IBM DATA ANALYST CAPSTONE PROJECT FINAL PRESENTATION

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IBM Developer

SKILLS NETWORK

OUTLINE

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

- Data Collection
- Data Wrangling
  - Expertise in data preprocessing techniques
  - Application of tools and libraries for efficient data wrangling processes
  - Ability to address missing values, outliers, and inconsistencies
- Exploratory Data Analysis
- Data Visualization
- Dashboards

INTRODUCTION

- The IBM Capstone project has provided an immersive learning experience in key data science areas
- Covering
  - data collection
  - data wrangling
  - exploratory data analysis (EDA)
  - And data visualization,

  the project equips participants with a comprehensive skill set
- Beginning with data collection, participants learn diverse techniques including APIs, databases, and web scraping, ensuring data integrity and relevance.
- Through data wrangling, participants preprocess raw data, addressing issues such as missing values and outliers, to prepare it for meaningful analysis.

METHODOLOGY

- Cleaned, transformed, and aggregated raw data to address missing values, outliers, and inconsistencies.
- Conducted thorough EDA to gain insights into data characteristics, distributions, and patterns.
- Created compelling visualizations using tools like Matplotlib, Seaborn, and Plotly to communicate insights effectively.
- Utilized various sources such as
  - APIs
  - Databases
  - and web scraping techniques

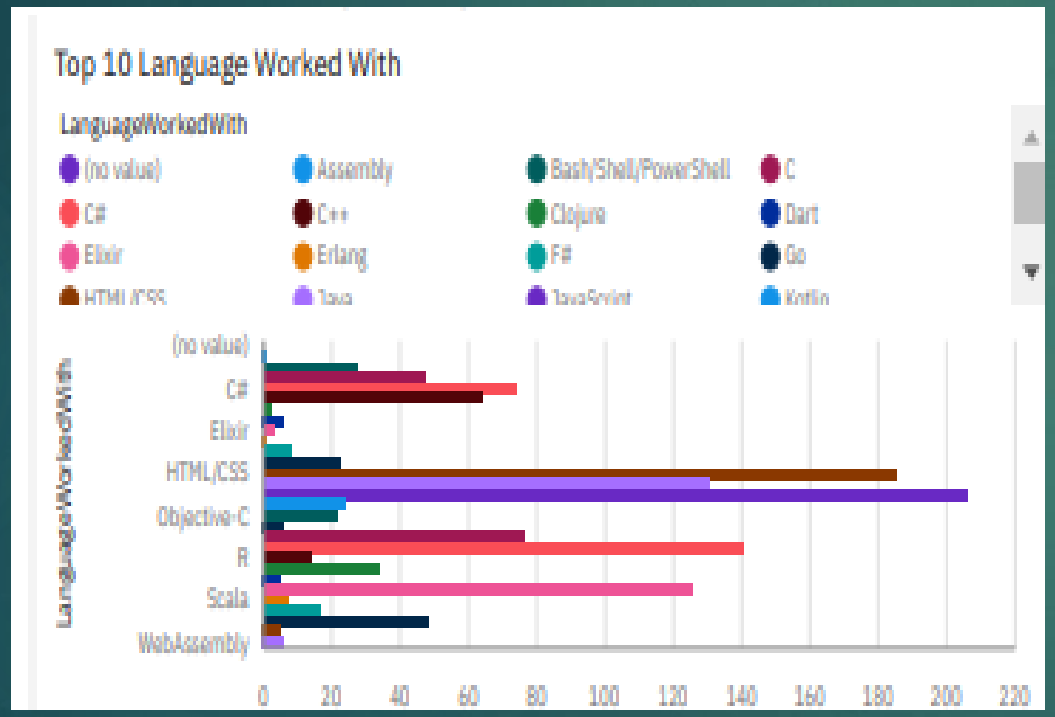
  to gather diverse datasets.

RESULTS

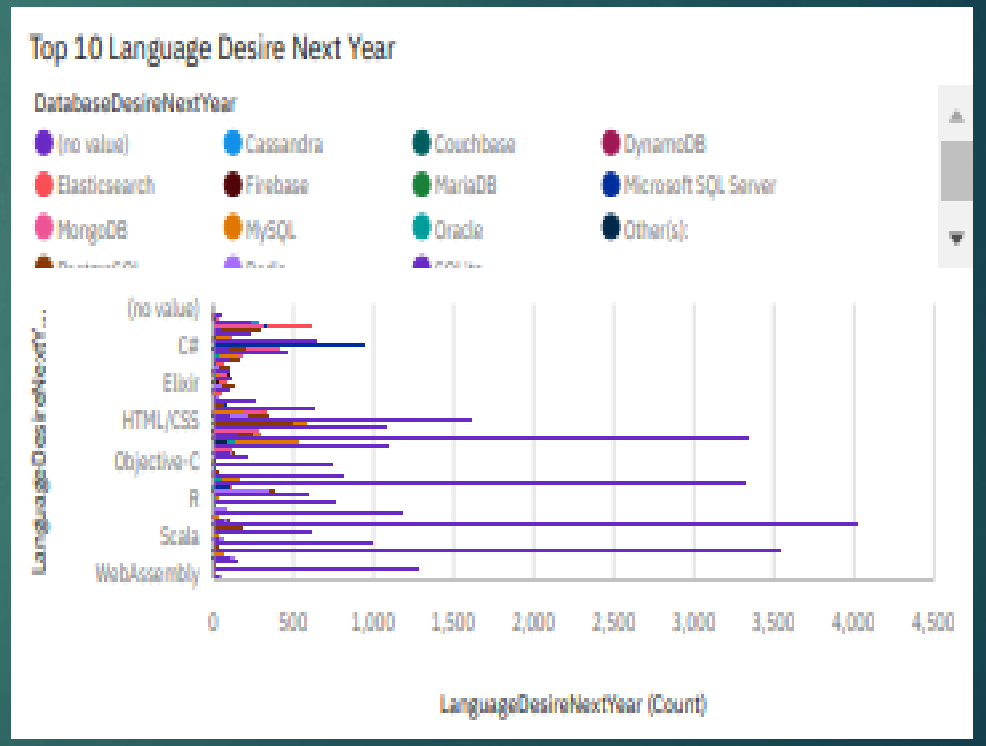
- Achieved comprehensive understanding and proficiency in data collection, data wrangling, exploratory data analysis (EDA), data visualization, and dashboard development.
- Successfully gathered and preprocessed diverse datasets, ensuring data integrity and quality for subsequent analysis.
- Uncovered valuable insights through thorough exploratory data analysis, identifying patterns, trends, and relationships within the data.
- Developed interactive and informative data visualizations and dashboards, facilitating data-driven decision-making and communication of findings to stakeholders.

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

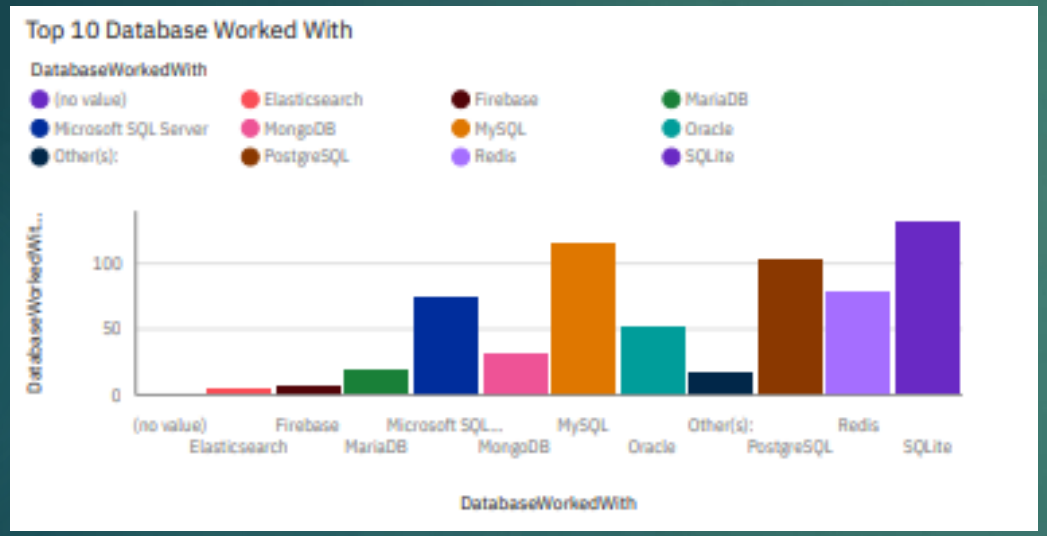
- Python continues to dominate as one of the most popular programming languages, driven by its versatility, readability, and extensive libraries.
- JavaScript maintains its position as a cornerstone language for web development
- Java remains resilient, particularly in enterprise-level applications, Android development, and big data processing frameworks like Apache Hadoop and Apache Spark
- Swift continues to gain traction as the preferred language for iOS and macOS app development

Implications

- Developers need to stay updated with the evolving landscape of programming languages to remain competitive in the job market.
- Organizations must carefully consider programming language trends when selecting technology stacks for their projects.
- Language trends often drive the development of new tools and frameworks.
- Language trends may impact standardization efforts and industry guidelines

DATABASE TRENDS

Current Year



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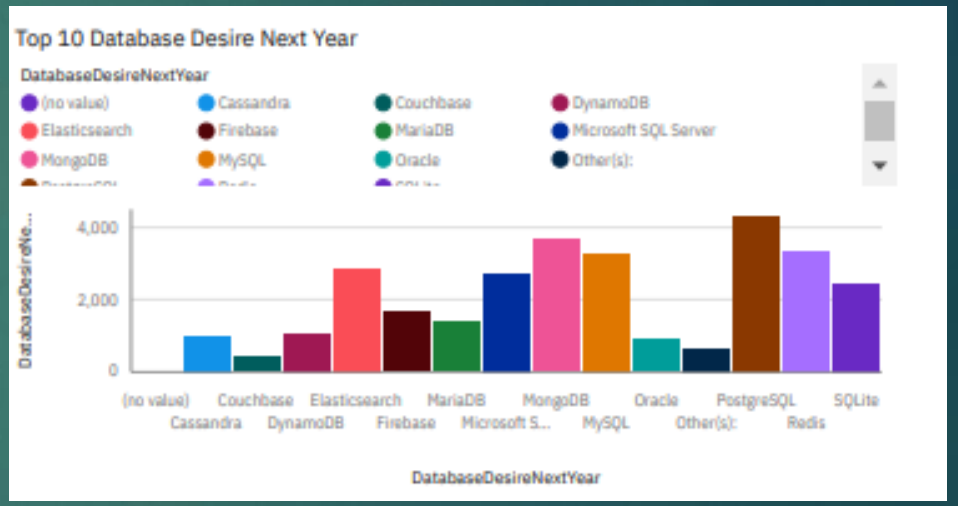

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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- There is a notable trend towards cloud-based NoSQL databases continue to grow in popularity
- NewSQL databases, which combine the scalability of NoSQL with the ACID transactions of traditional relational databases, are emerging
- With the proliferation of data breaches and privacy regulations, there is a heightened focus on [illegible] and security within

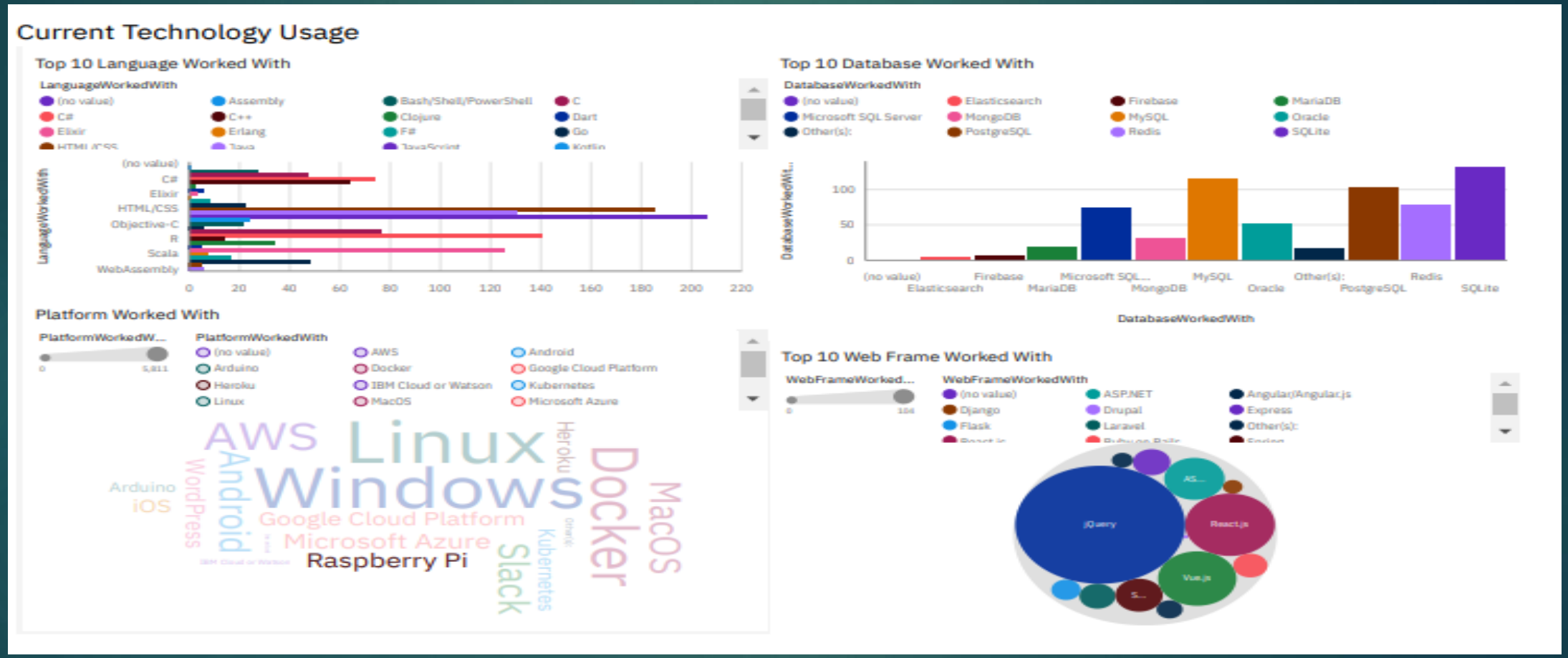
Implications

- Organizations need to evaluate their database infrastructure and consider migrating to cloud-based or hybrid solutions
- With the rise of NoSQL and NewSQL databases, developers need to familiarize themselves with non-relational data models
- Organizations must prioritize data governance and compliance initiatives to ensure data privacy and security within their databases

DASHBOARD

https://github.com/pkomot/Building-A-Dashboard-With-IBM-Cognos-Analytics/blob/3ad7f08f418bfaca649664ec90db894ff4de8640/Building%20A%20Dashboard%20With%20IBM%20Cognos%20Analytics.pdf

DASHBOARD TAB 1



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DASHBOARD TAB 2

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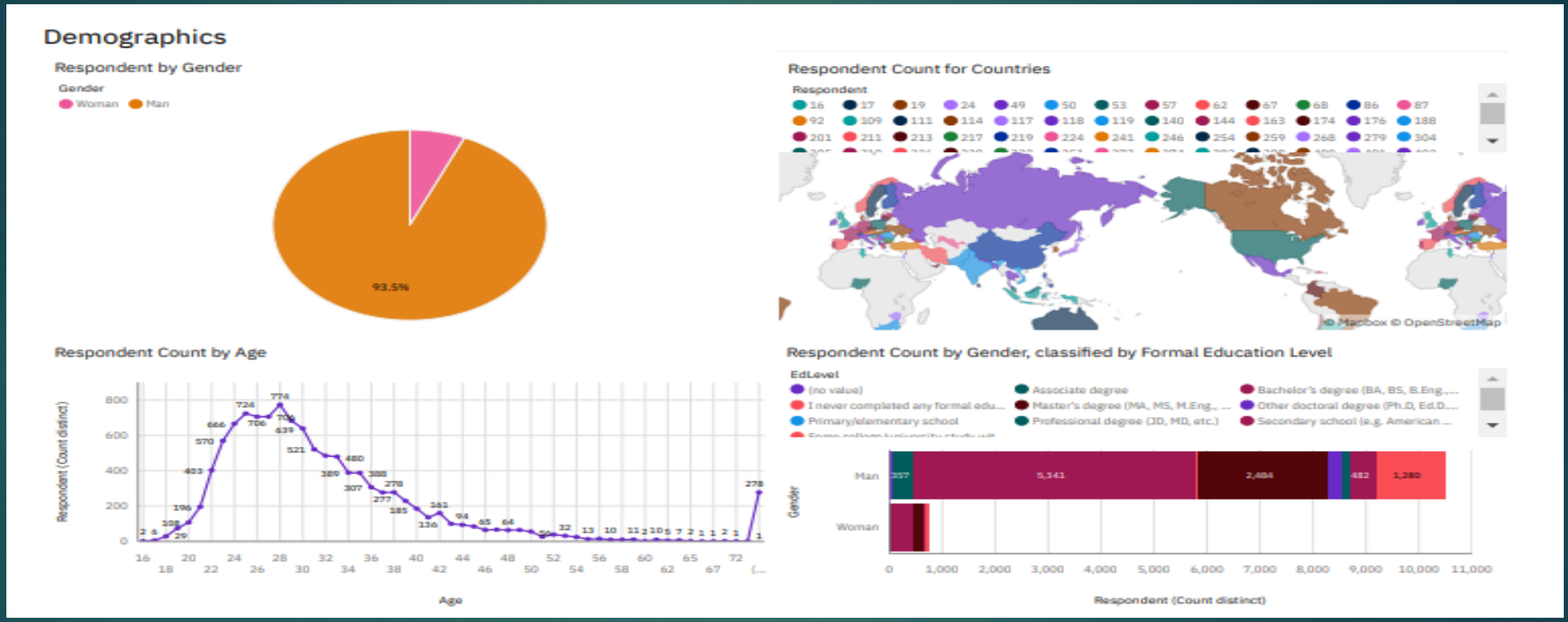
DASHBOARD TAB 3



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DISCUSSION

- IBM Cognos Analytics provides a user-friendly interface and intuitive drag-and-drop functionality
- The platform seamlessly integrates with diverse data sources, including databases, data warehouses, and APIs
- IBM Cognos Analytics offers a diverse set of visualization options such as charts, graphs, and maps
- Data governance and security are prioritized within IBM Cognos Analytics

OVERALL FINDINGS & IMPLICATIONS

Findings

- IBM Cognos Analytics proves to be an effective tool for building interactive and insightful dashboards
- The platform's user-friendly interface and seamless integration with various data sources promote self-service analytics
- By facilitating deeper data exploration and visualization, IBM Cognos Analytics enhances decision-making processes within organizations

Implications

- Organizations should strategically adopt IBM Cognos Analytics as a key component of their analytics and business intelligence strategy
- Organizations need to focus on optimizing dashboard design and governance practices
- Building dashboards with IBM Cognos Analytics can contribute to the promotion of a data-driven culture

CONCLUSION

- Through the capstone project, I developed proficiency in using various tools and technologies
- It enables me gain hands-on experience by working on real-world projects
- The skills acquired through the IBM Capstone project are highly relevant to various industry roles
- IBM Capstone project provided a holistic learning experience covering essential data science topics such as:
  - data collection
  - data wrangling
  - exploratory data analysis (EDA),
  - data visualization

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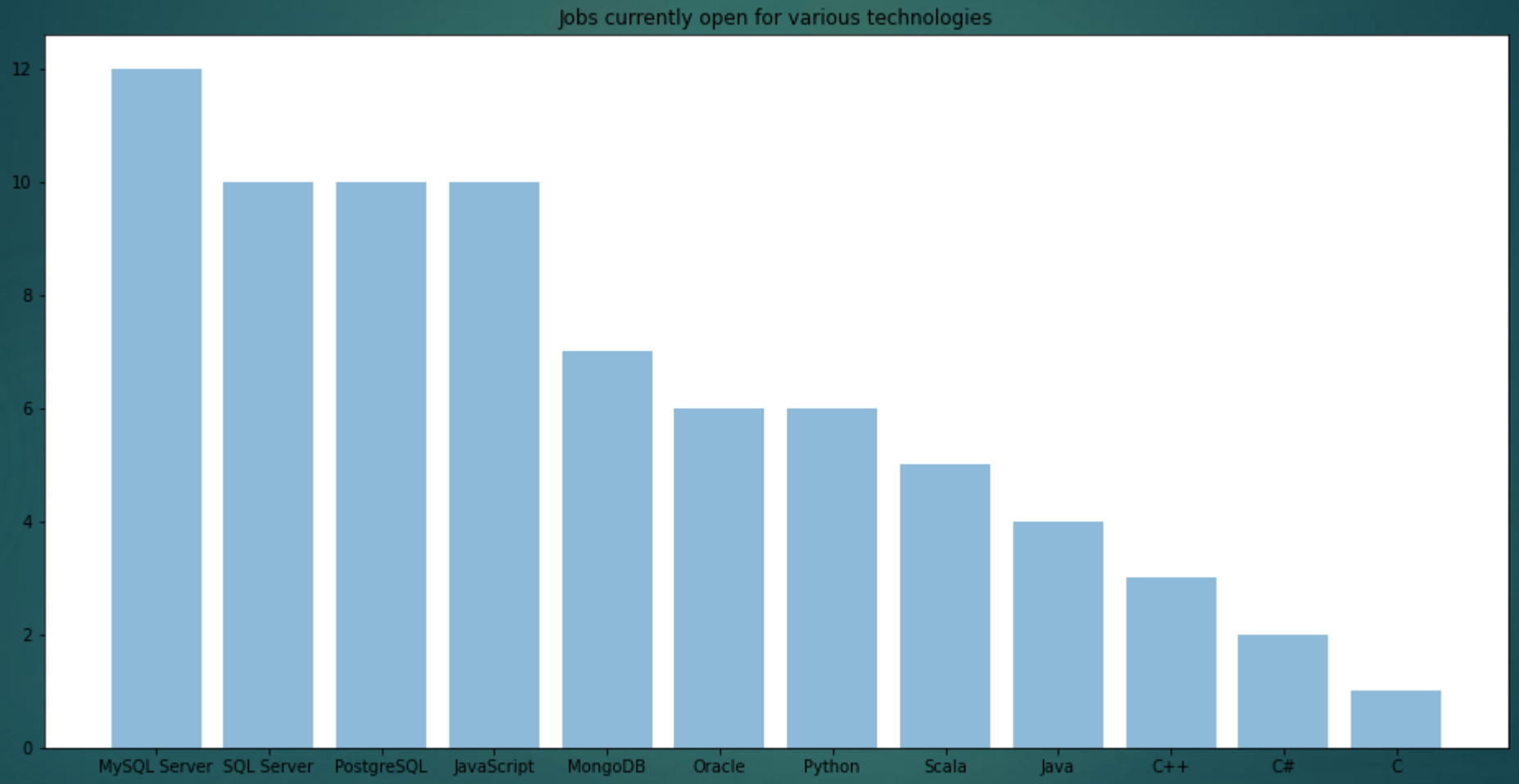
JOB POSTINGS



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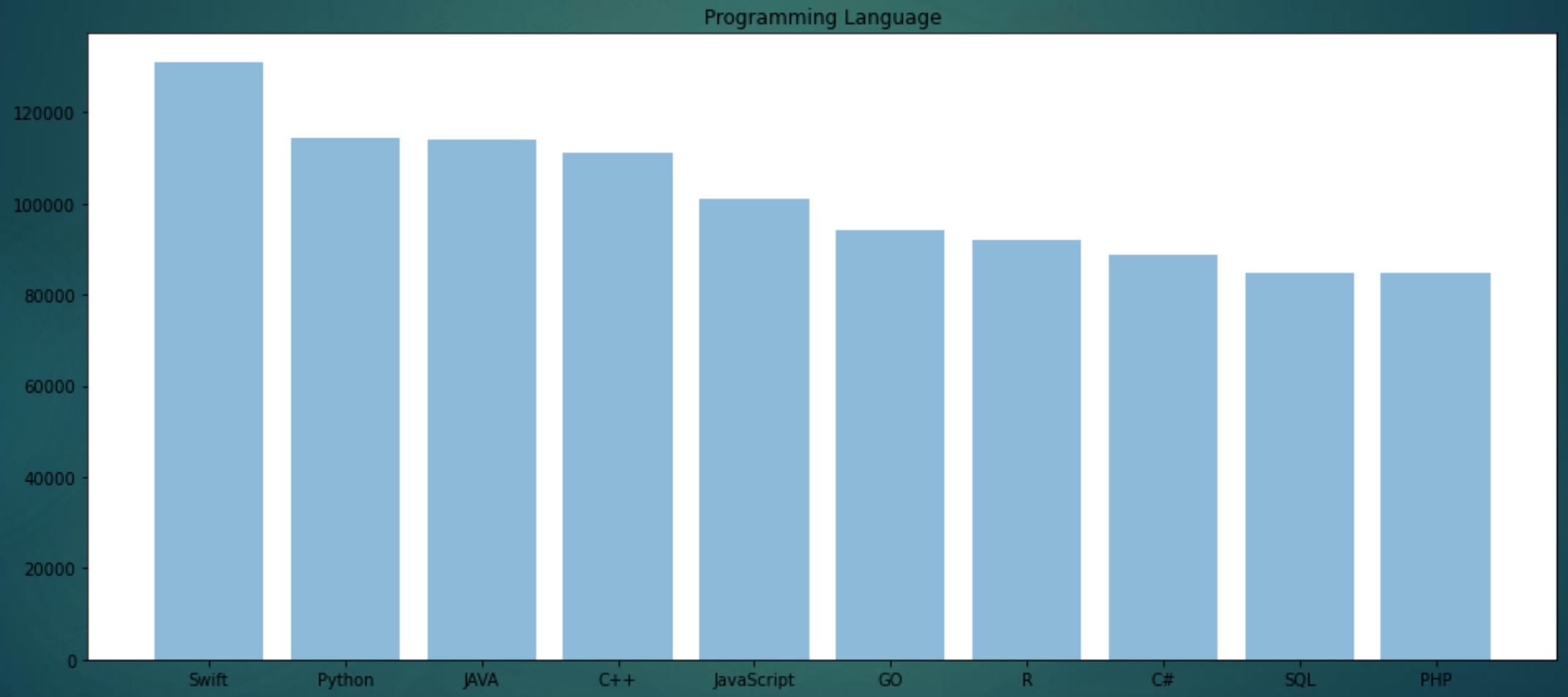
POPULAR LANGUAGES



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