Analyzing StackOverflow Job Data

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EXECUTIVE SUMMARY

- Through exploratory data analysis we looked to find the most popular programming languages and software used by data professionals. Our findings include the most popular languages used by professionals, the languages programmers want to learn, and what kinds of programming backgrounds the professionals surveyed come from. Our findings show how this industry is mostly men and how JavaScript continues to be a very sought after language by both professionals and employers.

INTRODUCTION

- Background and Context
  - StackOverflow is an online community for programmers to learn, collaborate, and build new programming skills. StackOverflow issued a survey to over 90,000 programmers from many different parts of the world and even more educational and coding backgrounds.

- Questions we want to answer…
  - What are the most popular programming languages?
  - What are the programming languages of the future?
  - What types of backgrounds do programmers come from?

METHODOLOGY

- Data collection
  - Webscraping
  - APIs
- Data wrangling
  - Find and removing duplicates
  - Dealing with missing values
- Exploratory Data Analysis
  - Finding the distribution of data, dealing with outliers, and calculating correlation between variables.
- Data Visualization
  - Dashboards

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RESULTS

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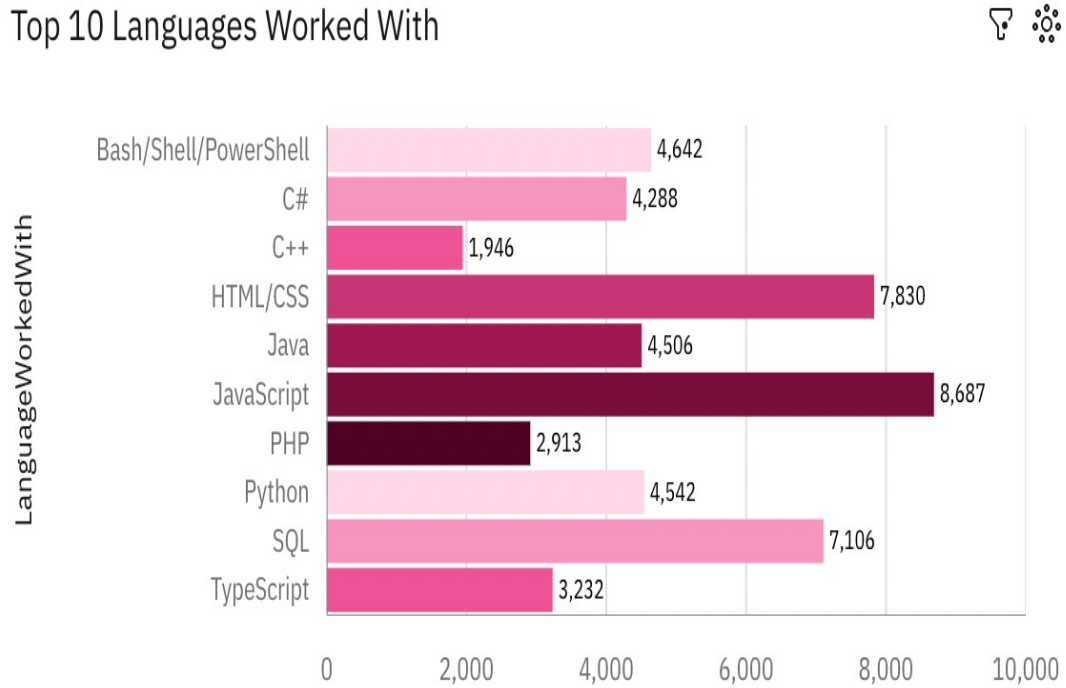
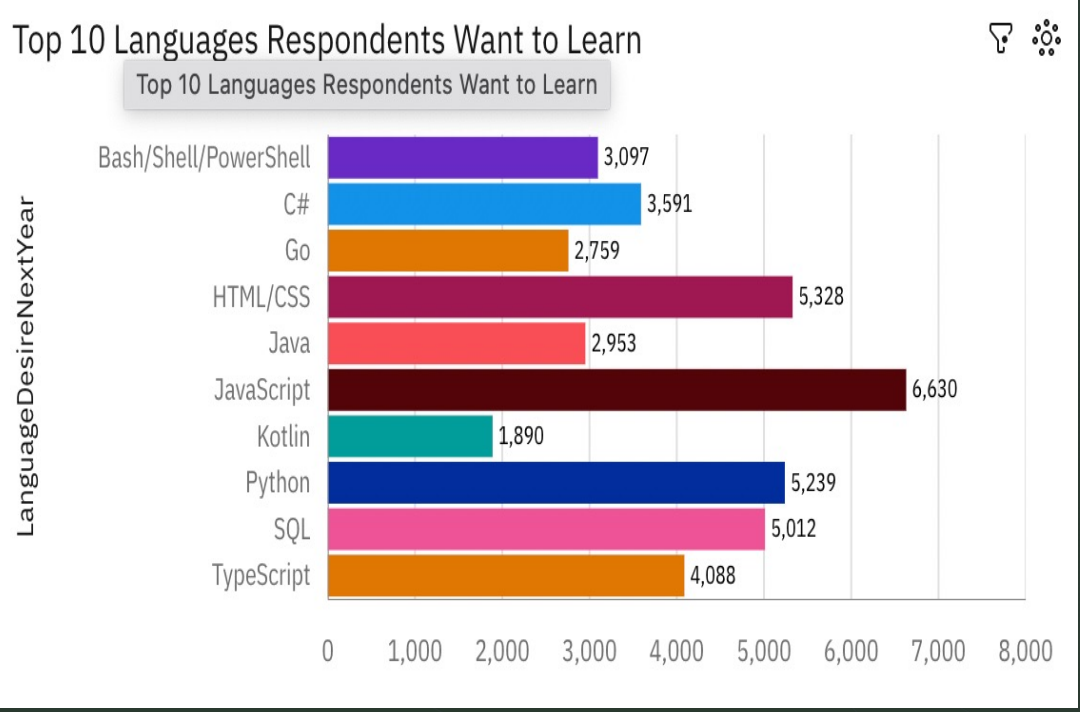
PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

- JavaScript is both the most popular used currently and for next year.
- Python is currently and will continue to be a popular language.
- C++ is the only language to fall out of the top 10 next year.

Implications

- Professionals trust and companies will continue to use JavaScript.
- Python will remain a giant in data analytics.
- C++ is not being used as much and new languages will begin to emerge.

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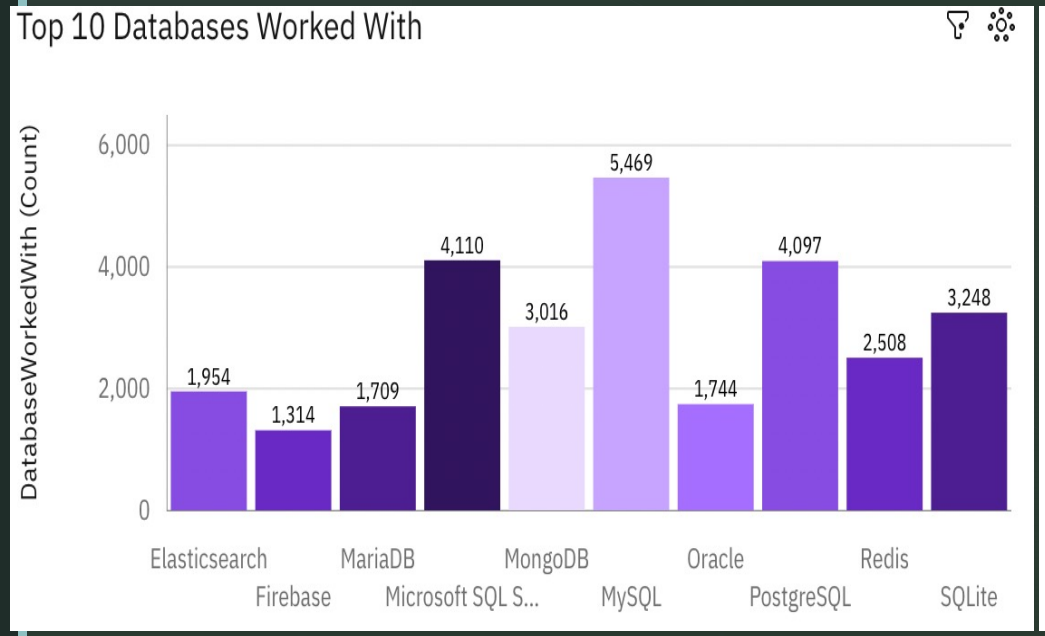
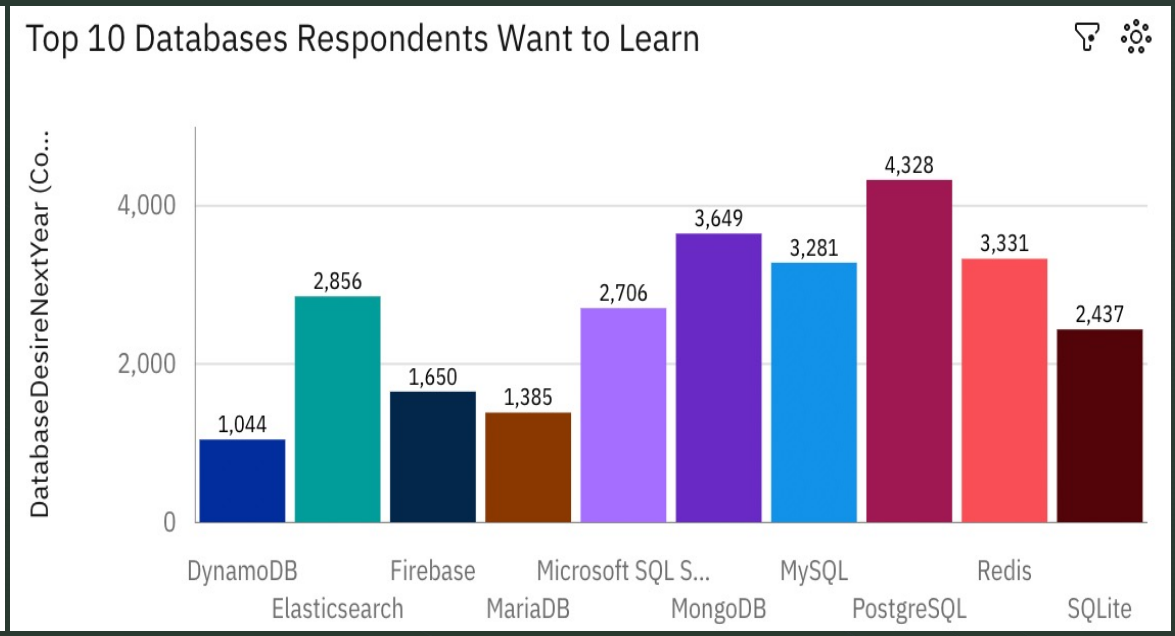
DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Oracle drops off after this current year.
- MySQL is losing popularity.
- PostgreSQL is gaining popularity.

Implications

- Less professionals will be using Oracle in the future.
- MySQL will still be widely used but not be as dominant in the industry as before.
- More professionals will begin using PostgreSQL.

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DASHBOARD

https://github.com/SamMeahan/IBMCapstone/blob/main/Capstone%20Project.pdf

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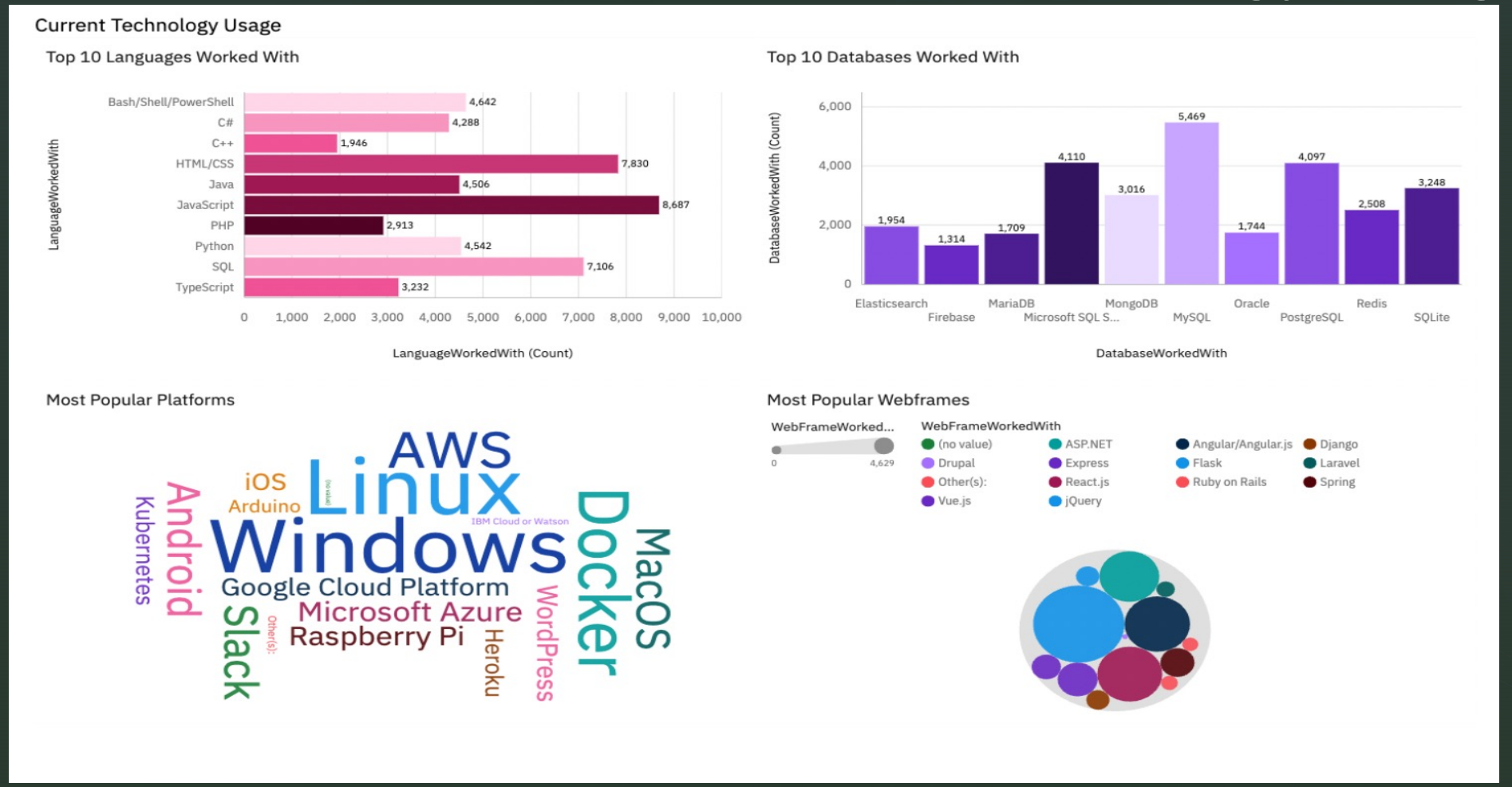
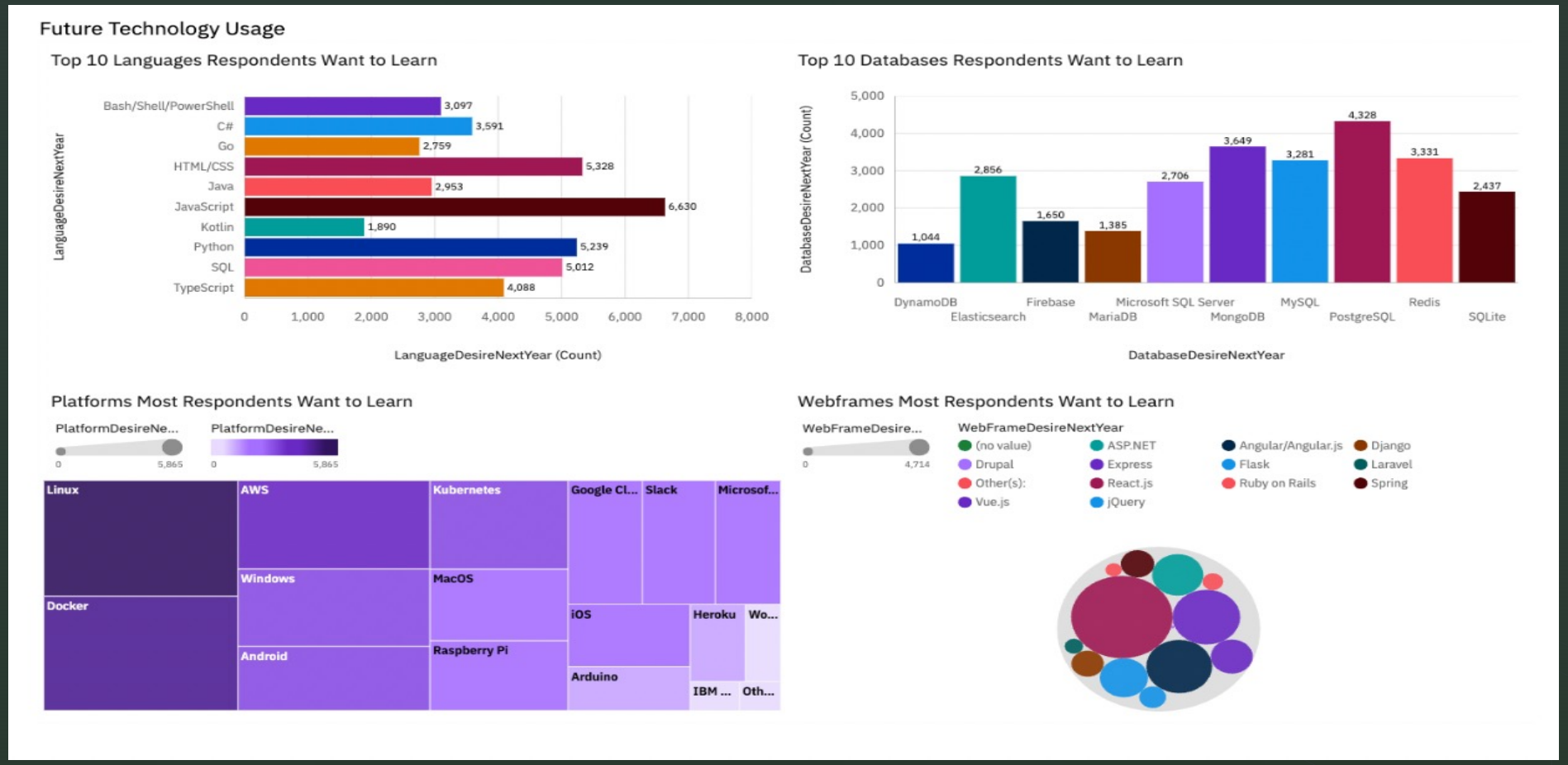
Current Technology Usage



Future Technology Usage



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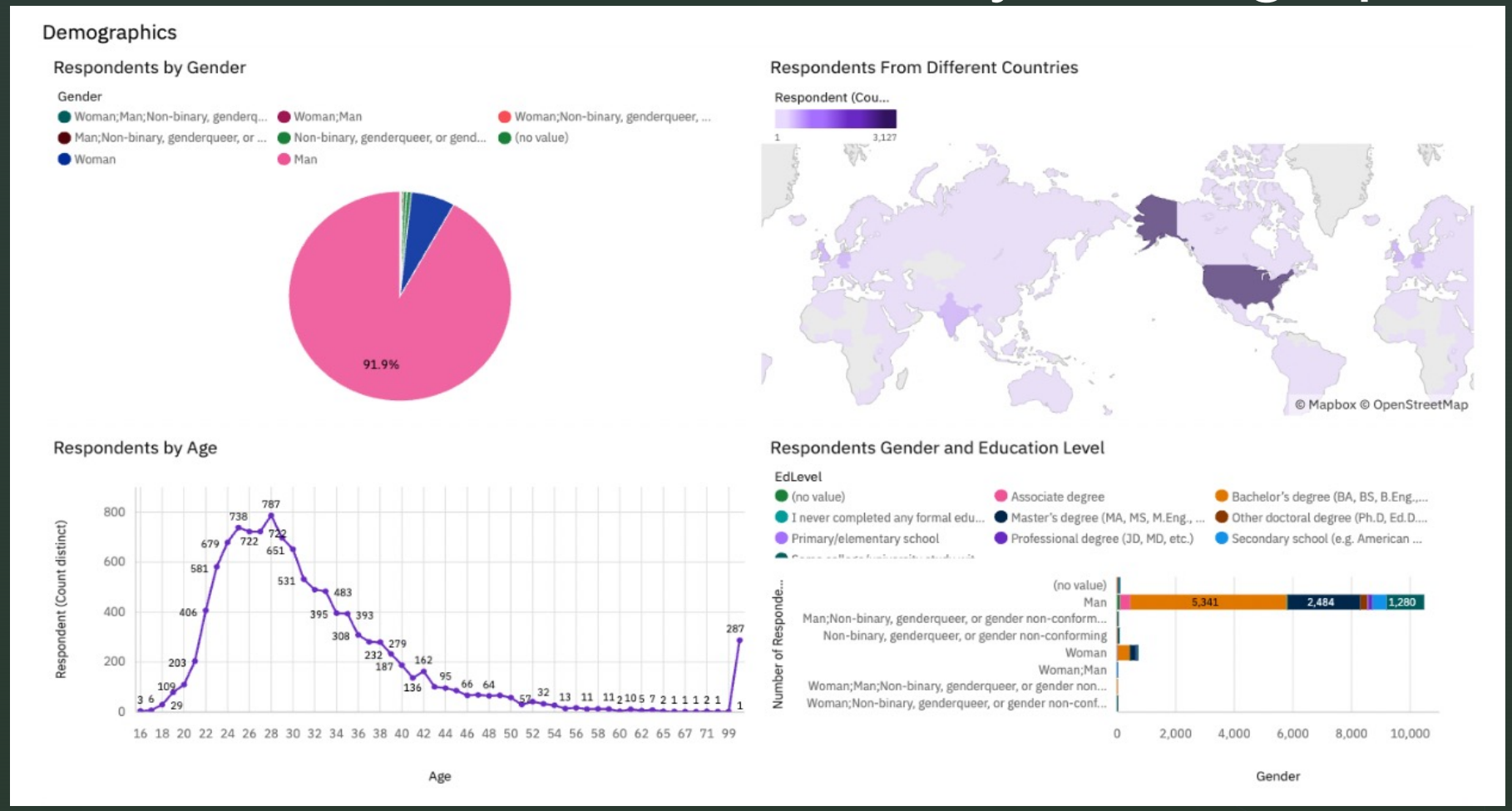
Survey Demographics



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DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- JavaScript and Python have dominated and will continue to be popular amongst professionals.
- Many programmers are male with bachelor's and master's degrees, but more women are beginning to break into the industry.
- PostgreSQL is quickly gaining popularity amongst programming professionals.

Implications

- Jobs will continue to be available for JavaScript and Python.
- Employers are looking into more diverse backgrounds for prospective employees.
- Professionals with experience with PostgreSQL will be very sought after by employers.

CONCLUSION

- The demand for programming professionals will continue to grow as new technologies emerge.
- JavaScript and Python continue to be very popular among professionals.
- Many new database systems are becoming more popular, like PostgreSQL.
- Programmers are coming from many different educational backgrounds.

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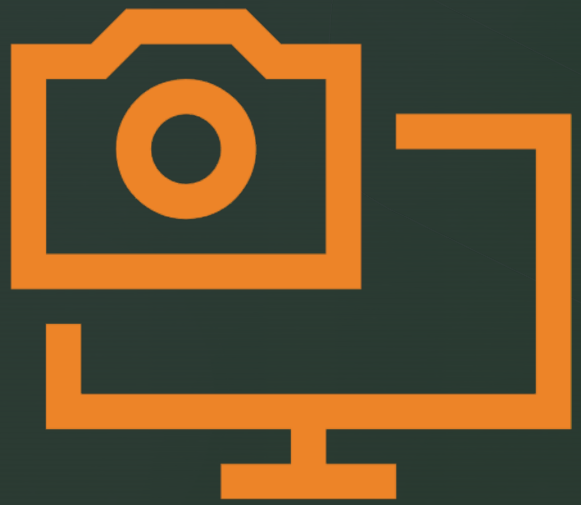
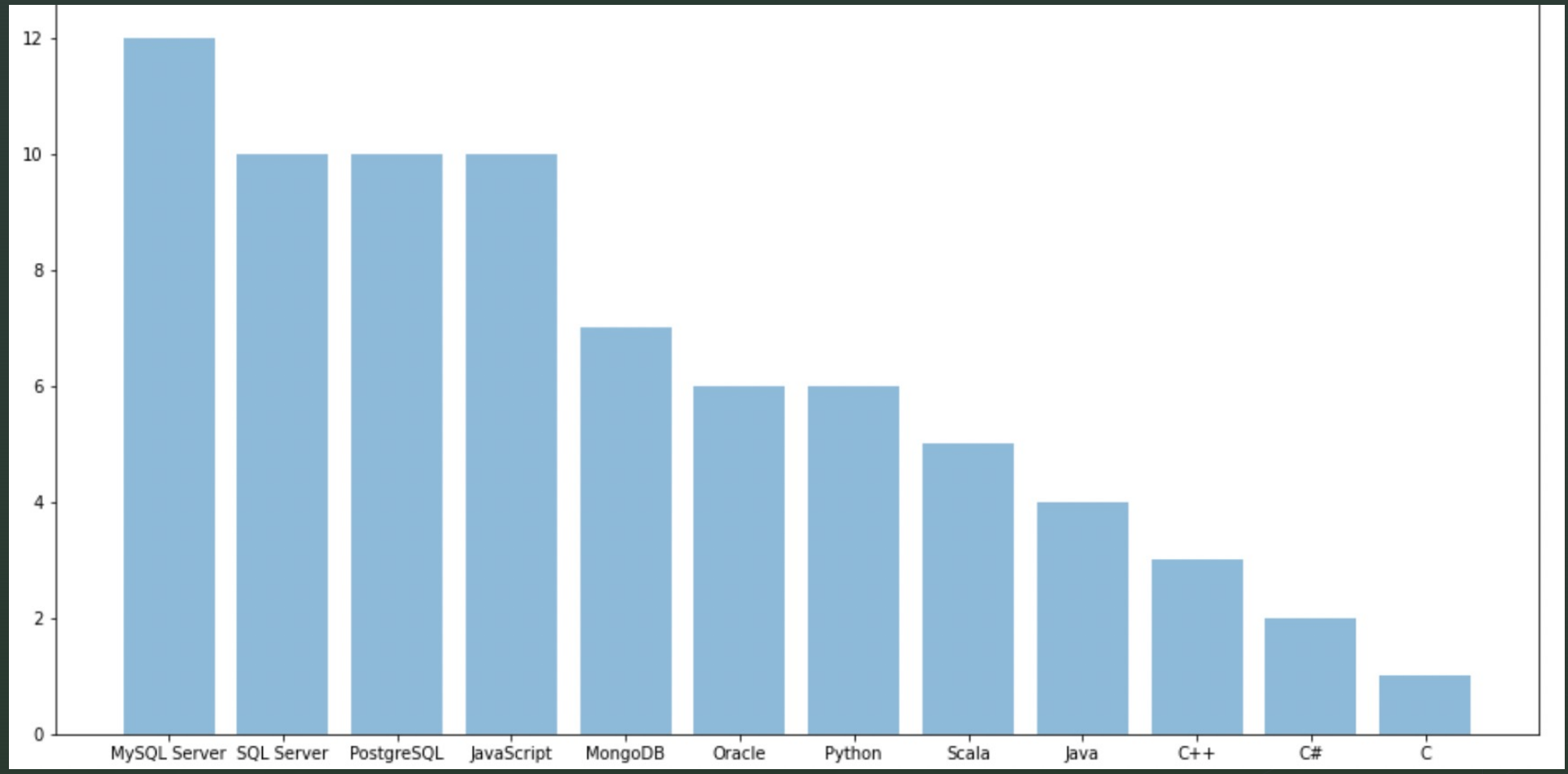
APPENDIX



- The following charts are from the data collecting labs from Module 1. They show the number of job postings from different languages followed by the average salary for professionals using those languages.

Most Job Postings by Language



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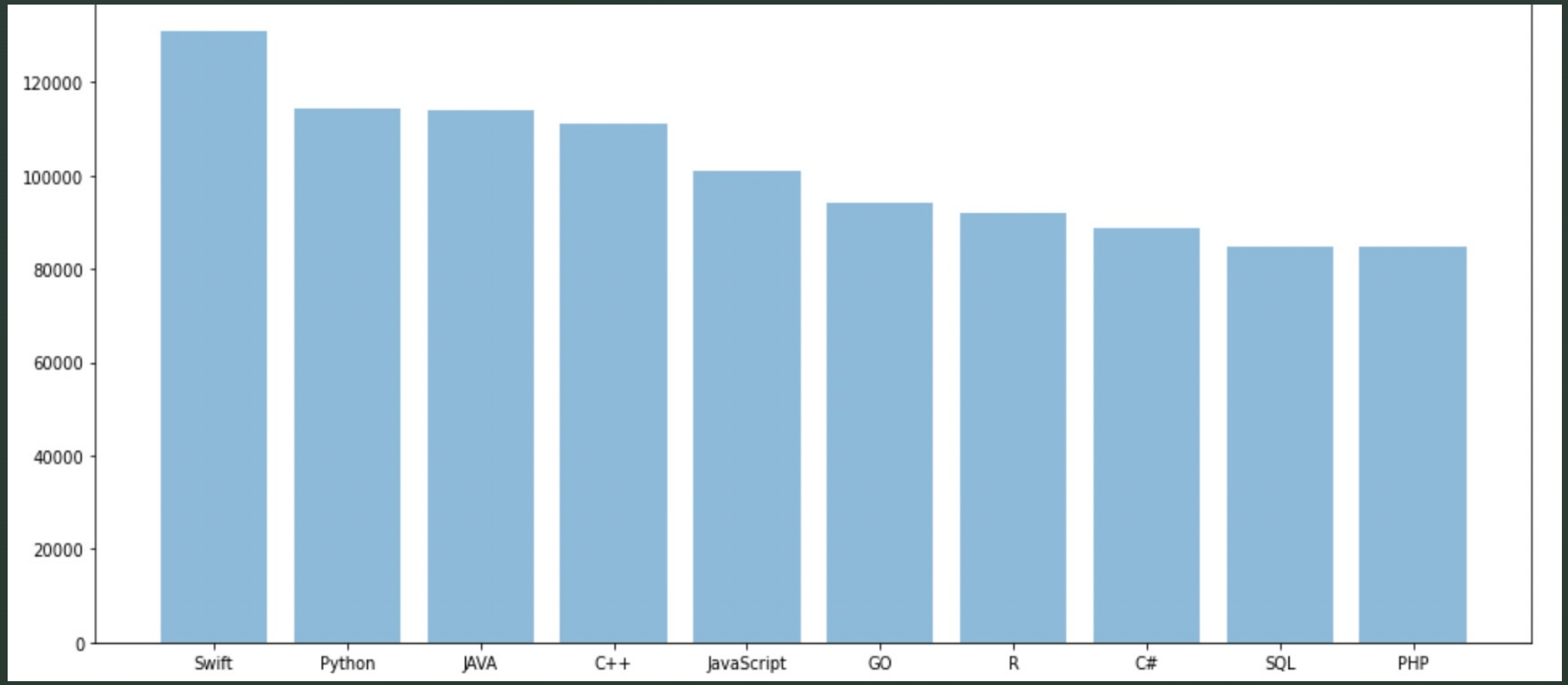
Highest Paying Languages



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