

# EMERGING TRENDS IN SOFTWARE

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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.**

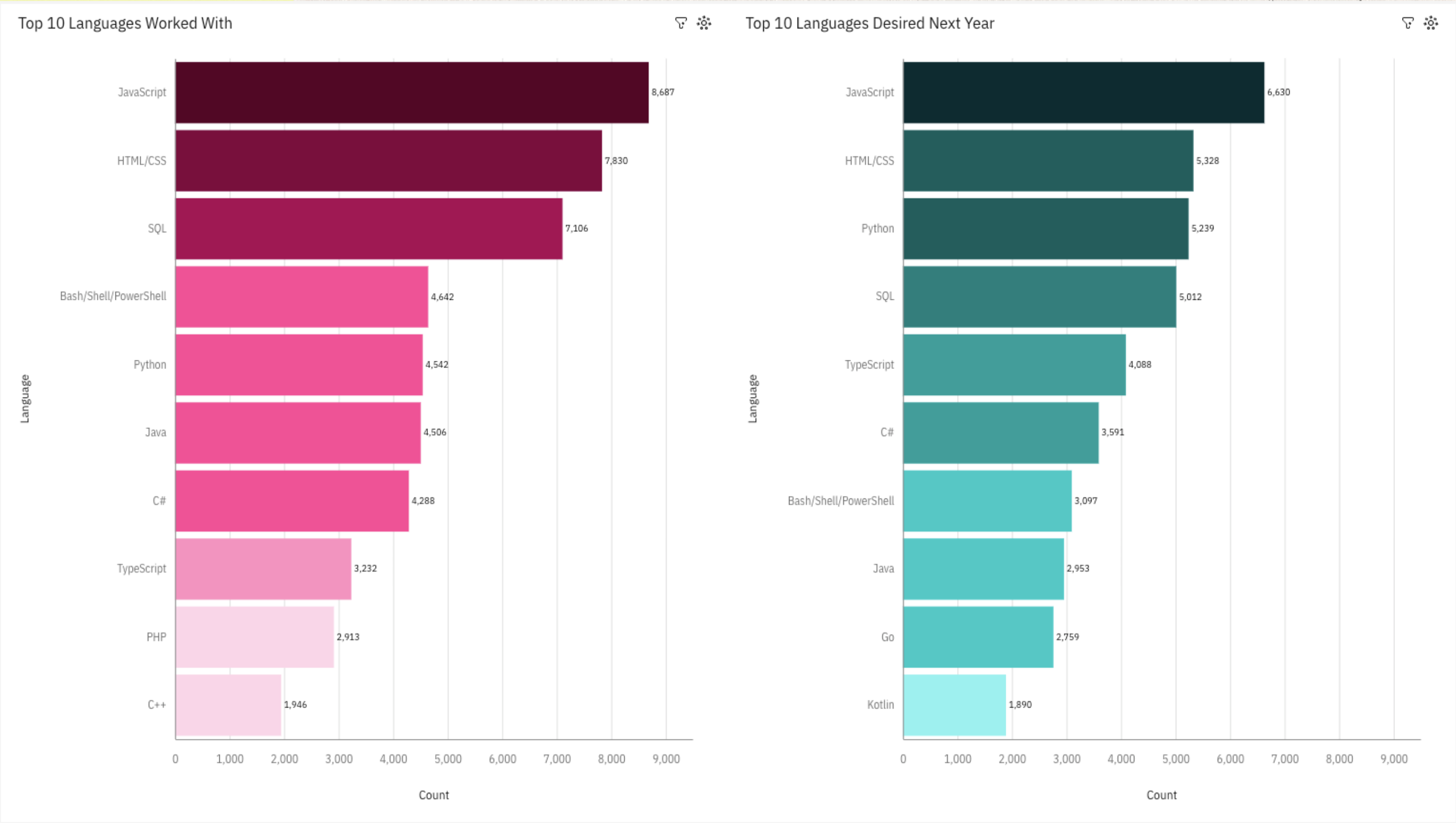
**Albert Einstein**

**RESULTS**

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# PROGRAMMING LANGUAGE TRENDS





# PROGRAMMING LANGUAGE TRENDS - **FINDINGS & IMPLICATIONS**

## **FINDINGS**

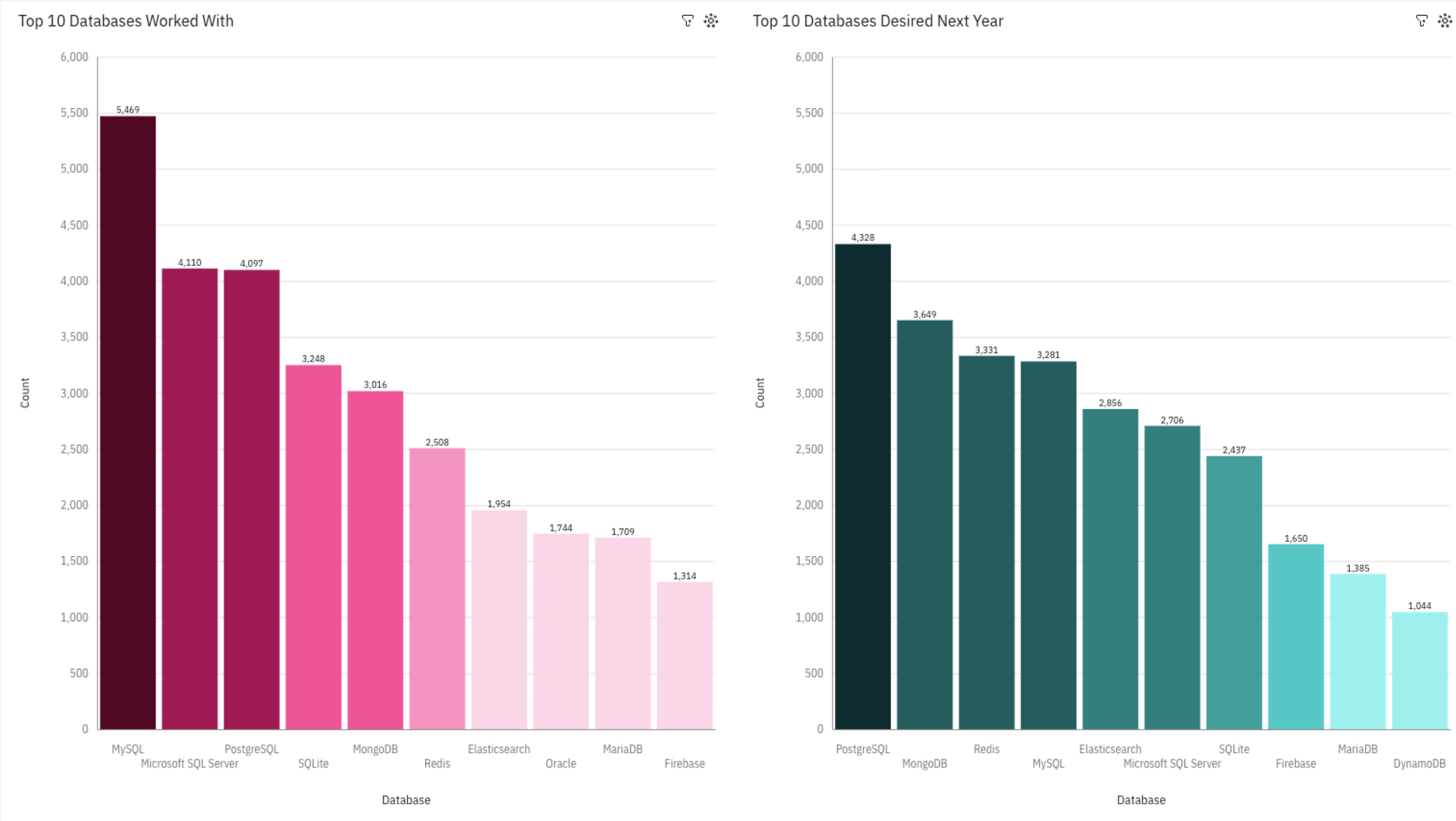
- JavaScript is the most used and most desired language
- Python demand is increasing fast
- Respondents are losing interest in Bash and Shell scripting

## **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

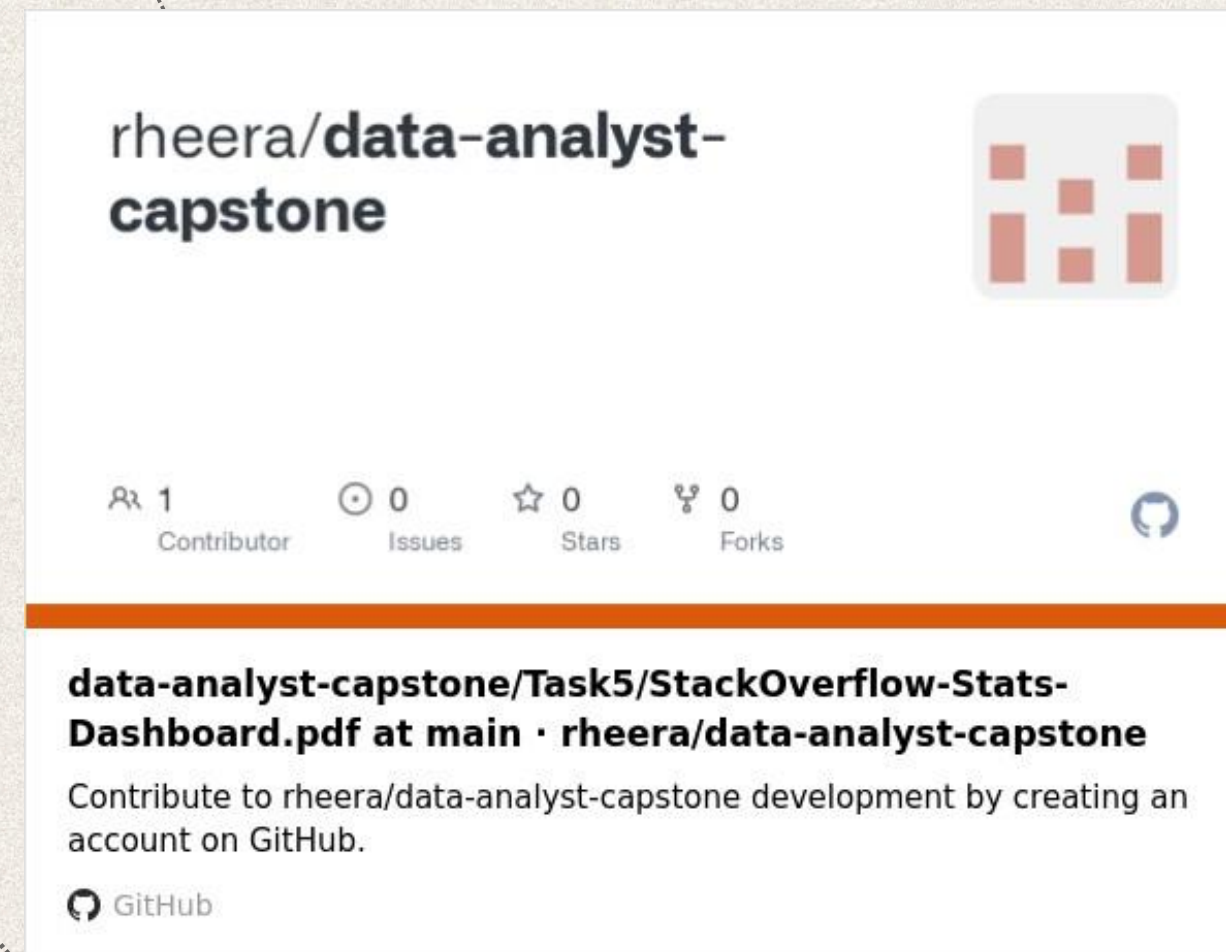
## IMPLICATIONS

- 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

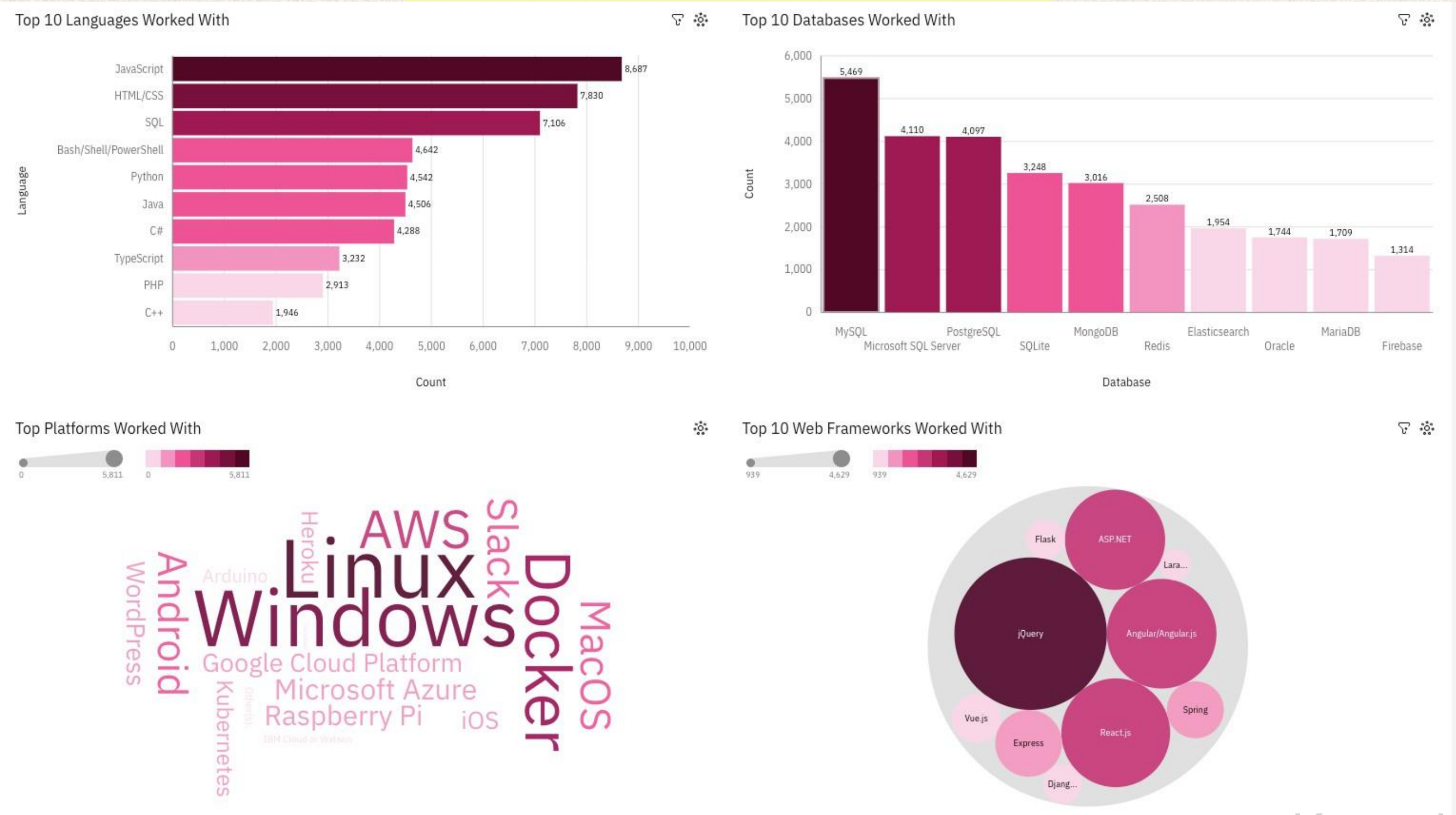
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and Hosted on Github



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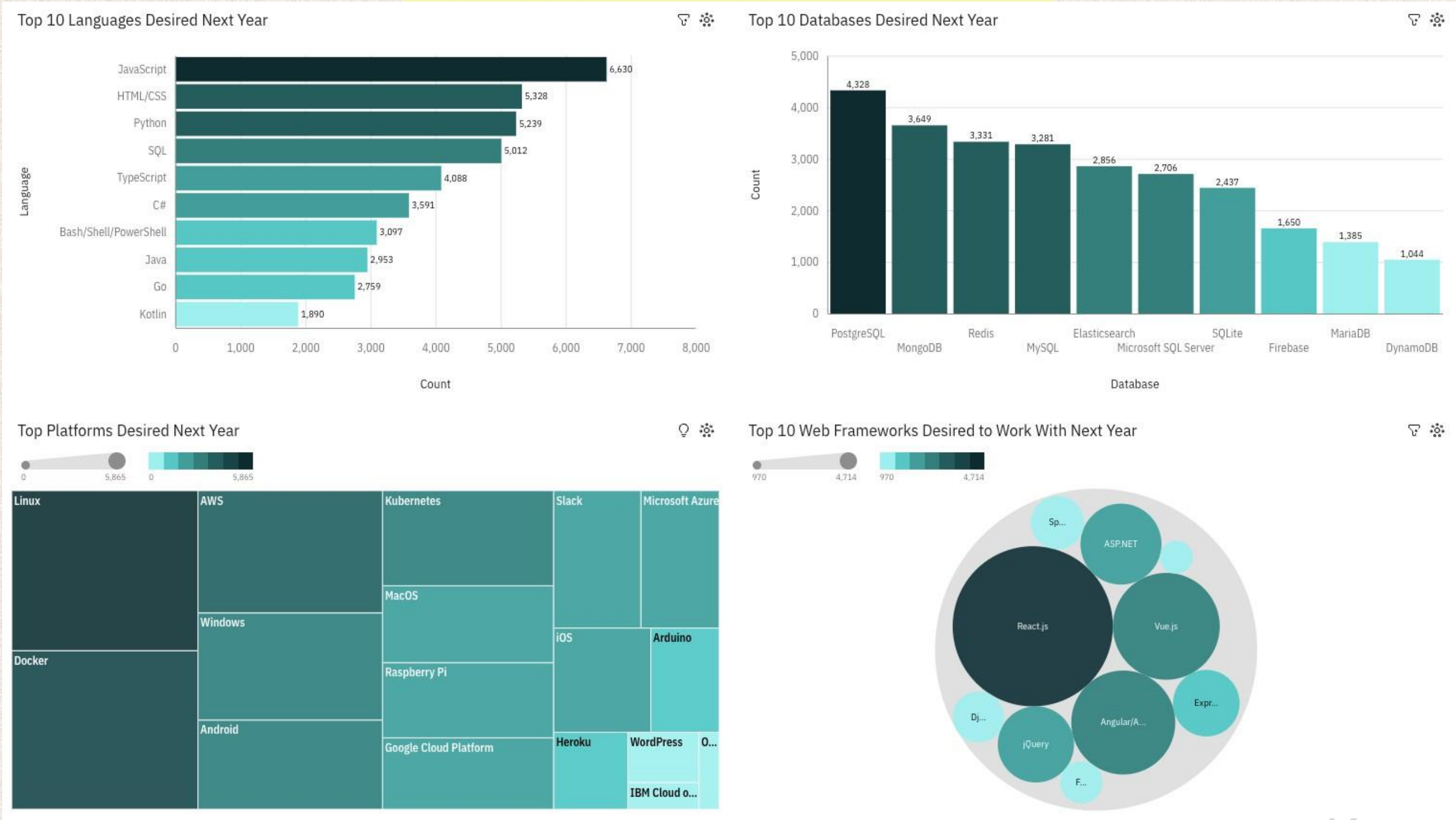


# DASHBOARD TAB 1



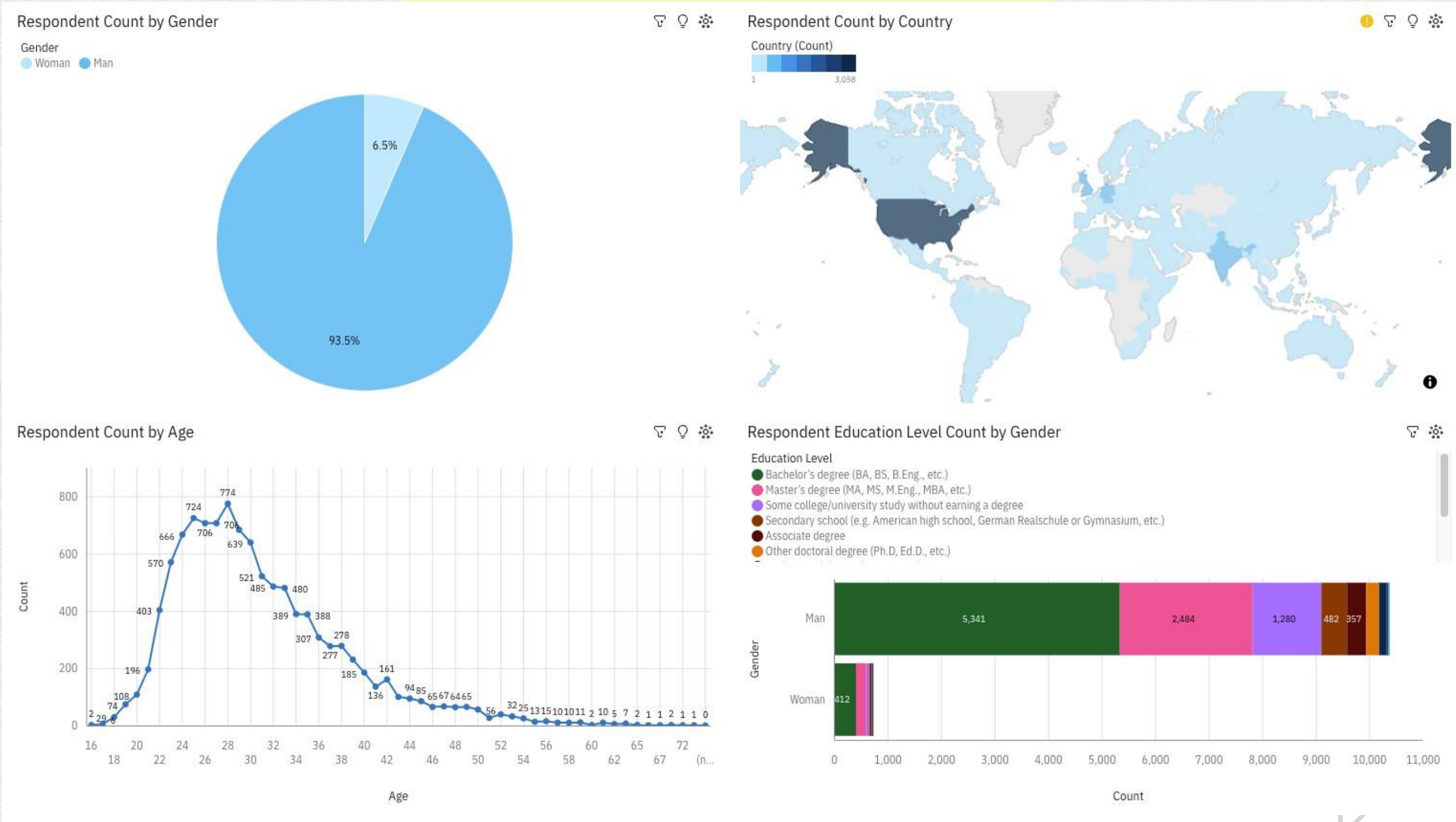


# DASHBOARD TAB 2



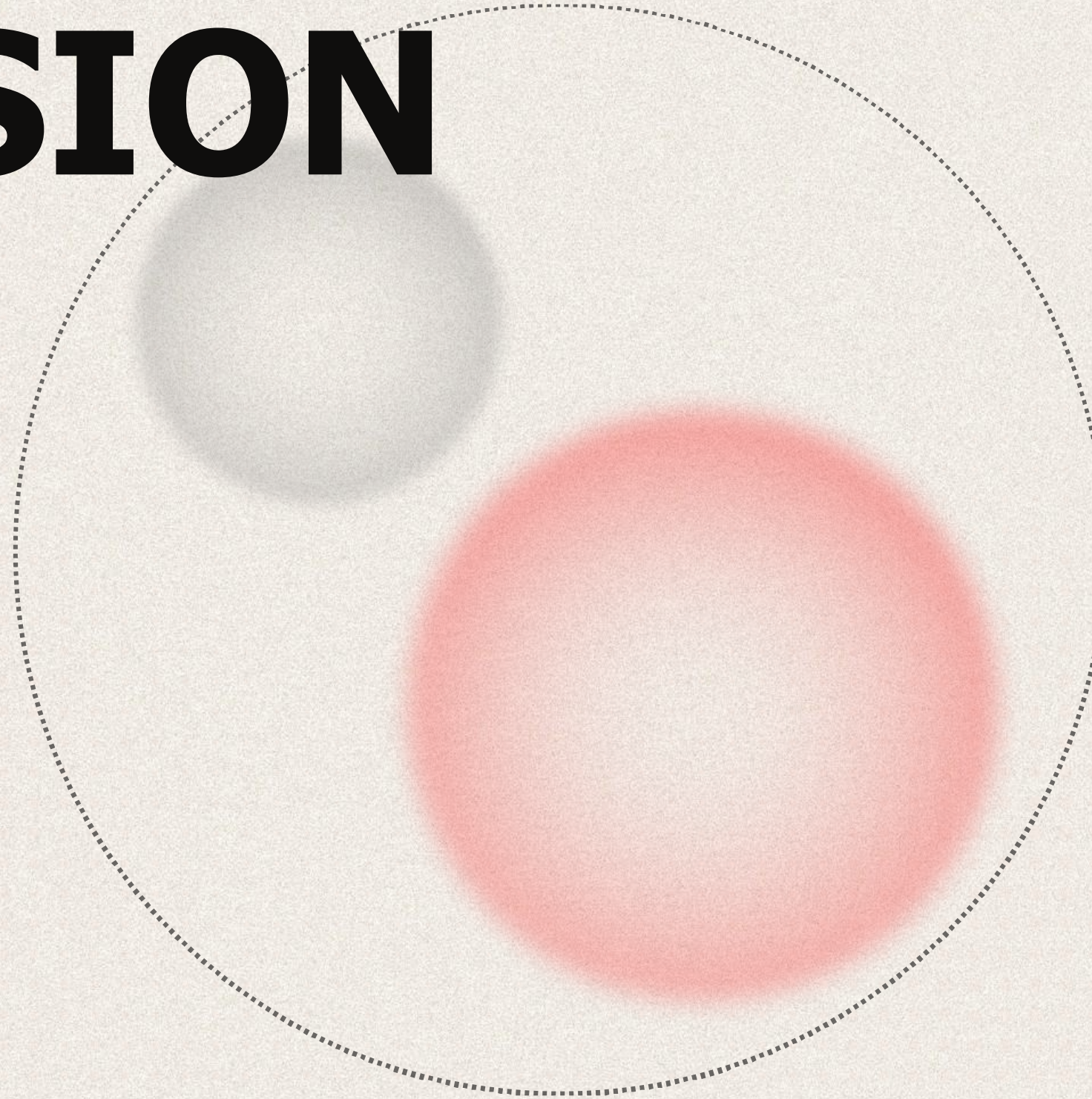


# DASHBOARD TAB 3





# 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.**

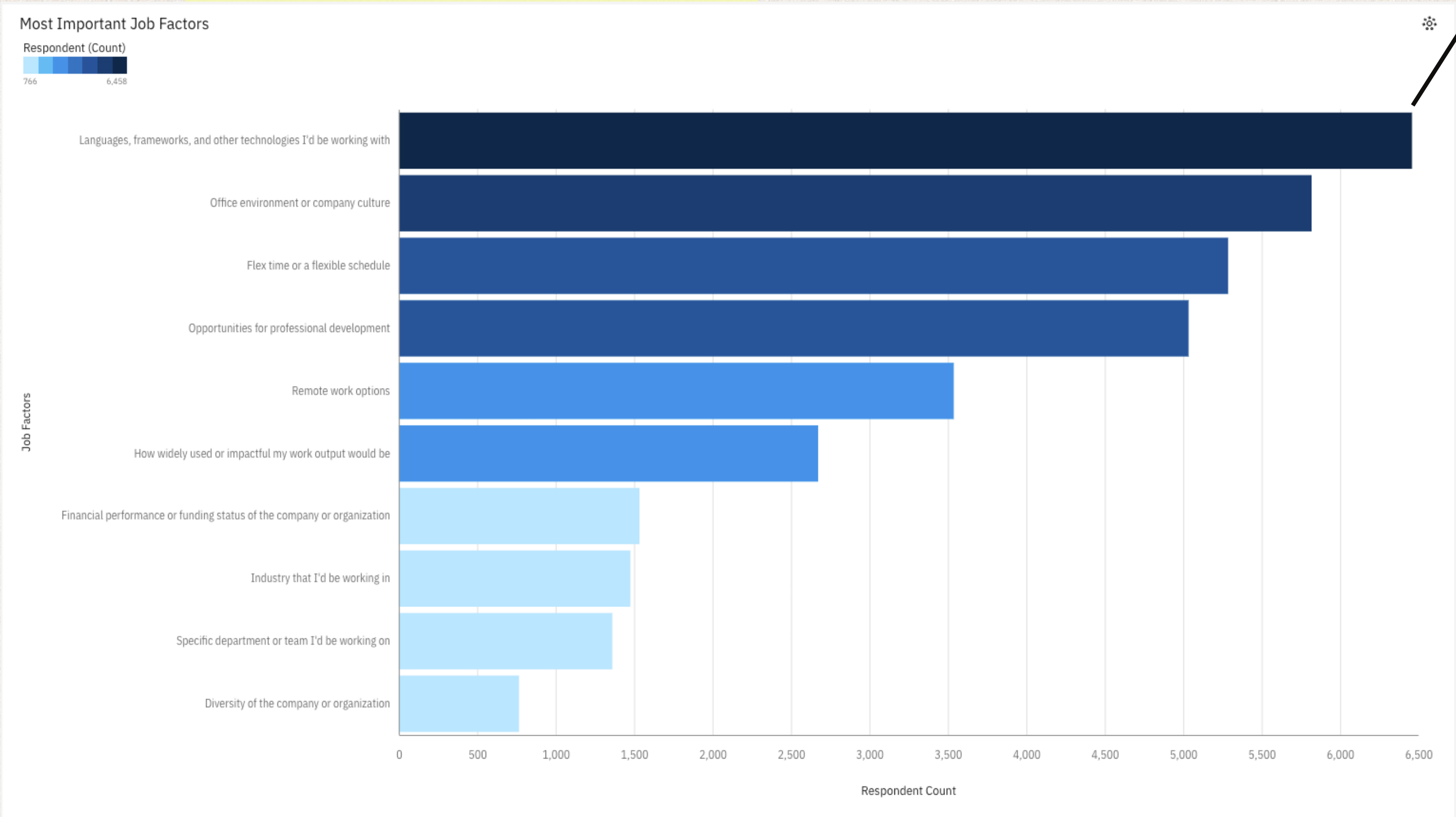
Tools that are less error-prone which can be accomplished by Typing



# APPENDIX

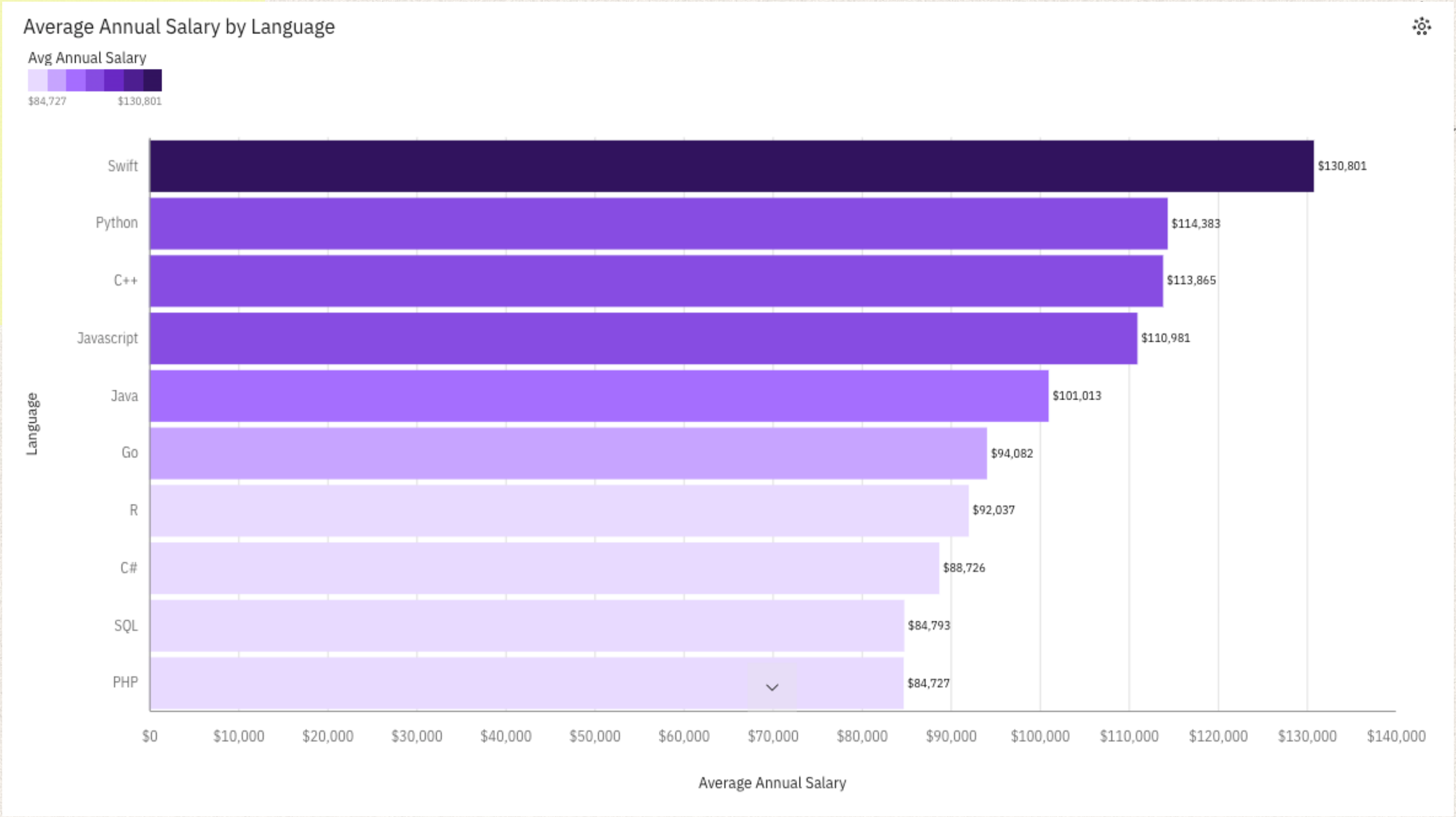
## TOP FACTOR

Most Important Job Factor is the coding technologies respondents work with



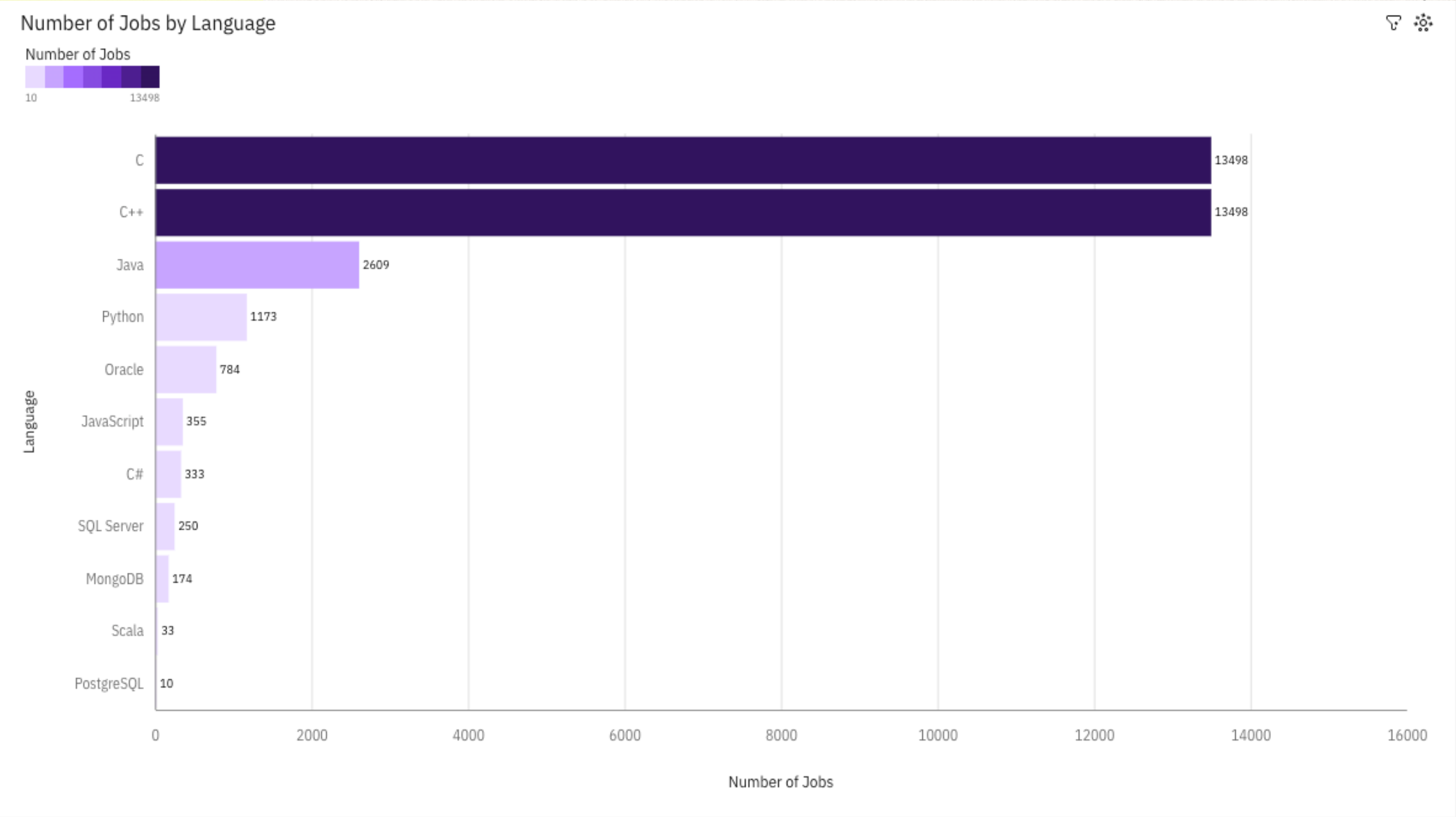


# POPULAR LANGUAGES





# 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).