
# Stack Overflow Developer Survey 2019

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IBM Developer

SKILLS NETWORK

# OUTLINE

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- Methodology
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  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
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# EXECUTIVE SUMMARY

- Relevant skills required in the field of IT and business consulting are ever-changing and evolving.
- The most popular technologies are web-based one such as JavaScript, HTML.
- This presentation will show current and future trends in Programming Languages, for example:
  - Databases
  - Platforms
  - WebFrames
- Overall, the aim in identifying future skill requirements and trends is to help the firm make more informed data driven hiring and budgetary decisions

# INTRODUCTION

- The technology market evolves swiftly, with new developments emerging annually. Staying updated with the latest advancements.
- Analyzing current and future technology trends provides valuable insights into the market to understand changes and adapting strategies.
- Identify future skill requirements and strategic needs in the global IT sector, ensuring the firm remains agile and competitive amidst evolving technologies.
- This study is divided into four key areas:
  - Top programming languages in use
  - Leading databases in deployment
  - Most popular platforms
  - Prominent web frameworks

# METHODOLOGY

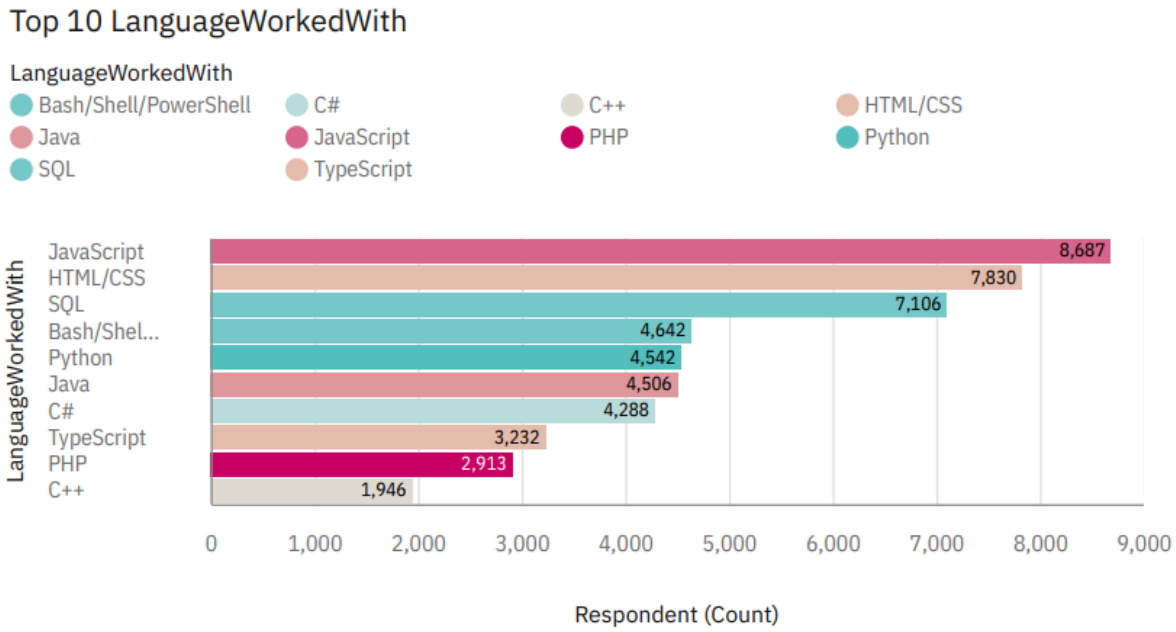
- Using a modified subset of the Stack Overflow dataset[1], the data was wrangled in order to remove duplicates, impute missing values and normalize data.
- The technology trend analysis involves comparing current and future technology usage to understand shifts and emerging patterns.
- The data was then used to visualize the distribution, the relationship between two features and the composition and comparison of datapoint after downloading two files, a modified subset of the Stack Overflow dataset, Cognos Dashboard Embedded (CDE) was used to create:
  - “Current Technology Usage” slide
  - “Future Technology Trends” slide
  - “Demographics” slide

# RESULTS

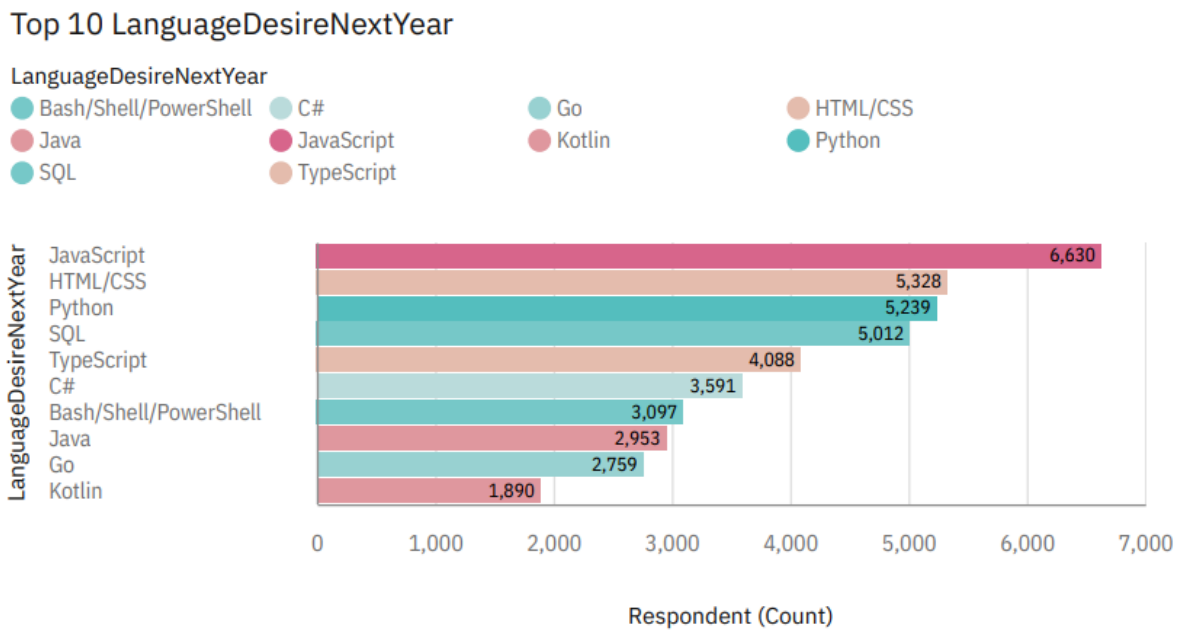
- The results consist of 4 main parts:
  - Programming language trend
  - Database trend
  - Platform trend
  - Web frame trend

# PROGRAMMING LANGUAGE TRENDS

## Current Year




## Next Year



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

## Findings

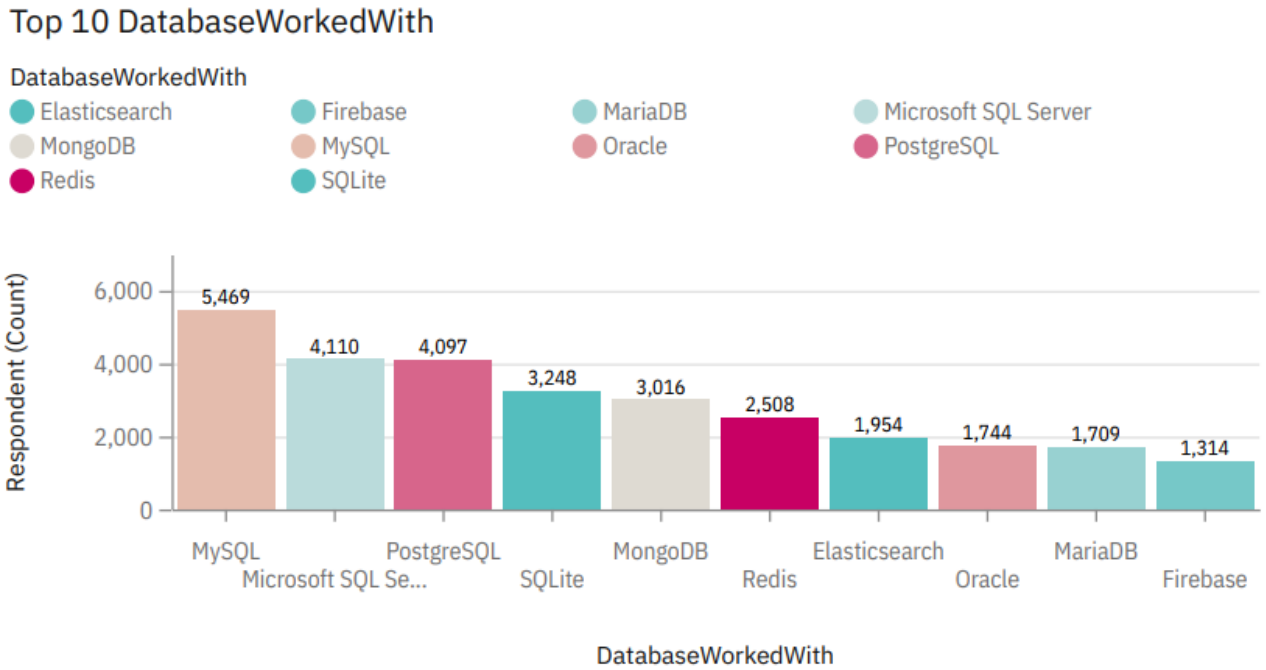
- JavaScript and HTML/CSS remain the top two programming languages for both the current and upcoming year.
- Python has risen from 5th to 3rd place in the top 10 languages, while C++ and PHP are falling out of the top 10.
- The increasing popularity of Python and TypeScript suggests a shift in developer preferences, while traditional languages like SQL and Bash/Shell/PowerShell are becoming less prominent.

## Implications

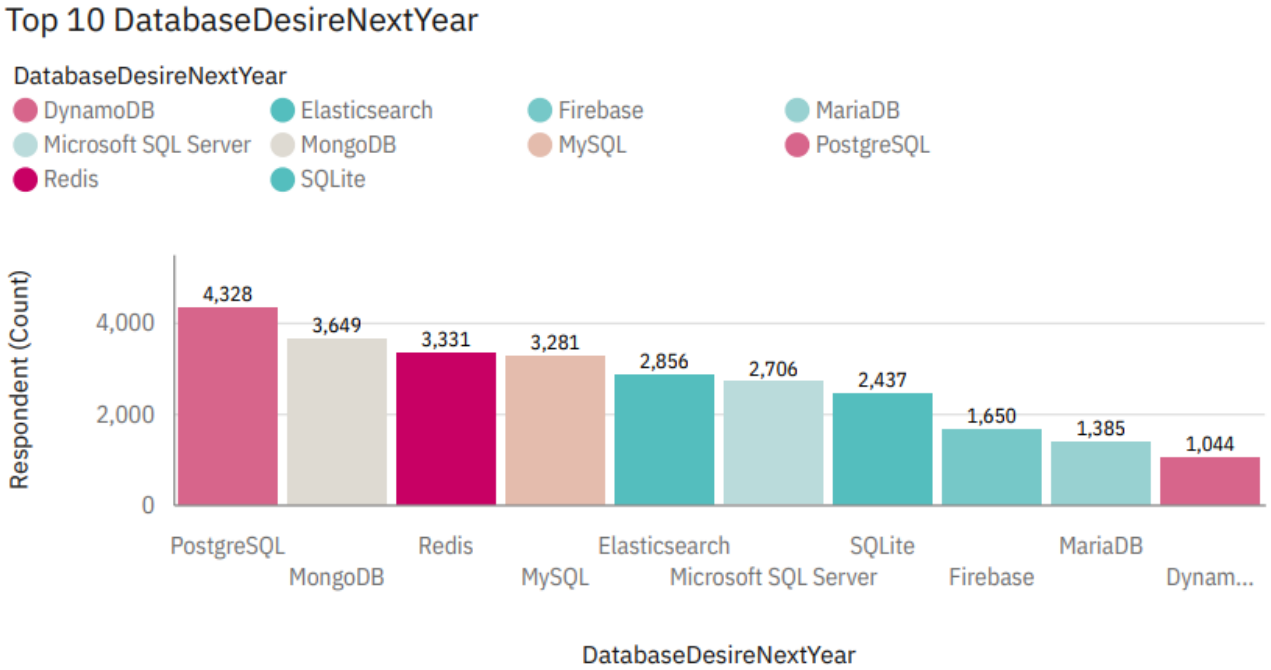
- Keep and grow expertise in JavaScript and HTML/CSS as they will remain essential for web development.
- Invest in Python training and recruitment to capitalize on its increasing role in data science.
- Reassess and reduce reliance on declining languages like C++ and PHP in favor of newer technologies.

# DATABASE TRENDS

## Current Year




## Next Year

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# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## Findings

- PostgreSQL has risen to No. 1, with MS SQL Server dropping to No. 5.
- MongoDB and Redis have quickly moved up to No. 2 and No. 3, with increased interest also noted in Redis and Elasticsearch.
- Interest in MySQL, MS SQL Server, SQLite, and Oracle is decreasing.

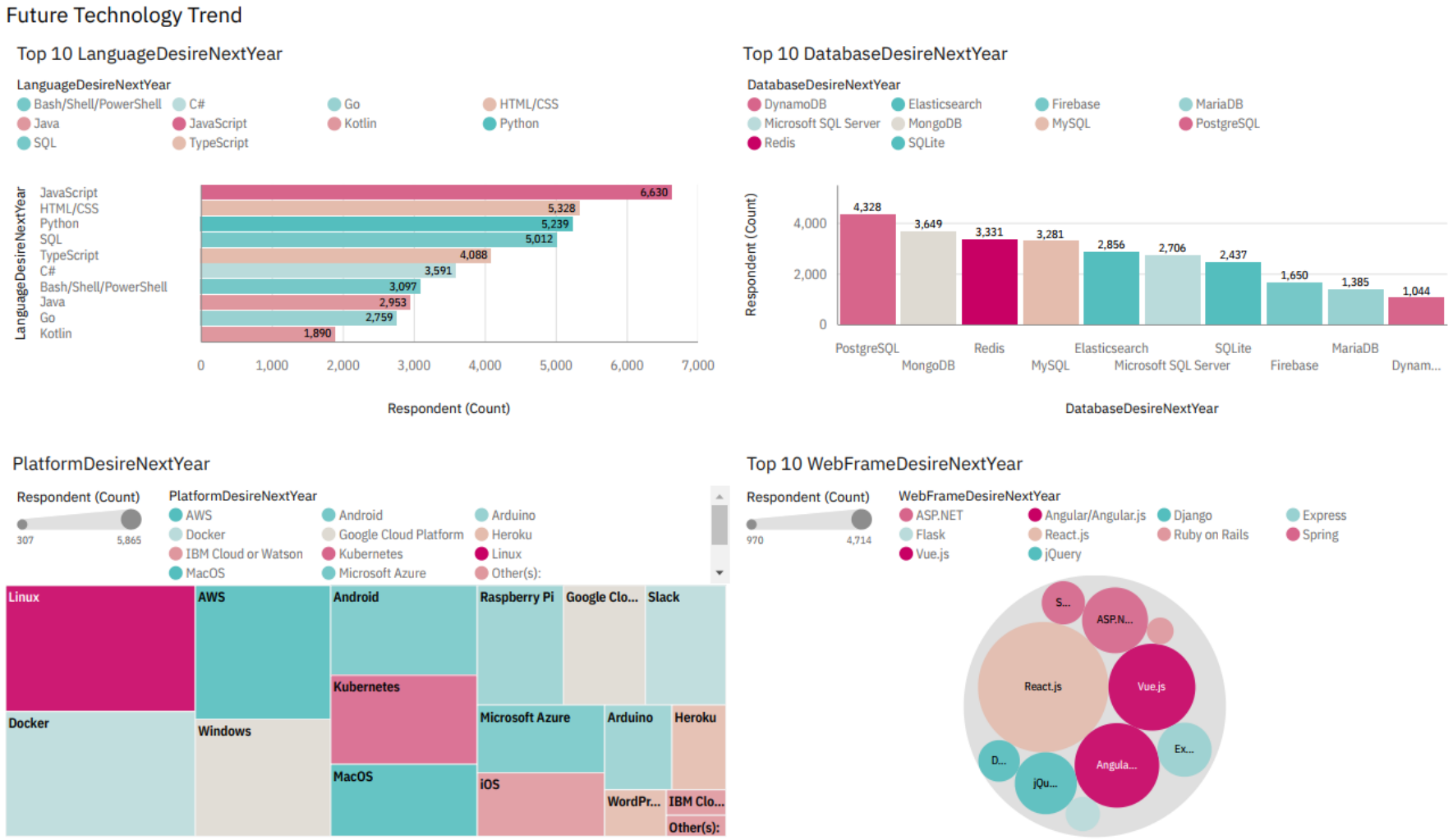
## Implications

- Shift resources and training towards PostgreSQL, MongoDB, and Redis to align with rising trends in database technology.
- Prepare for reduced demand for MySQL, MS SQL Server, and SQLite, and adjust strategies accordingly.
- Increase investment in Redis and Elasticsearch to stay ahead of growing interest and technological advancements.

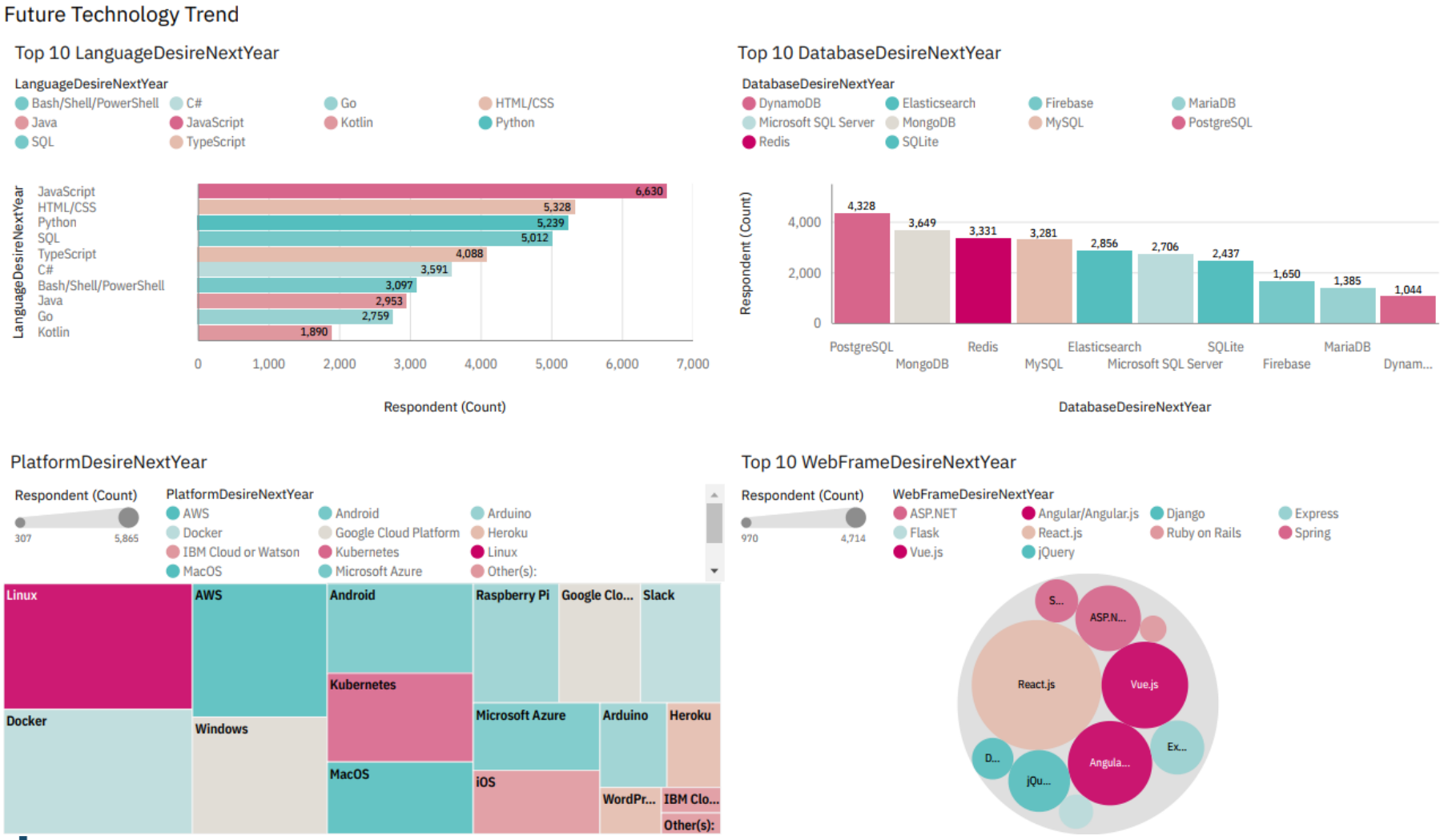
# DASHBOARD

<https://github.com/Bi925/IBM-Capstone-Project-for-DA/blob/main/MySubmission.pdf>

# DASHBOARD TAB 1



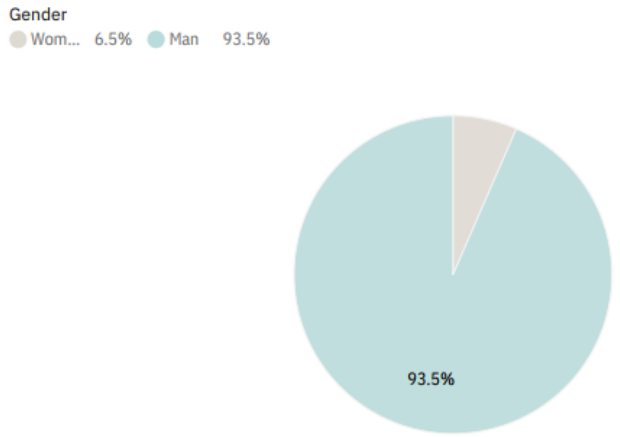
# DASHBOARD TAB 2



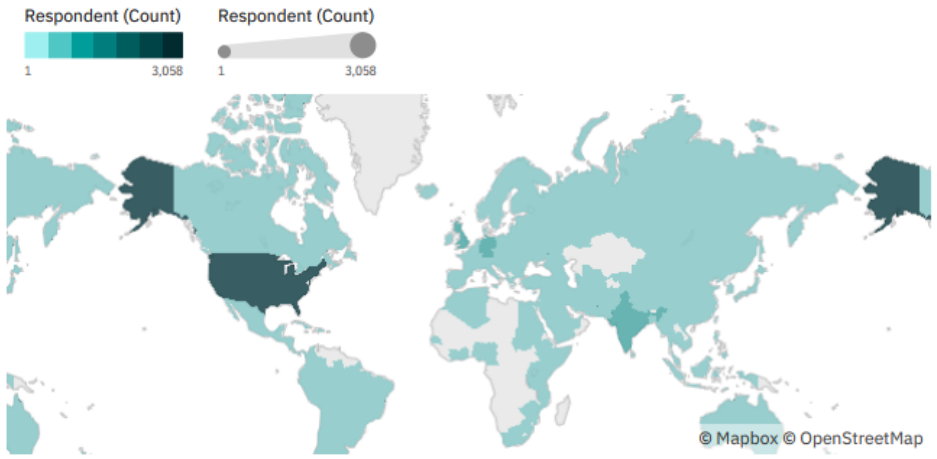
# DASHBOARD TAB 3

## Demographics

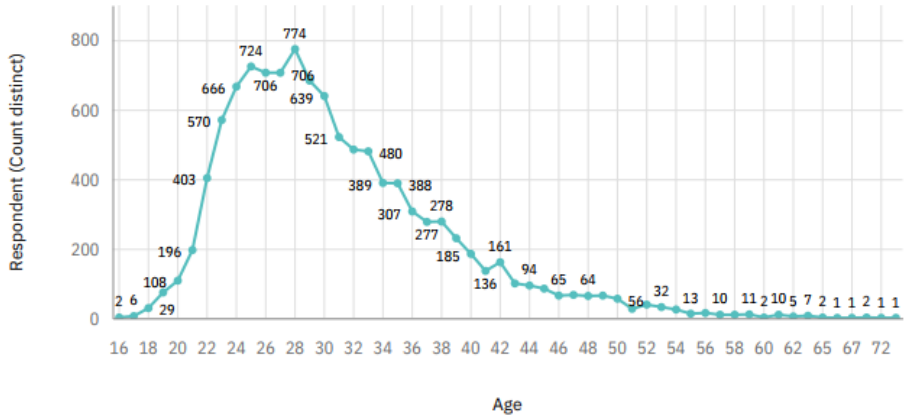
### Respondent classified by Gender



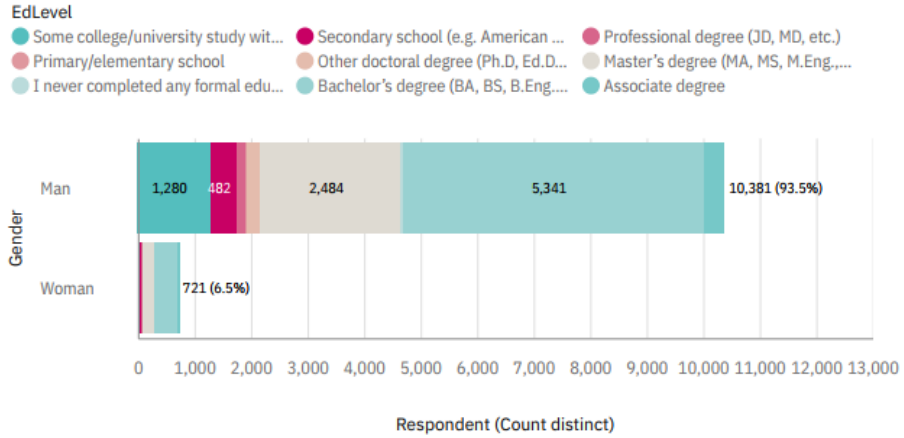

### Respondent Count for Countries




### Respondent Count by Age

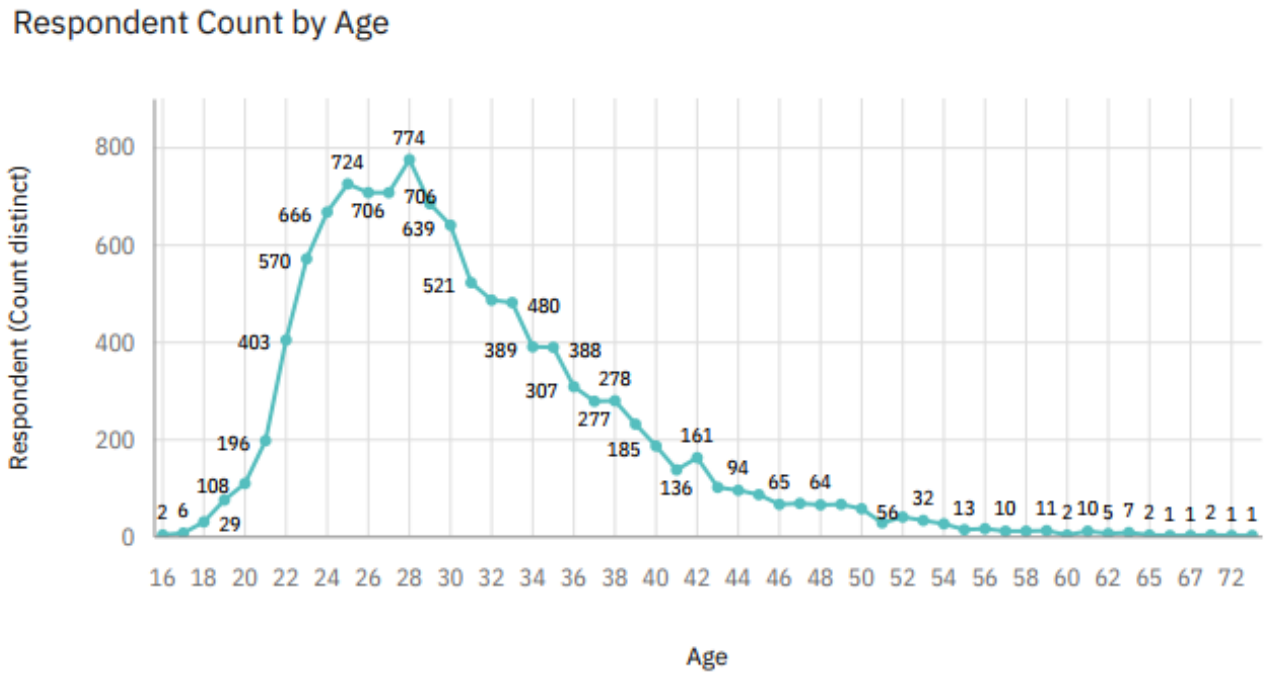



### Respondent Count by Gender, classified by Formal Education Level



# DISCUSSION

- The younger age of most respondents may skew results toward newer technologies, potentially affecting the accuracy of trend analysis?



# OVERALL FINDINGS & IMPLICATIONS

## Findings

- PostgreSQL's Rise: PostgreSQL has become the top database, with MongoDB and Redis moving up to No. 2 and No. 3.
- Decline in Legacy Databases: Interest in MySQL, MS SQL Server, and SQLite is decreasing, and Oracle has dropped off the top list.
- Young Respondent Bias: The predominance of younger respondents may skew results towards newer technologies.

## Implications

- Embrace New Database Technologies: Focus on PostgreSQL, MongoDB, and Redis to align with rising trends.
- Adapt to Shifting Preferences: Adjust strategies to account for the declining interest in MySQL, MS SQL Server, and SQLite.
- Consider Age-Related Bias: Recognize that younger respondents may influence trends toward newer technologies, affecting the accuracy of the analysis.

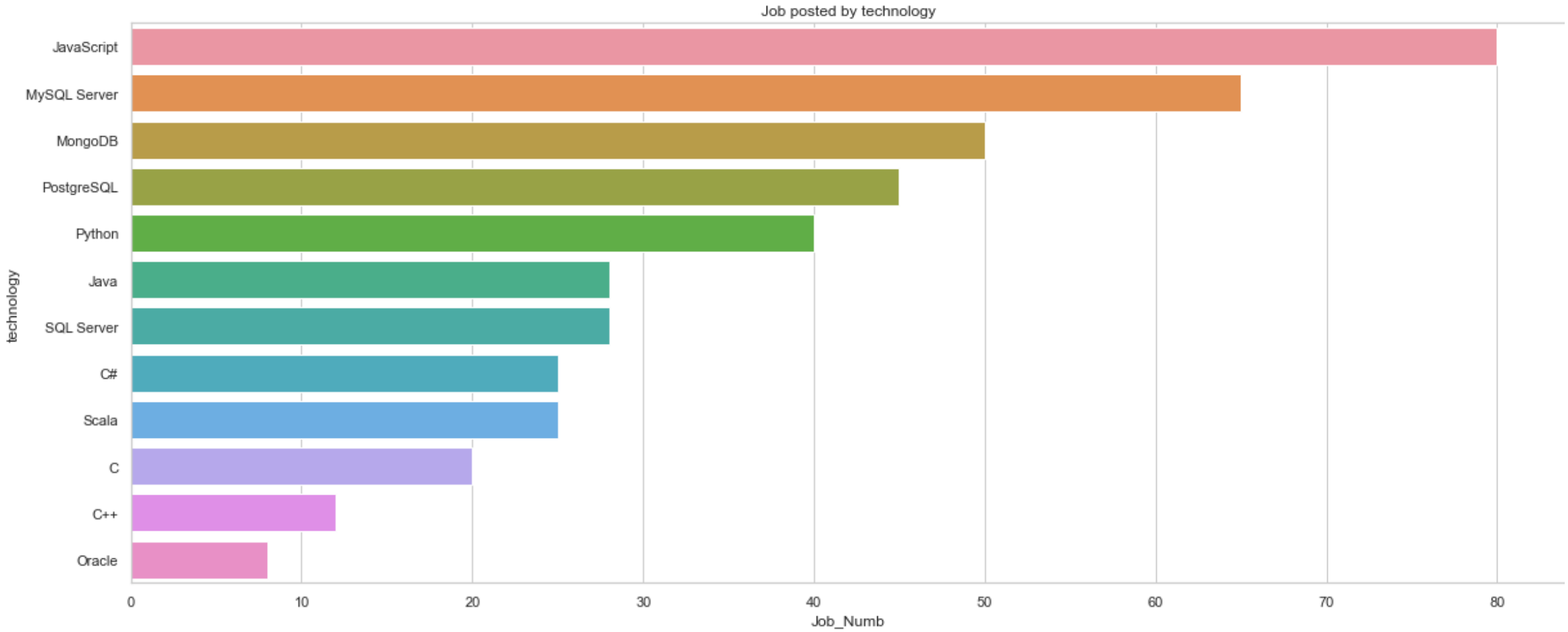
# CONCLUSION

- **Database Technology Shift:** PostgreSQL, MongoDB, and Redis are rapidly gaining popularity, indicating a shift in preference towards these databases. Organizations should focus on adopting and integrating these technologies to stay competitive.
- **Declining Legacy Systems:** Traditional databases like MySQL, MS SQL Server, and SQLite are losing traction, suggesting a need to reevaluate investments in these areas. This shift may also imply reduced future support and innovation.
- **Impact of Respondent Demographics:** The younger demographic of survey respondents may skew trends towards newer technologies. It’s essential to consider this bias when interpreting the results and making strategic decisions.

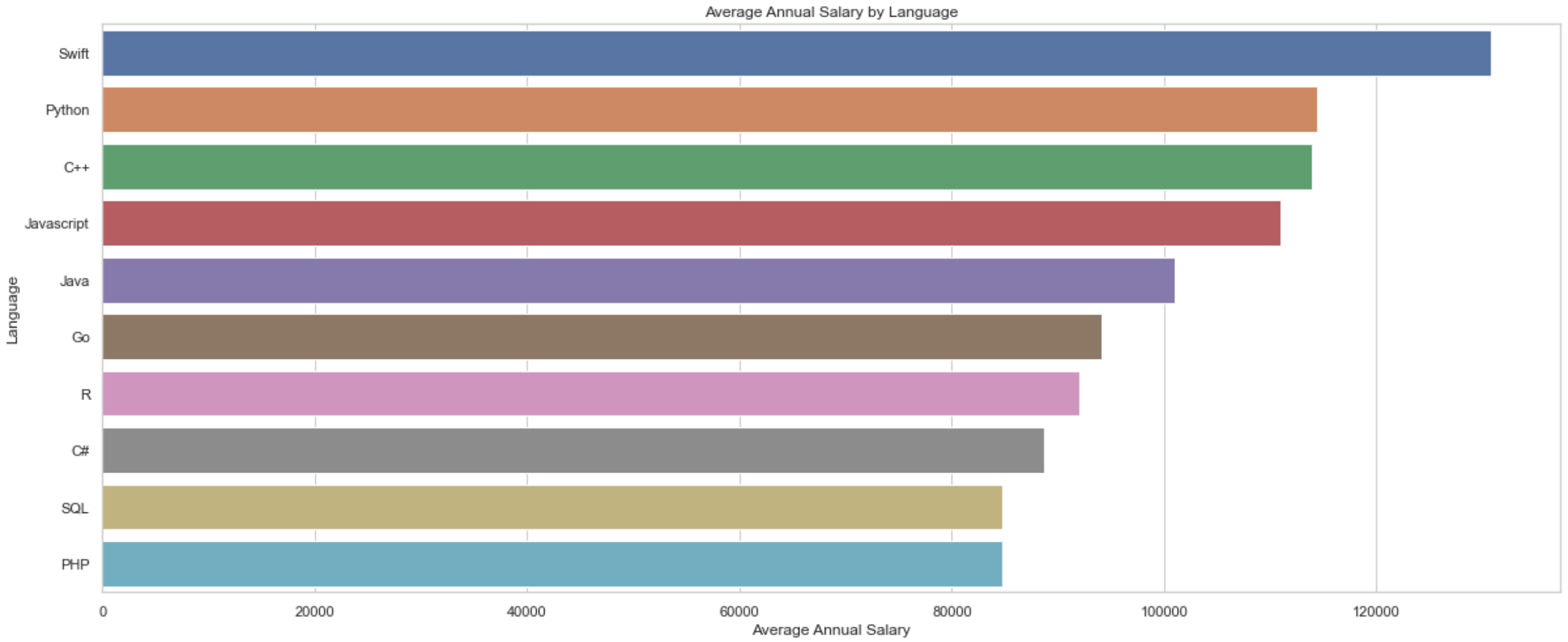
# APPENDIX

- Relevant additional charts, or tables have created during the analysis phase.

# JOB POSTINGS



# POPULAR LANGUAGES



# Thank you for your attentions!

Questions and Answers