# Navigating the Future



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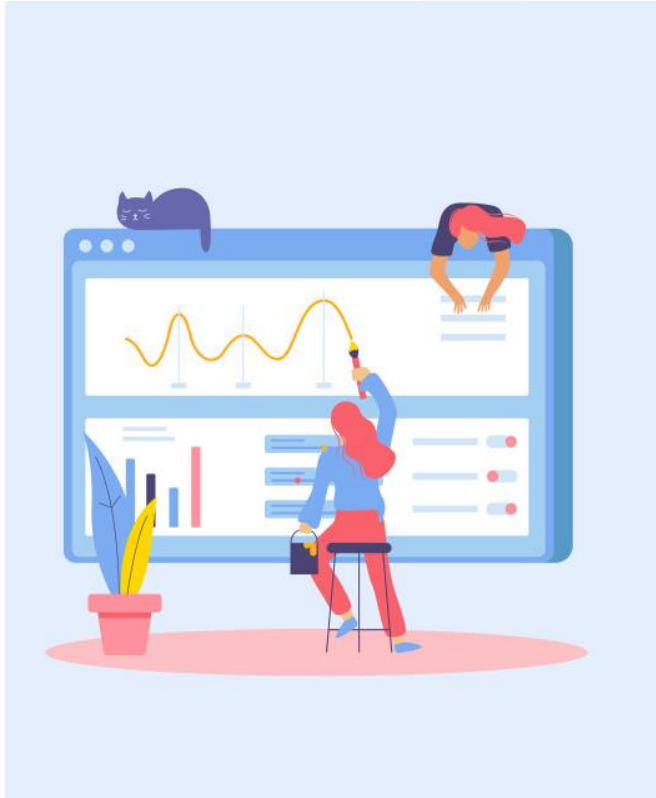
**Date: 24th September 2024**

# OUTLINE

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# EXECUTIVE SUMMARY

- It is crucial to keep pace with changing technologies and remain competitive

- Identifying current and future technology trends
  - By collecting data using APIs
  - Cleaning and analyzing the collected data
  - Visualizing the trends

- Finding the aspects of future changes that benefits the organization and society in future

- Focusing on going development of skills

- There are various demographic factors that can be used to analyze data and trends

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# INTRODUCTION



- Purpose of this Data Analysis is to find out the current and future technological trends in order to remain competitive

- The nature of the analysis is Exploratory Data Analysis
  - How the data is distributed
  - Finding correlation between features in data

- To answer: Are we competitive enough to cope up with future technological skills requirements?

- We will analyze and identify current and future trends by finding;
  - What are the top programming languages in demand?
  - What are the top database skills in demands?

# METHODOLOGY



- The data sources were Primary and Secondary data sources

- The method that was used is Exploratory data analysis to find the correlation between the variables

- Python Programming Language was used to conduct the analysis

- Relationships identified are then visualized for better understanding

# RESULTS

- Data was collected from sources like Job postings, Training portals and surveys
- Data was pre-processed by;
  - Replacing missing values
  - Removing duplicates
  - Normalizing data

- Exploratory data analysis was performed on data to find correlation between variables
- Python Programming Language was used to conduct the analysis
- The trends and insights from the analysis can be better understood by looking at the visualizations
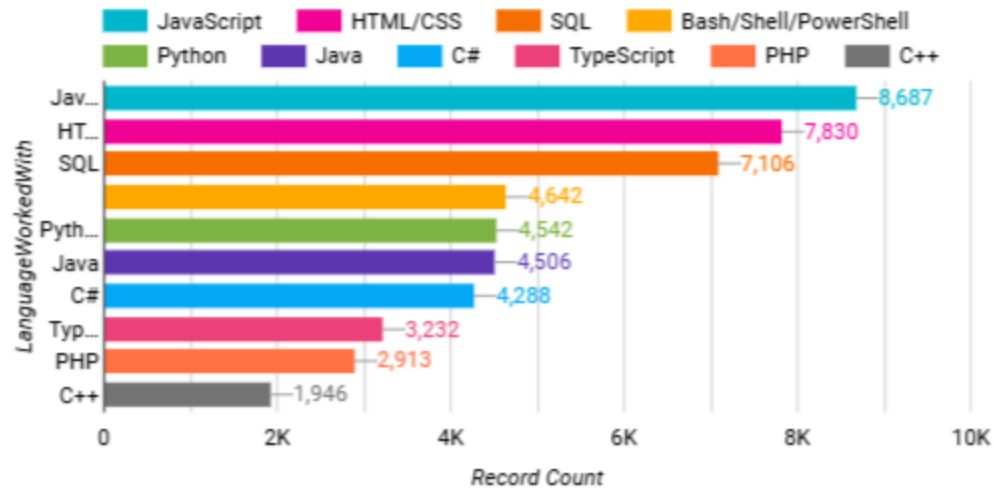


ANALYSIS

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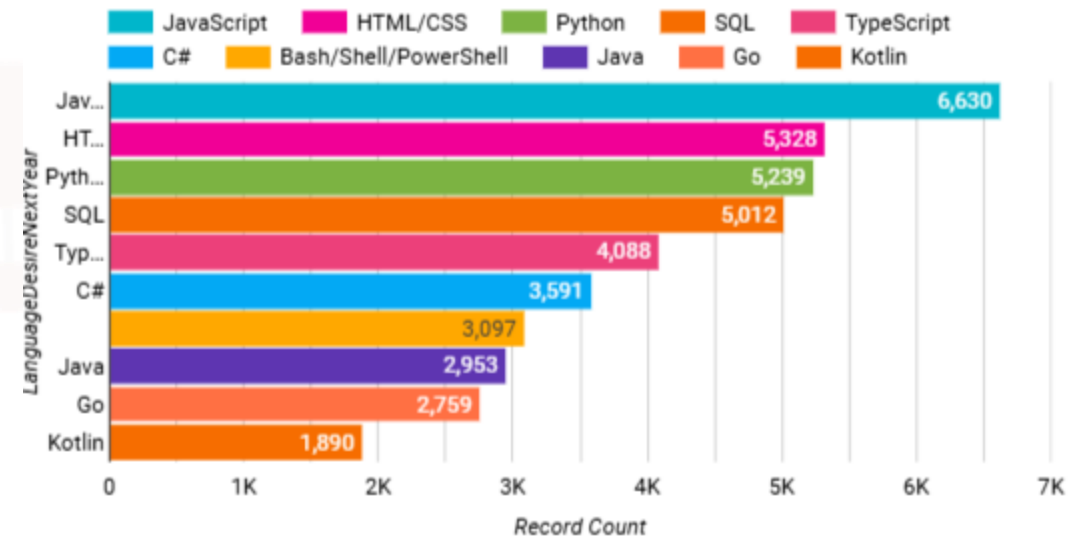
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# PROGRAMMING LANGUAGE TRENDS

## Current Year



Top 10 LanguageWorkedWith

## Next Year



Top 10 Language Desire NextYear.

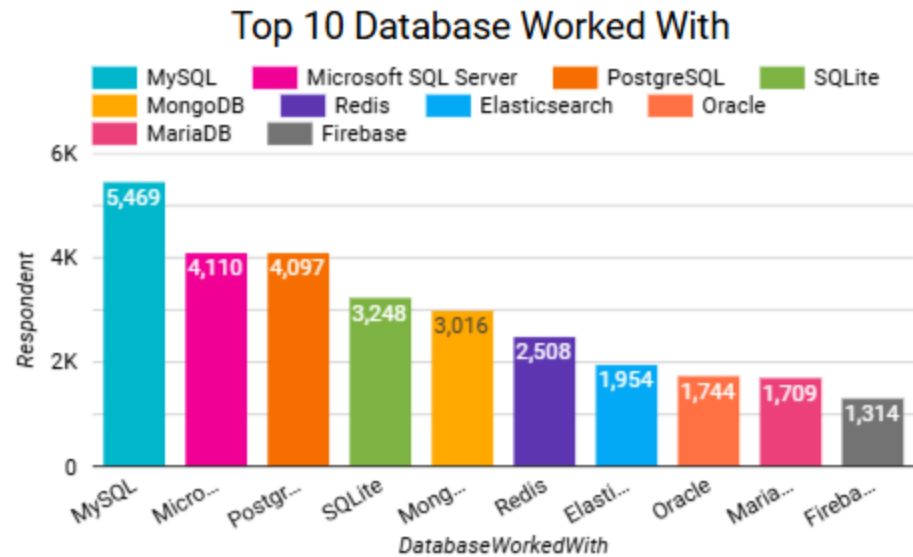# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- Java, CSS and SQL are top 3 languages that people are working with

- People have shown great desire to learn towards Python with Java and CSS still on first and second

- Overall, Java, CSS, Python and SQL are most desired languages
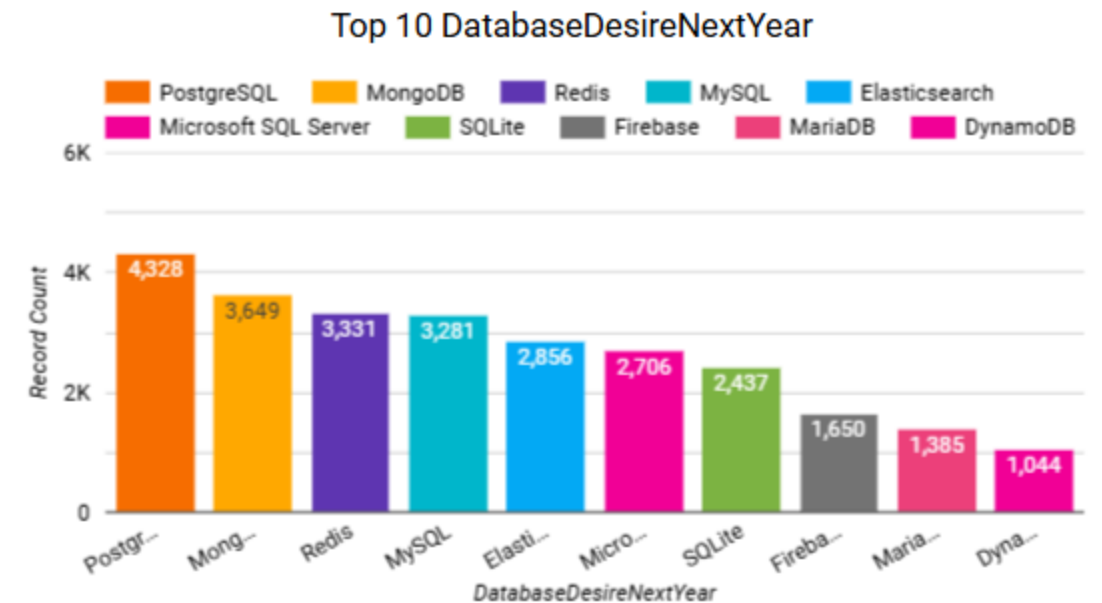
## Implications

- Broader demand for full stack developers

- Increased focus on web development and applications

- Growth in Data-Focused Roles

- Educational Shift Toward Multi-Language Proficiency

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# DATABASE TRENDS

**Current Year**

**Next Year**



Top 10 Database Worked With

Legend: MySQL, Microsoft SQL Server, PostgreSQL, SQLite, MongoDB, Redis, Elasticsearch, Oracle, MariaDB, Firebase

- MySQL: 5,469
- Micro...: 4,110
- Postgr...: 4,097
- SQLite: 3,248
- Mong...: 3,016
- Redis: 2,508
- Elasti...: 1,954
- Oracle: 1,744
- Maria...: 1,709
- Fireba...: 1,314

DatabaseWorkedWith



Top 10 DatabaseDesireNextYear

Legend: PostgreSQL, MongoDB, Redis, MySQL, Elasticsearch, Microsoft SQL Server, SQLite, Firebase, MariaDB, DynamoDB

- Postgr...: 4,328
- Mong...: 3,649
- Redis: 3,331
- MySQL: 3,281
- Elasti...: 2,856
- Micro...: 2,706
- SQLite: 2,437
- Fireba...: 1,650
- Maria...: 1,385
- Dyna...: 1,044

DatabaseDesireNextYear

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# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- MySQL, Microsoft SQL server and PostgreSQL are top three databases being worked with

- PostgreSQL, MongoDB and Redis are most desired databases next year to work with

- Overall, MySQL, Microsoft SQL server, PostgreSQL, MongoDB and Redis are top demanded databases to work with

## Implications

- Growing Demand for Multi-Database Expertise

- Hybrid Database Environments

- Increased Adoption of Open-Source Technologies

- Emphasis on Cloud and Distributed Systems

# DASHBOARD



**GitHub link of Cognos dashboard**

https://github.com/SarahKhan96/Cognos
Dashboard/blob/7f849506f4cef1191795
75c3b3f513ba47161513/Sarah's%20IBM
%20cognos%20dashboard%20-
%20Project.pdf
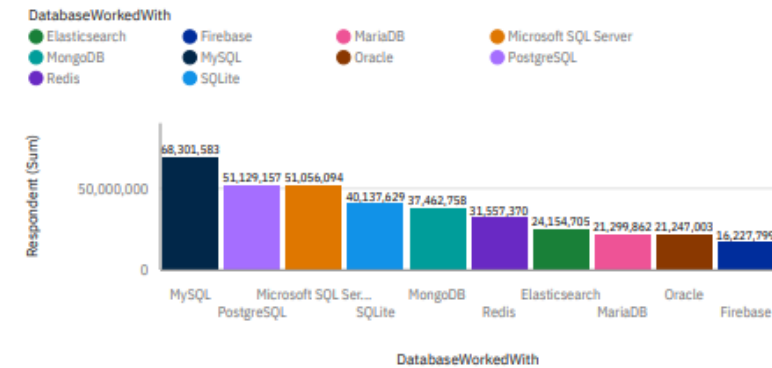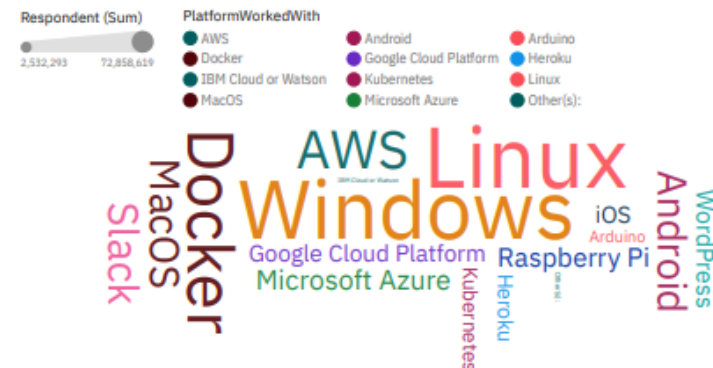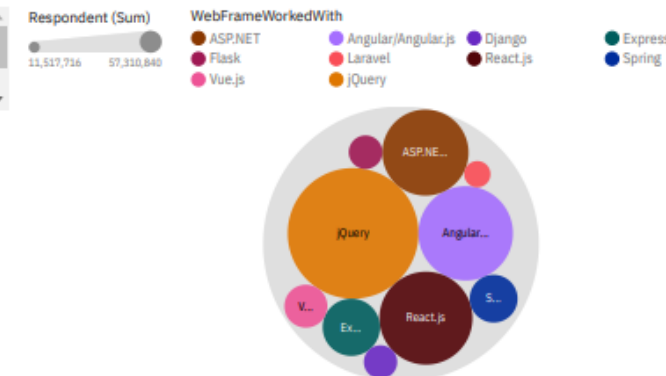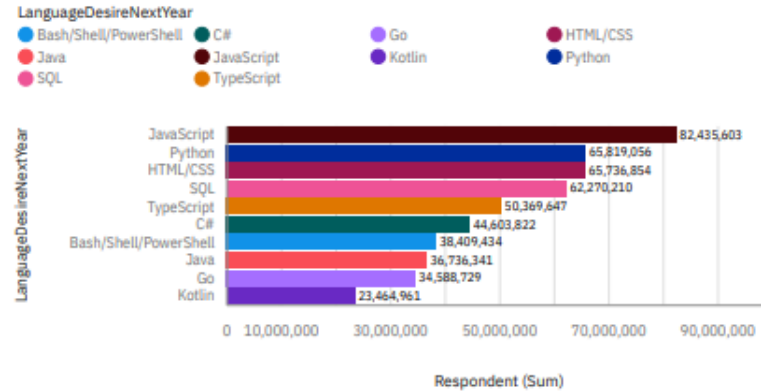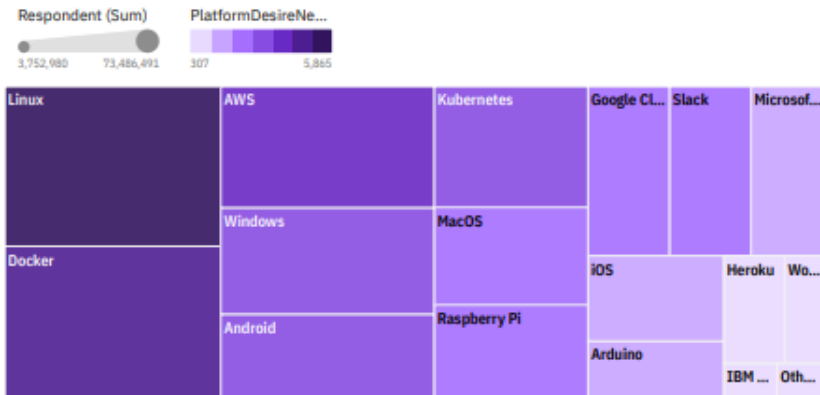
# DASHBOARD TAB 1

# DASHBOARD TAB 2

# DASHBOARD TAB 3
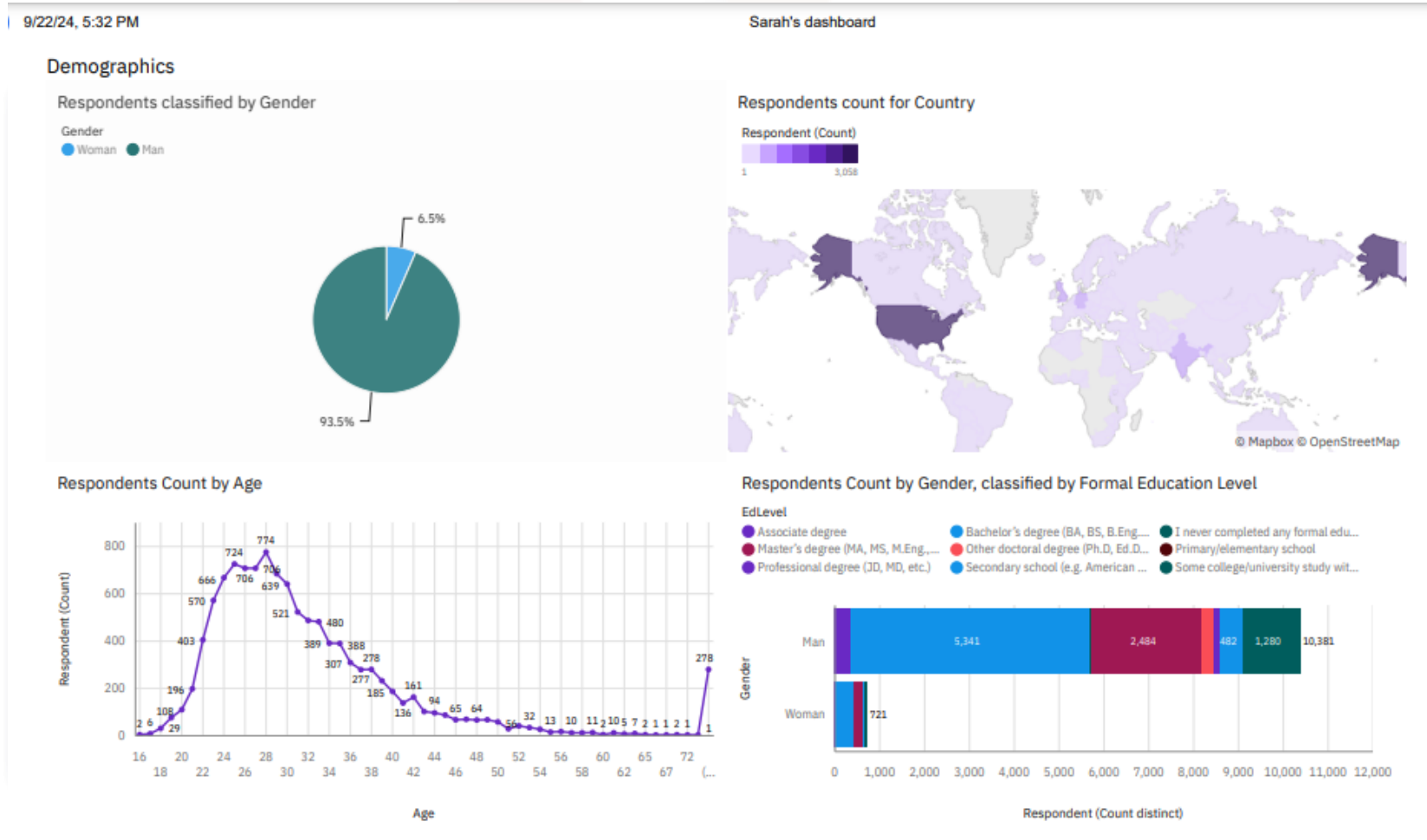
# DISCUSSION



- Focus on gaining expertise in more than one programming languages and databases
- Most worked and desired platforms are Linus, Docker, Windows, AWS and Android.
- Focus on training employees to have multi database expertise
- Cross functional skills are very crucial
- High demand for database administrators (DBAs), developers, and data architects.
- Java is the most demanded language currently and in future too.

# OVERALL FINDINGS & IMPLICATIONS

## Findings

- Java, CSS and python are most demanded languages

- MySQL, PostgreSQL, MySQL server, Mongo DB and Redis are most desired databases to be worked with

- Linus, windows, docker and AWS are most demanded platforms

- JQuery, react.js and ASP.Net are most demanded Webframes

## Implications

- Increased Demand for Versatile Developers

- Growing Adoption of Python for Data Science and AI

- Demand for Cross-Database Skills

- Multi-Platform Skills Are Essential

- Demand for Frontend Framework Expertise
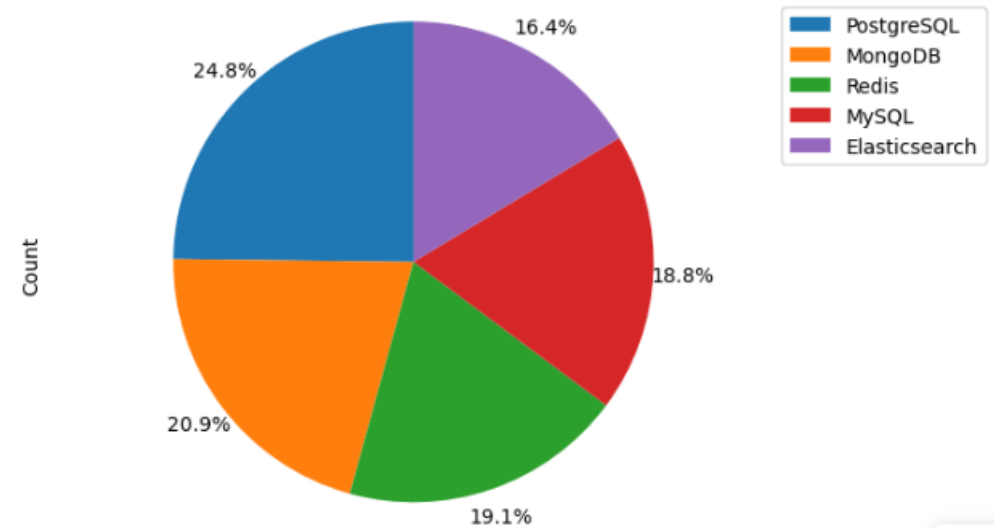
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# CONCLUSION



- People should focus to learn more than one programming languages as it opens new horizons in technological environment for them

- Java, CSS, SQL and Python are the most demanded programming languages.

- The demand for multiple databases indicates that firms will require multi database expertise i.e., people with cross-functional skills

- MySQL, PostgreSQL, Microsoft SQL Server, Redis and MongoDB are most demanded databases to work with.
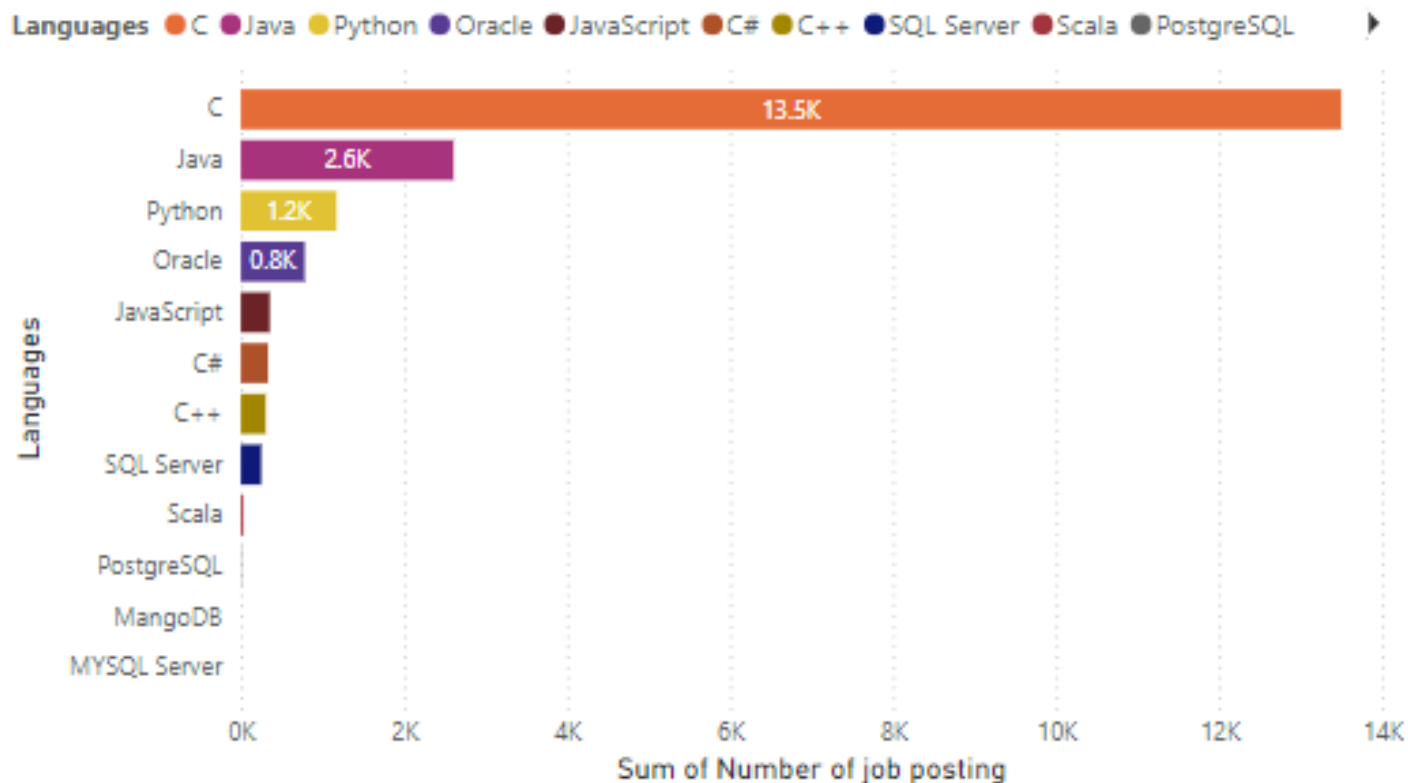
# APPENDIX



Median ConvertedComp for all ages from 25 to 30
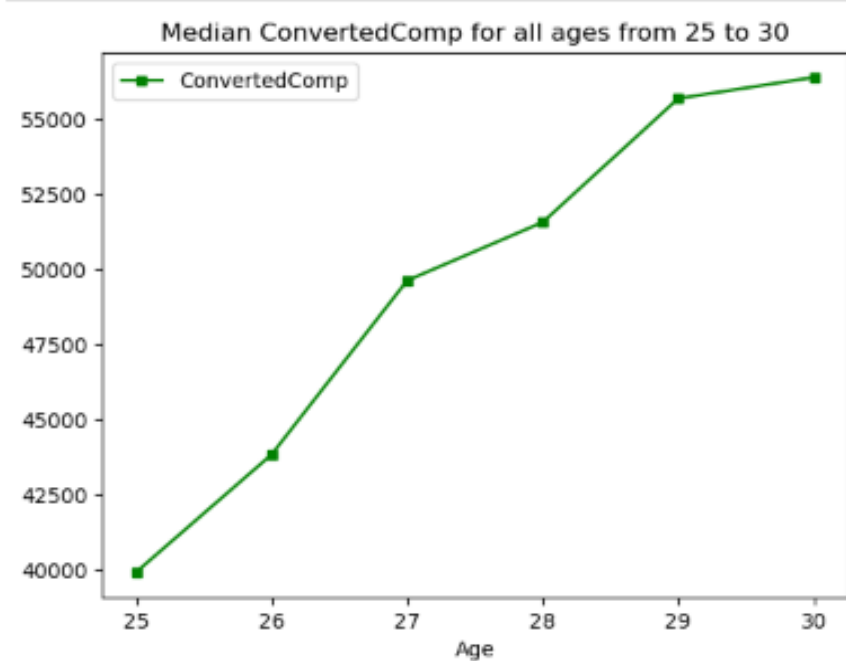


Top five Databases that Respondents to learn Next Year

# JOB POSTINGS



Sum of Number of job posting by Languages

Languages ● C ● Java ● Python ● Oracle ● JavaScript ● C# ● C++ ● SQL Server ● Scala ● PostgreSQL ▶

| Languages | Sum of Number of job posting |
|-----------|------------------------------|
| C | 13.5K |
| Java | 2.6K |
| Python | 1.2K |
| Oracle | 0.8K |
| JavaScript | |
| C# | |
| C++ | |
| SQL Server | |
| Scala | |
| PostgreSQL | |
| MangoDB | |
| MYSQL Server | |

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# POPULAR LANGUAGES



Popular Languages and average salary in USD
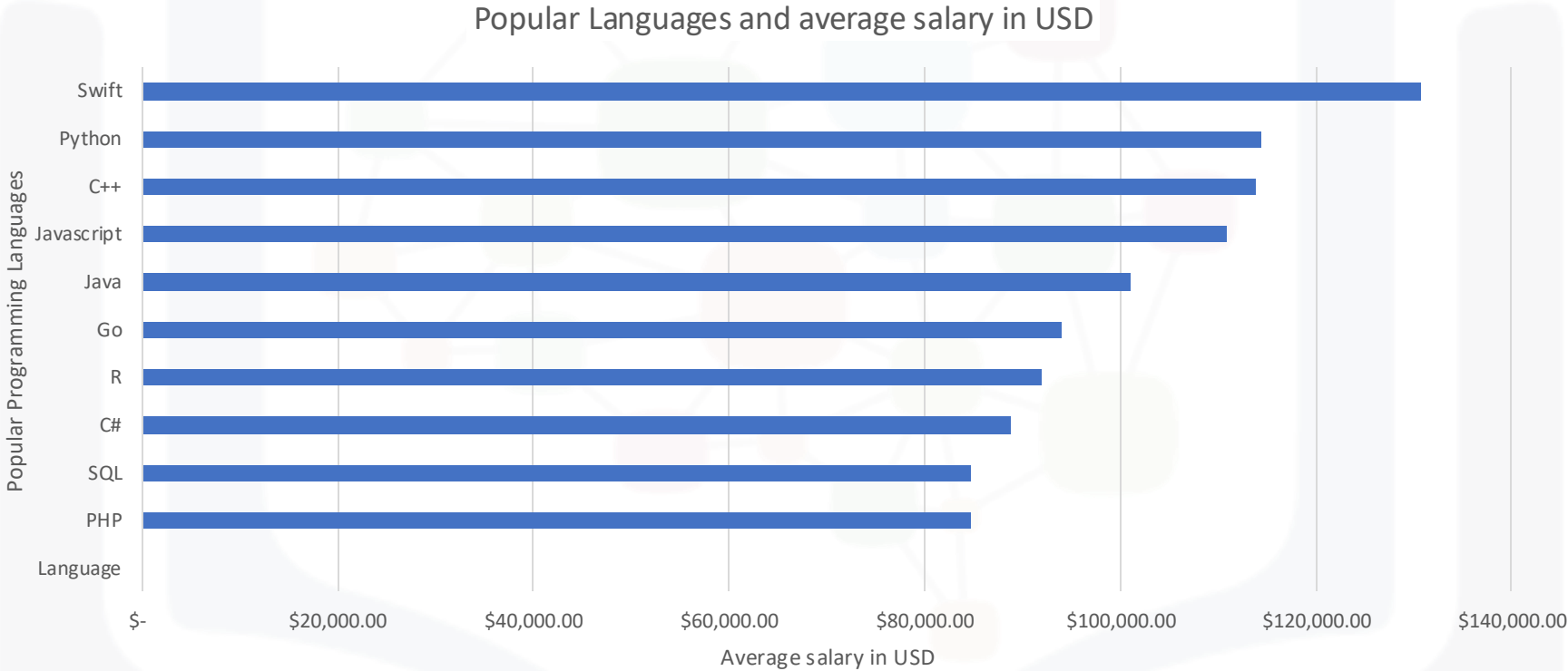
# Thank you for your attention

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