



TECH TRENDS ANALYSIS

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OUTLINE



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- Methodology
- Results
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 - Dashboard
- Discussion
 - Findings & Implications
- Conclusion
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EXECUTIVE SUMMARY



- Data Collection, Cleaning & Visualization
- Top 10 Tech Currently Used and Future Trends
 - Languages
 - Databases
 - Platforms
 - Web Frames
- Demographics of Respondents
- Result Presentation in IBM Cognos Analytics

INTRODUCTION



- Gathering Stack Overflow's Annual Developer Survey Data.
- Cleaning, Analyzing and Visualizing the Data with Python.
- Analyzing Technology Trends in Languages and Databases among Developers around the World.
- Presenting Results via Dashboards
 - Top 10 Languages
 - Top 10 Databases
 - Platforms and Web Frames
 - Demographics of Respondents with various parameters

METHODOLOGY



- Gathering & Exploring the Data Set
- Data Wrangling
 - Removing Duplicates
 - Imputing Missing Values
 - Normalizing Values
- Data Exploration
 - Distribution of Data
 - Finding Outliers
 - Finding Correlation
- Data Visualization
 - Using Matplotlib & Seaborn libraries
 - Various Charts of Relationships & Compositions
- Dashboards
 - Top Tech Trends via Charts in Cognos Analytics
 - Demographics of Respondents

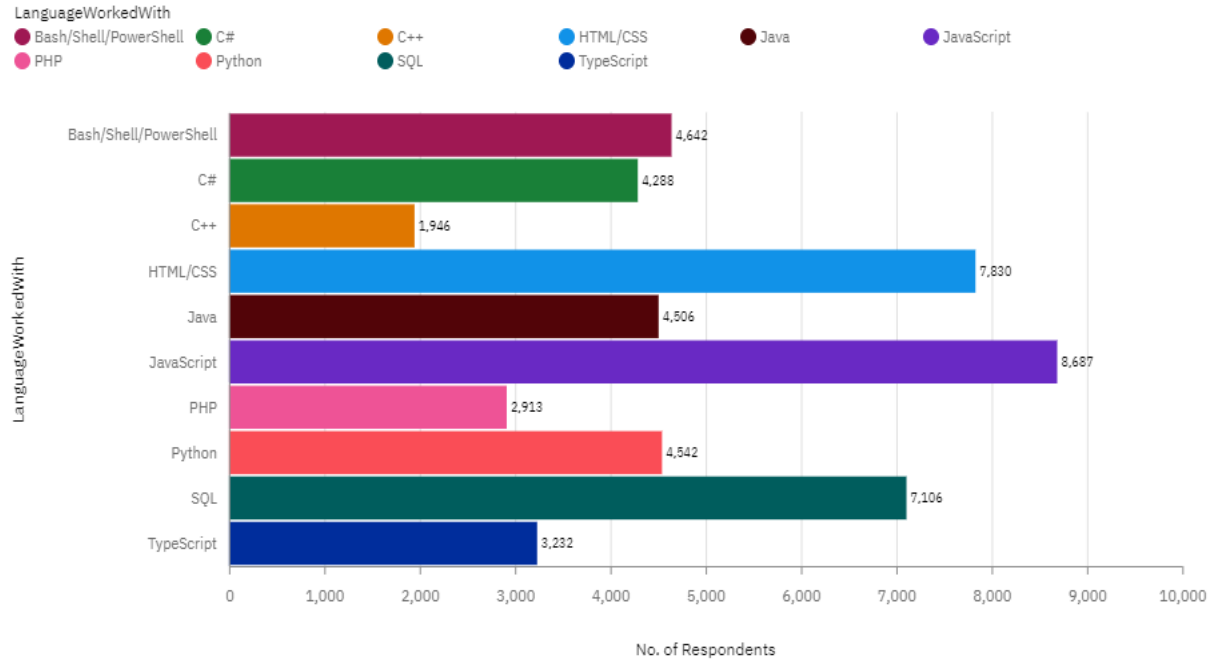
RESULTS

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PROGRAMMING LANGUAGE TRENDS

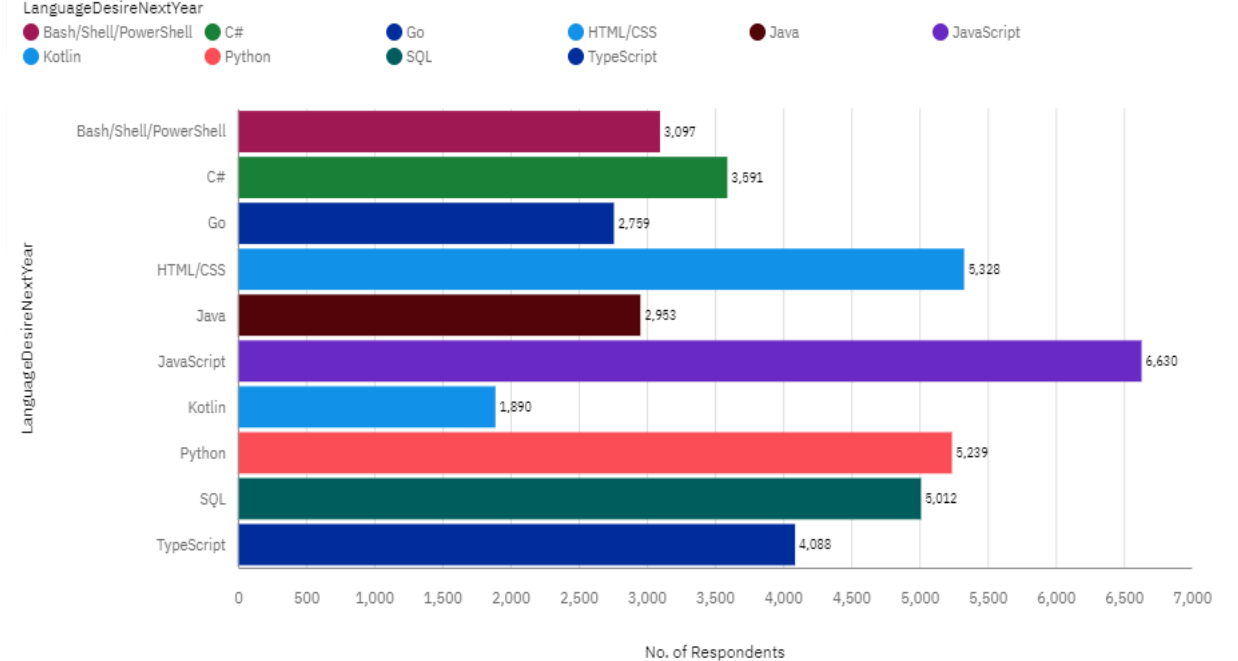
Current Year

Top 10 Languages Used by Employees



Next Year

Top 10 Languages Desired Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Javascript is the most popular language among the developers in the current year and next year also.
- HTML/CSS & SQL trends are similar in both present and future.
- Python & Typescript trends in Future is increasing.
- Kotlin and Go are appearing in Future trends
- PHP & C++ disappear in Future Trends.

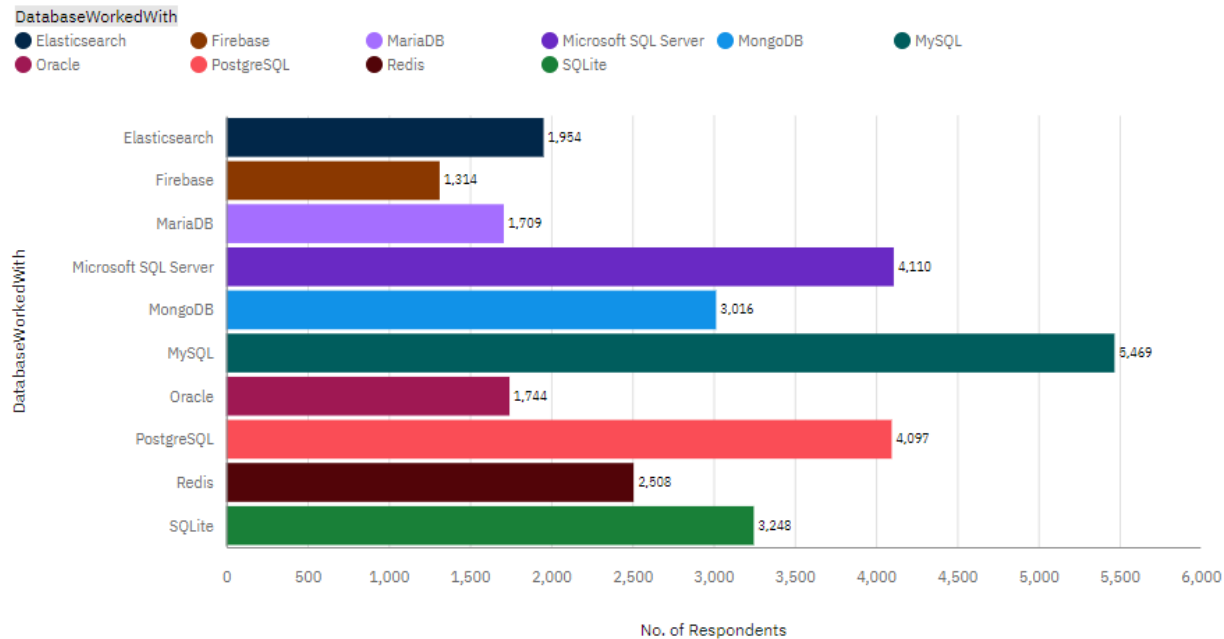
Implications

- Javascript language will always be in Highest demand among the developers.
- HTML/CSS & SQL will share the similar trends in Future also.
- Will see an Increase in demand for Python and Typescript.
- Kotlin and Go are emerging Technologies.
- PHP & C++ are declining Technologies.

DATABASE TRENDS

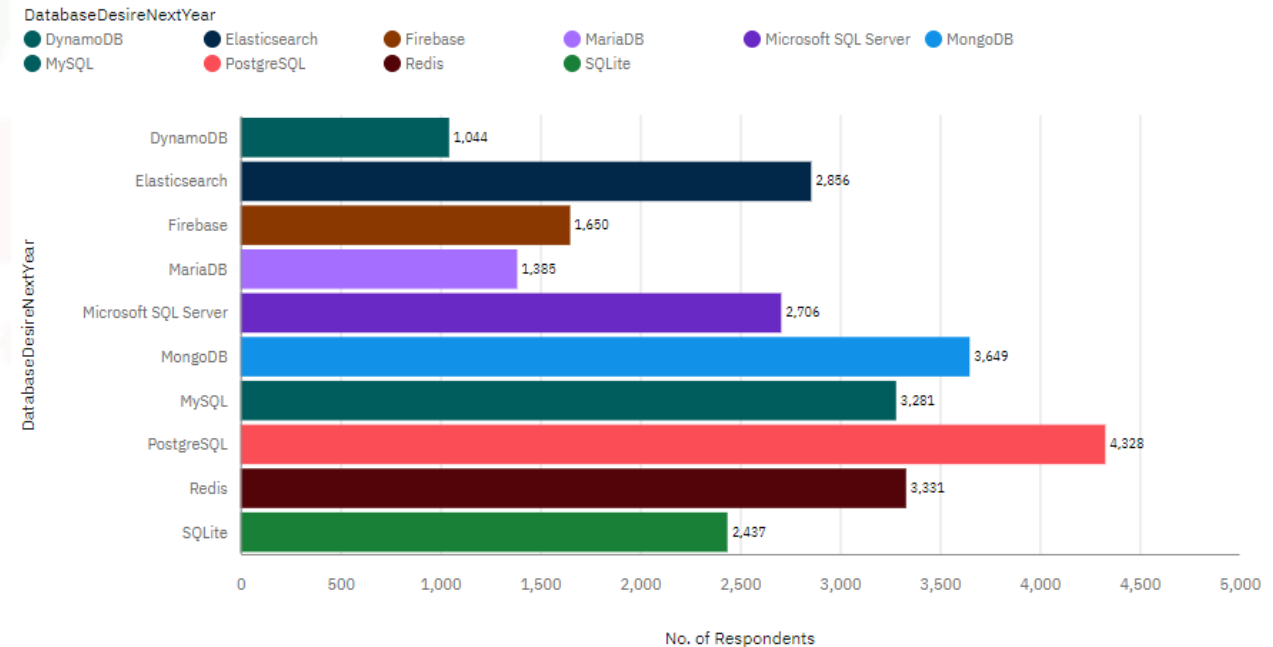
Current Year

Top 10 Databases Used by Employees



Next Year

Top 10 Databases Desired by Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL Server, MySQL & SQLite trends decrease in Future.
- PostgreSQL increases in Future becoming most popular database.
- DynamoDB appears & Oracle disappears in Future.
- Elastic Search, MongoDB and Redis increase in future.

Implications

- Significant decrease and less interest in Relational database.
- PostgreSQL will remain as an Emerging technology.
- Significant Increase and more interest in Non relational database.
- Oracle will be a declining database to work with.

DASHBOARD



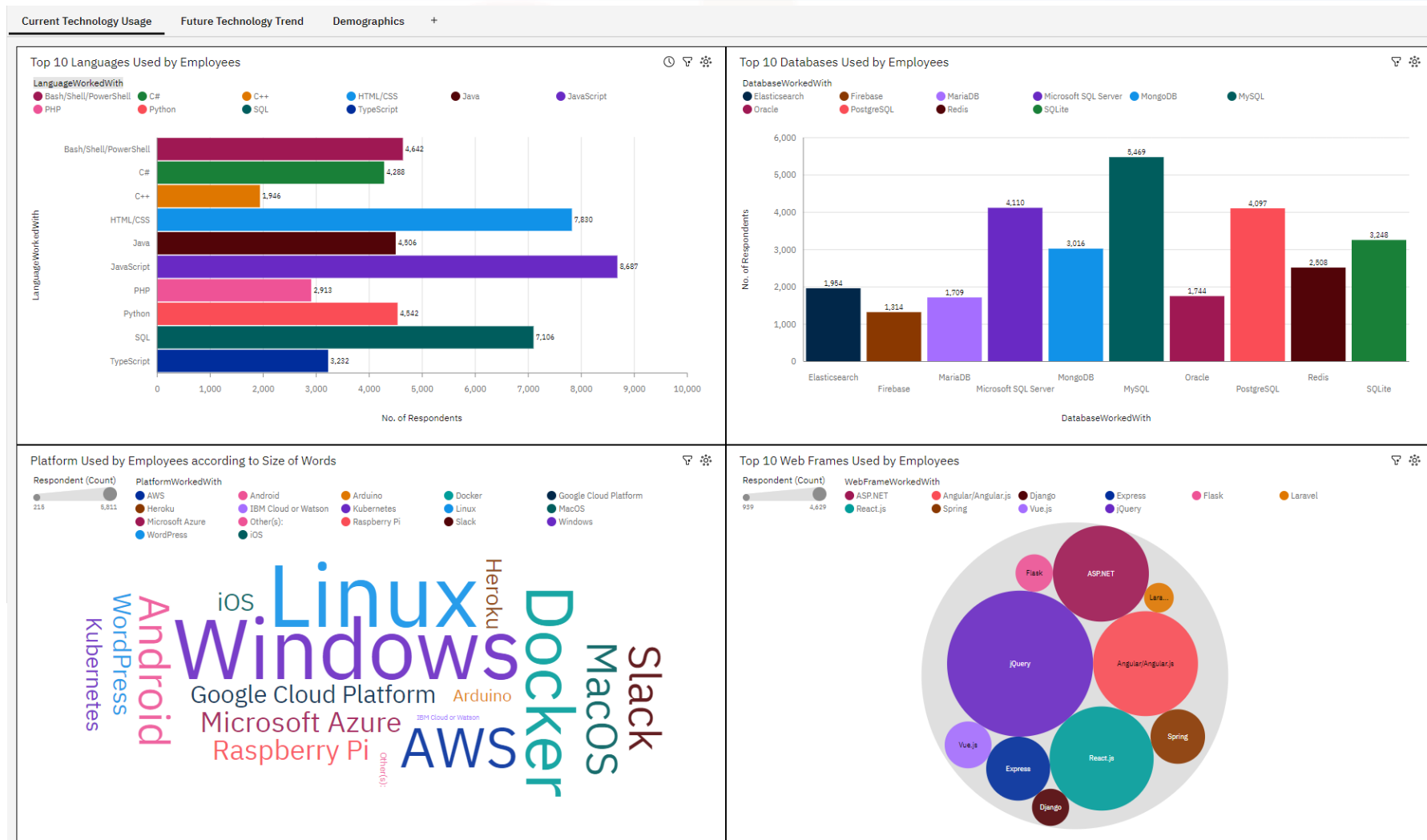
Github Link :

<https://github.com/BikashBIOS/IBM-Data-Analysis-Capstone-Project/blob/main/Tech%20Trends%20Dashboard.pdf>

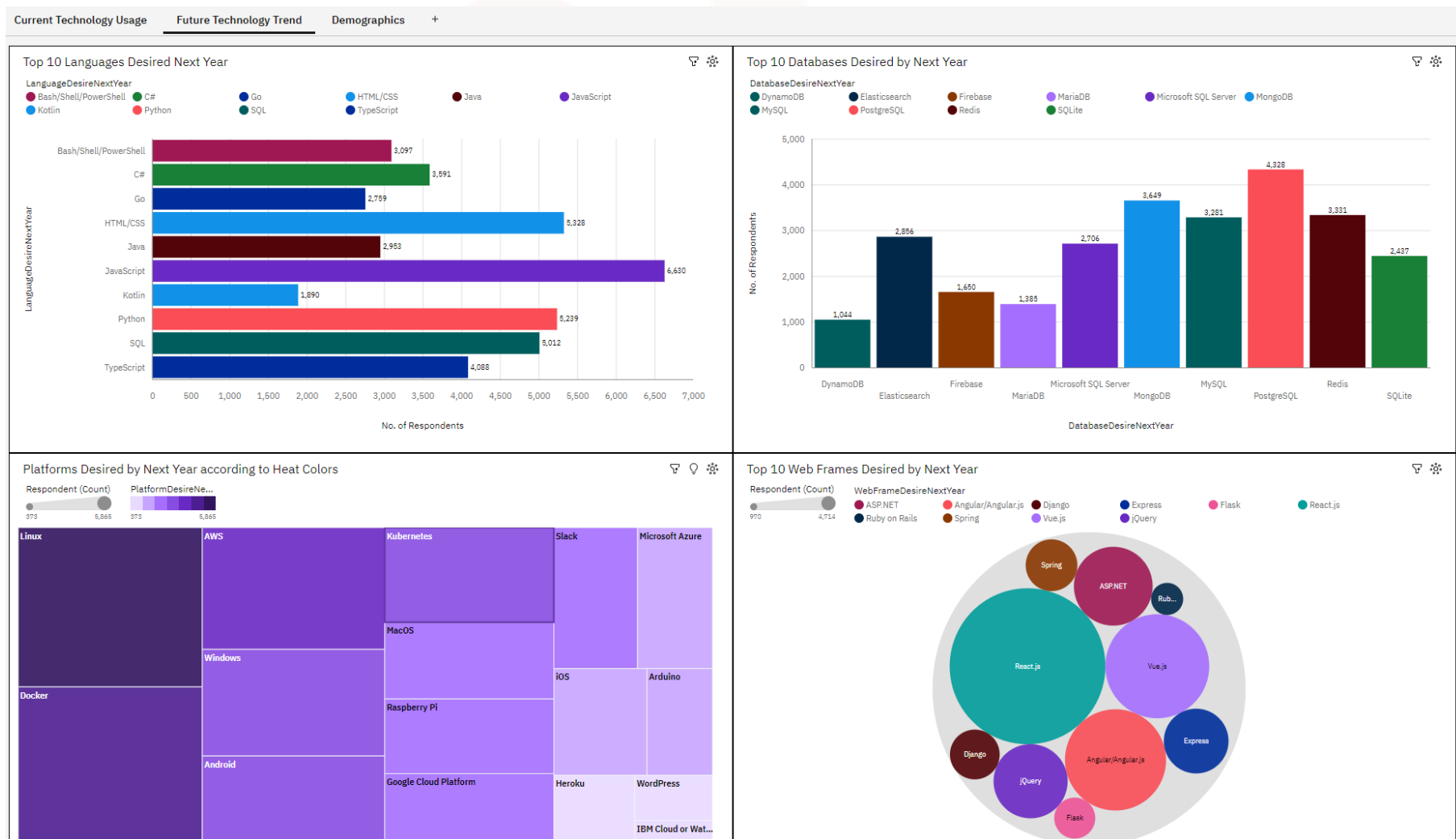
Cognos Analytics Lab :

https://ap1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FNew%2Bdashboard&action=view&mode=dashboard&subView=model0000001904fe91f70_000000000

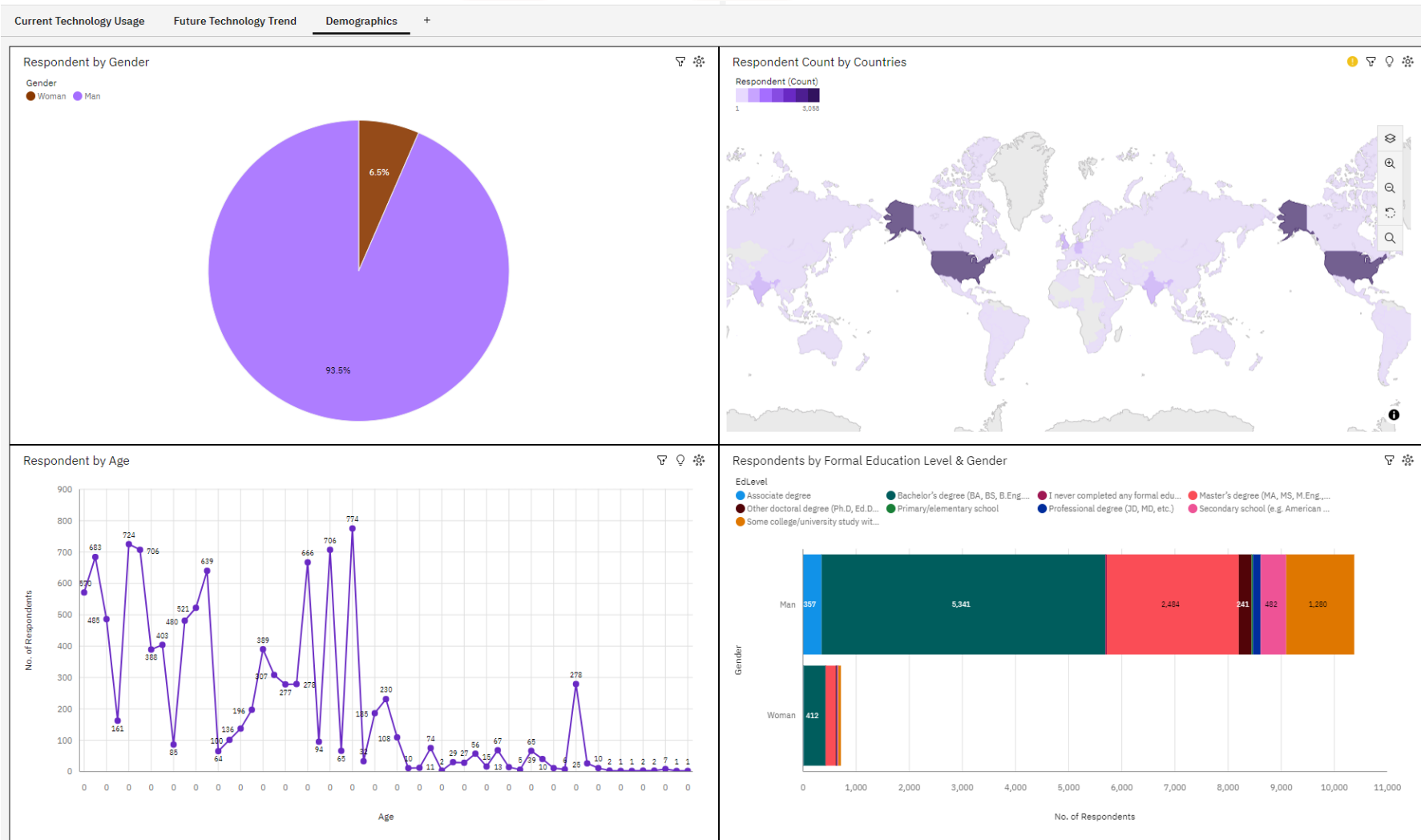
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION



- It is clear from all the graphs that Python and Non relational databases are Emerging rapidly.
- Linux, Docker and Windows are Best platforms to grow. ReactJS and Angular are emerging web frames.
- Most Respondents have a Bachelor's degree and mostly are from USA and Alaska.

OVERALL FINDINGS & IMPLICATIONS

Findings

- Python & Javascript are the most popular languages while PHP & C++ are least.
- PostgreSQL used mostly while MongoDB & Elastic Search becomes popular.
- React & Angular are most popular Web frames while Linux & Windows are most popular Platforms.
- Respondents are 90% young Men and live in USA and Alaska.

Implications

- Advanced Programming languages are seeing a boom like Python & Kotlin.
- PostgreSQL remains as a popular RDBMS while Non RDBMS are becoming more popular.
- Advanced Web frames and similar platforms are emerging.
- Mostly Young men from USA & Alaska are participating in the trends.

CONCLUSION



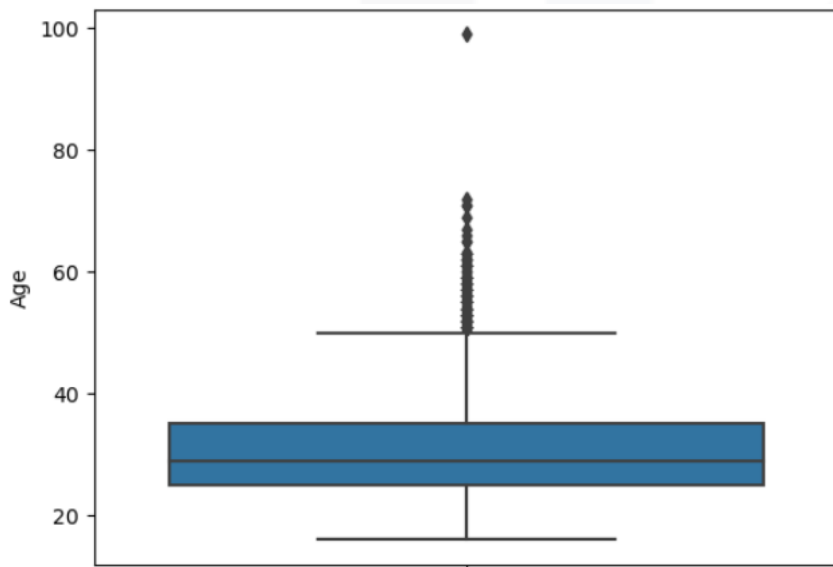
- Technology is advancing as per the requirement of new Developers and skills in the market.
- Having a good idea of the trends will keep you advancing as a Growing Developer.
- Encouragement for women to learn and grow in IT fields.

APPENDIX

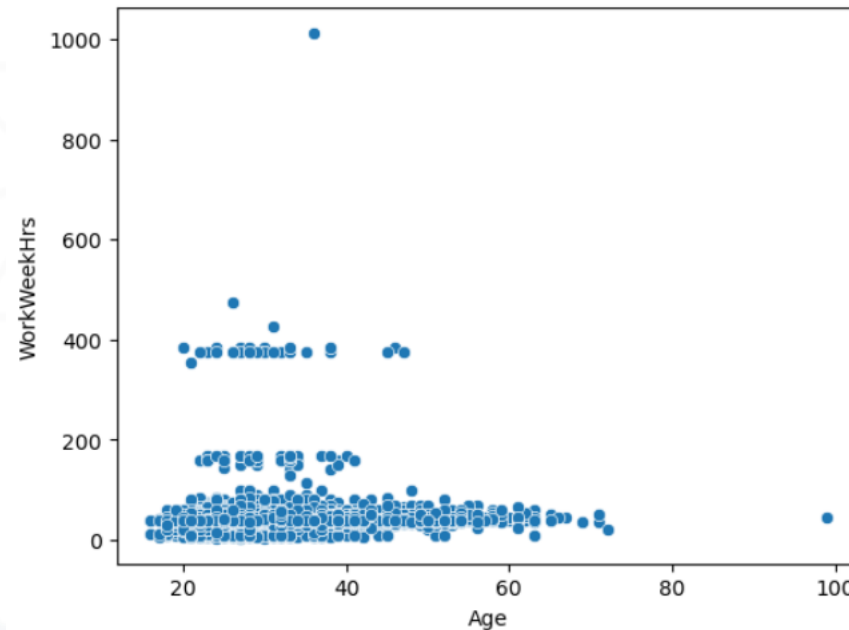


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- Box Plot of Age
- Scatter Plot of Age and Weekly Working Hours
- Pie Chart of Databases
- Stacked Plot of Age
- Line Chart of Age & Comp
- Bubble Plot of Hours

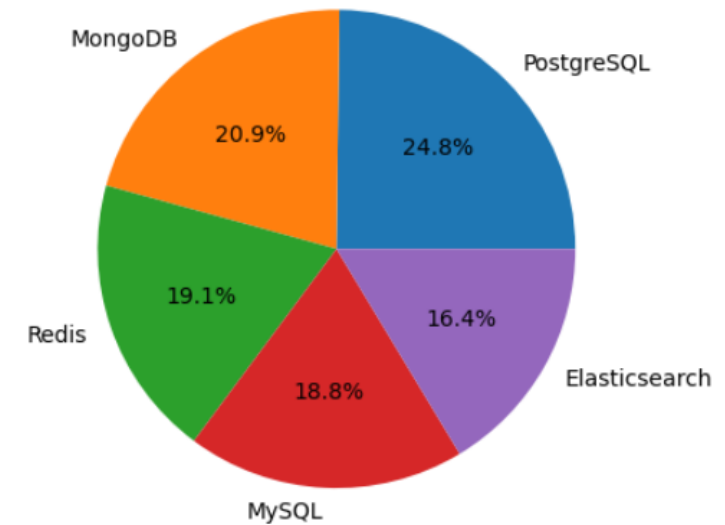
Appendix - Visualisation Charts



Box Plot of Age

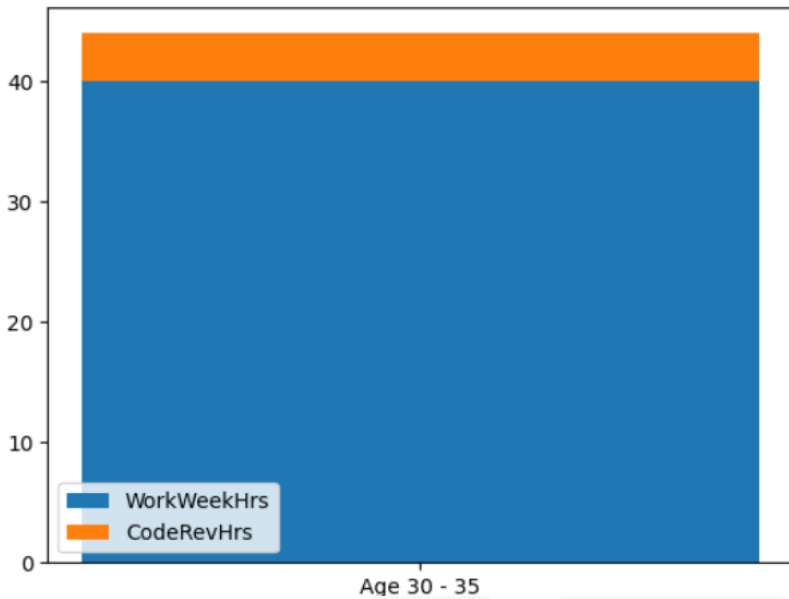


Scatter Plot of Age and Hours

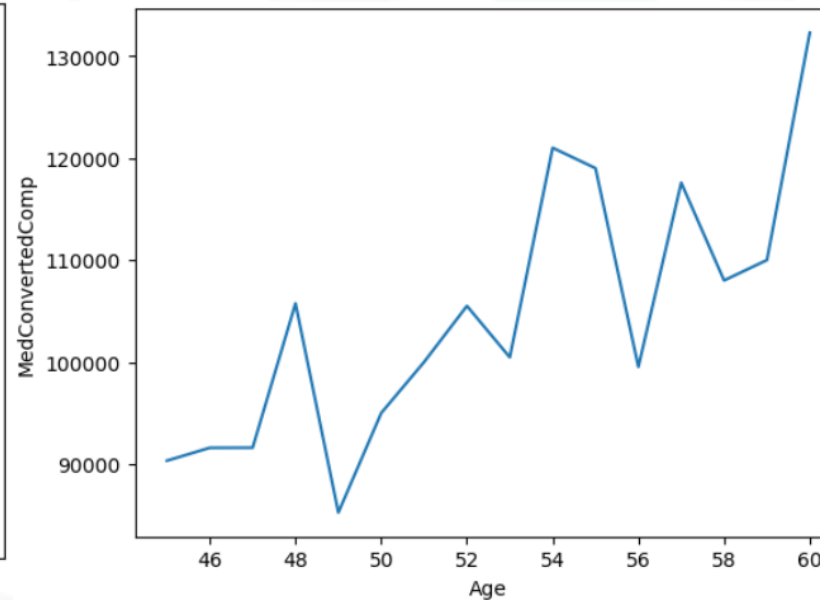


Pie Chart of Databases

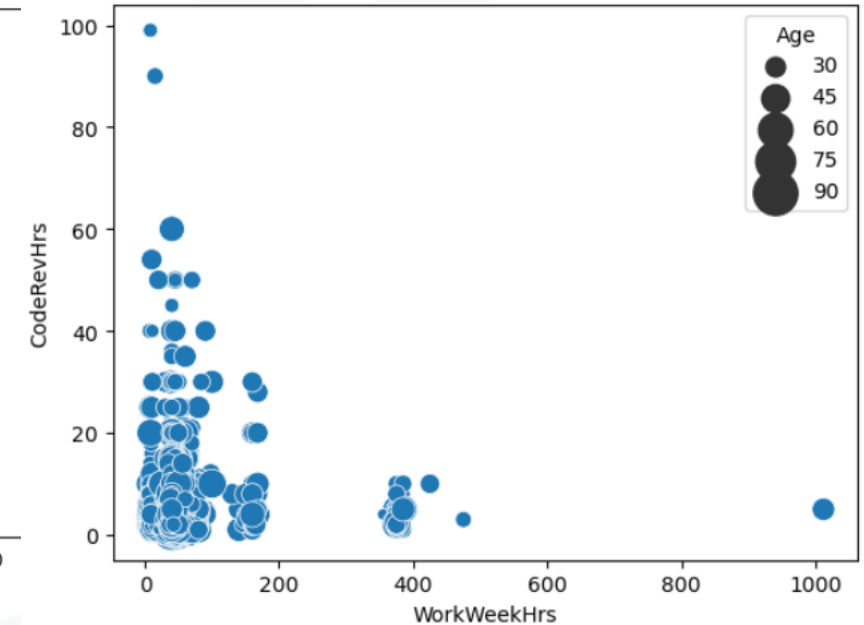
Appendix - Visualisation Charts



Stacked Plot

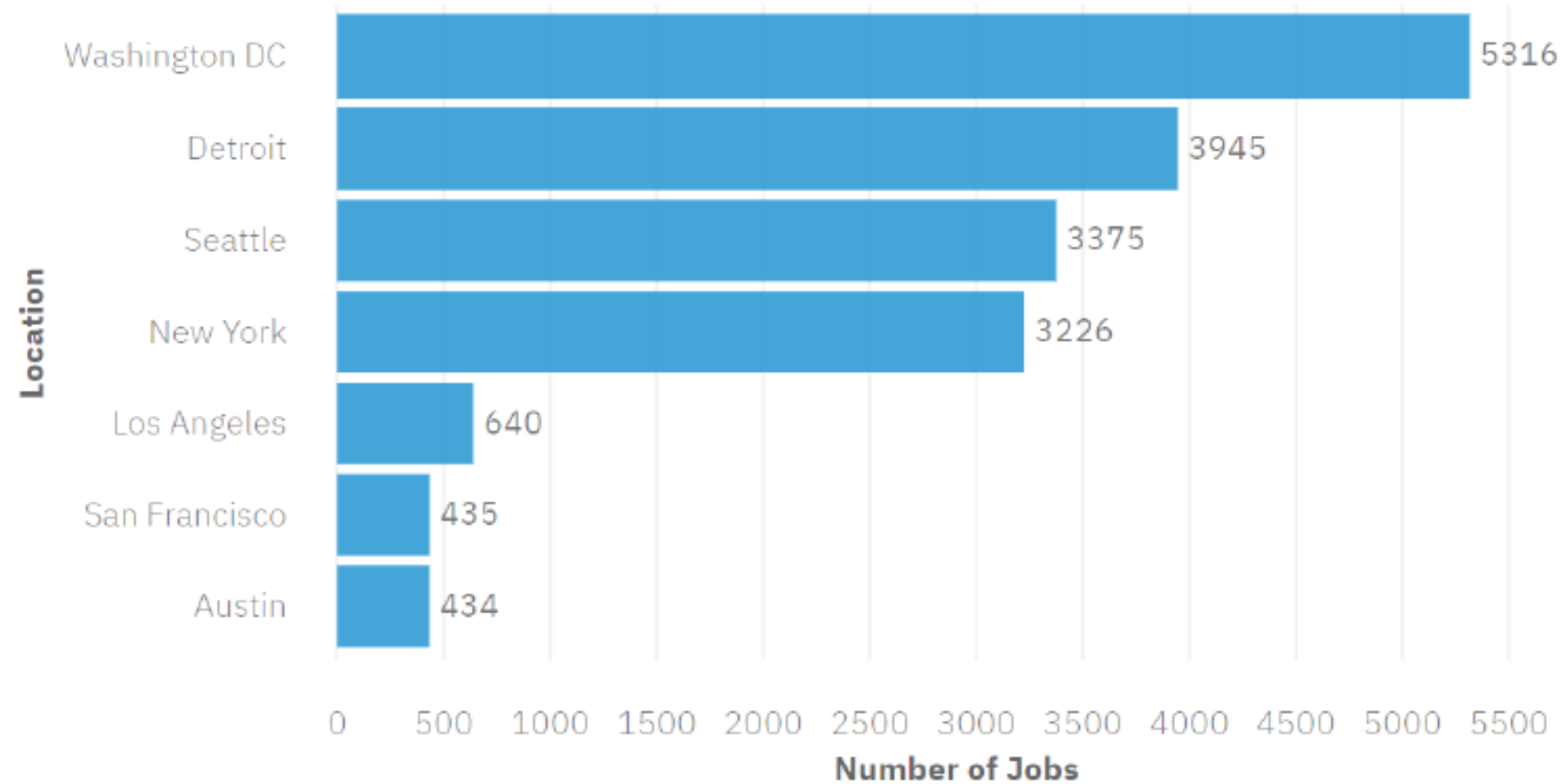


Line Chart of Age and Converted Comp



Bubble Plot of Hours

JOB POSTINGS



POPULAR LANGUAGES

