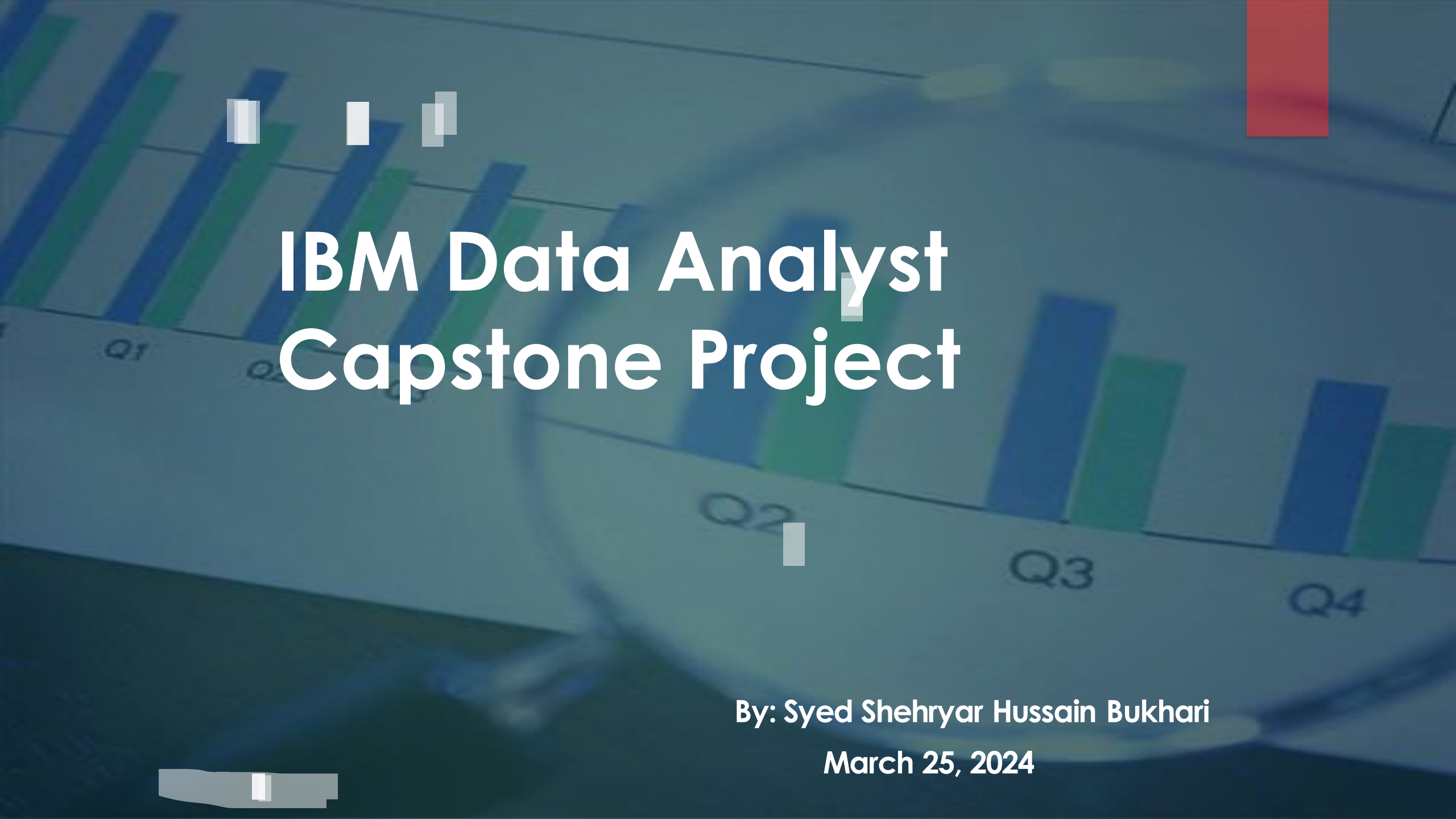

IBM Data Analyst Capstone Project

By: Syed Shehryar Hussain Bukhari

March 25, 2024

OUTLINE

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

- IT sector is evolving continuously. In order to find out the emerging trends in this sector we have analyzed some data to find the future direction of this sector.
- The data for this study was gathered from a Stack Over Flow survey and Github job postings. It was then cleaned and after exploratory analysis was done the data was visualized on dashboards to gain insights from the data.
  - The survey respondents belong to a different backgrounds. However majority of the respondents were male.
  - The most popular technologies and professions are clearly describe in this presentation.
- The goal of this analysis is to identify the current and future landscape of the IT sector by finding trends and helping the organization to make relevant decisions.

INTRODUCTION

- The presentation shows the present and future trends in the IT sector from gathered data from professionals in the field.
- The data is result of a survey in which professionals in the sector were asked about the technologies they are currently working with and what are their expectations about the future of those and other technologies.
- By the end of this study we will have an idea of where the sector is headed and the most popular technologies that are in demand now and more so will be in the future.

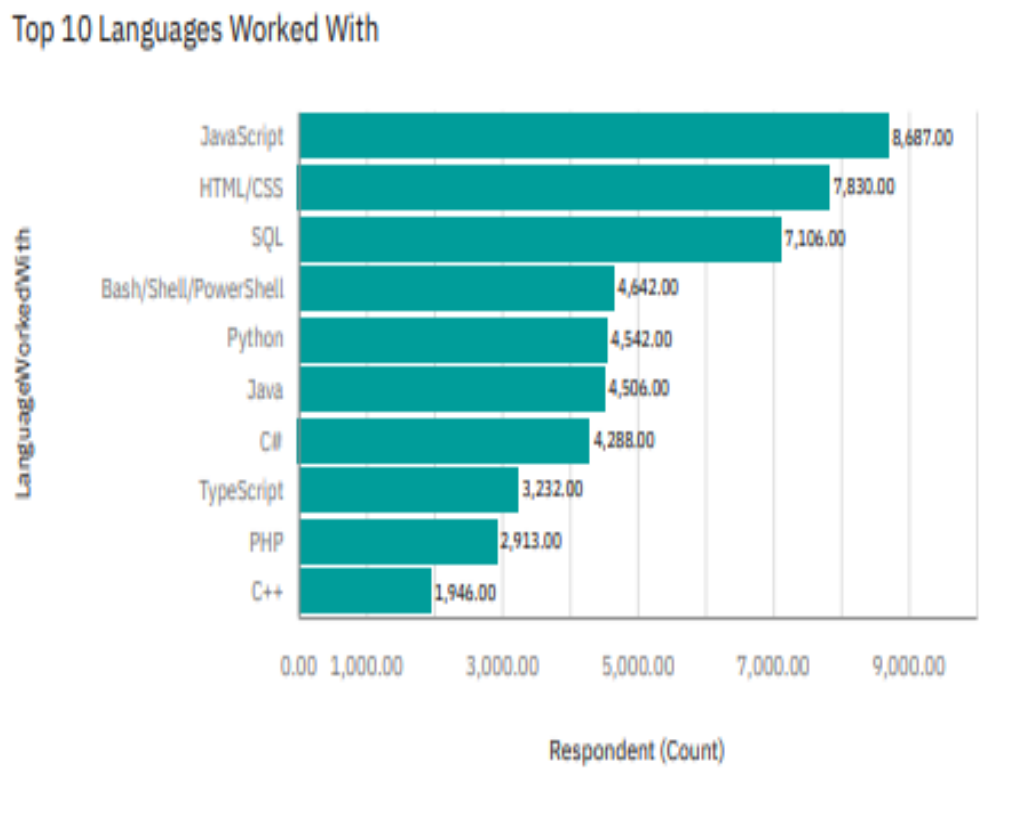
METHODOLOGY

- A Stack Overflow Survey data was scraped and used to get response of the professionals.
- The data was cleaned, normalized and exploratory analysis was done to find different trends.
- Data was then visualized in certain dashboards to get an easy and simplified overview of insights from the data.

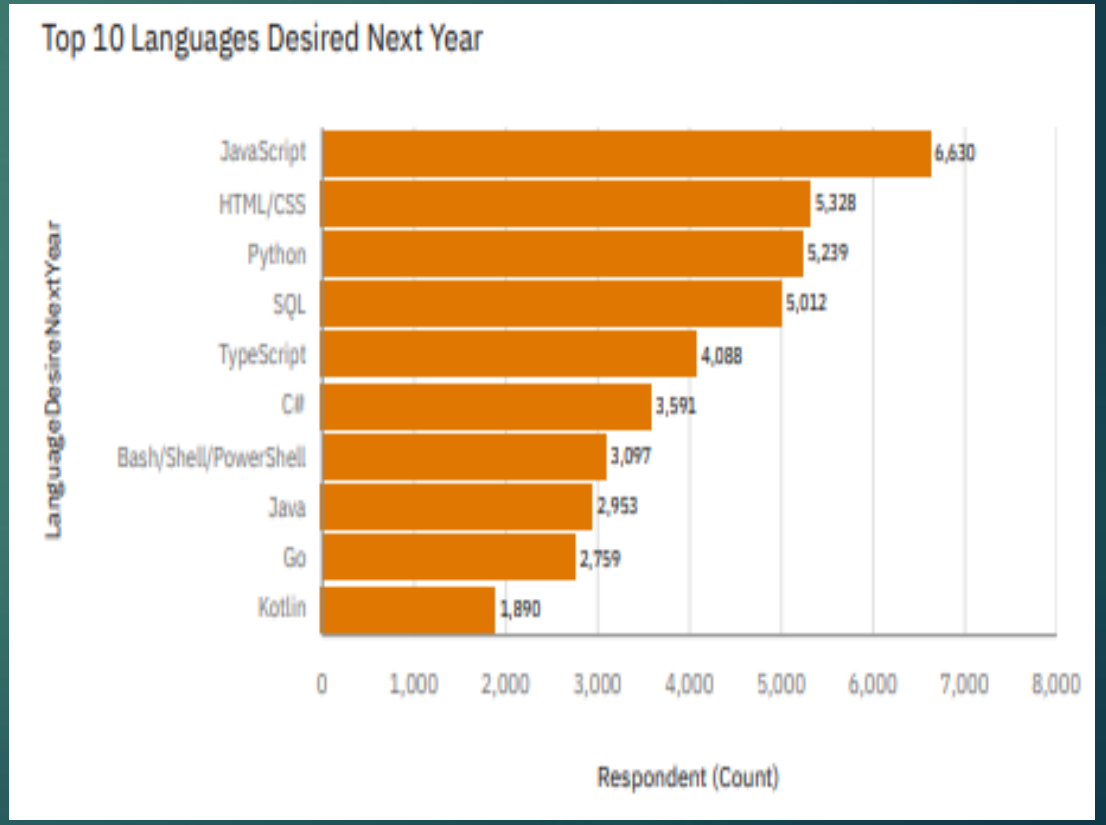
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

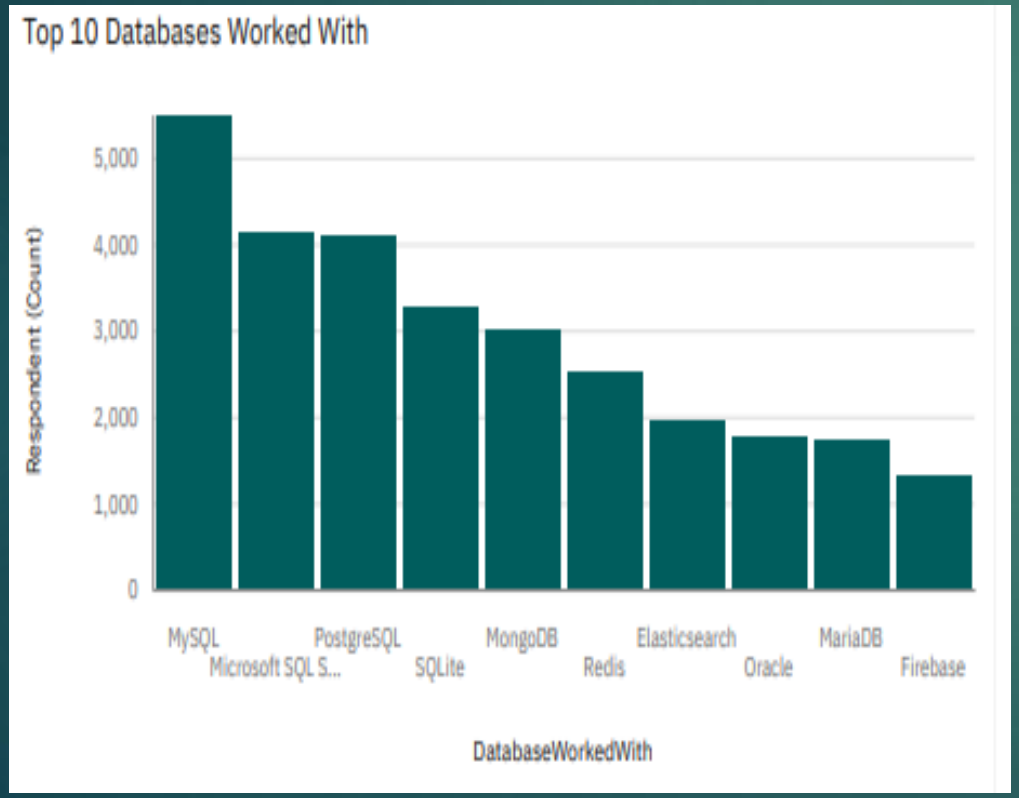
- JavaScript and HTML/CSS are currently the top languages being used by professionals and are expected to be so in the future as well.
- Python, TypeScript and SQL are likely to be used more by the professional in the future.
- Bash/Shell/PowerShell and Java will likely have a decrease in usage in the future.

Implications

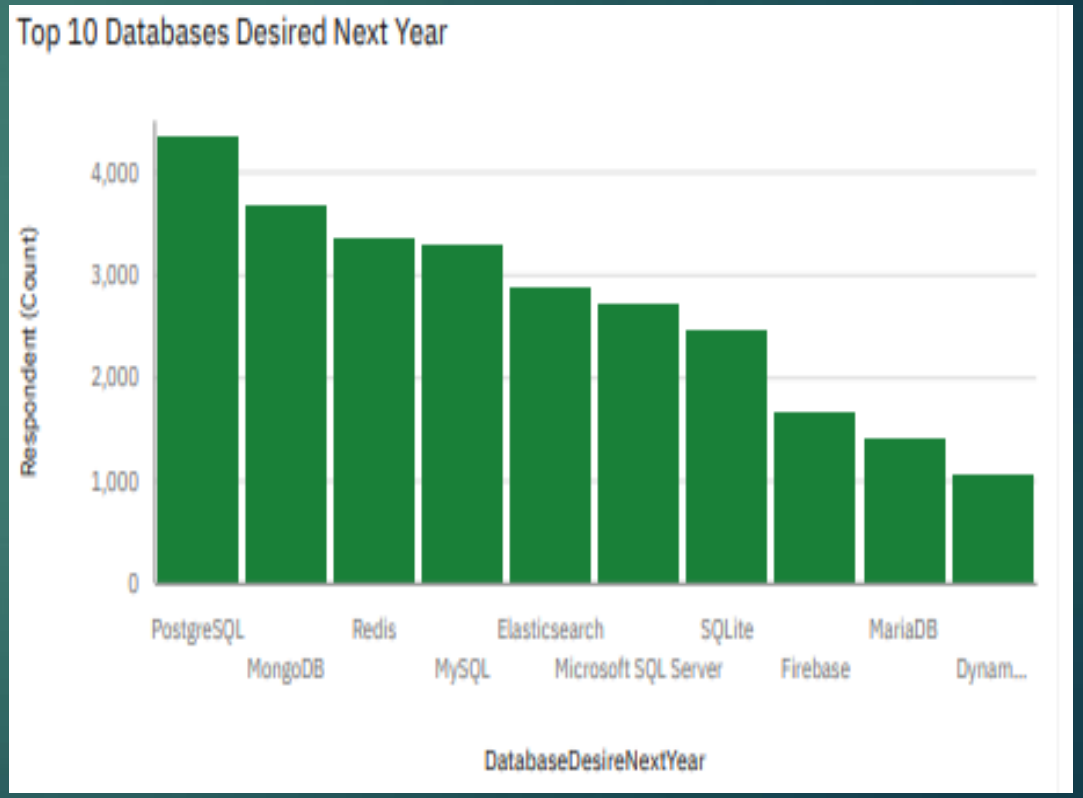
- There will be an increase in people opting for languages like Python, TypeScript and SQL.
- JavaScript and HTML/CSS will continue to be the leading languages based on professionals.
- There will be less people opting for Bash/Shell/PowerShell in the coming year.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- SQL is the leading database currently being used by professionals.
- PostgreSQL will likely be the most popular database in the future.
- MongoDB ,Redis and ElasticSearch will show a high increase in their usage in the coming year.

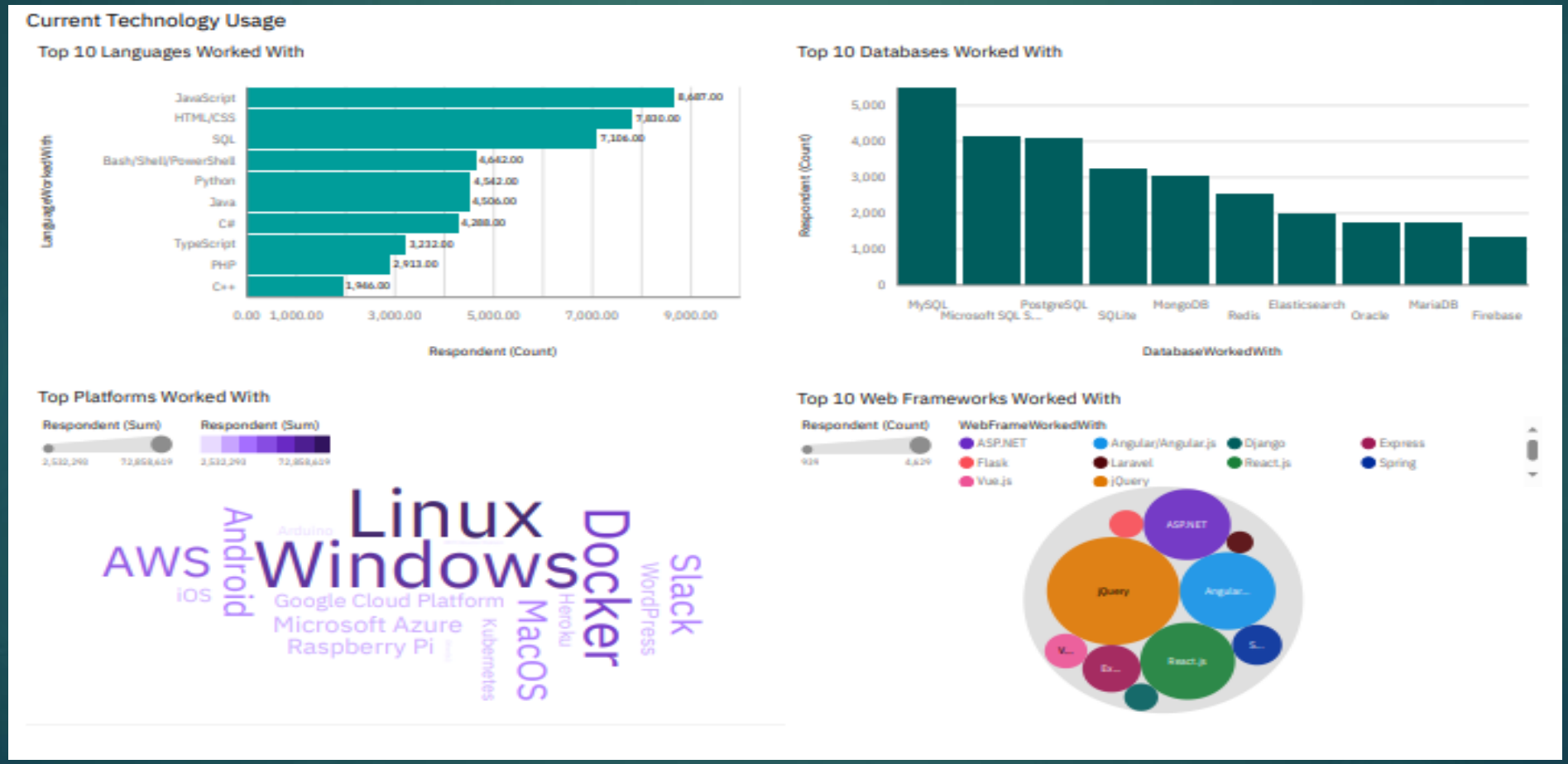
Implications

- There will be an increase in people opting for PostgreSQL as it is heading to be the leading database.
- There will still be a demand for SQL however it is showing a decrease in usage.
- There will be an increase in demand for people having skills in MongoDB, Redis and ElasticSearch.

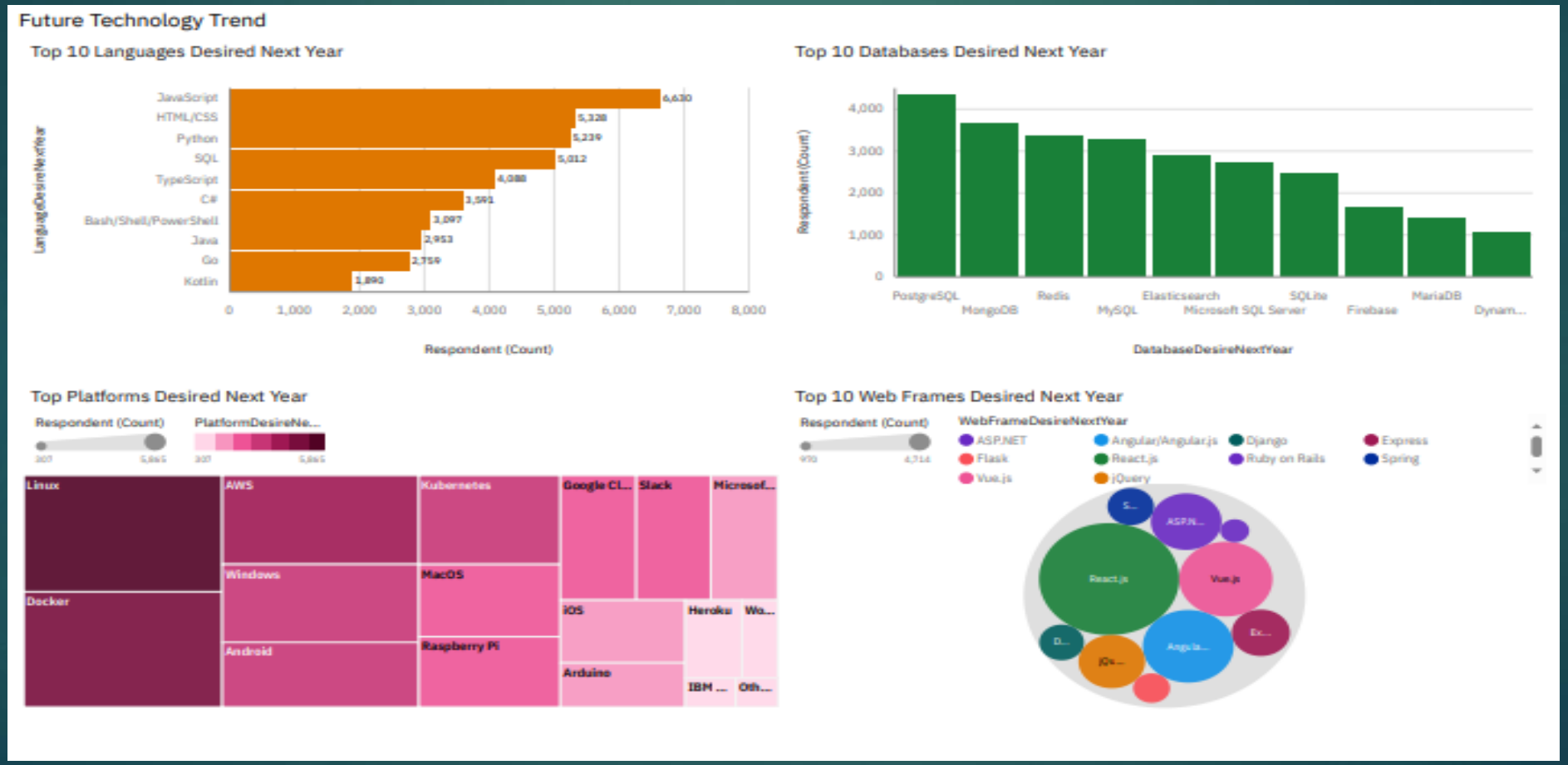
DASHBOARD

https://github.com/shehryar71/testrepo/blob/main/New%20dashboard.pdf

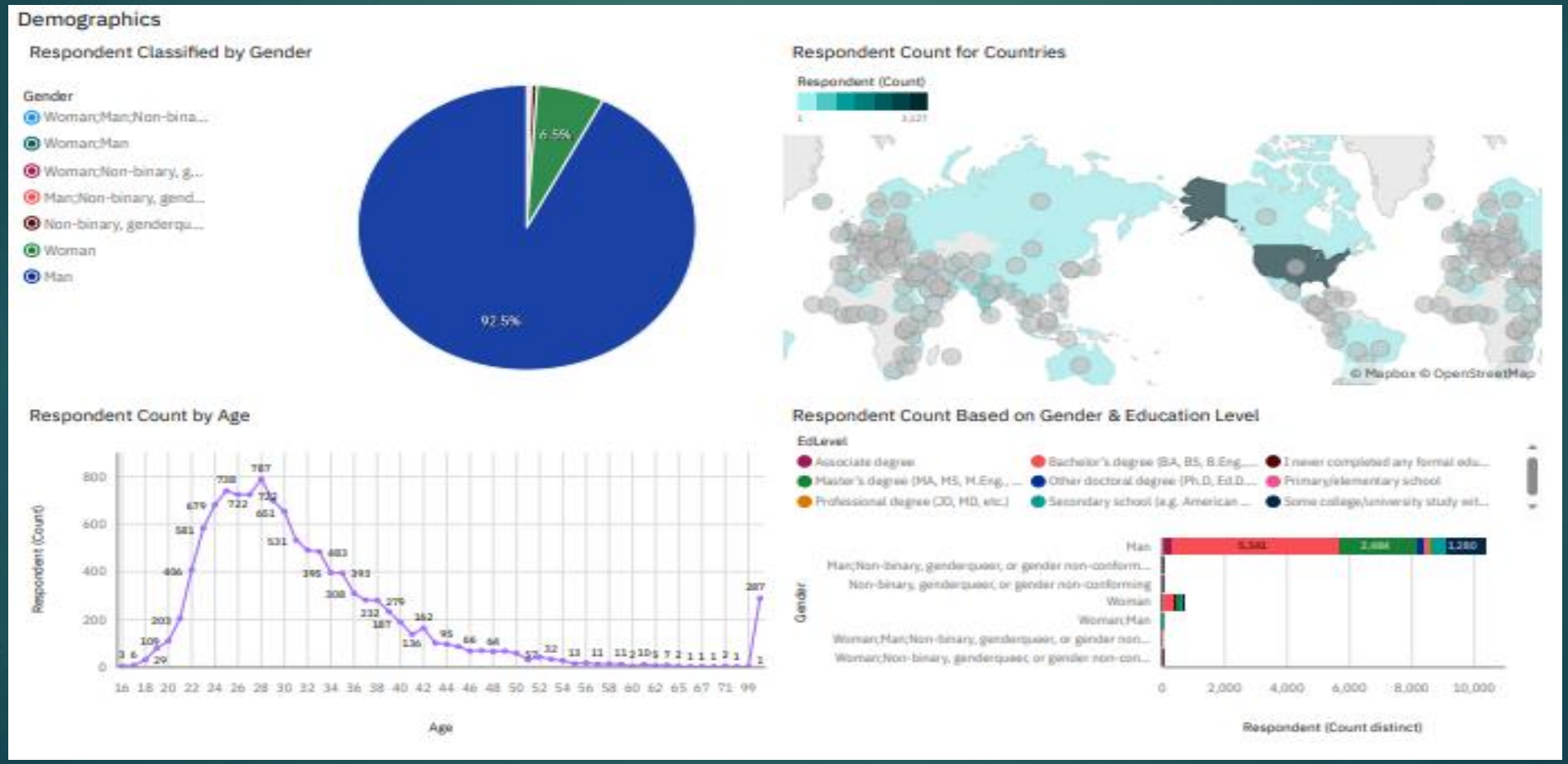
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

- Steps needed to keep up with high paced evolving IT Sector?
- Watch out for high in demand technologies and using them to an advantage for the organization.
- Having an idea of where the IT sector is headed is important for growth and survival.

OVERALL FINDINGS & IMPLICATIONS

Findings

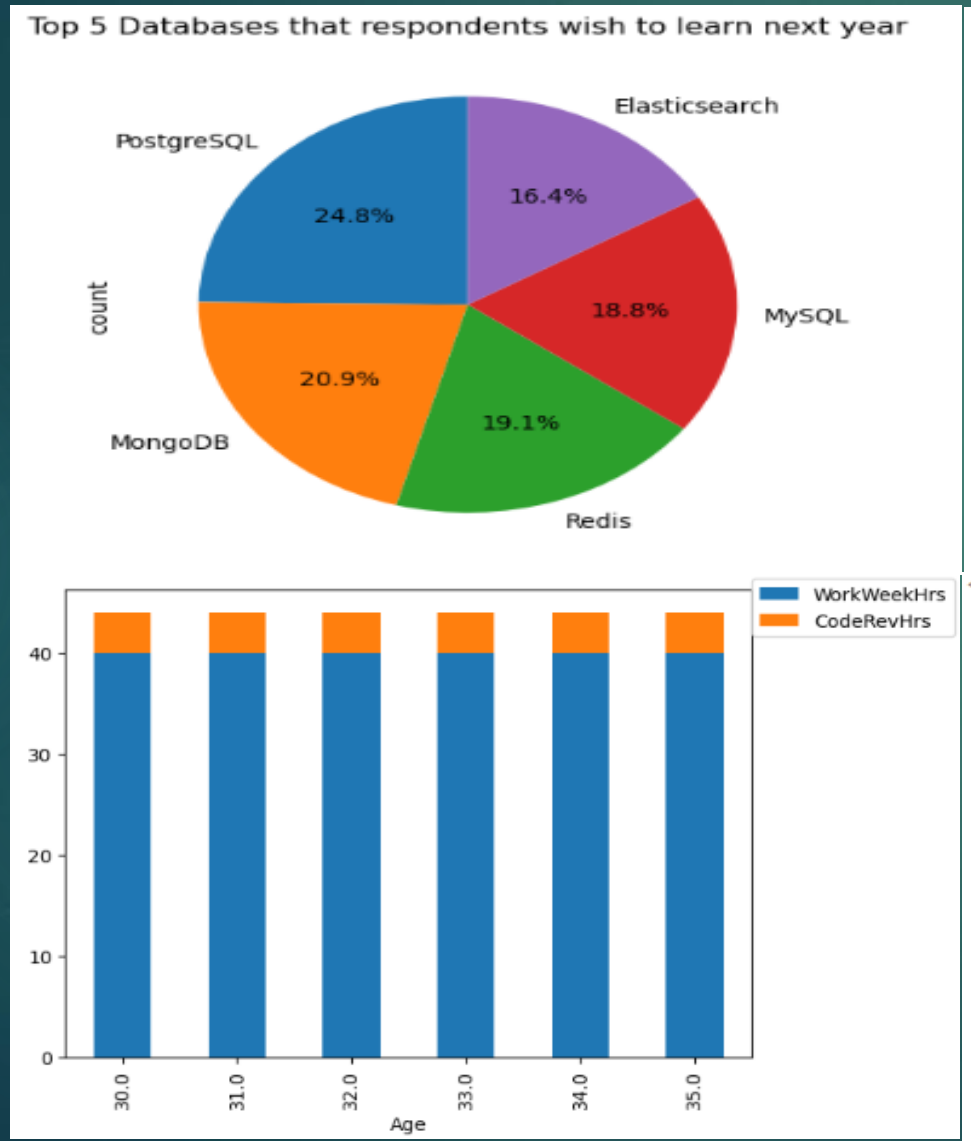
- Programming Languages:
  - JavaScript and HTL/CSS continue to be the top languages however languages like Python, TypeScript and SQL are growing in usage.
- Databases:
  - SQL is being replaced by PostgreSQL as the top database. MongoDB, Redis and ElasticSearch are showing an increase in usage.
- There are continuous changes in technologies being used.

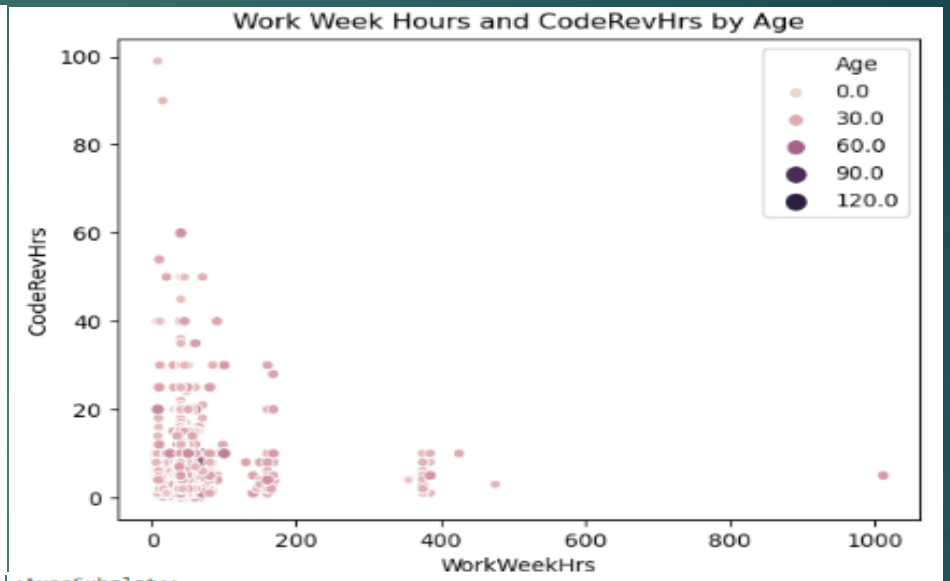
Implications

- There will likely be more people skilled in languages like Python, TypeScript and SQL.
- Increase in usage for MongoDB, Redis and ElasticSearch likely shows that more people will opt for skills in these databases.
- New technologies being used contribute greatly to the changing IT landscape.

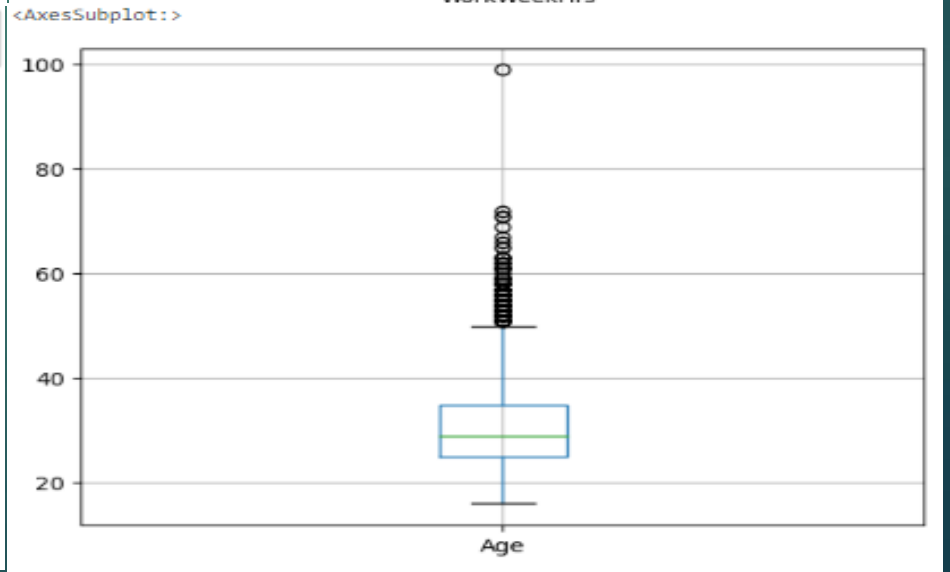
CONCLUSION

APPENDIX


Top 5 Databases that respondents wish to learn next year
Elasticsearch
PostgreSQL
16.4%
24.8%
18.8%
MySQL
count
20.9%
19.1%
MongoDB
Redis


Work Week Hours and CodeRevHrs by Age
Age
0.0
30.0
60.0
90.0
120.0
CodeRevHrs
WorkWeekHrs

WorkWeekHrs
CodeRevHrs
30.0
31.0
32.0
33.0
34.0
35.0
Age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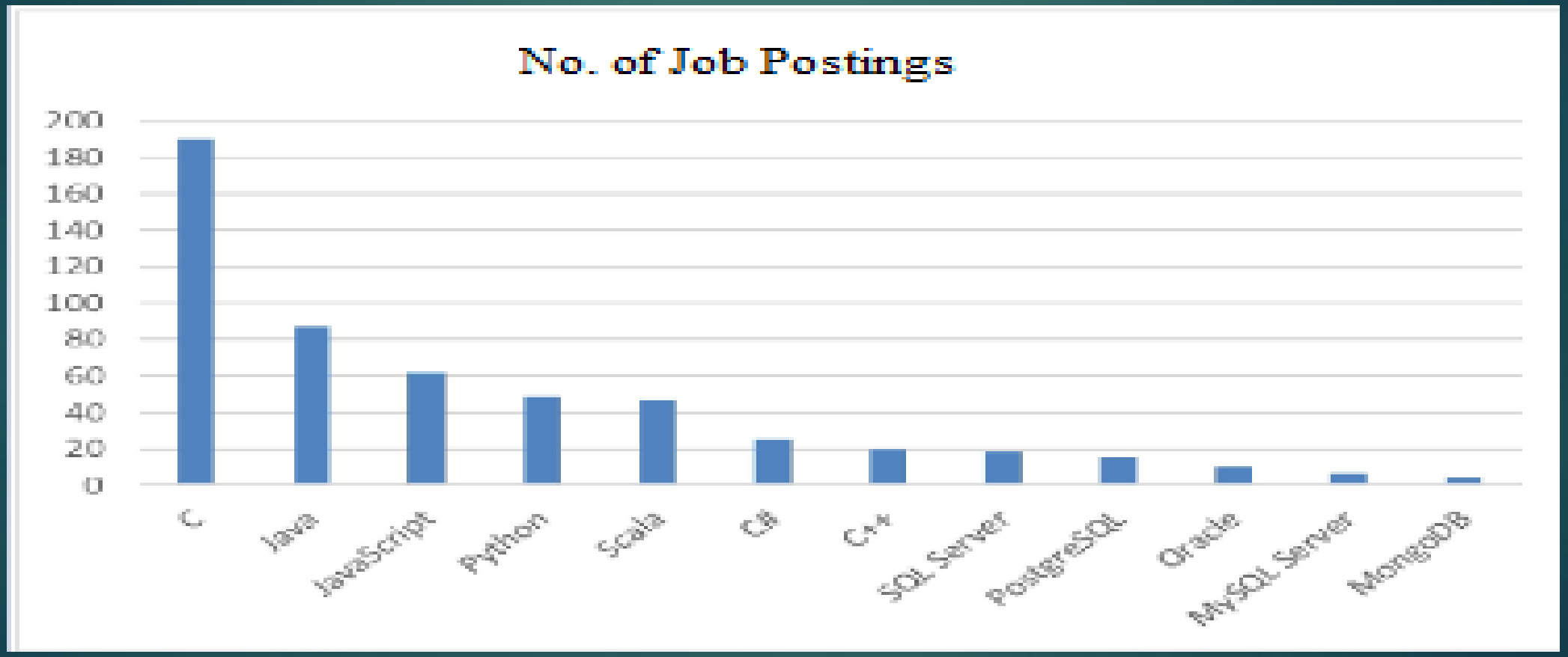
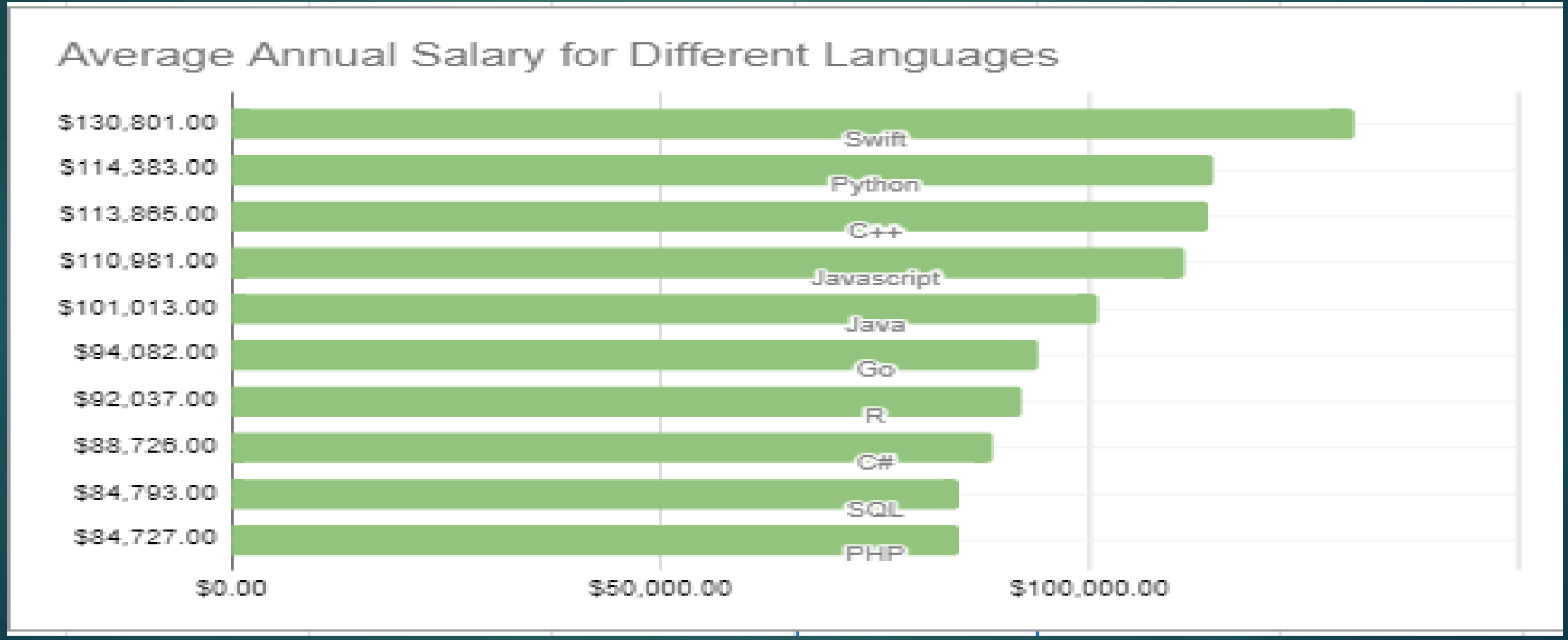
JOB POSTINGS



POPULAR LANGUAGES