

EMERGING TRENDS IN SOFTWARE

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- Visualizations - Charts
- Dashboard

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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 API¹
- Programming language salaries from Web Scraping²
- Modified Stack Overflow Survey Results³

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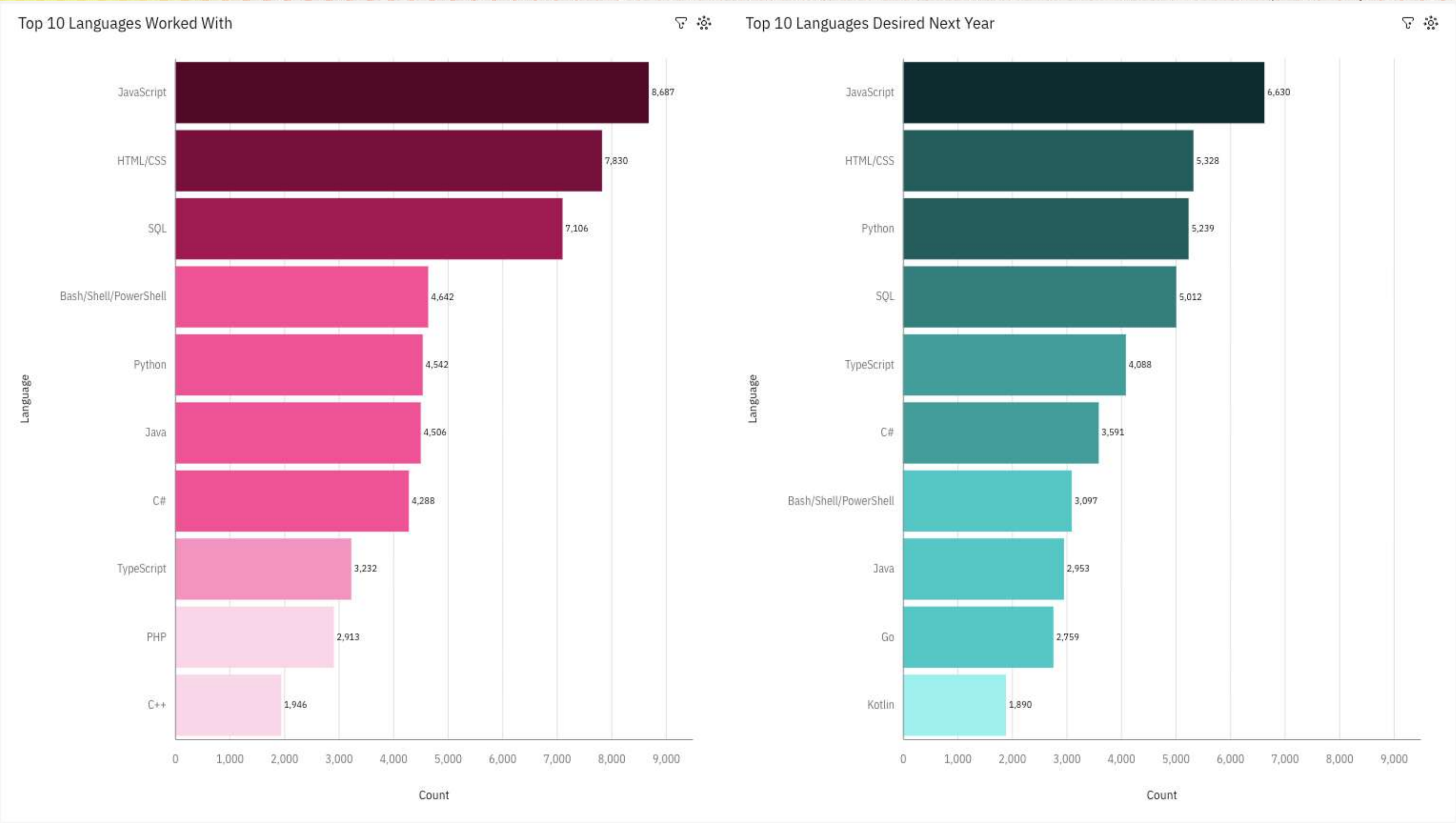
**If you want to
know the future,
look at the past.**

Albert Einstein

RESULTS

Next Slide →

PROGRAMMING LANGUAGE TRENDS



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

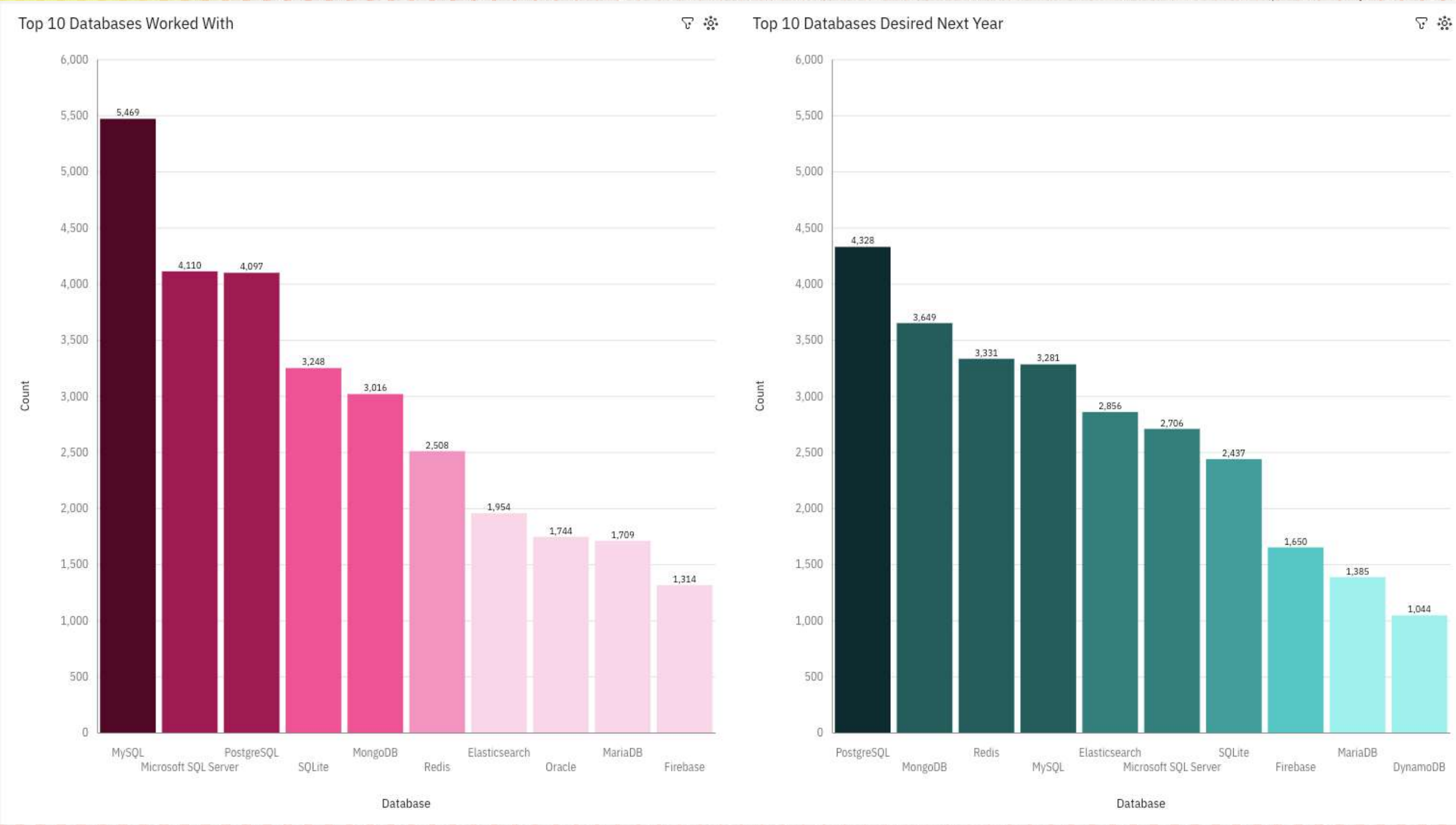
FINDINGS

- 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

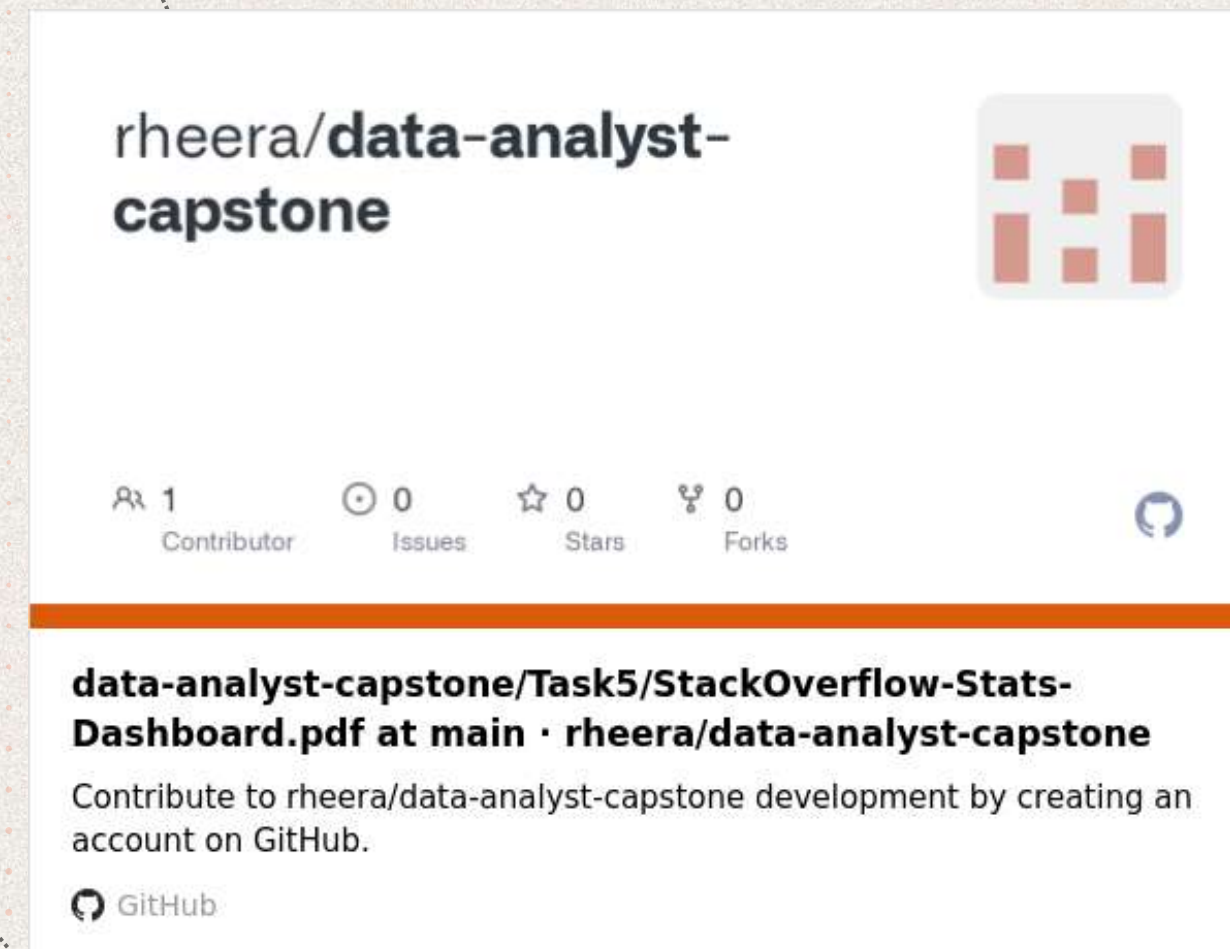
- NoSQL (Non-relational) databases are increasing in interest such as MongoDB and DynamoDB
- Relational Databases are still popular
- Services are increasing in popularity such as Elasticsearch and Firebase
- Data stores are increasing in demand such as Redis
- Oracle is not in the top 10 most desired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

IMPLICATIONS

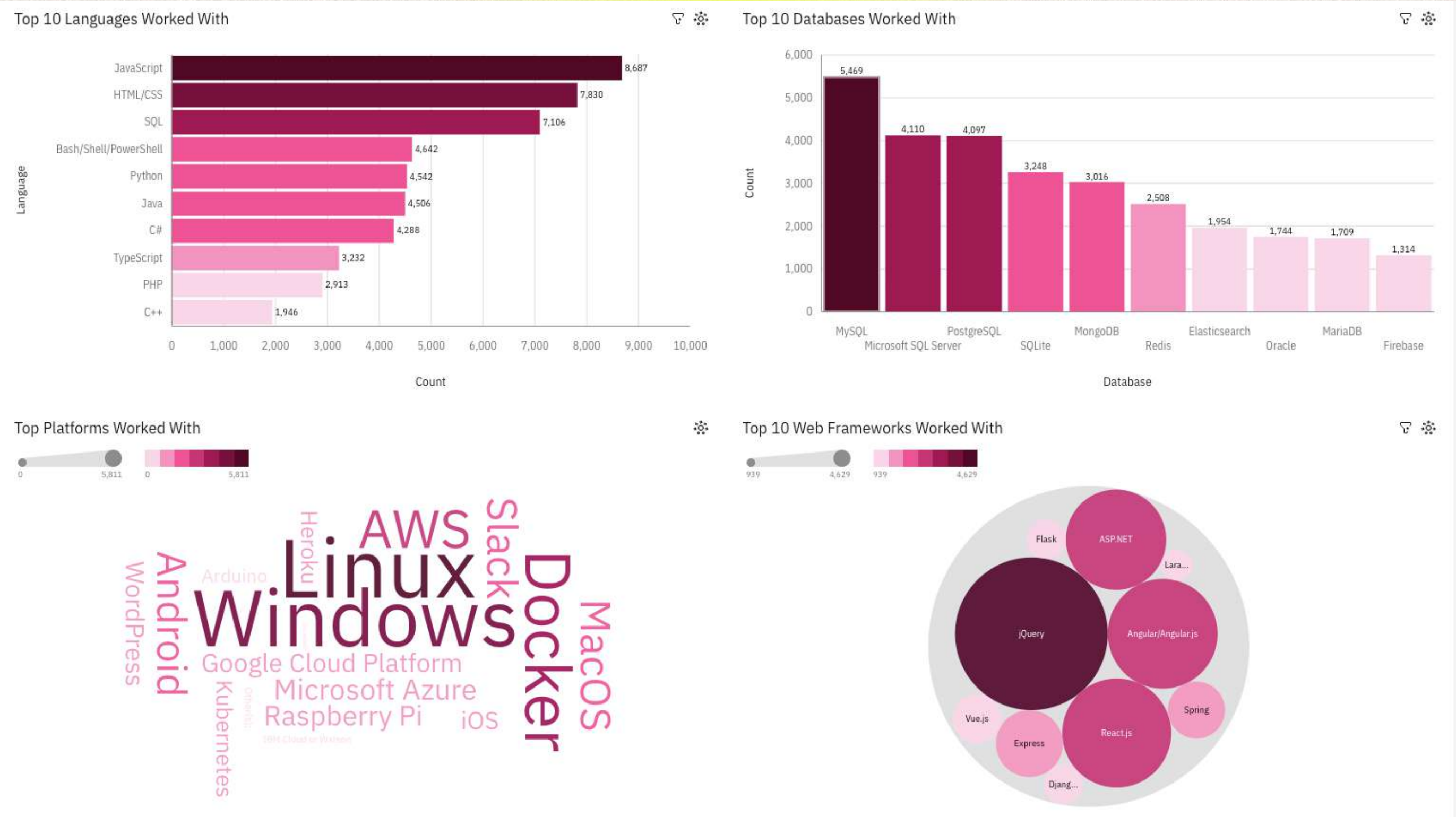
- PostgreSQL has more features and makes working with SQL easier, which shows a similar trend as with programming languages that simplicity and ease-of-use are important
- With more complex data the freedom that NoSQL provides is very alluring
- PaaS tools are gaining in popularity, again to simplify 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

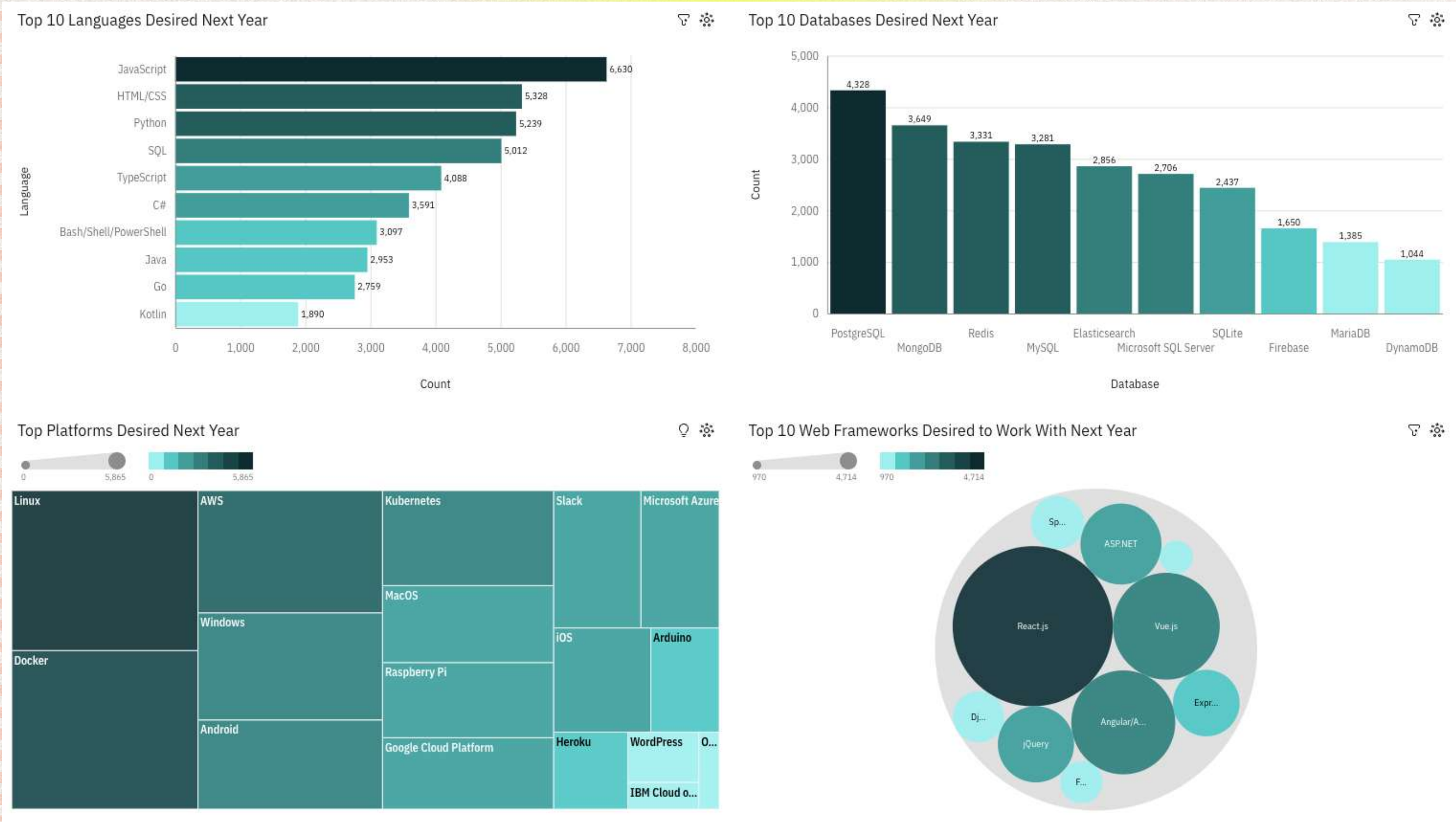
Created with IBM Cognos Analytics
and Hosted on Github



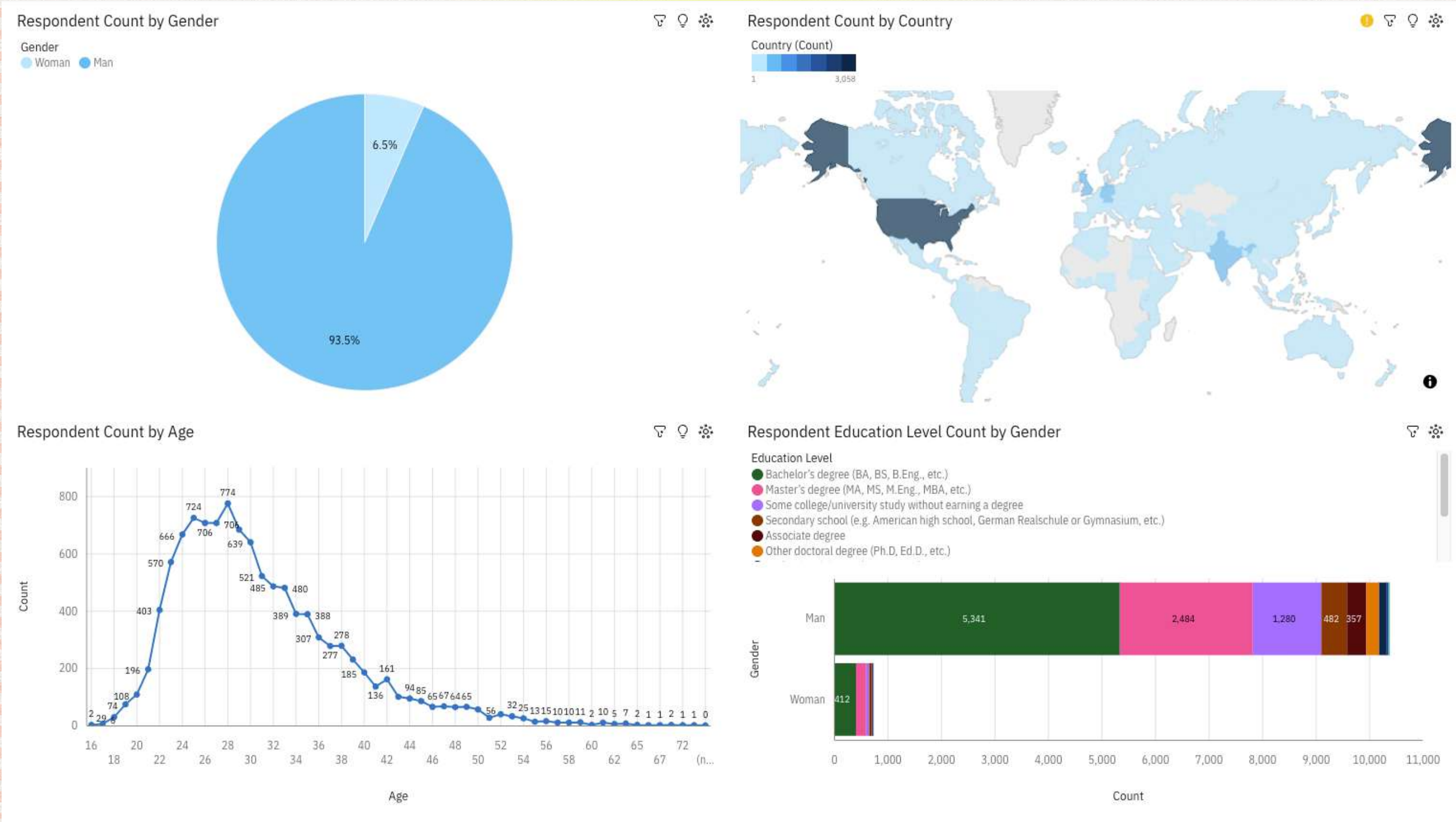
DASHBOARD TAB 1



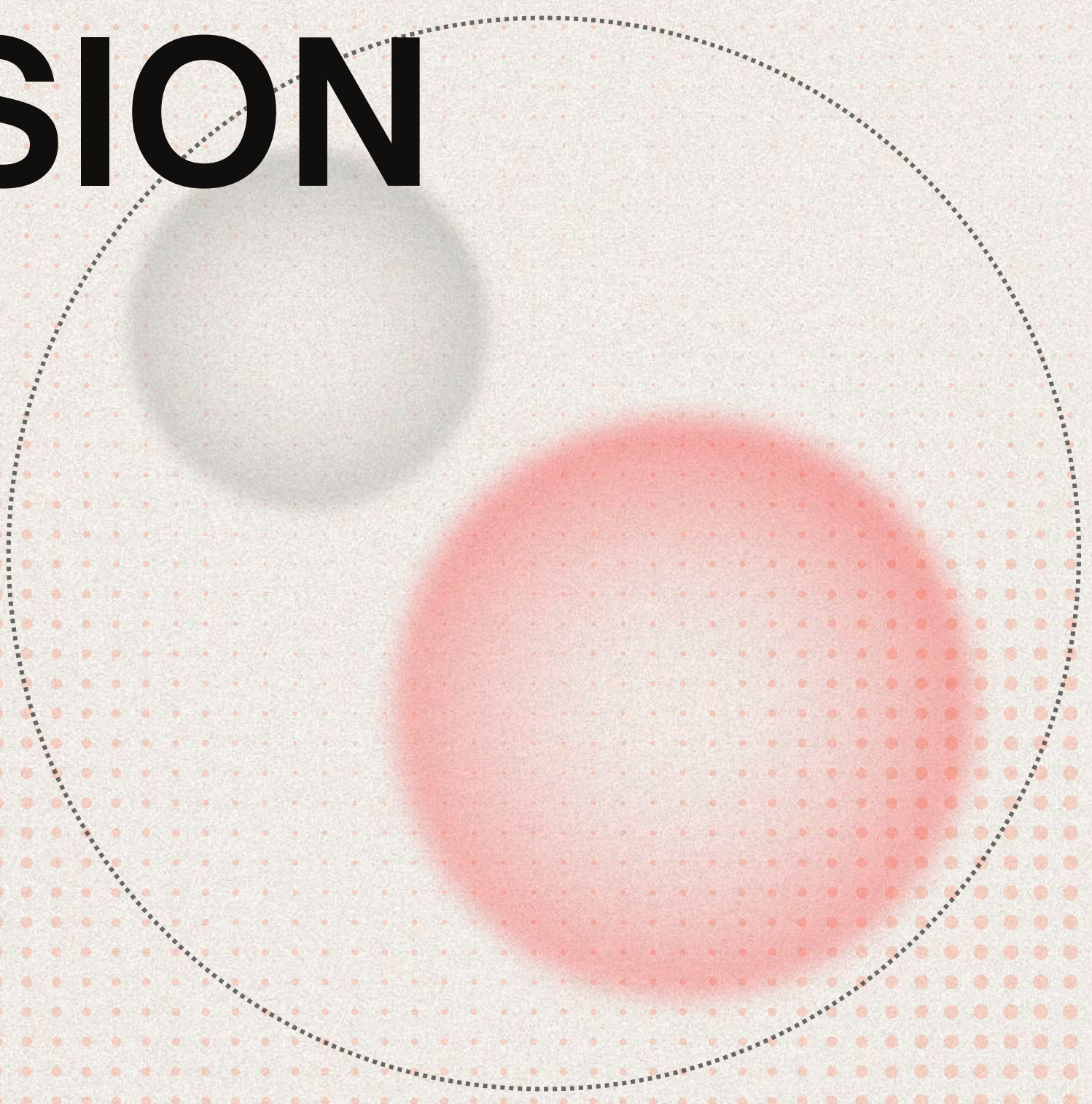
DASHBOARD TAB 2



DASHBOARD TAB 3



DISCUSSION

An abstract graphic on a background of small, light-orange dots. A large, thin, dotted black circle is centered on the right side of the image. Inside this circle, there are two overlapping circles: a larger, semi-transparent grey one on the left and a smaller, semi-transparent red one on the right, partially overlapping the grey one.

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

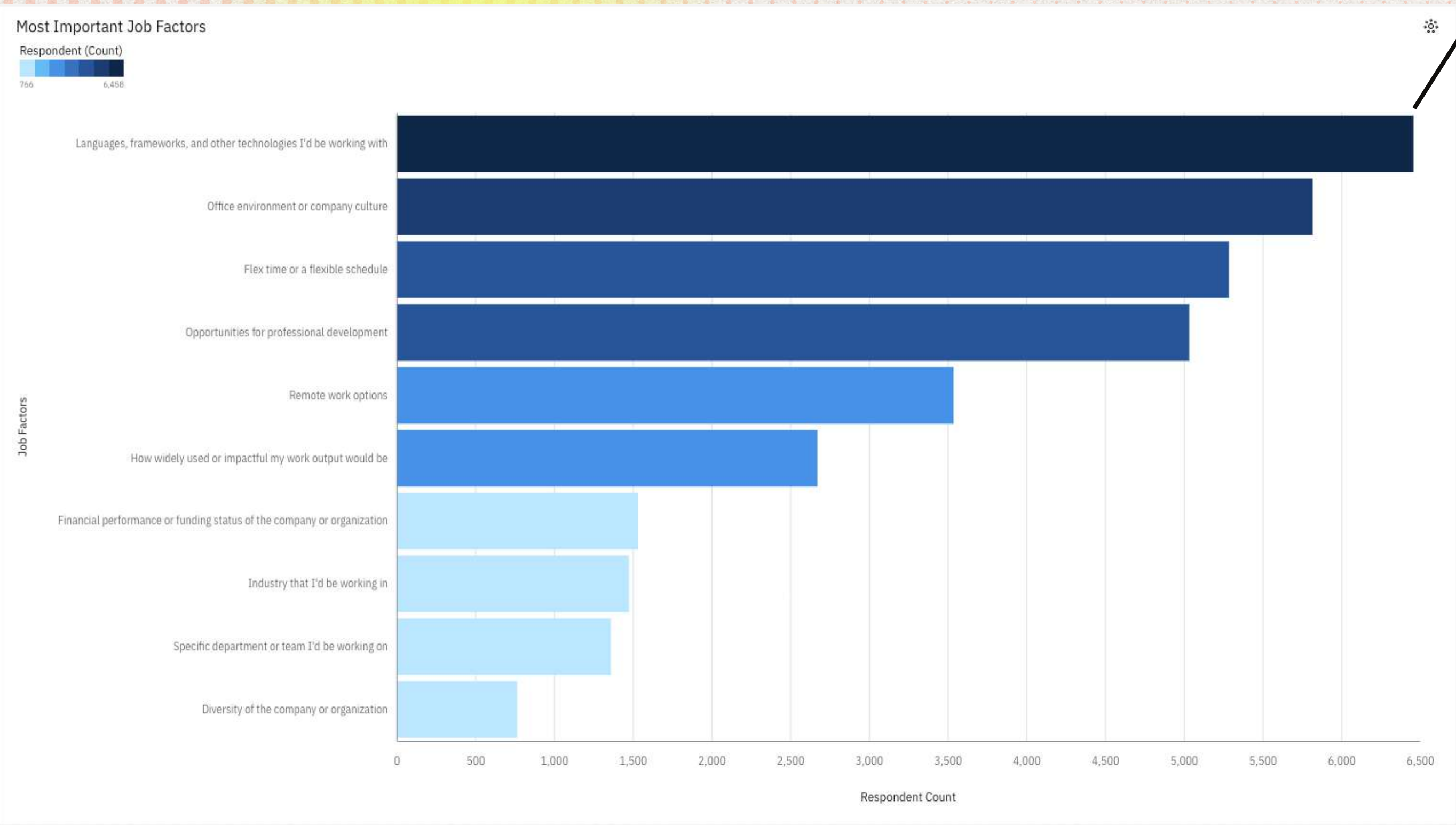
03.

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

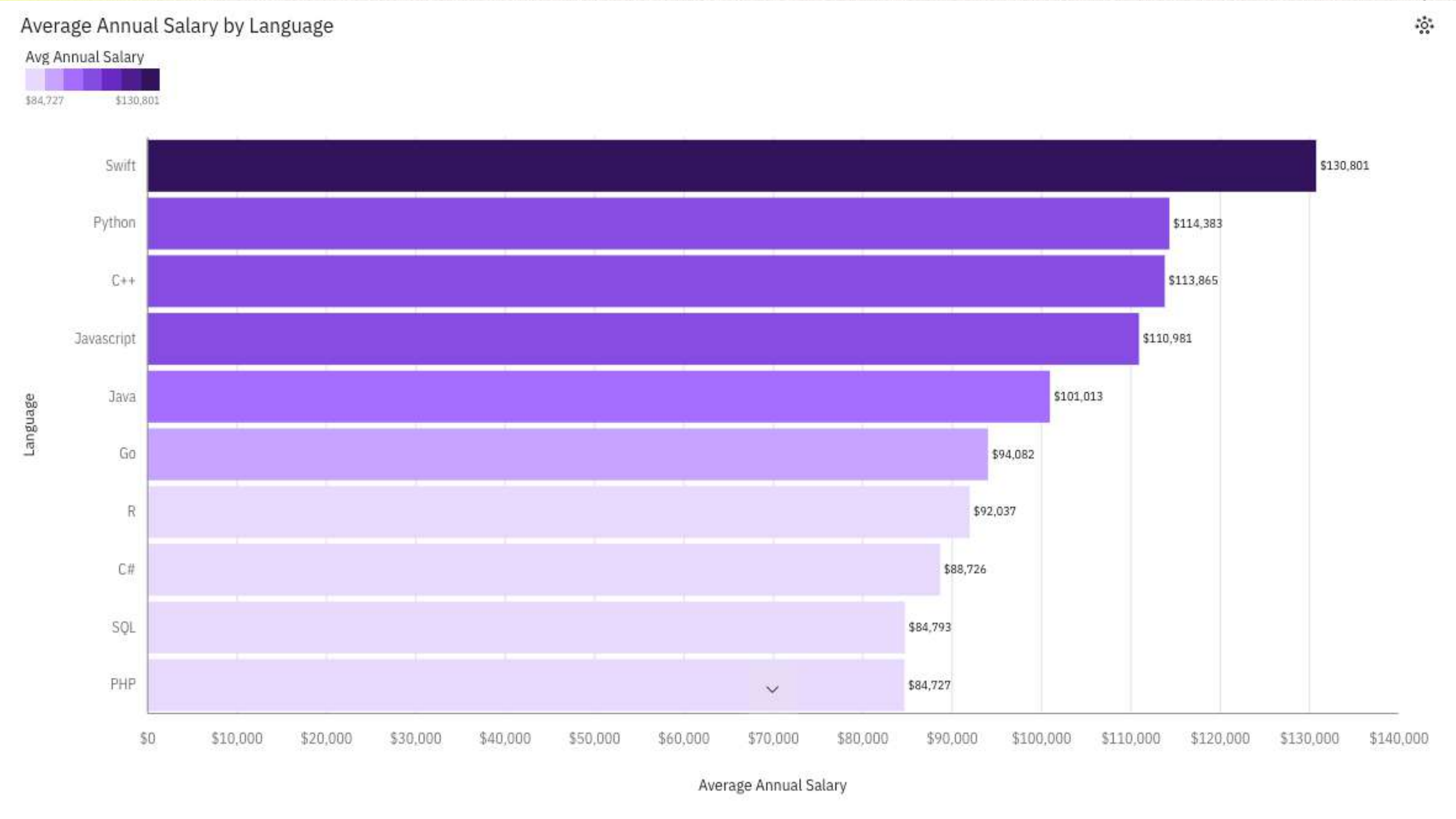
APPENDIX

TOP FACTOR

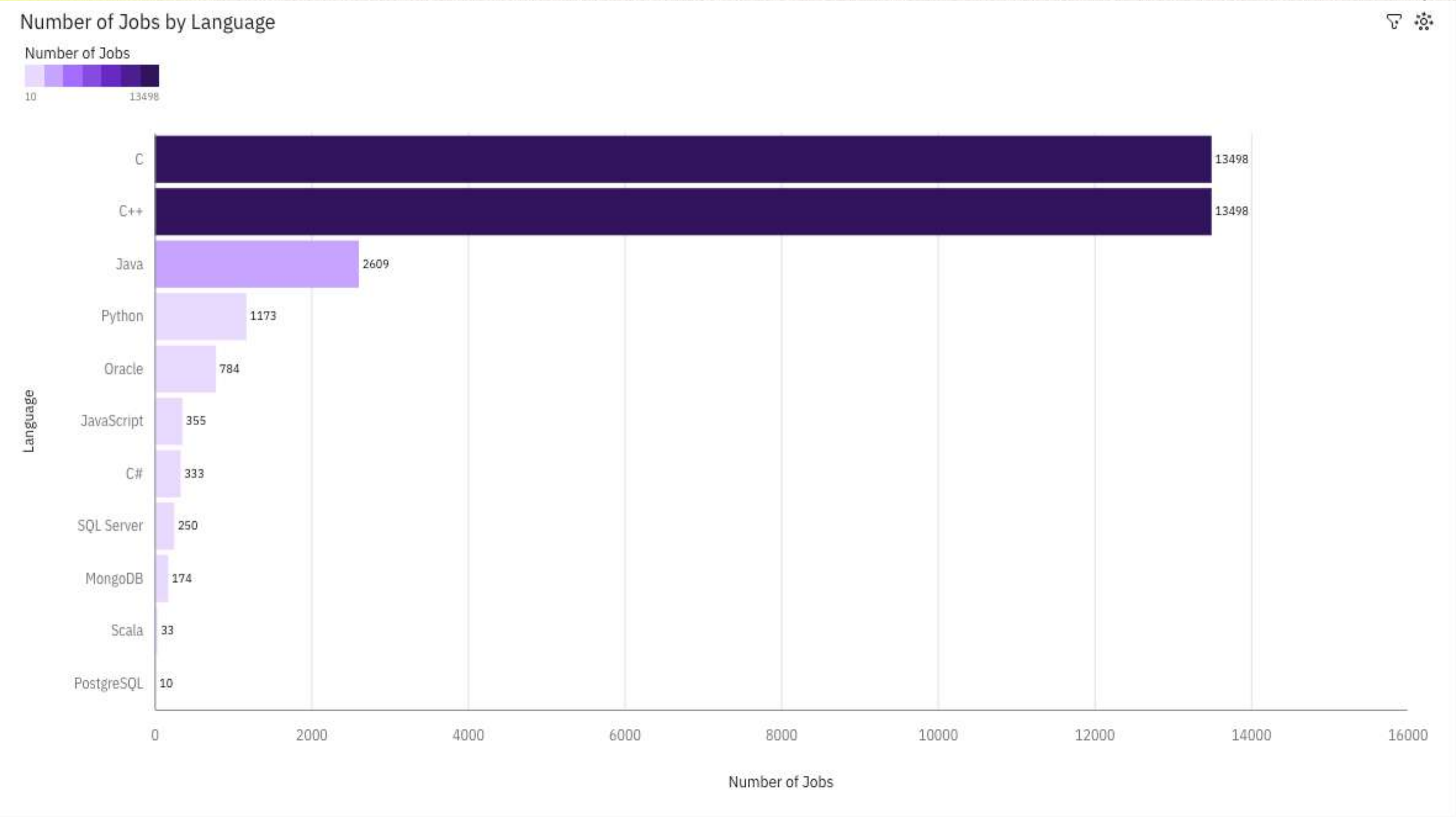
Most Important Job Factor is the coding technologies respondents work with



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.
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.