STACK OVERFLOW DEVELOPER SURVEY 2019

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OUTLINE

- **Executive Summary**
- **Introduction**
- **Results**
  - Visualization - Charts
  - Dashboard
- **Discussion**
  - Findings & Implications
- **Conclusion**
- **Appendix**

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EXECUTIVE SUMMARY

- Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- It is important to identify future skill requirements and trends to keep pace with changing technologies and remain competitive.
- This presentation will identify current and future trends in Programming Languages, Databases, Platforms and Web Frames.
- Overall, the aim in identify future skill requirements and trends helps our firm make more informed data-driven hiring and budgetary decisions.

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INTRODUCTION

- This presentation is created for stakeholders and business decision makers within the global IT and business consulting services firm.
- This will help identify future skill requirements in the global IT sector necessary for the firm to keep pace with changing technologies and remain competitive.
- Recommendations will be stated based on the analysis.
- Reader may gain some insights into current and future trends of technological applications.

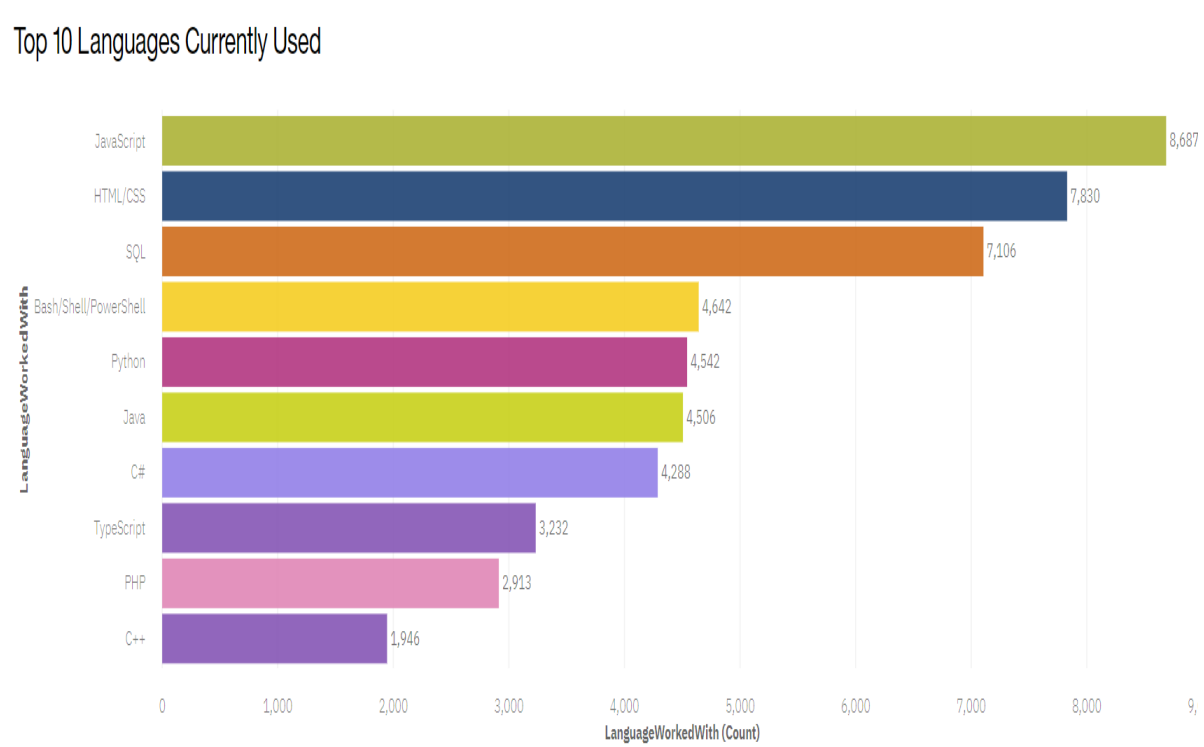
METHODOLOGY

- Data about number of job postings and average salary of different languages were collected from websites (e.g: Kaggle), json URL using APIs and Webscraping, which were then stored in excel and csv file.
- Using a modified subset of the Stack Overflow dataset, the data was first wrangled: removing duplicates, imputing missing values and normalizing data.
- Next, the data underwent exploratory analysis in order to find the distribution of data, presence of outliers and determine the correlation between different indicators in the dataset.
- The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of data.
- Finally, Cognos Dashboard Embedded (CDE) was used to create the “Current Technology Usage”, “Future Technology Trends” and “Demographics” dashboards.

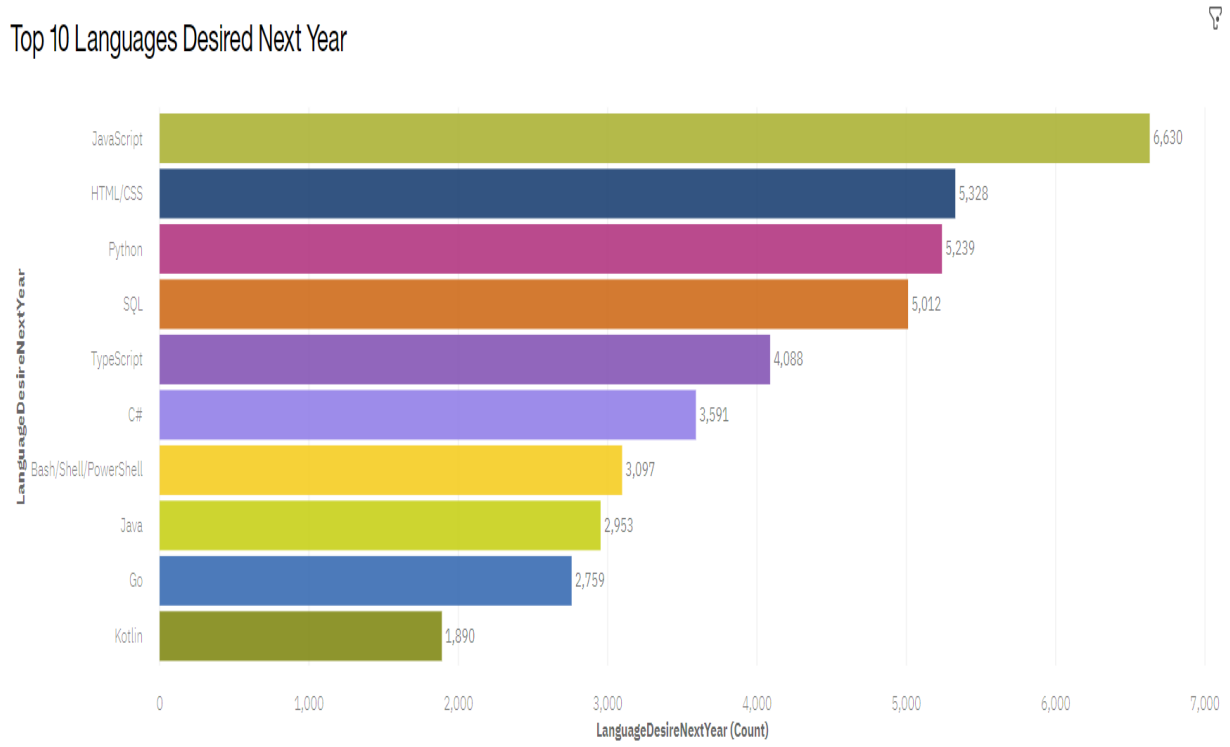
RESULTS

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

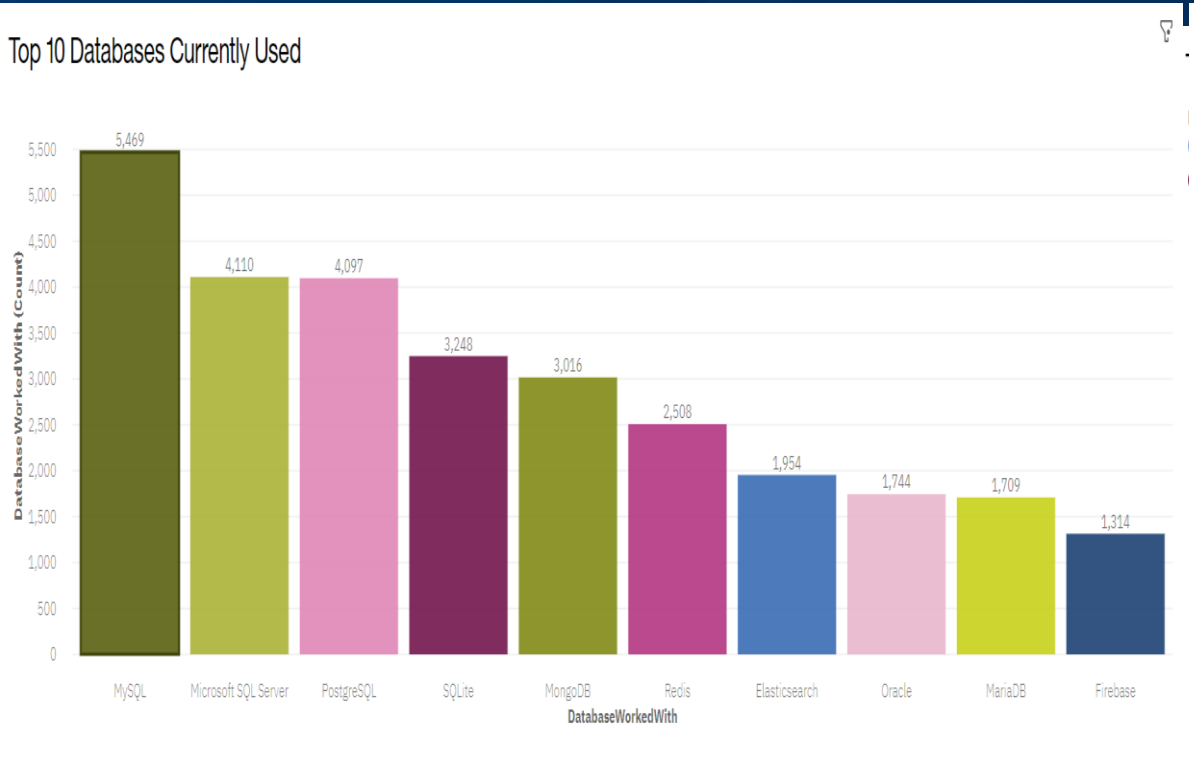
- JavaScript and HTML/CSS are the top 2 most prevailing programming languages even in this year and next year.
- Python and TypeScript may gain more interest next year.
- Preference in SQL and Bash/Shell/PowerShell shows sign of decrease.

Implications

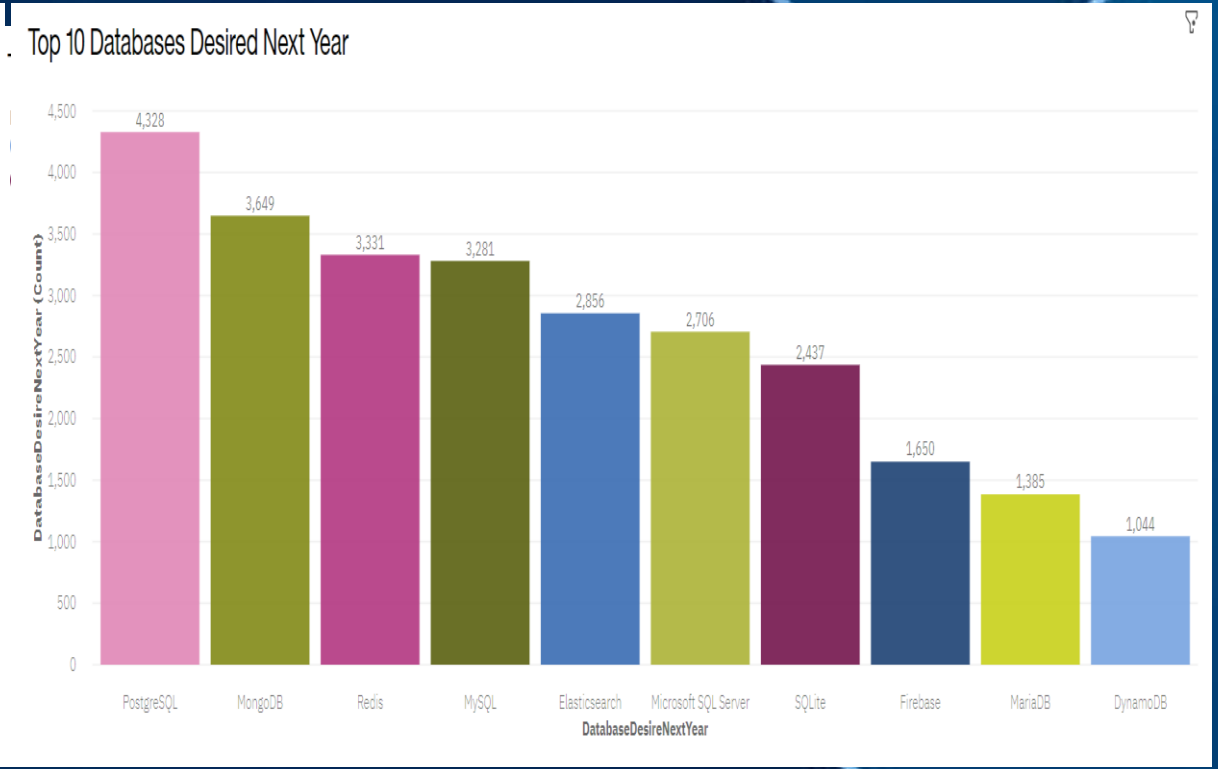
1. Still prioritize people skilled in JavaScript and HTML/CSS.
2. Employ more people skilled in Python and TypeScript.
3. Employ fewer people skilled in SQL and Bash/Shell/PowerShell.

DATABASE TRENDS

Current Year



Next Year



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DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- Interest in MySQL, Microsoft SQL Server and SQLite may decrease next year.
- Interest in PostgreSQL and MongoDB increases compared to the current year.
- Redis and Elasticsearch may receive more interest next year.

Implications

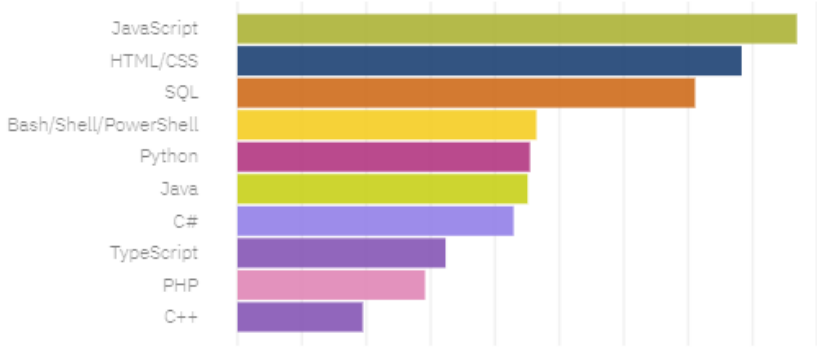
1. Employ fewer people skilled in MySQL, Microsoft SQL Server and SQLite.
2. Employ more people skilled in PostgreSQL and MongoDB.
3. Pay more attention to people skilled in Redis and Elasticsearch.

DASHBOARD

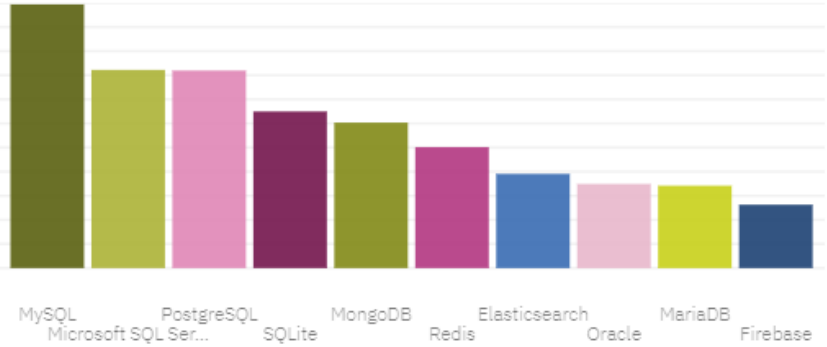
Click here to view the dashboard

DASHBOARD TAB 1

Top 10 Languages Currently Used



Top 10 Databases Currently Used

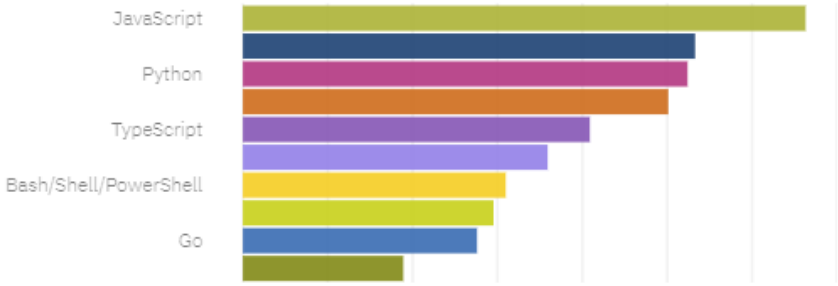


Platforms Currently Used

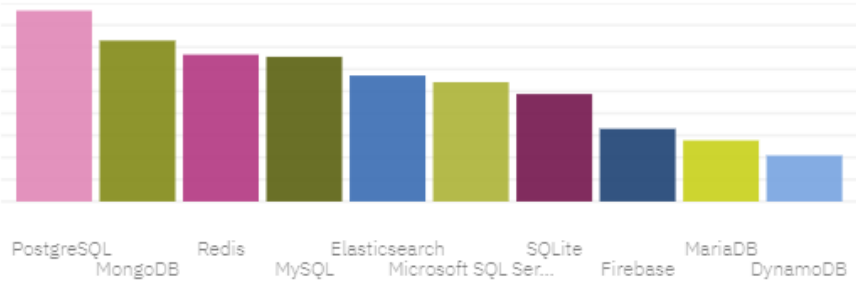
Top 10 Web Frames Currently Used

DASHBOARD TAB 2

Top 10 Languages Desired Next Year



Top 10 Databases Desired Next Year



Platforms Desired Next Year

Top 10 Web Frames Desired Next Year

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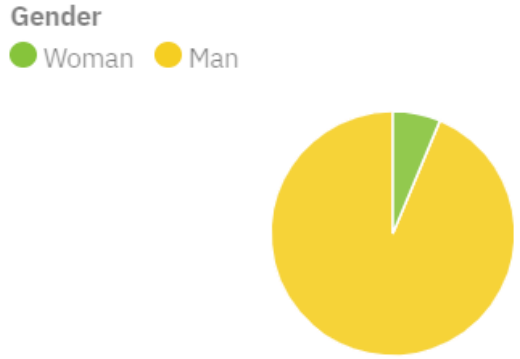
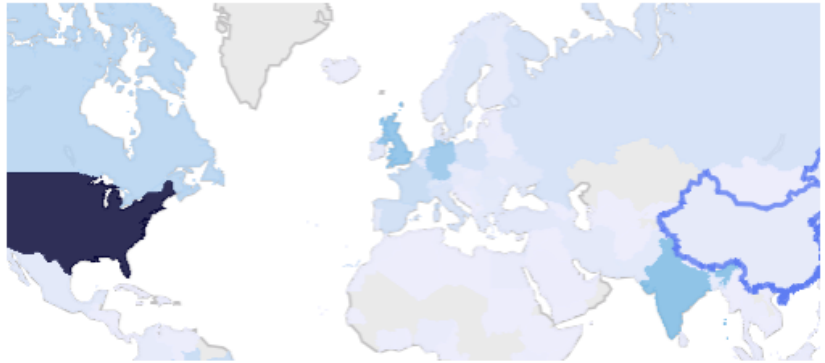
DASHBOARD TAB 3

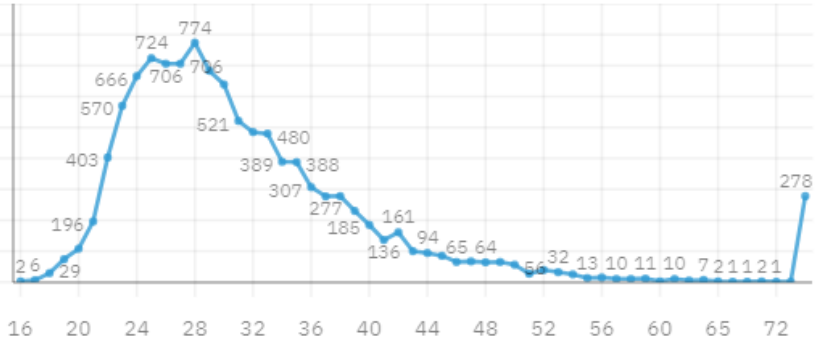
Respondent classified by Gender



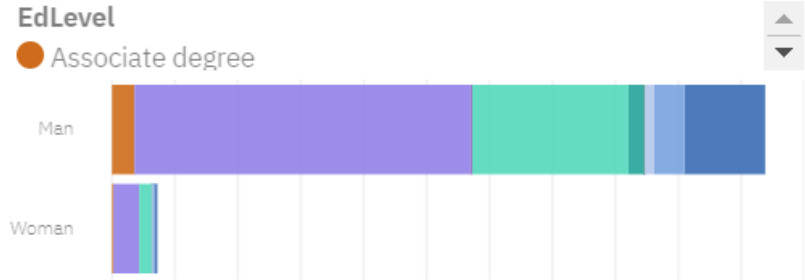
Respondent Count for Countries



Respondent Count by Age



Respondent Count by Gender, classified by Formal Education Level



DISCUSSION

OVERALL FINDINGS & IMPLICATIONS

Findings

- Programming Languages – TypeScript is gaining significant interest and Python continues to grow as well.
- Databases – Redis, Elasticsearch, PostgreSQL and MongoDB are gaining more interest.
- Platforms – Linux and Docker remain prevailing while Windows is significantly dropping in interest.
- Web Frames – React.js and Vue.js gain substantial growth in the future.

Implications

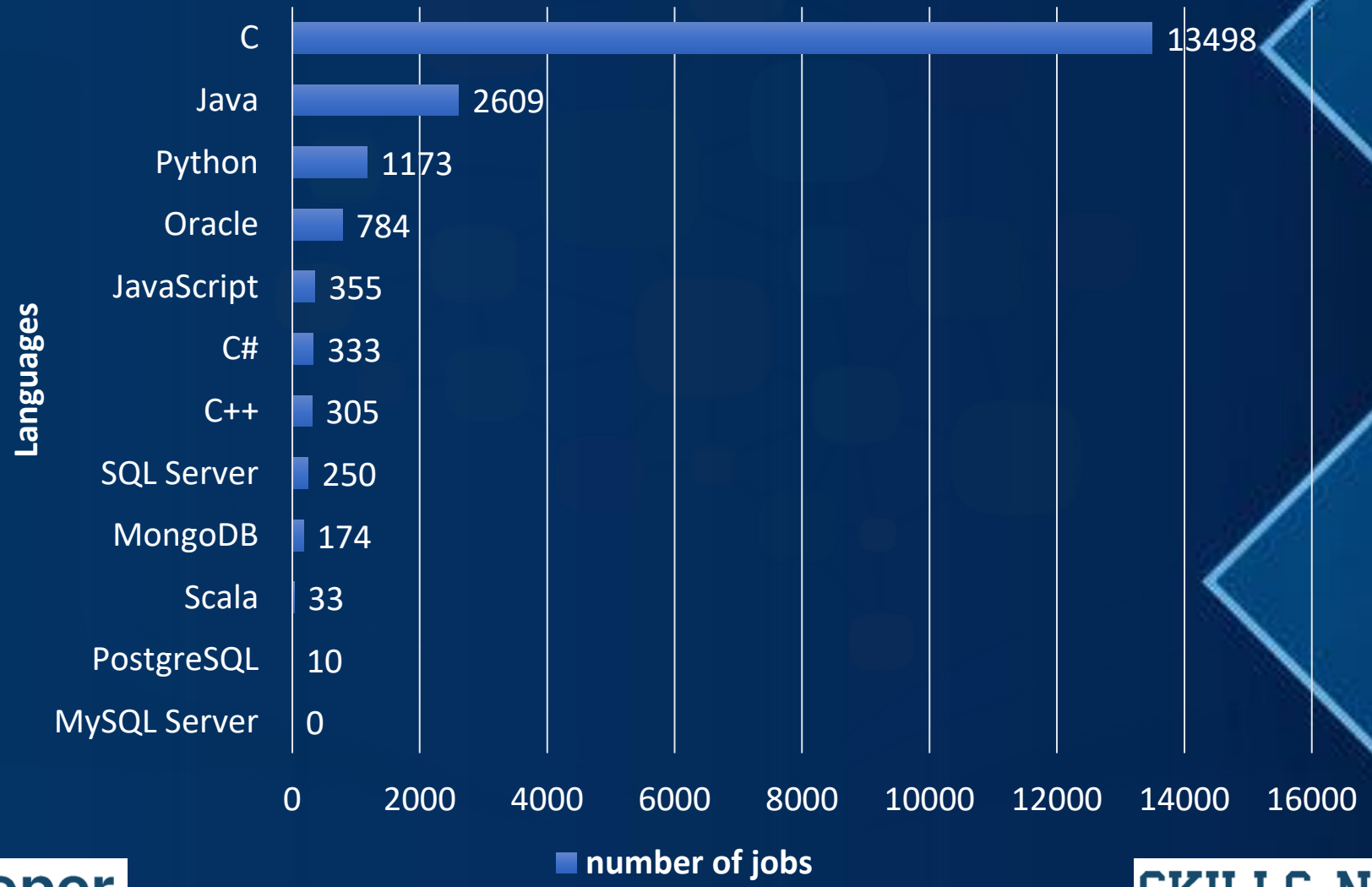
- *Implication 1:* Continue to focus on JavaScript and HTML/CSS but employ more people skilled in TypeScript and Python.
- *Implication 2:* Employ more people skilled in Redis, Elasticsearch, PostgreSQL, and MongoDB.
- *Implication 3:* Continue to focus on Linux, employ more people mastered in Docker, but make reductions to Windows.
- *Implication 4:* Employ more people skilled in Vue.js and React.js.

CONCLUSION

Point 1	Carve out budget in order to hire additional staff with skills needed to fill any gaps.
Point 2	Set aside budget or establishes programs in place to train and upskill existing employees.
Point 3	Make adjustment in staff whose skills no longer in demand.

APPENDIX

JOB POSTINGS



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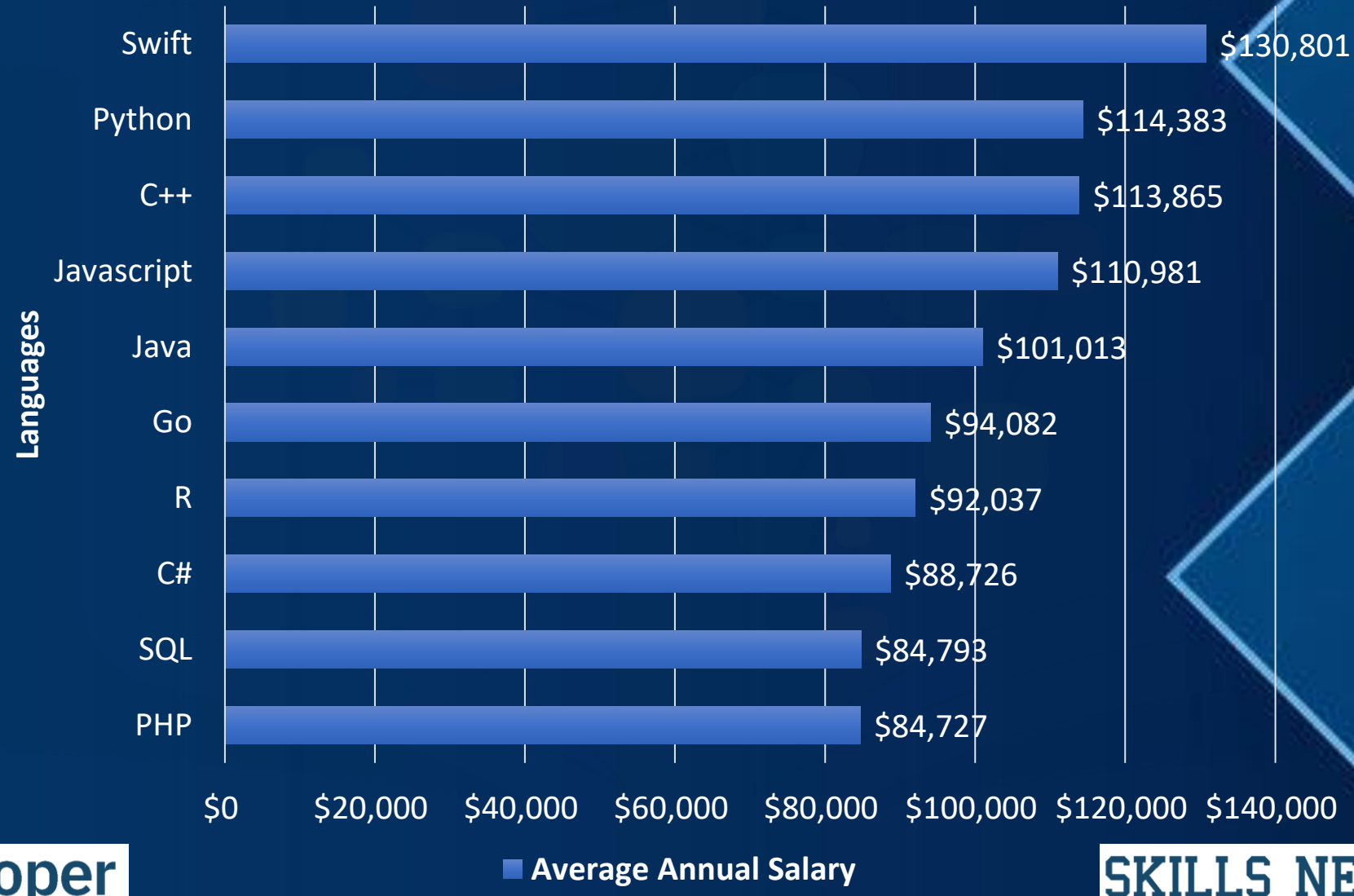
POPULAR LANGUAGES



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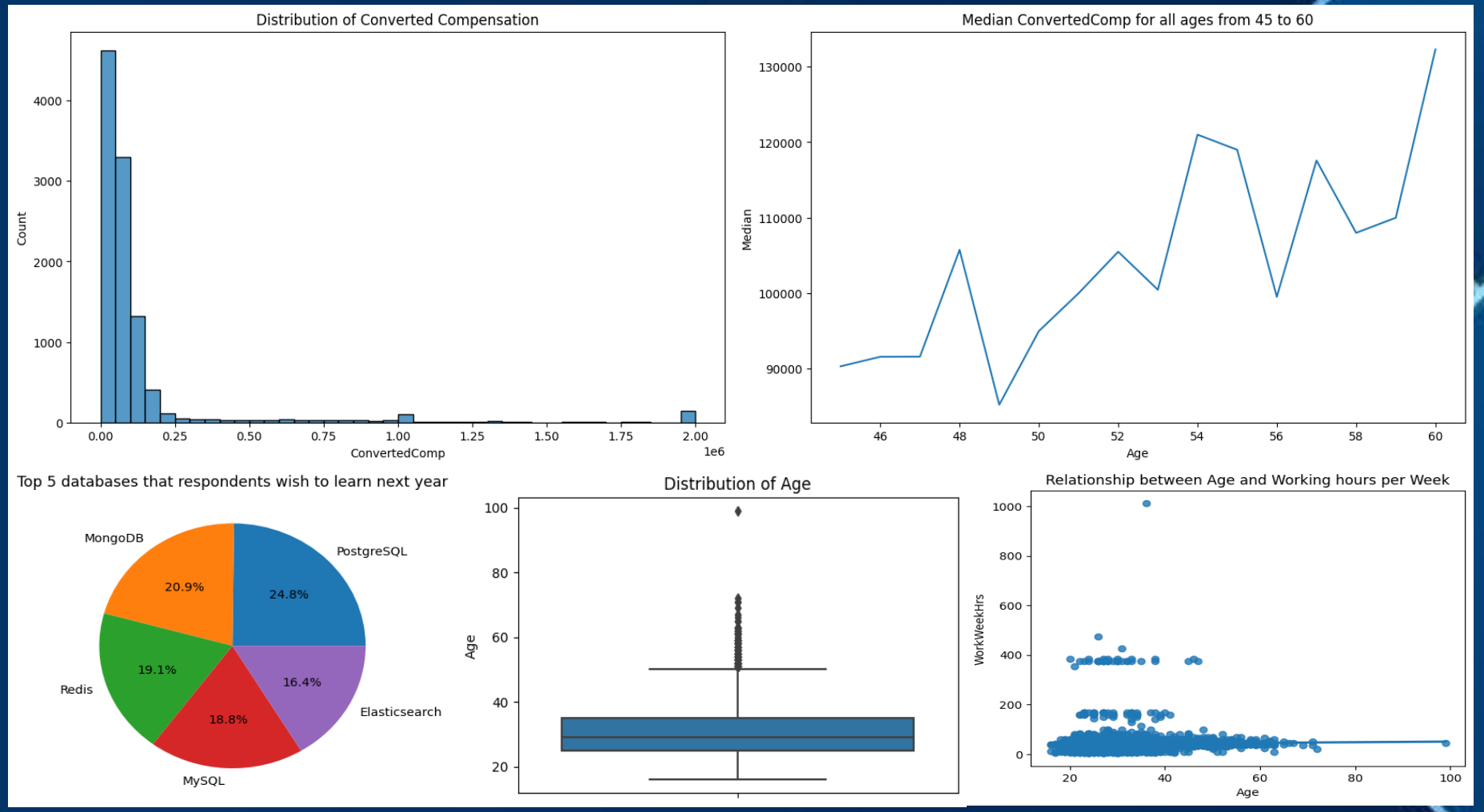
RESOURCES

- *data collection*
- *data wrangling*
- *data exploratory*
- *data visualizations*

ADDITIONAL VISUALIZATIONS



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