



Trends in Technology: A Comparative Analysis of Present-Day Dominance and Future Popularity

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07-30-2023

Executive Summary

- The report is a comparative analysis of Present-Day dominance and future popularity
- It is about various aspects of software developers covering topics like programming languages, development practices, frameworks, salaries, job preferences, demographic information, and job satisfaction
- The major stakeholders are developers, tech Companies, Recruiters, Researchers, Analysts, Tech Enthusiasts, and Students. Datasets are collected from Kaggle. Two datasets were taken for analysis "m5_survey_data_demographics.csv" and "m5_survey_data_technologies_normalised.csv."

Executive Summary (Cont..)

- Jupyter Notebook is used to code the data. Before analysis data is cleaned by using some codes to avoid duplicates and missing numbers.
- After data cleaning, the next step is to showcase the five programming languages for the current and future years. At present JavaScript language is very popular but it is predicted Python will be taken up the first position.
- After that, database trends are shown, as their future predictability. It is concluded that as programming languages evolve rapidly,
- Python is positioned to become one of the best languages among IT professionals and developers due to its versatile applications, including web development, data analysis, and machine learning. Python is expected to play a significant role in the evolving IT industry, contributing to significant changes in the field.

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Introduction

- This report is about various aspects of software developers and their experiences in the tech industry.
- The report is for developers, tech Companies, Recruiters, Researchers, Analysts, Tech Enthusiasts, and Students.
- By reading through this report, a reader can gain industry insights, career guidance, community knowledge, Benchmarking, and data-driven decision-making.

Methodology

- Datasets are collected from Kaggle, the world's largest data science platform, which offers powerful resources to help achieve goals. The data was collected by downloading directly from the Kaggle account, and web scraping was used to extract additional data.
- Initially, necessary libraries were imported into Jupyter Notebook.
- Two datasets were utilized to support the findings and analysis: "m5_survey_data_demographics.csv" and "m5_survey_data_technologies_normalised.csv."
- Both datasets are in CSV format.

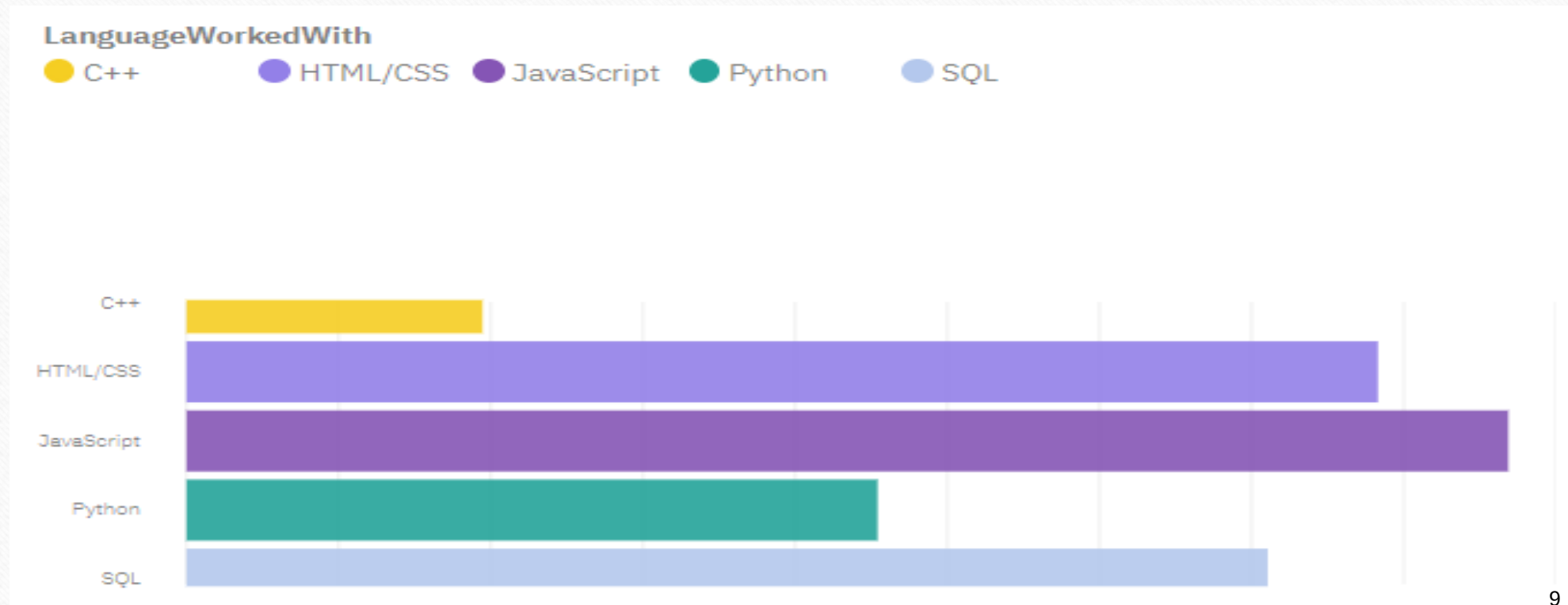
Methodology(cont..)

- Both datasets were cleaned. The following steps were performed to handle duplicates and missing values:
- Duplicates were identified and removed.
- Missing values were located, and imputation techniques were applied to fill in the gaps.

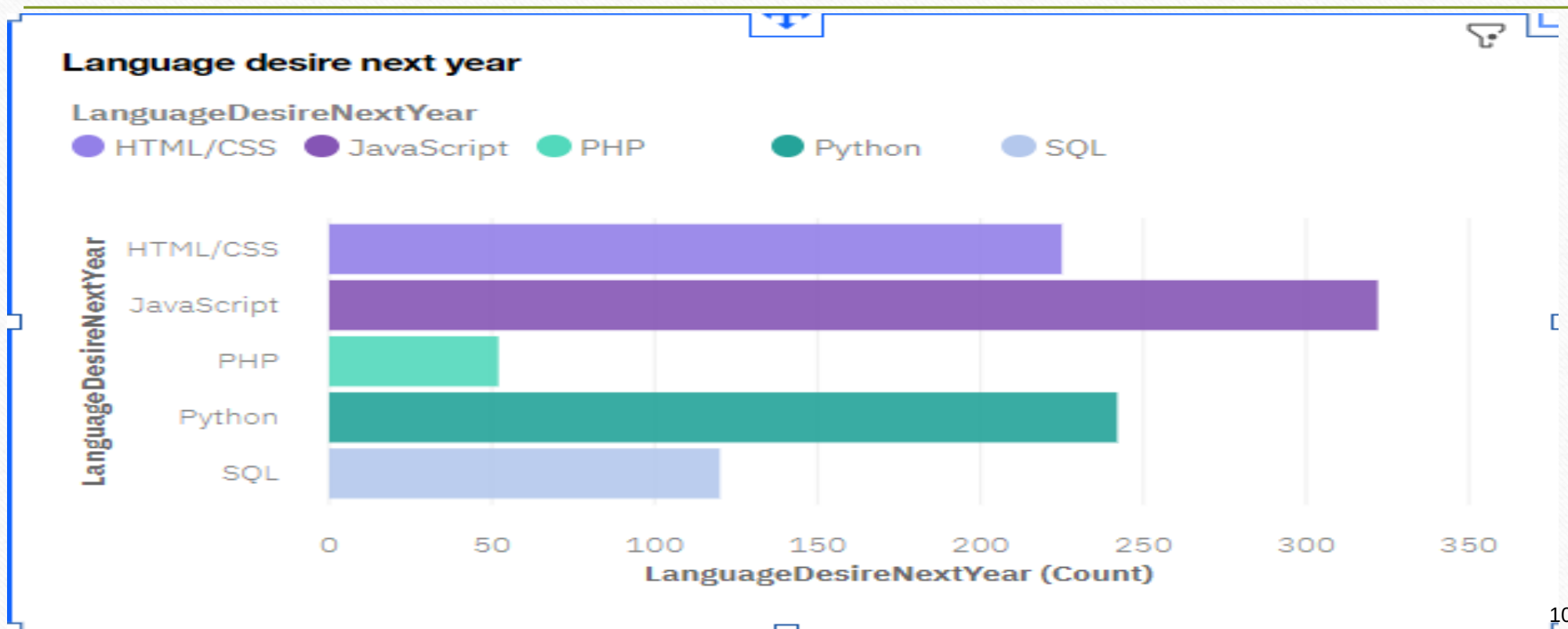
Functions to Clean Data

Data Wrangling criteria	Functions used
Finding duplicates	<code>df.duplicated().sum()</code>
Removing duplicates	<code>df_new=df.drop_duplicates()</code> <code>df_new.shape</code>
Finding Missing values	<code>df_new.isnull().sum()</code> <code>df_new['WorkLoc'].isnull().sum()</code>
Imputing missing values	<code>df_new['workLoc'].value_counts()</code> <code>df_new['WorkLoc'].isnull().sum()</code> # verify if imputing was successful.

Top 5 programming languages for the current year



Top 5 programming languages for the future year



Programming Languages Trends-Findings and Implications

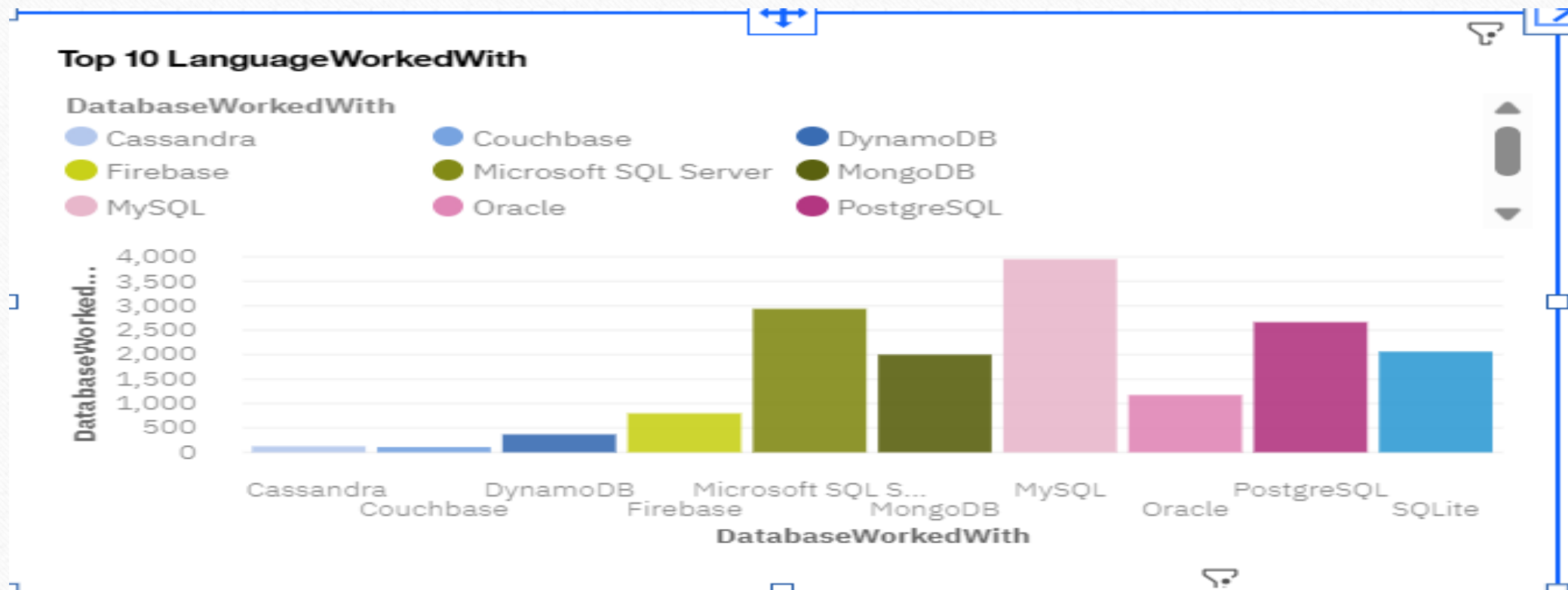
- **Current Year**

- The current year shows that JavaScript has huge demand among developers
- It is the most popular language that most people prefer in the recent year
- The second most popular is HTML/ CSS languages. Python is the fourth desire of language

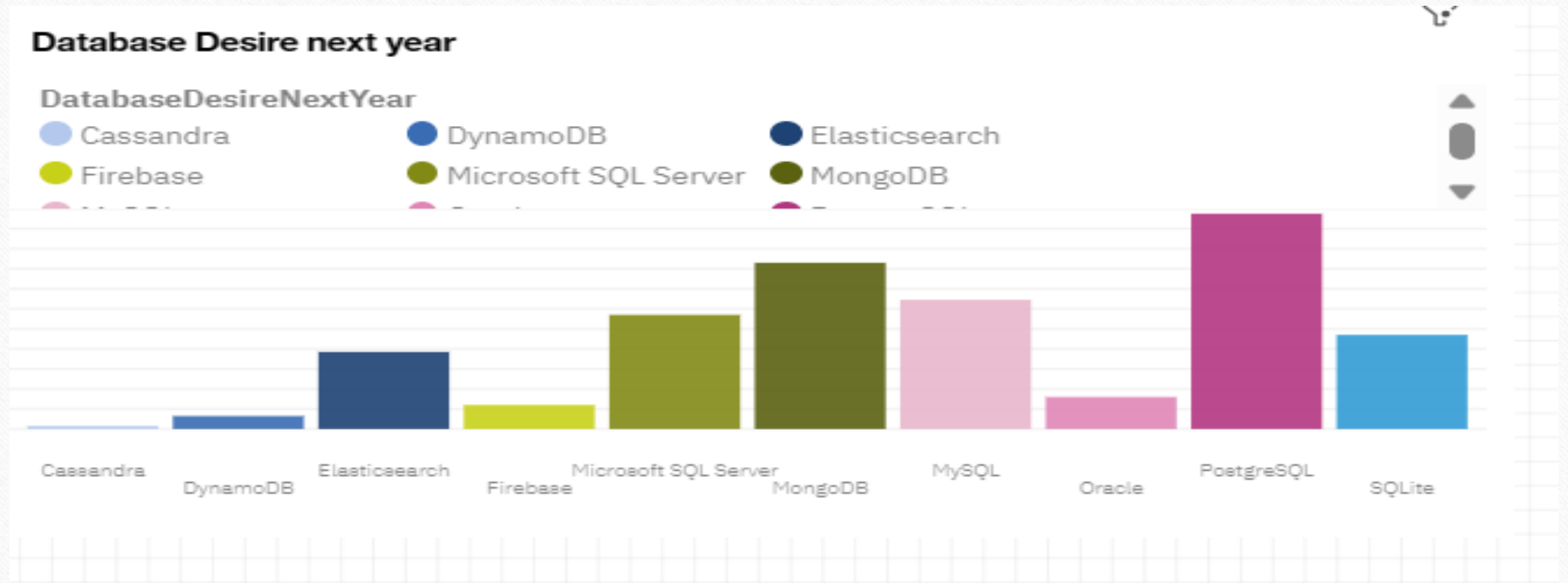
- **Future Year**

- It is predicted that Python will be the second most popular language while JavaScript remains the same. HTML has taken up the third position

Top 10 databases for the current year



Top 10 databases for the future years



Database Trends-Findings and Implications

- The figure above shows the top 10 databases for the current and future years.
- Currently, people prefer MySQL which 4000 respondents used while Microsoft SQL possesses the second position with 3000.
- On the other hand, it is predicted that in the future people will prefer PostgreSQL and the second will be MongoDB.

Discussion

- It was analyzed that Python is one of the fastest-growing major programming languages, indicating that people will likely consider Python as their desired programming language in the future.
- Python is known for its ease of understanding, and respondents in the survey admitted that they found it easier to solve coding problems in Python compared to other languages.
- As programming languages evolve rapidly, Python is positioned to become one of the best languages among IT professionals and developers due to its versatile applications, including web development, data analysis, and machine learning.

Conclusion

- Each programming language has its unique syntax and coding style, setting it apart from others. Python shows promising prospects for the future.
- Python is expected to play a significant role in the evolving IT industry, contributing to significant changes in the field.

Thank You