Identifying Emerging IT Skills

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EXECUTIVE SUMMARY

- To identify the most in-demand programming skills in the IT industry for the year 2024 by analyzing data from job postings, training portals, and surveys.
- The analysis provides insights that will guide the organization in aligning its training and development programs with emerging industry needs, ensuring a competitive edge in the market.

INTRODUCTION

- The IT and business consulting industry is rapidly evolving, driven by technological advancements and changing client needs. To remain competitive, organizations must anticipate and adapt to these changes by developing the right skills within their workforce.
- This project aims to identify emerging programming skills by analyzing data from various sources. The insights derived will inform the company's talent development strategies and ensure that the workforce is equipped with the skills required for future success.

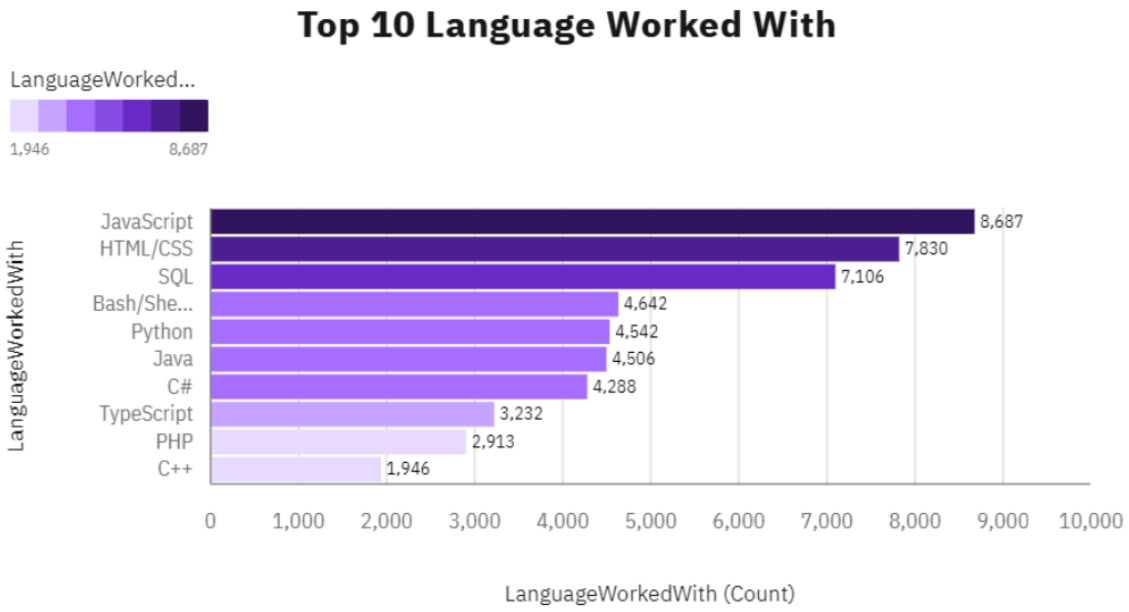
METHODOLOGY

- Data Collection
  - Webscraping
  - Accessing APIs
- Data Wrangling
  - Identify duplicate rows in the data frame.
  - Remove duplicate rows from the dataframe.
  - Find the number of missing values for all columns.
  - Find the value counts for the column "Employment".
  - Normalize the data using two existing columns.
- Data Analysis
- Data Visualisation
- Building a Dashboard

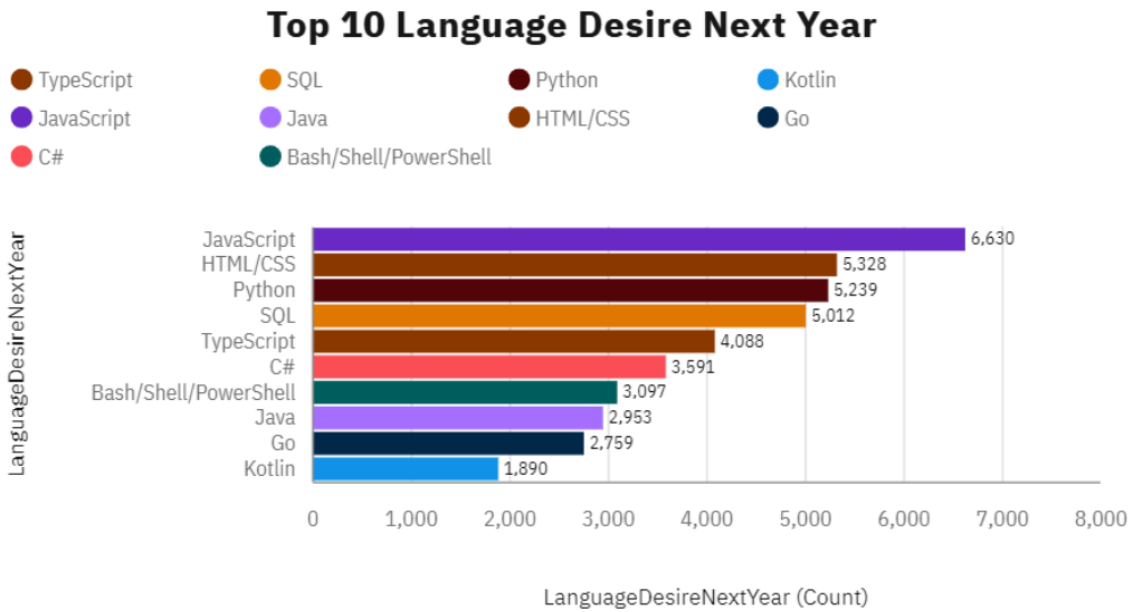
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

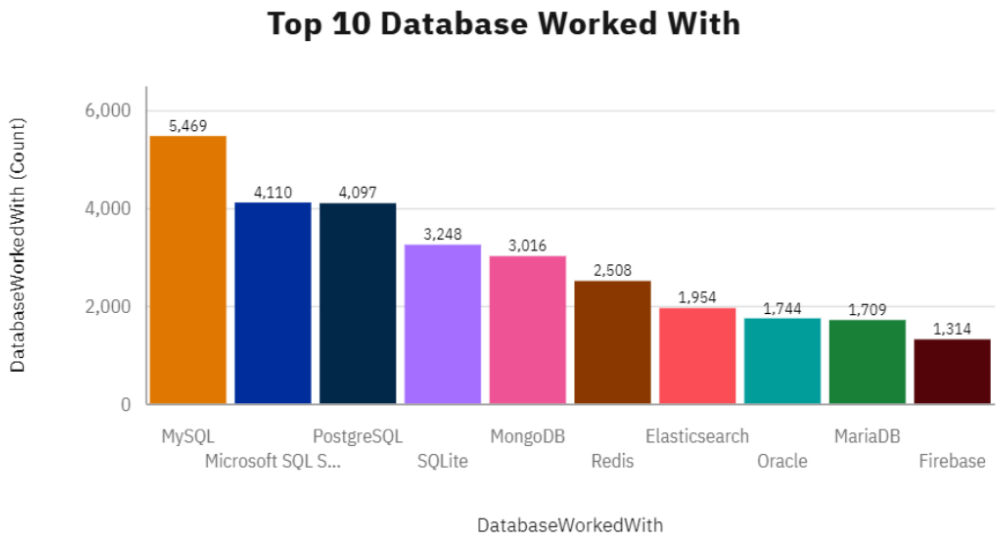
- **JavaScript** remains highly desired, leading with **6,630** respondents indicating a desire to use it next year.
- **Python** shows strong demand with **5,328** users expressing interest, which is a notable increase in preference compared to current usage.
- **HTML/CSS**, **SQL**, **TypeScript**, and **C#** continue to be in high demand.

Implications

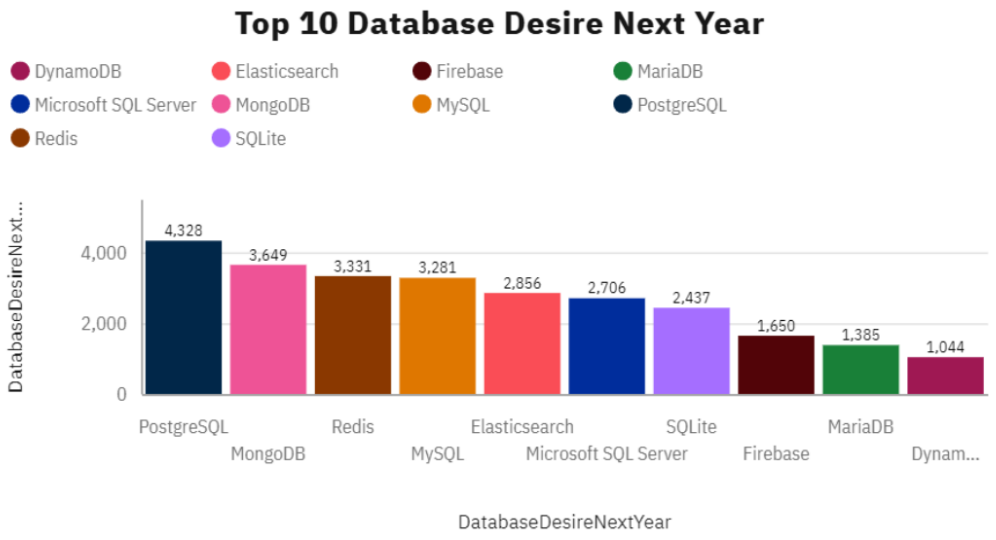
- **JavaScript** remains a critical language for both current and future needs, indicating that continued investment in JavaScript skills, including frameworks like React and Node.js, will be important for developers and organizations.
- The rising demand for **Python** suggests a shift towards data science, machine learning, and automation tasks, making it essential for organizations to enhance their workforce's proficiency in Python.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- **PostgreSQL** leads the list of desired databases for next year, with **4,328** respondents indicating interest.
- **MongoDB** is the second most desired, with **3,649** respondents, reflecting a growing interest in NoSQL databases.

Implications

- The increasing desire for **PostgreSQL** indicates a shift towards open-source, versatile, and feature-rich databases, which may be preferred over proprietary solutions for flexibility and cost-effectiveness.
- The strong interest in **MongoDB** suggests that NoSQL databases are becoming more critical, especially for handling unstructured data and supporting modern application development.

DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- **JavaScript Dominance:** JavaScript continues to be the most widely used programming language, with the highest number of professionals currently working with it. It also remains a top choice for the coming year, underscoring its essential role in both frontend and backend web development.
- **Leadership of MySQL and PostgreSQL:** MySQL is currently the most used database, but PostgreSQL is emerging as the most desired for the next year. PostgreSQL's rise in popularity is due to its advanced features, open-source nature, and flexibility, making it a strong contender for both new and existing projects.

Implications

- **Investment in JavaScript and Python:** Organizations should continue investing in JavaScript and Python training, given their critical importance across various development domains. Python’s growing demand also suggests the need for increased focus on data-related technologies and applications.
- **Prioritizing PostgreSQL:** With PostgreSQL's increasing popularity, organizations should consider migrating or integrating PostgreSQL into their database solutions, especially for projects requiring robust, feature-rich, and cost-effective database management systems.

CONCLUSION

- The overall trend in programming languages and databases indicates a balance between maintaining proficiency in established technologies while also embracing newer, specialized tools. JavaScript and Python are critical for current and future development needs, while PostgreSQL and MongoDB are emerging as key players in the database domain. Organizations should focus on enhancing skills in both traditional and emerging technologies to remain competitive and meet evolving industry demands.