

# EMERGING TRENDS IN SOFTWARE

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- Visualizations - Charts
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# EXECUTIVE SUMMARY

## WEB IS KING

- Web-based languages and technologies continue to be most used and most desired

## SIMPLE IS SEXY

- Languages and technologies that are easy to use (simple syntax and typing to avoid errors) are more desired by respondents

# INTRODUCTION

01.

## STACK OVERFLOW

Using every developer's favourite website's survey to understand trends in technology.

02.

## PROBLEM

Software development languages and technologies are changing quickly, in what direction are they trending?

03.

## QUESTIONS TO ASK

- What are technology demands of the world and what are the demands of the developer?

04.

## WHAT TO LOOK FOR

Focus on what the developers work with now, what they want, and who they are.

# METHODOLOGY

## DATA COLLECTION & WRANGLING

- Modified GitHub Jobs API<sup>1</sup>
- Programming language salaries from Web Scraping<sup>2</sup>
- Modified Stack Overflow Survey Results<sup>3</sup>

## DATA ANALYSIS & VISUALIZATION

- Exploring the data through visualizations
- Doing analysis of the data to create meaningful visualizations
- Creating dashboards with visualizations of relevant data

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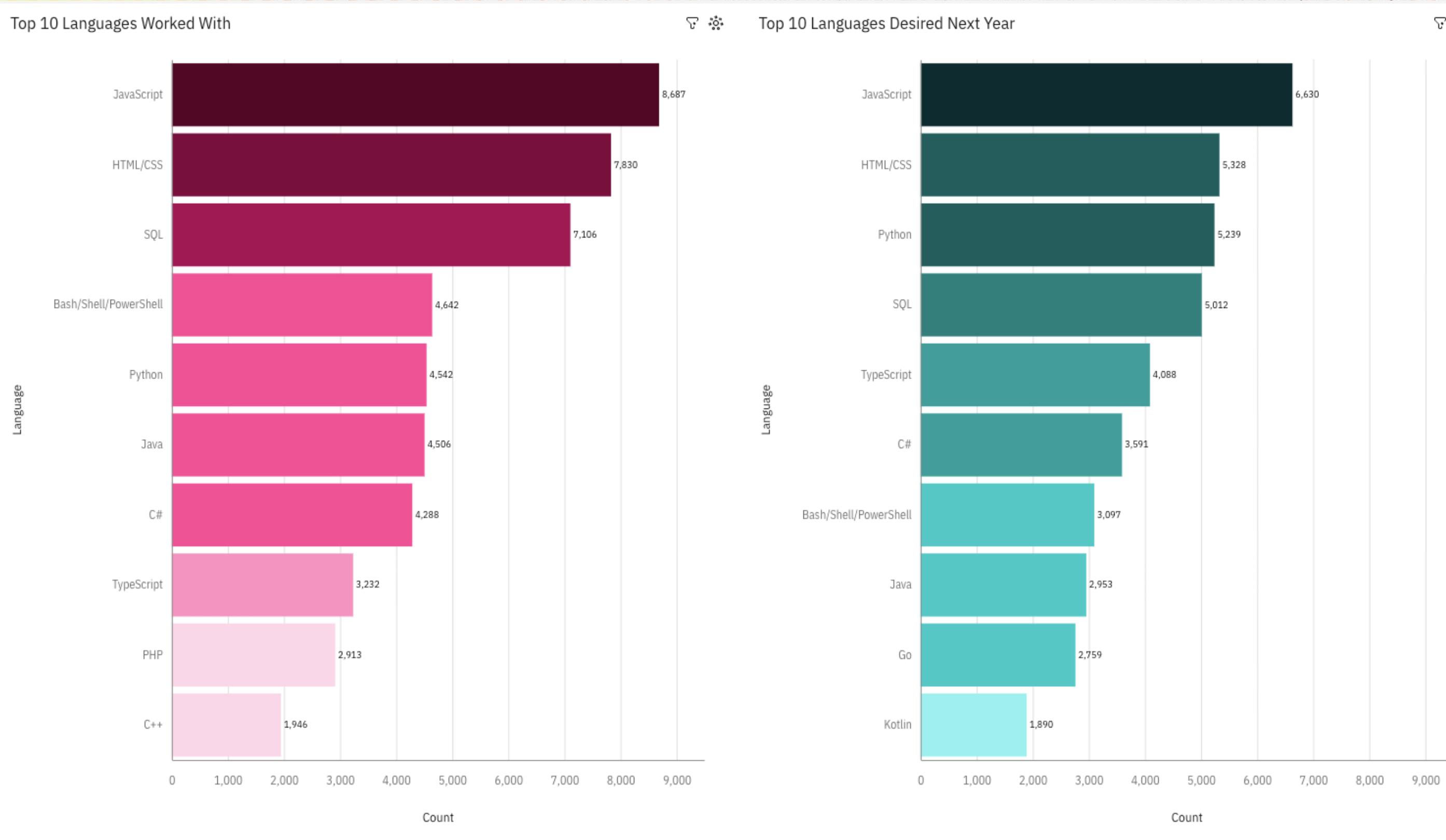
If you want to  
know the future,  
look at the past.

Albert Einstein

# RESULTS

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# PROGRAMMING LANGUAGE TRENDS



# PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

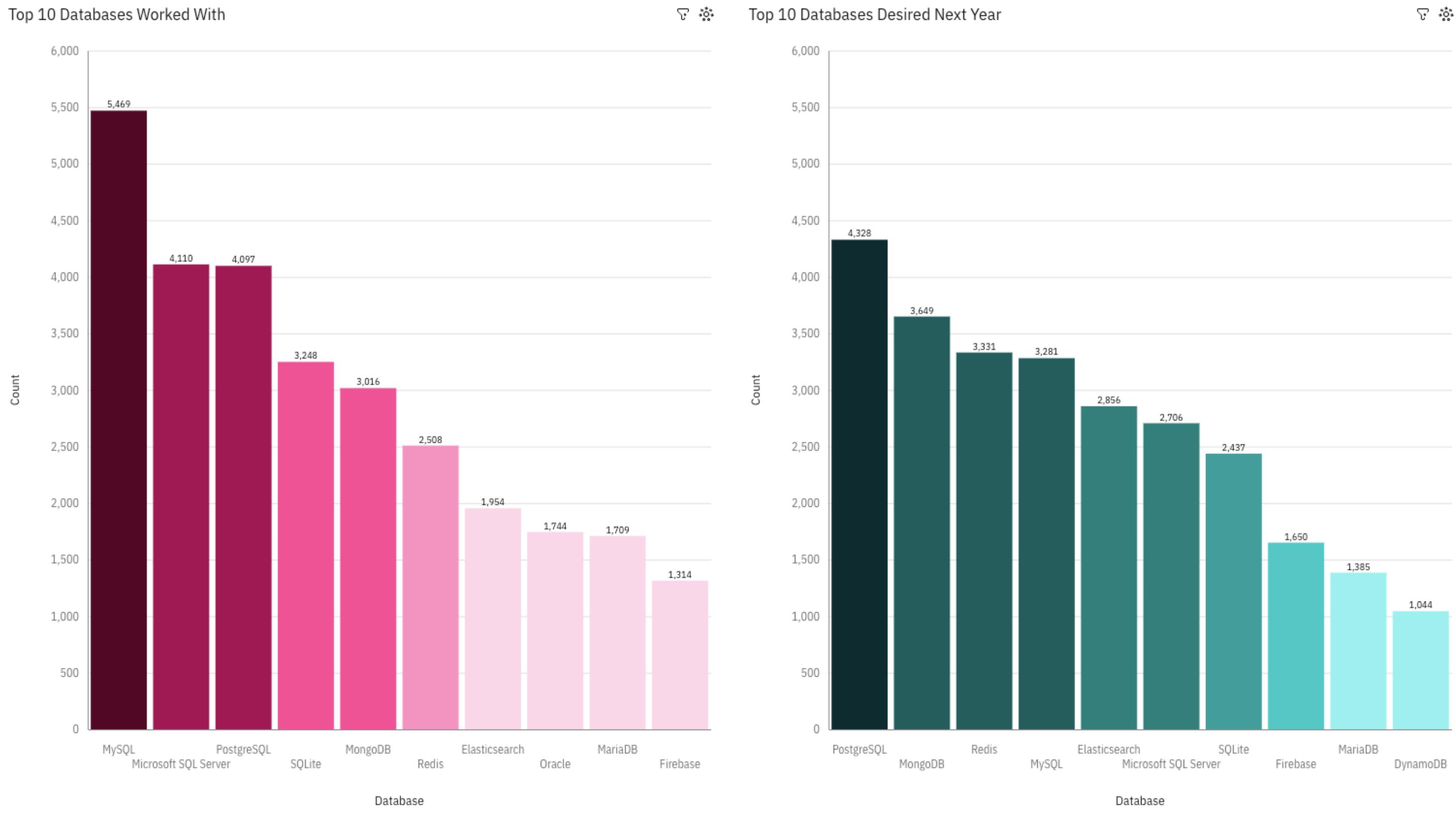
## FINDINGS

- JavaScript is the most used and most desired language
- Python demand is increasing fast
- Respondents are losing interest in Bash and Shell scripting

## IMPLICATIONS

- Since the web is such a prominent aspect of the tech world it makes sense that web languages are at the top
- JavaScript is being continually upgraded and made more easy to use, a large complaint is the lack of Typing. This could be the reason for the surge in TypeScript
- PHP, Java, and C are seen as more archaic and take a little more effort to work with which could be why we're seeing their decrease
- Go & Kotlin are languages that are also contain Typing and have simple syntaxes along with other features that make it easier to use than languages like C

# DATABASE TRENDS



# DATABASE TRENDS - FINDINGS & IMPLICATIONS

## FINDINGS

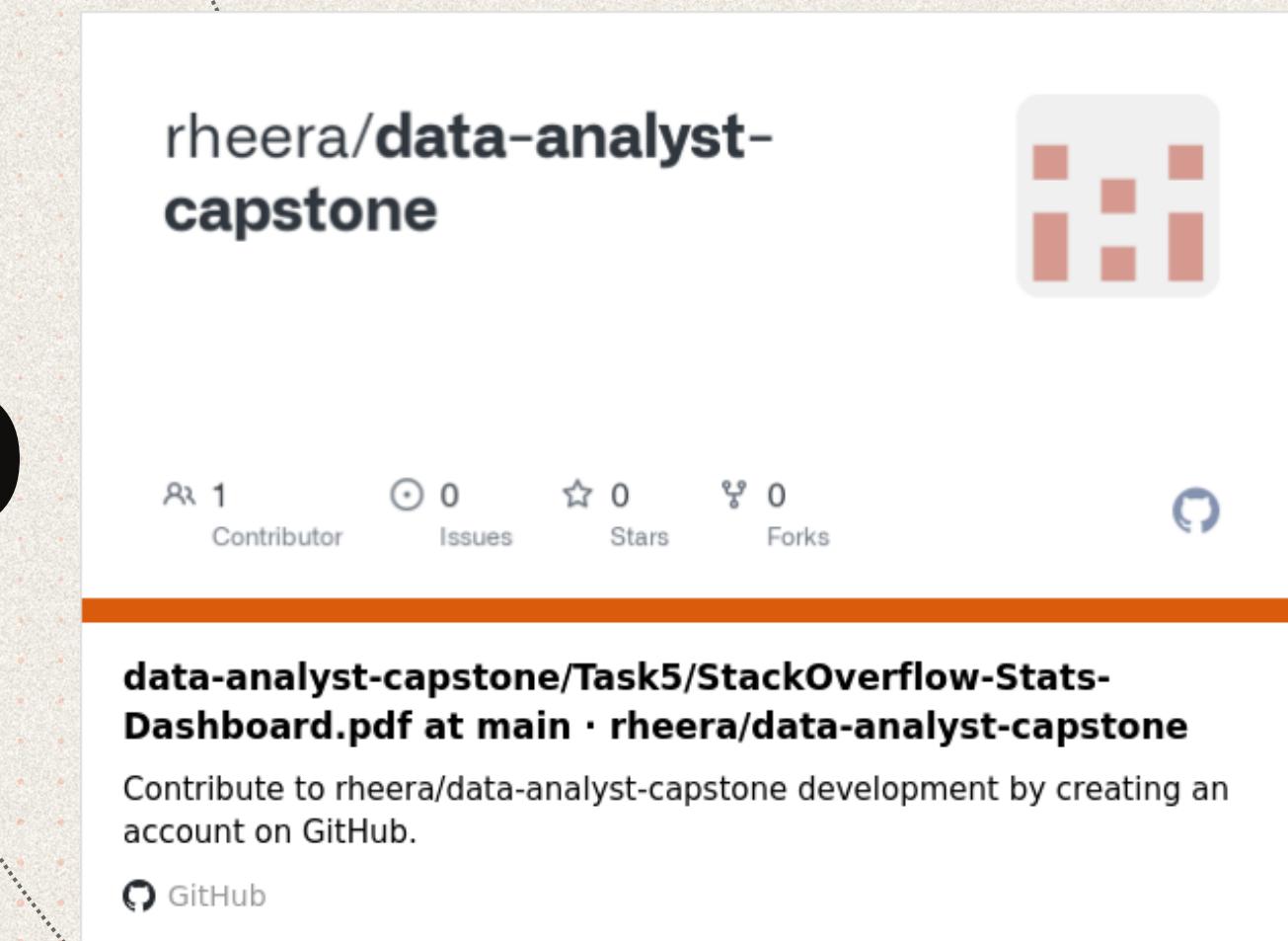
- NoSQL (Non-relational) databases are increasing in interest such as MongoDB and DynamoDB
- Relational Databases are still popular
- Services are increasing in popularity such as Elasticsearch and Firebase
- Data stores are increasing in demand such as Redis
- Oracle is not in the top 10 most desired
- Developers losing interest in Microsoft SQL Server

## IMPLICATIONS

- PostgreSQL has more features and makes working with SQL easier, which shows a similar trend as with programming languages that simplicity and ease-of-use are important
- With more complex data the freedom that NoSQL provides is very alluring
- PaaS tools are gaining in popularity, again to simplify the developers life
- As data becomes more prevalent and valuable storing it becomes more important, thus explaining the increase in data stores

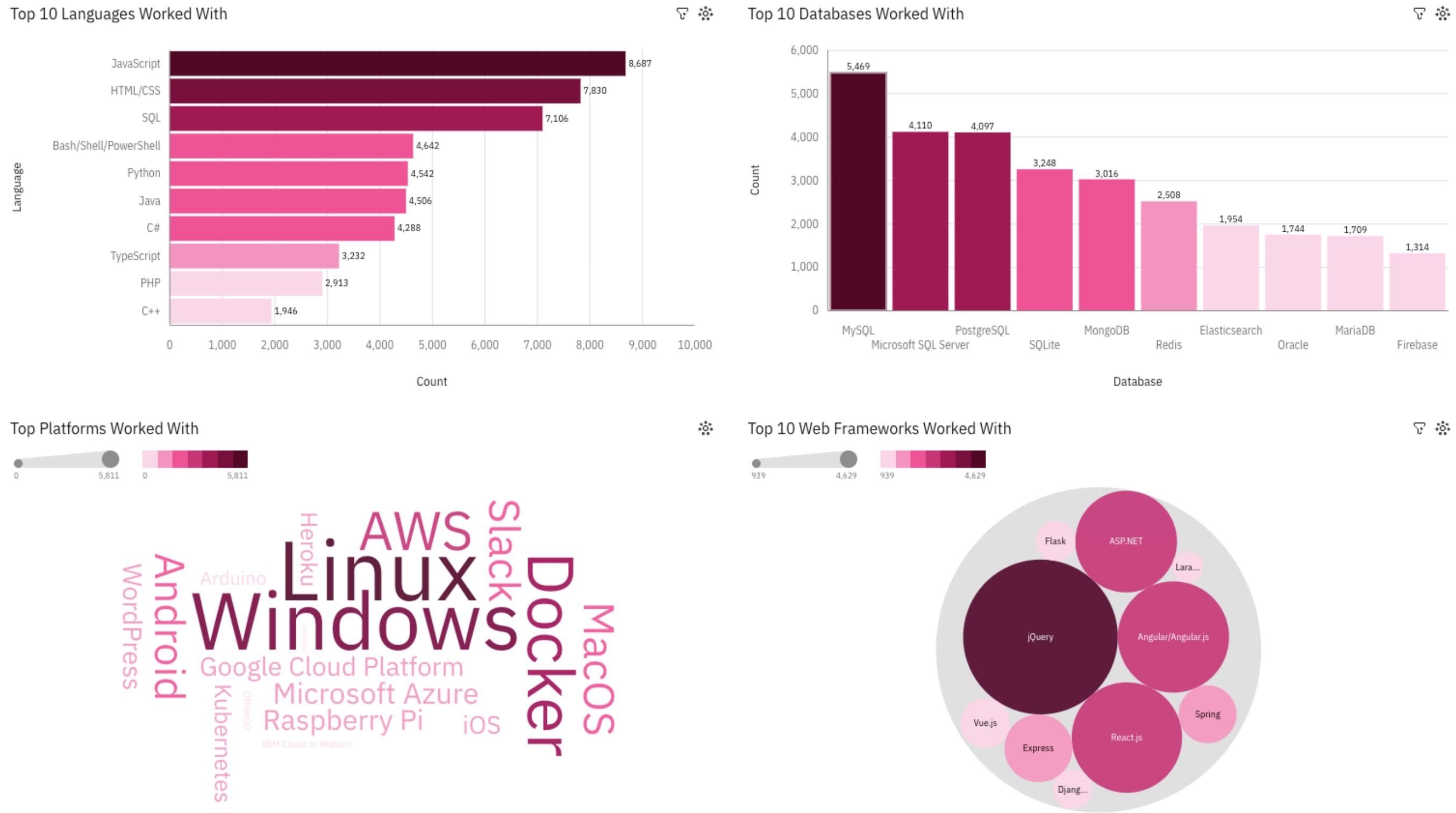
# LINK TO DASHBOARD

Created with IBM Cognos Analytics  
and Hosted on Github

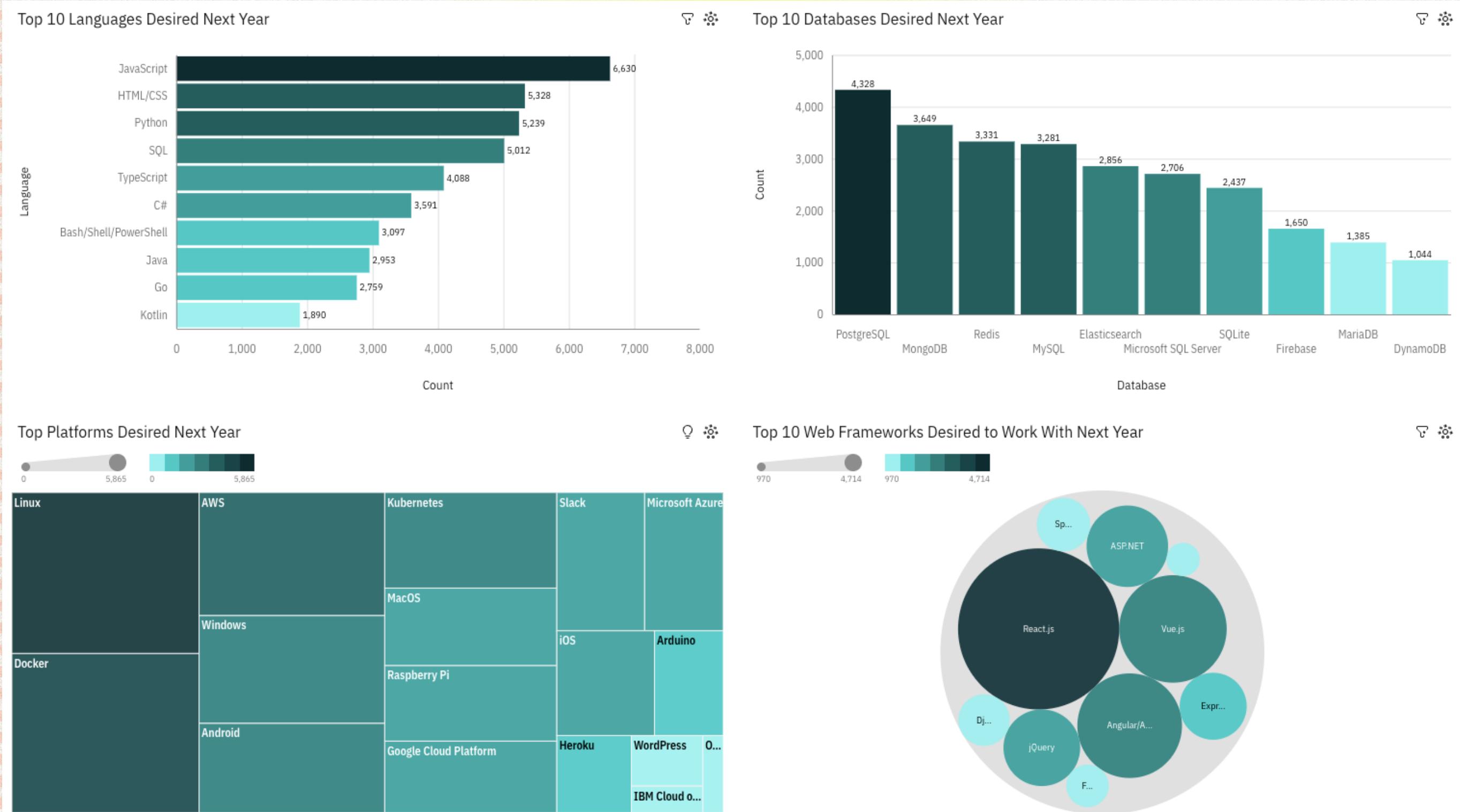


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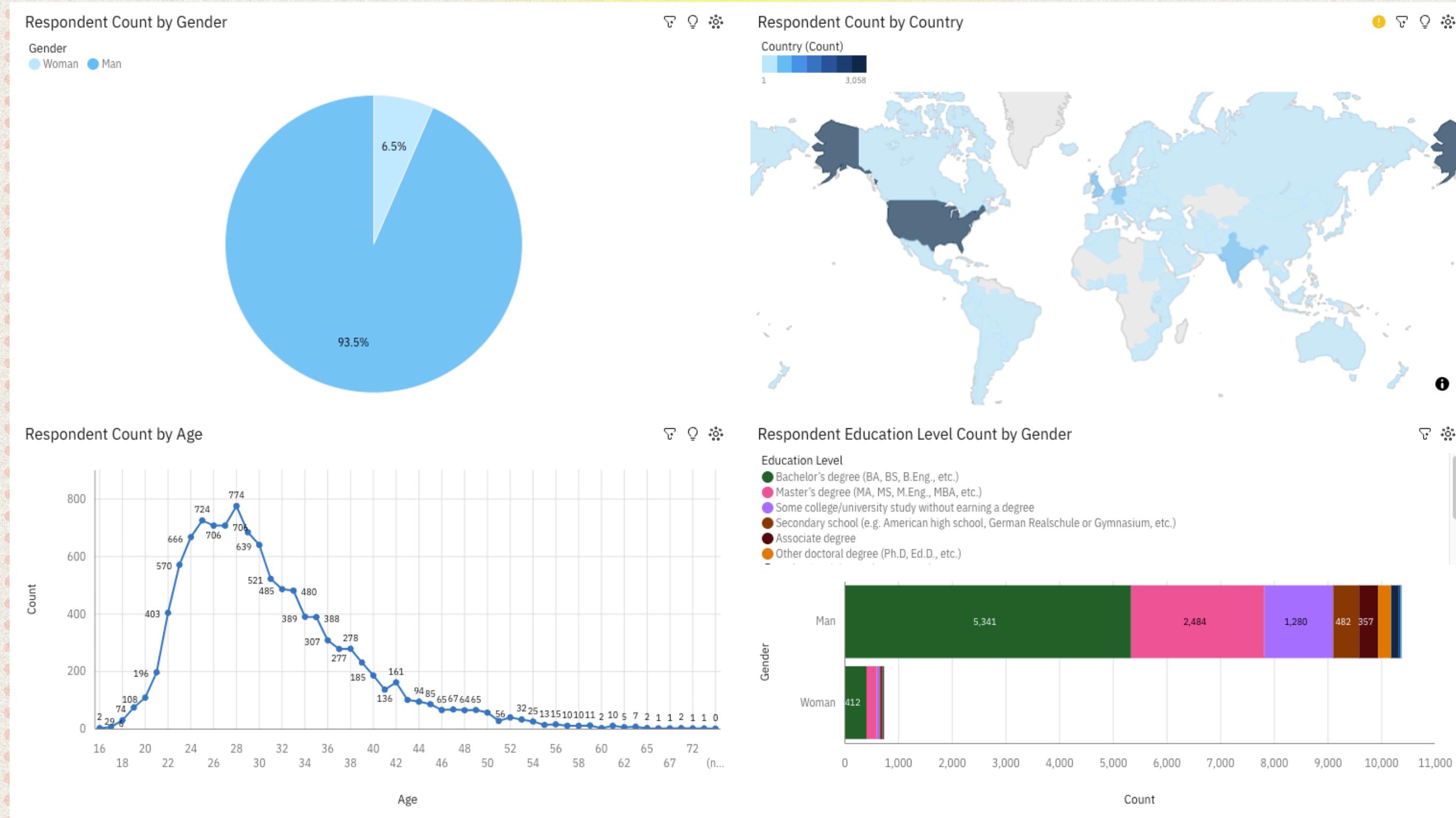
# DASHBOARD TAB 1



# DASHBOARD TAB 2



# DASHBOARD TAB 3



# DISCUSSION

# OVERALL FINDINGS & IMPLICATIONS

## FINDINGS

- Majority of respondents are male
- Most of the respondents were between the ages of 22-32
- Most of the respondents are from developed english speaking nations
- The most important factor for a Job is the Languages and Technologies used
- Python has one of the highest salaries and most jobs available, that could be the reason for the surge in desire

## IMPLICATIONS

- The respondents being more on the young side could explain the tendency to want to adopt newer languages and technologies
- All the technologies in the survey are English-based, this could stem from the respondents being predominantly English
- Since developers choose jobs based on technologies used it could sway employers to embrace those technologies to draw in talent

# CONCLUSION

Developers are looking for 3 main factors when choosing languages and technologies

01.

Languages that are  
syntactically simple

02.

Tools that require less  
overhead and are more  
declarative rather than  
imperative

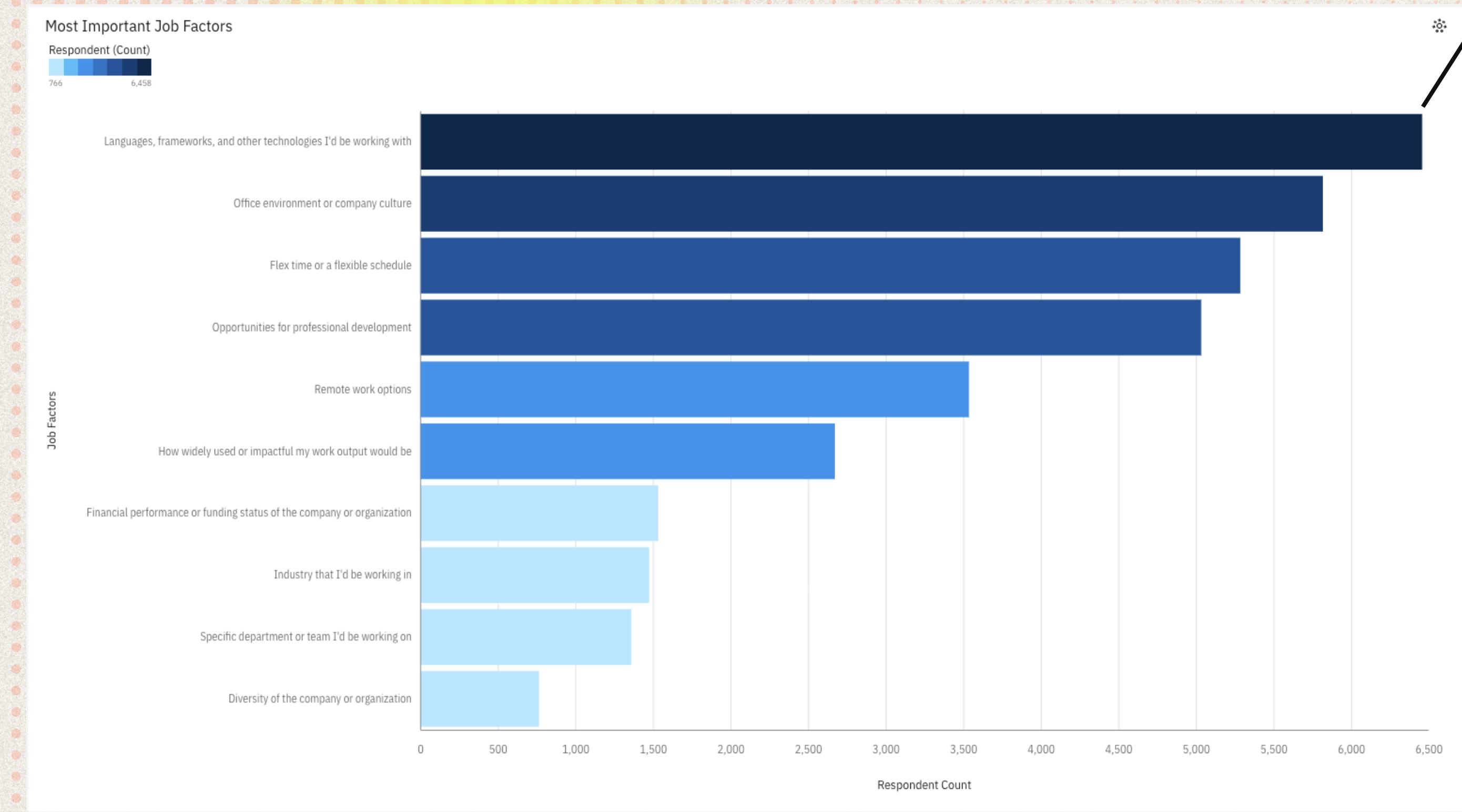
03.

Tools that are less error-  
prone which can be  
accomplished by Typing

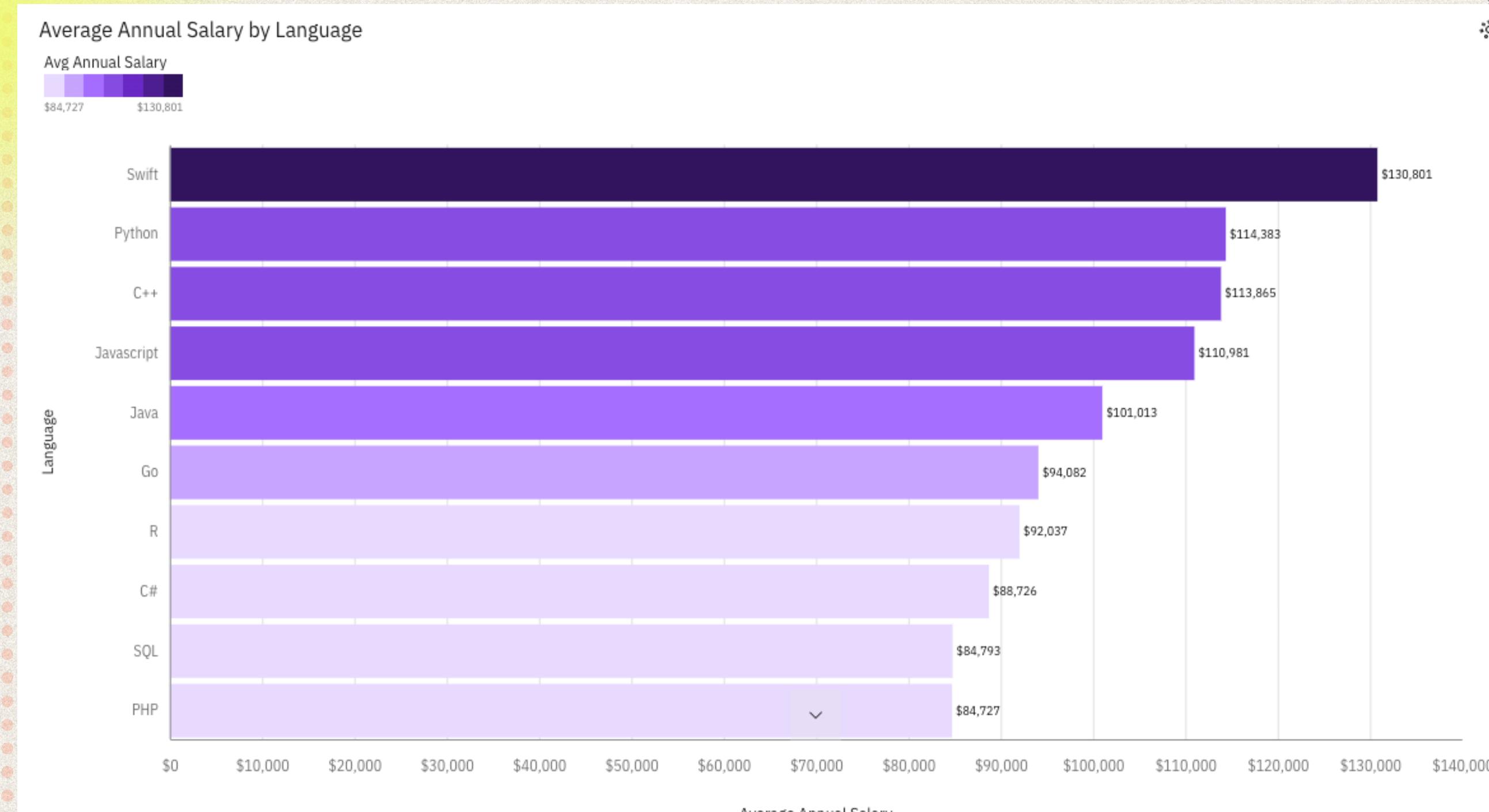
# APPENDIX

# TOP FACTOR

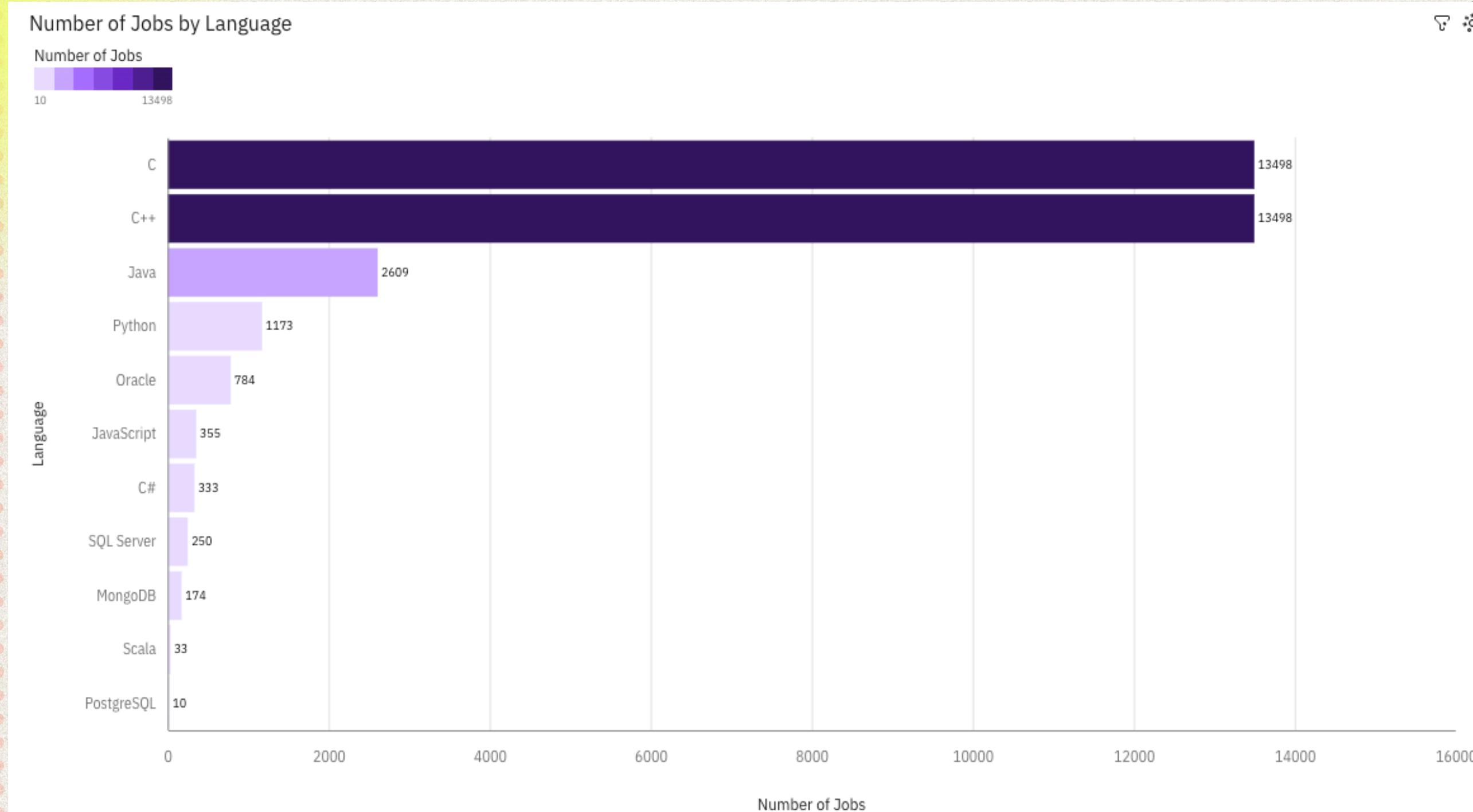
Most Important Job Factor is the coding technologies respondents work with



# POPULAR LANGUAGES



# JOB POSTINGS



# SOURCES

1. PromptCloud and DataStock. (2019, August). Jobs on Naukri.com, Version 1. Retrieved April, 2024 from <https://www.kaggle.com/datasets/promptcloud/jobs-on-naukricom/data>.
2. IBM Skills Network. Popular Programming Languages. Retrieved April, 2024 from [https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming\\_Languages.html](https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-DA0321EN-SkillsNetwork/labs/datasets/Programming_Languages.html).
3. Stack Overflow. (2019, February). Annual Developer Survey, 2019. Retrieved April, 2024 from [https://insights.stackoverflow.com/survey?\\_ga=2.177616038.2076724704.1713048265-654320079.1713048265](https://insights.stackoverflow.com/survey?_ga=2.177616038.2076724704.1713048265-654320079.1713048265).