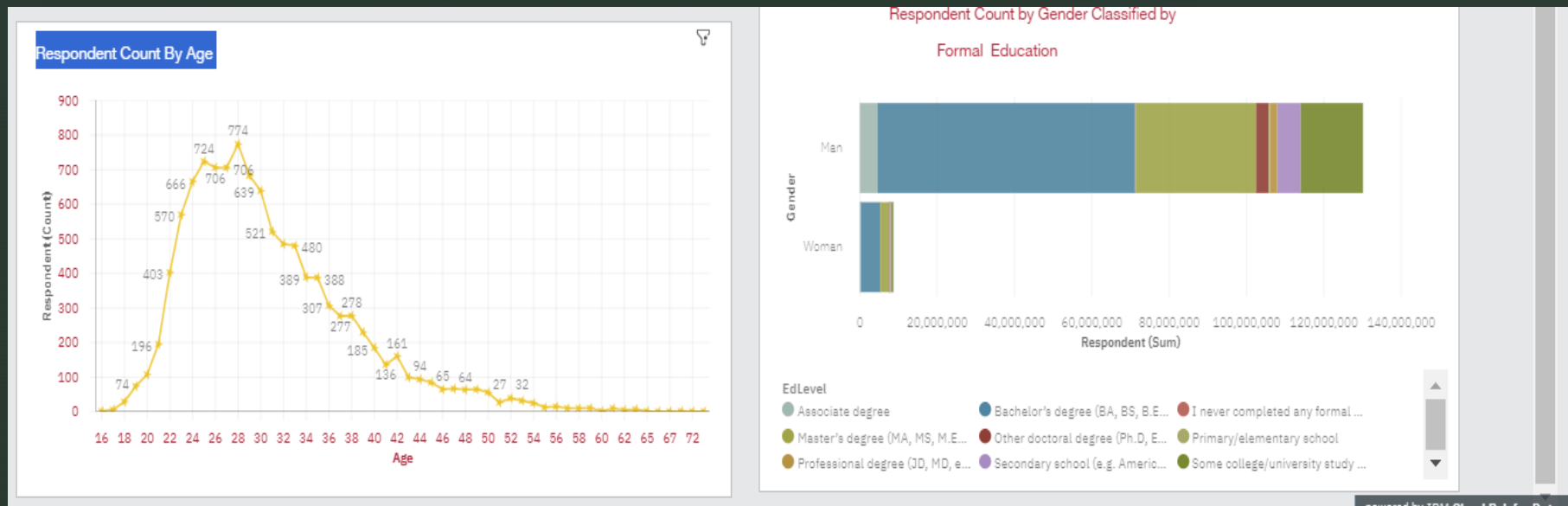
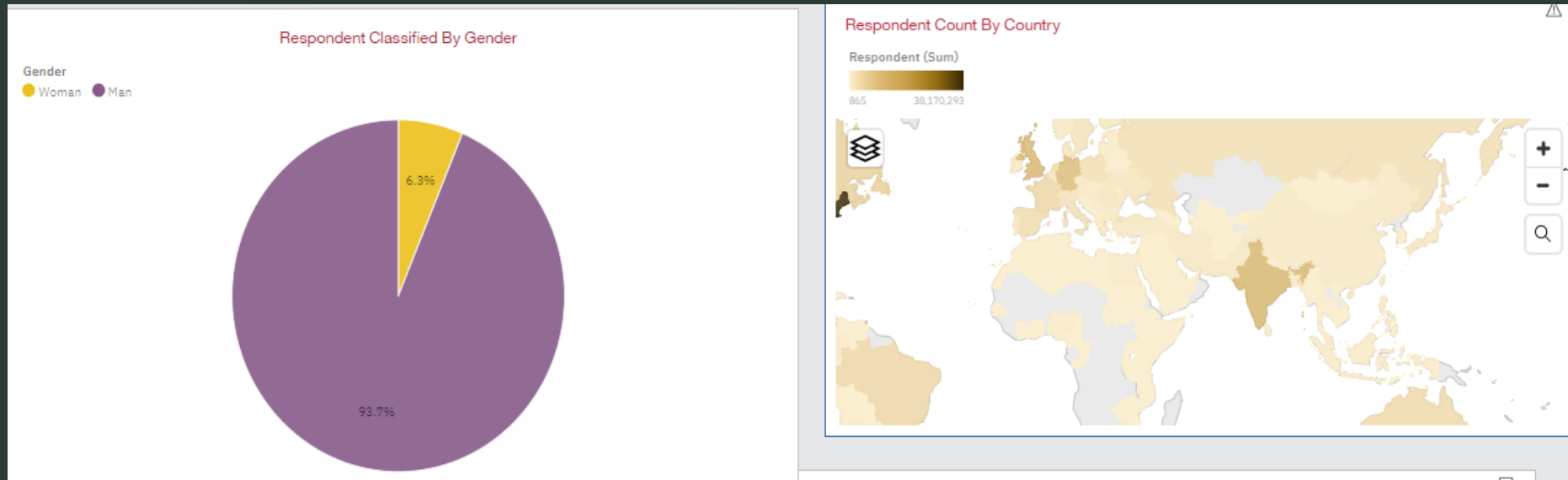


# Future Technology Trends





# Demographics





# Demographic Trends

## Findings

- Above 90% of developers are male, with only around 6% female developers
- Majority of developers are ages 25 to 30

## Implications

- Most developers only hold an undergraduate degree

# Discussion

- JavaScript continues to be widely used while Typescript and Python are getting more and more popular
- PostgreSQL and MongoDB are quickly replacing Microsoft SQL server
- Android and AWS are getting increasingly sought over Windows and might soon overtake Linux and Docker.

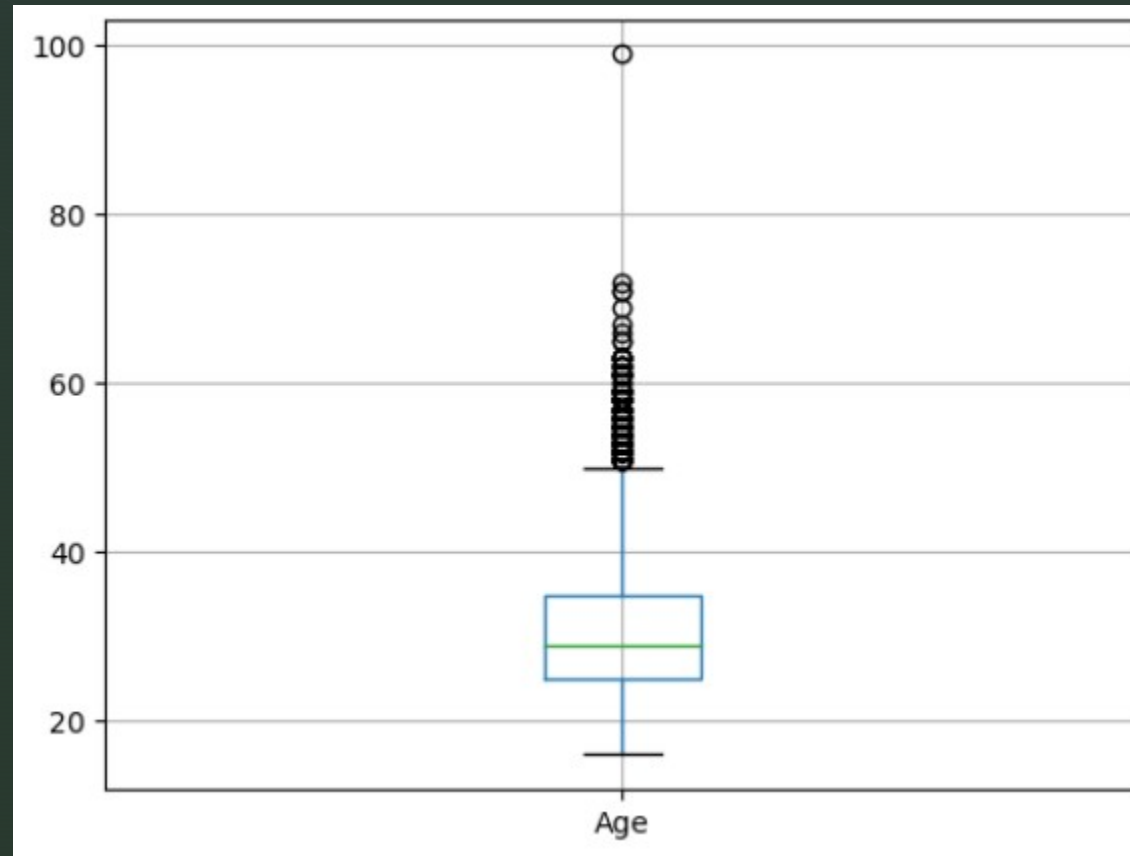
# Conclusion

- This survey has given us a good idea about the upcoming trends in technology
- The study of this emerging technology trends can help people to decide on the path to pursue to get good developer jobs and enrich themselves with appropriate skillsets
- More and more women need to be empowered and encouraged to pursue a profession in the software industry
- There is uneven distribution of developers across the globe. Therefore, awareness about changing and developing labour markets should be communicated to those regions.

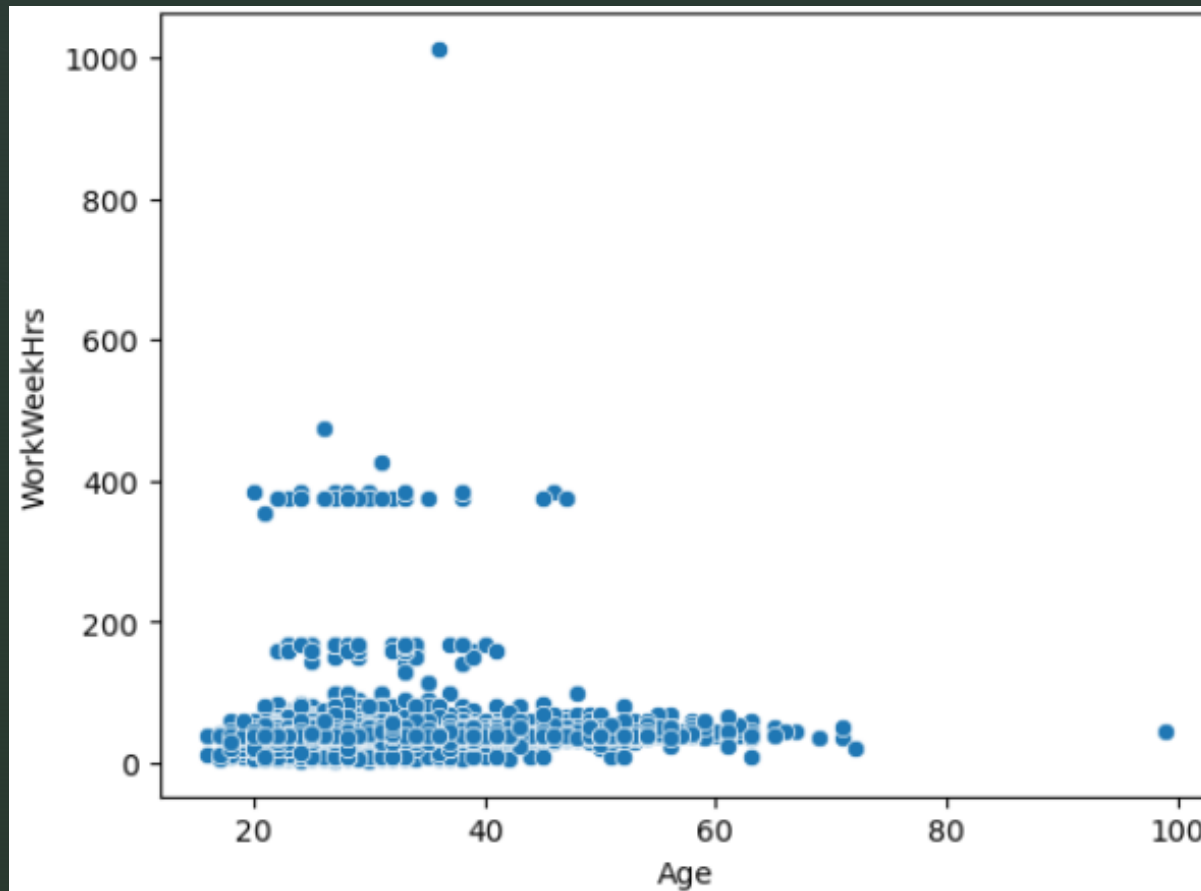


# Appendix

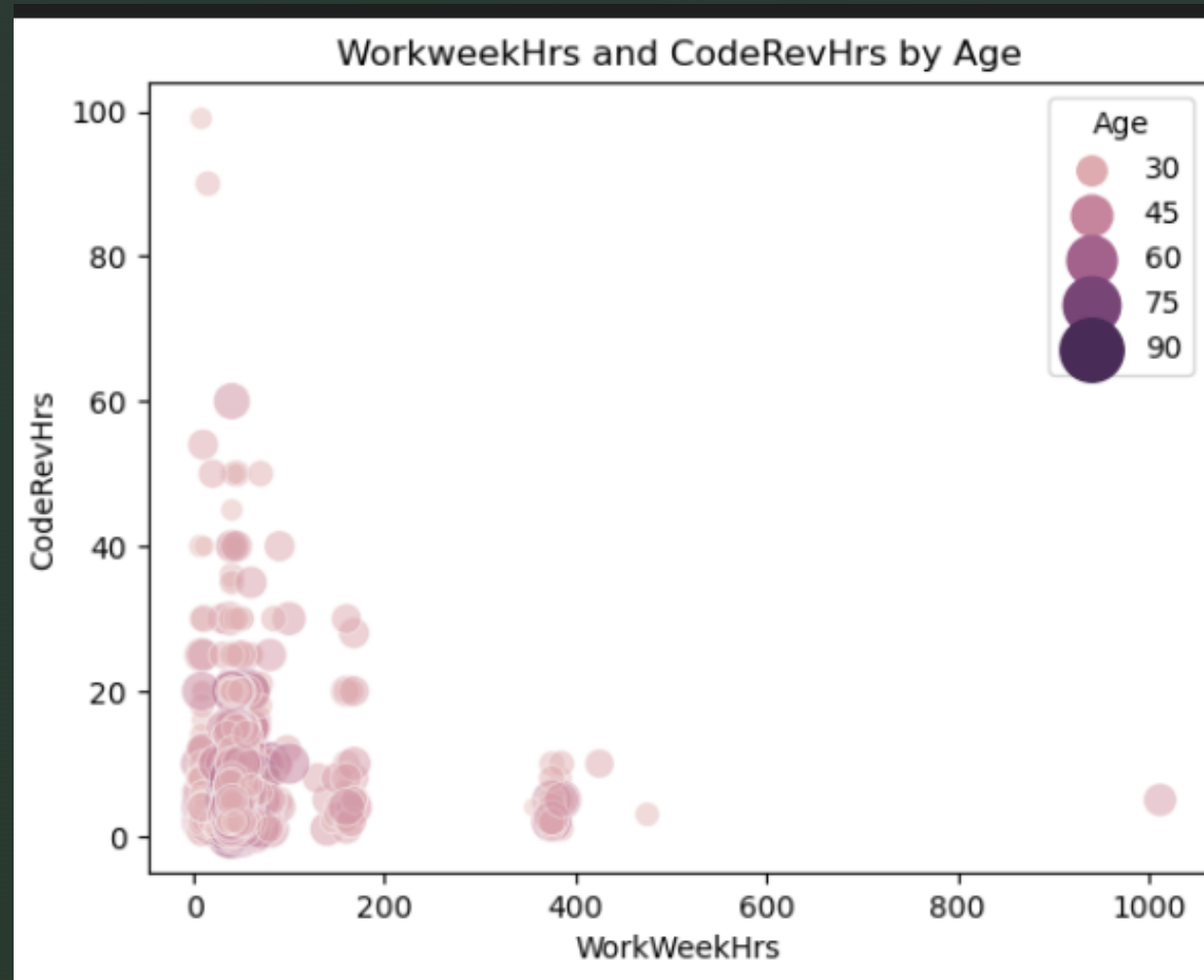
## Respondent Age Outliers



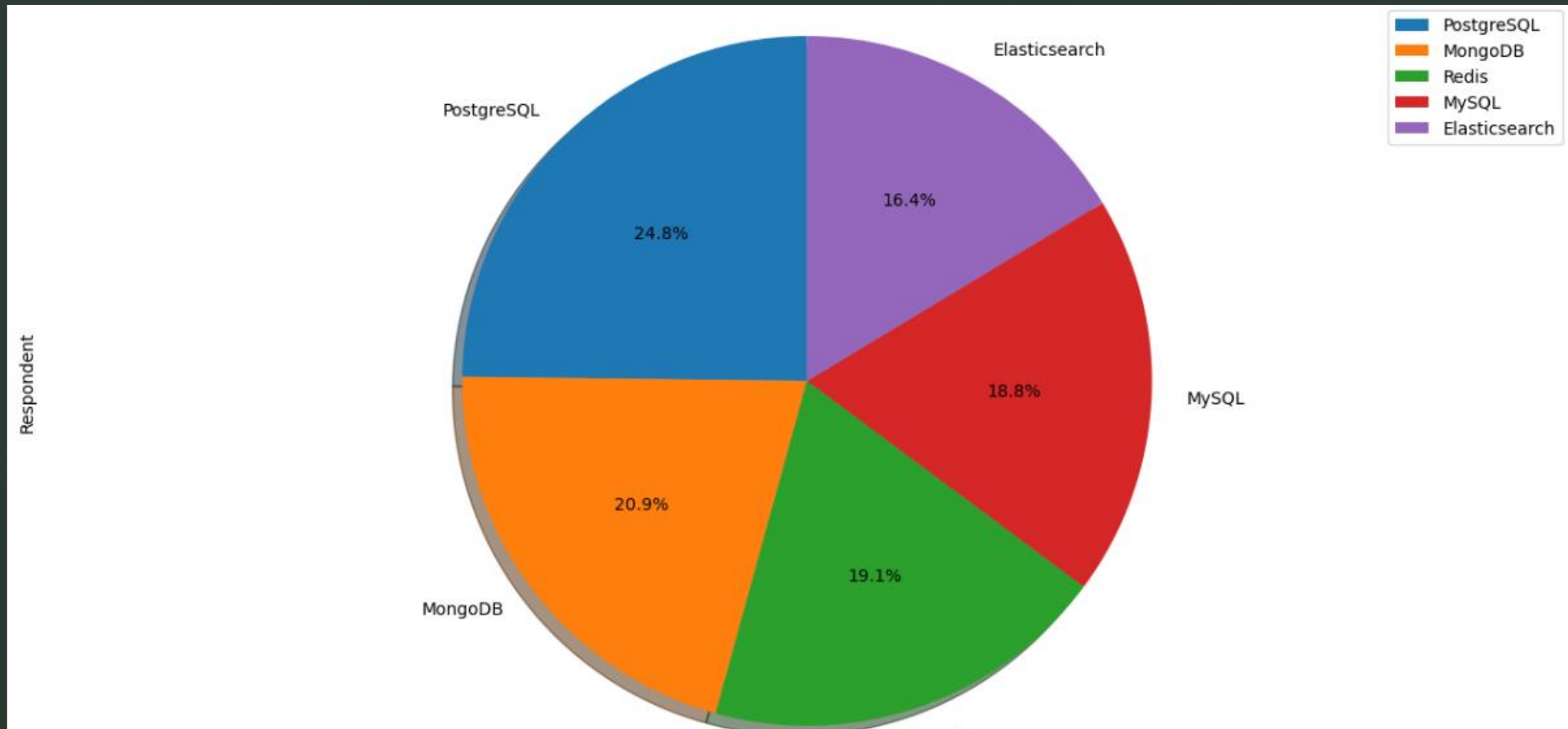
# Age versus Work week hours



## WorkweekHrs and CodeRevHrs by Age

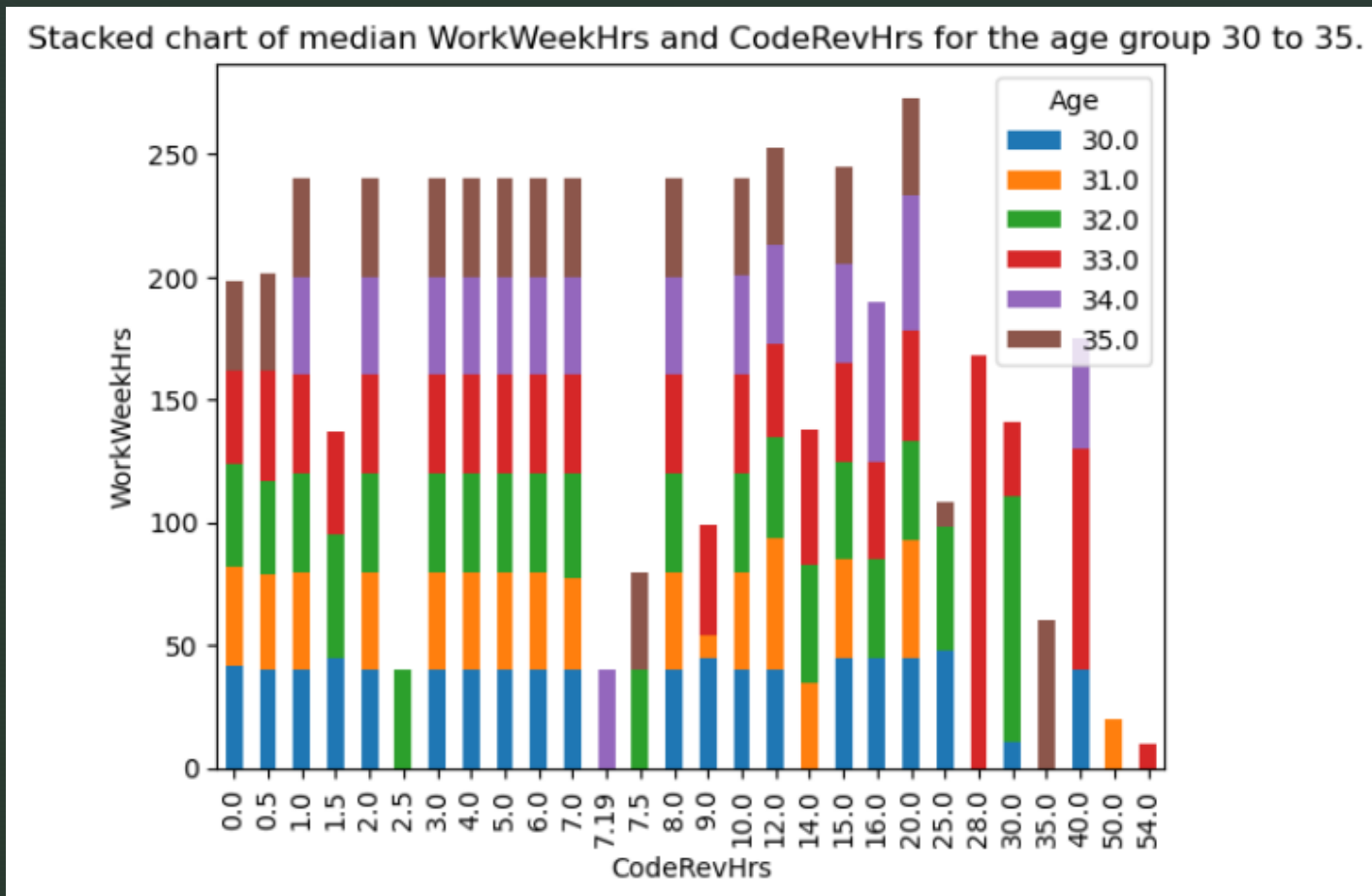


## Top 5 databases that respondents wish to learn

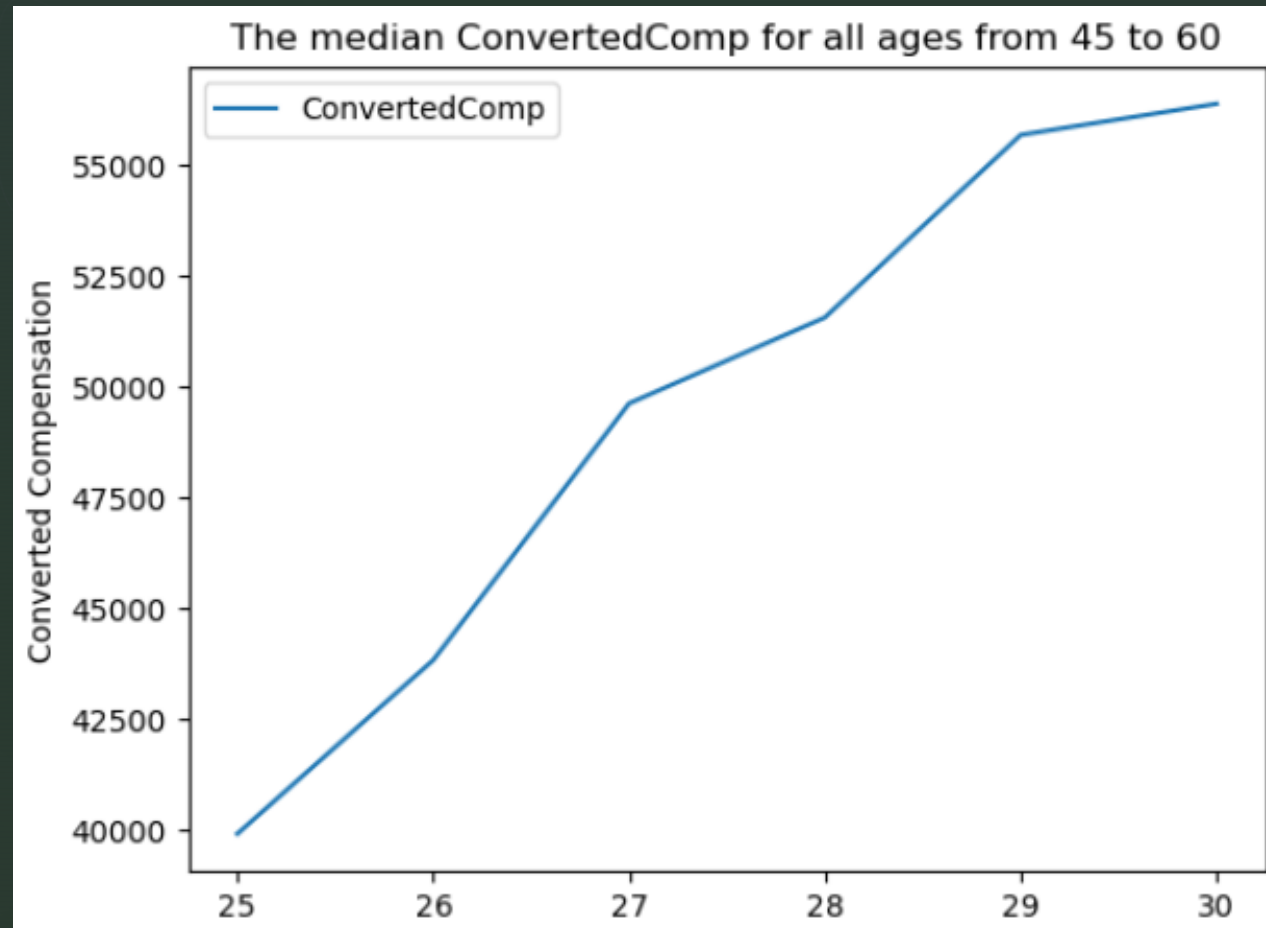




## Stacked chart of median WorkWeekHrs CodeRevHrs for the age group 30-35



■ The median Converted Compensation for ages 45 to 60



## URL for the Dashboard

<https://datapatform.cloud.ibm.com/dashboards/46ee36a7-7405-41ac-8009-50f117f3a737/view/6717eb3b38ea22ca6bc1c8e4079b24002c35200ce1bbd704828d7b490e347197a96e1297c8264b52dd170d63f7b9465acc>