Emerging trends in software

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20th March 2025

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OUTLINE

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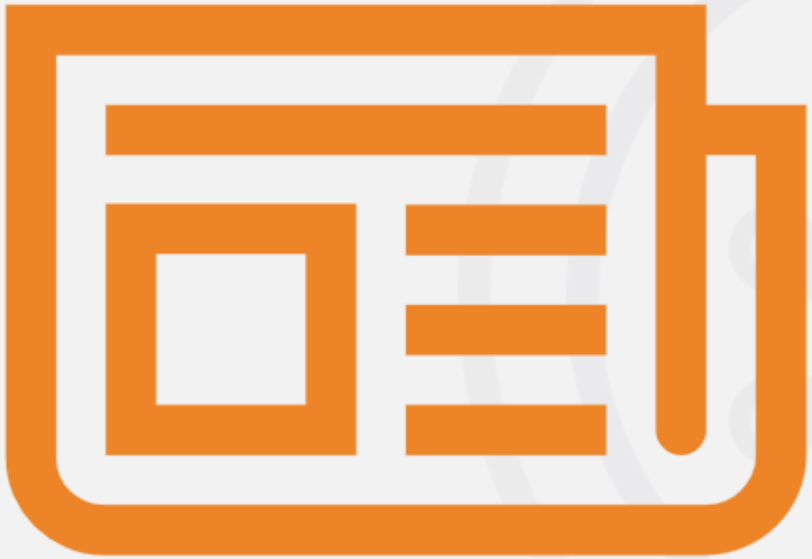
EXECUTIVE SUMMARY

- **Web is king**
  - Web-based languages and technologies continue to be most used and most desired
- **Simply is sexy**
  - Languages and technologies that are easy to use (simple syntax and typing to avoid errors) are more desired by respondents

INTRODUCTION

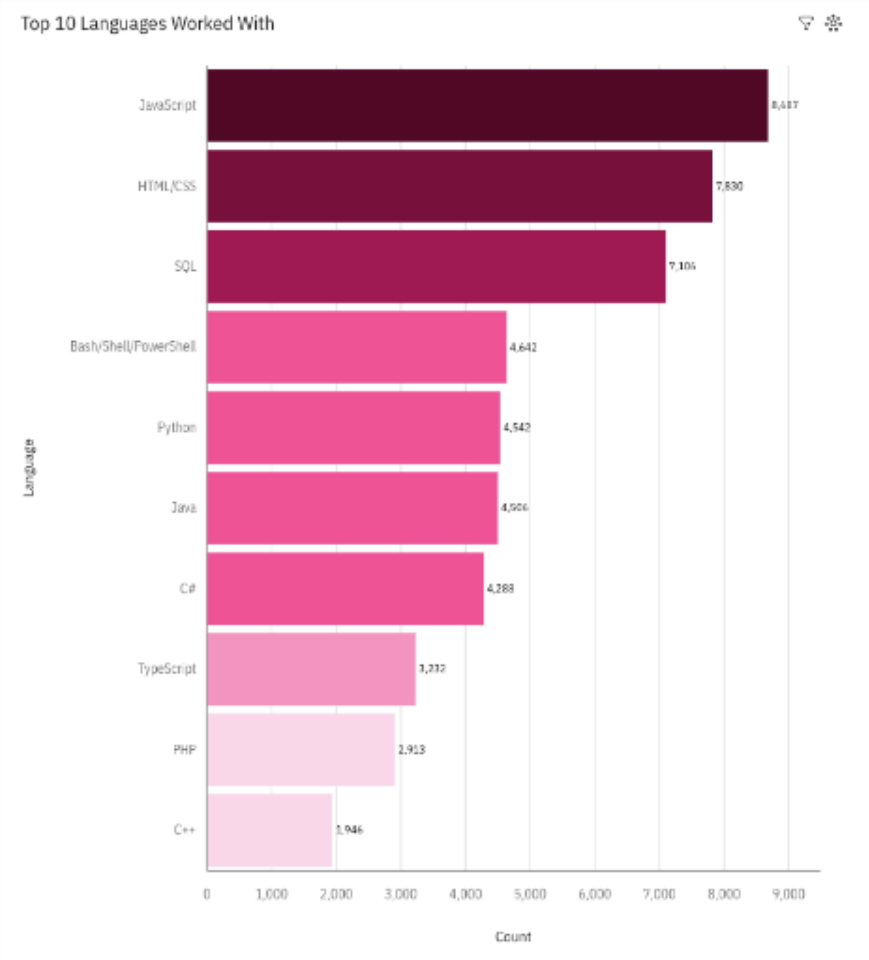
- **Stack Overflow**
  - Using every developer's favourite website's survey to understand trends in technology.
- **Problem**
  - Software development languages and technologies are changing quickly, in what direction are they trending?
- **Questions to Ask**
  - What are technology demands of the world and what are the demands of the developer?
- **What to Look For**
  - Focus on what the developers work with now, what they want, and who they are.

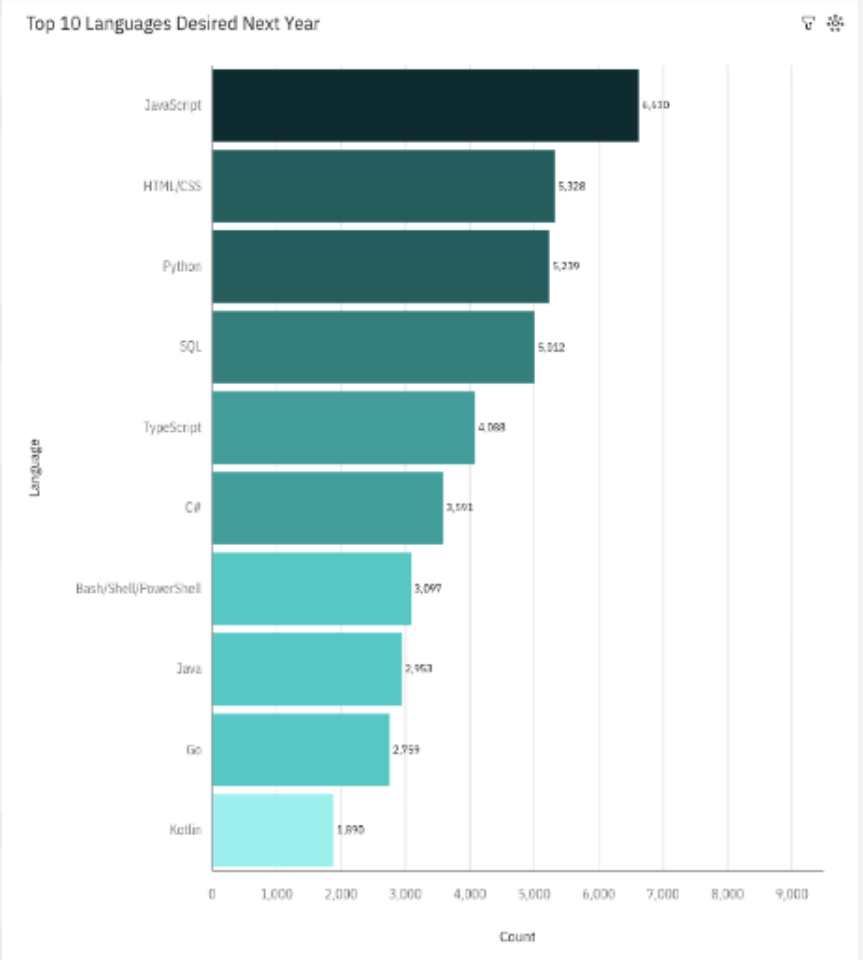
METHODOLOGY



- **Data Collection & Wrangling**
  - Modified GitHub Jobs API
  - Programming language salaries from Web Scraping
  - Modified Stack Overflow Survey Results
- **Data Analysis & Visualization**
  - Exploring the data through visualizations
  - Doing analysis of the data to create meaningful visualizations
  - Creating dashboards with visualizations of relevant data

RESULTS- Programming Language Trends





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PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

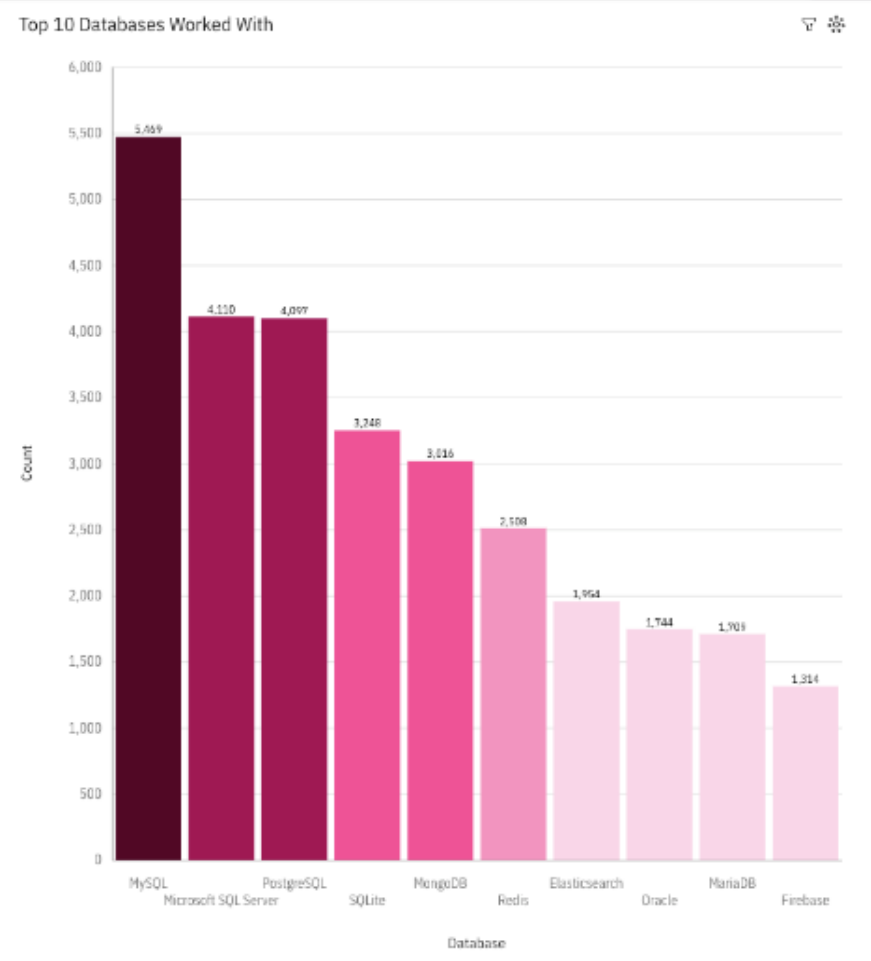
Findings

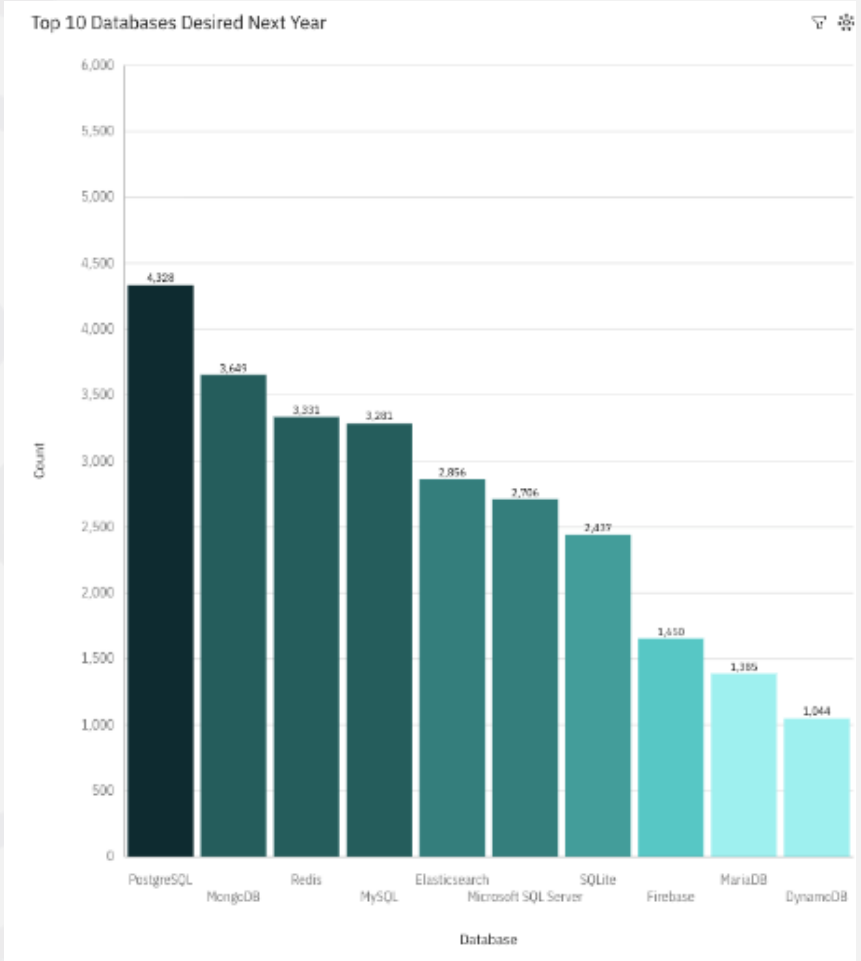
- JavaScript is the most used and most desired language
- Python demand is increasing fast
- Respondents are losing interest in Bash and Shell scripting

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 easier 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

RESULTS- DATABASE TRENDS





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DATABASE TRENDS - FINDINGS & IMPLICATIONS

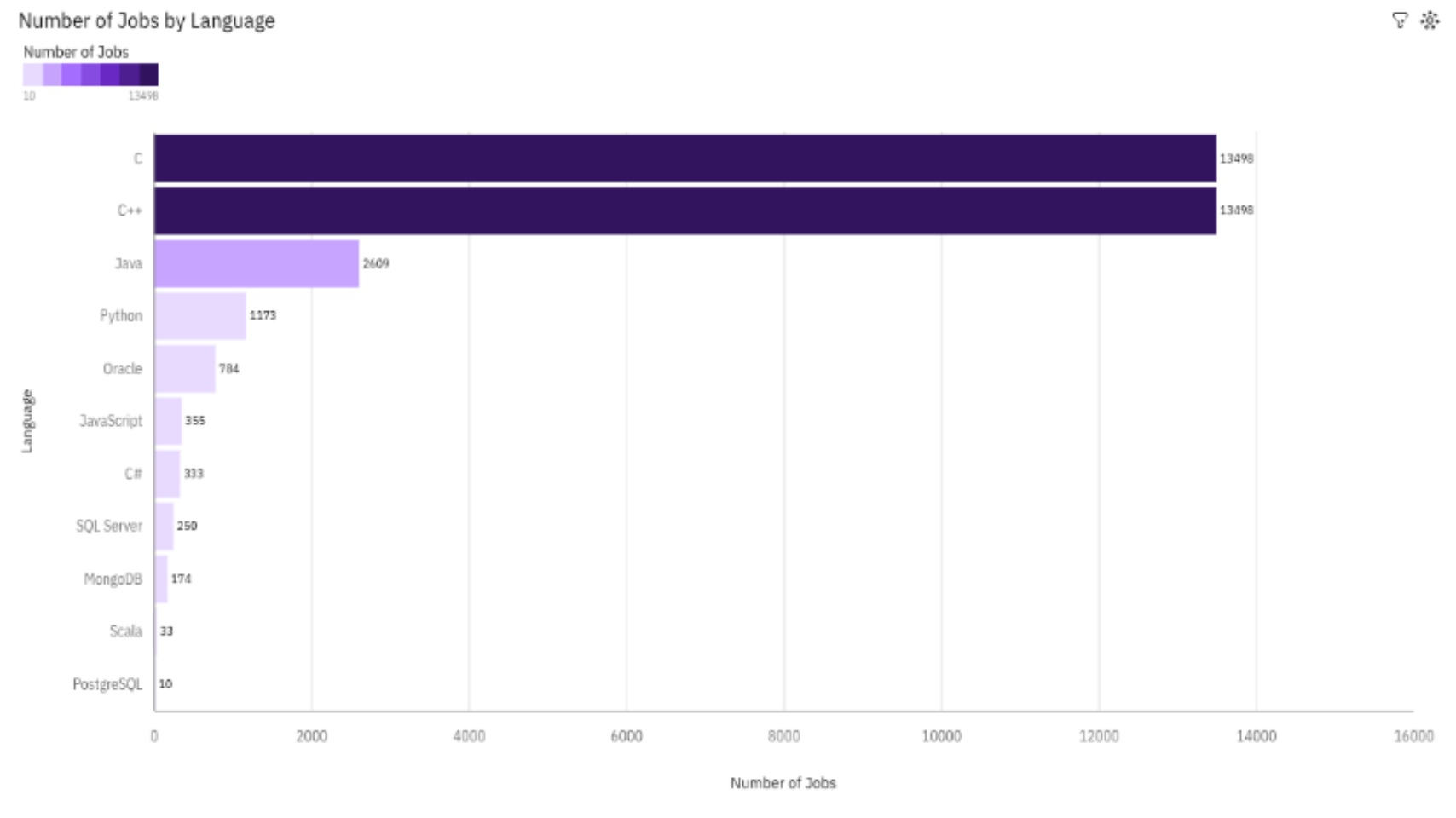
Findings

- 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 Elastisearch 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

JOB POSTINGS

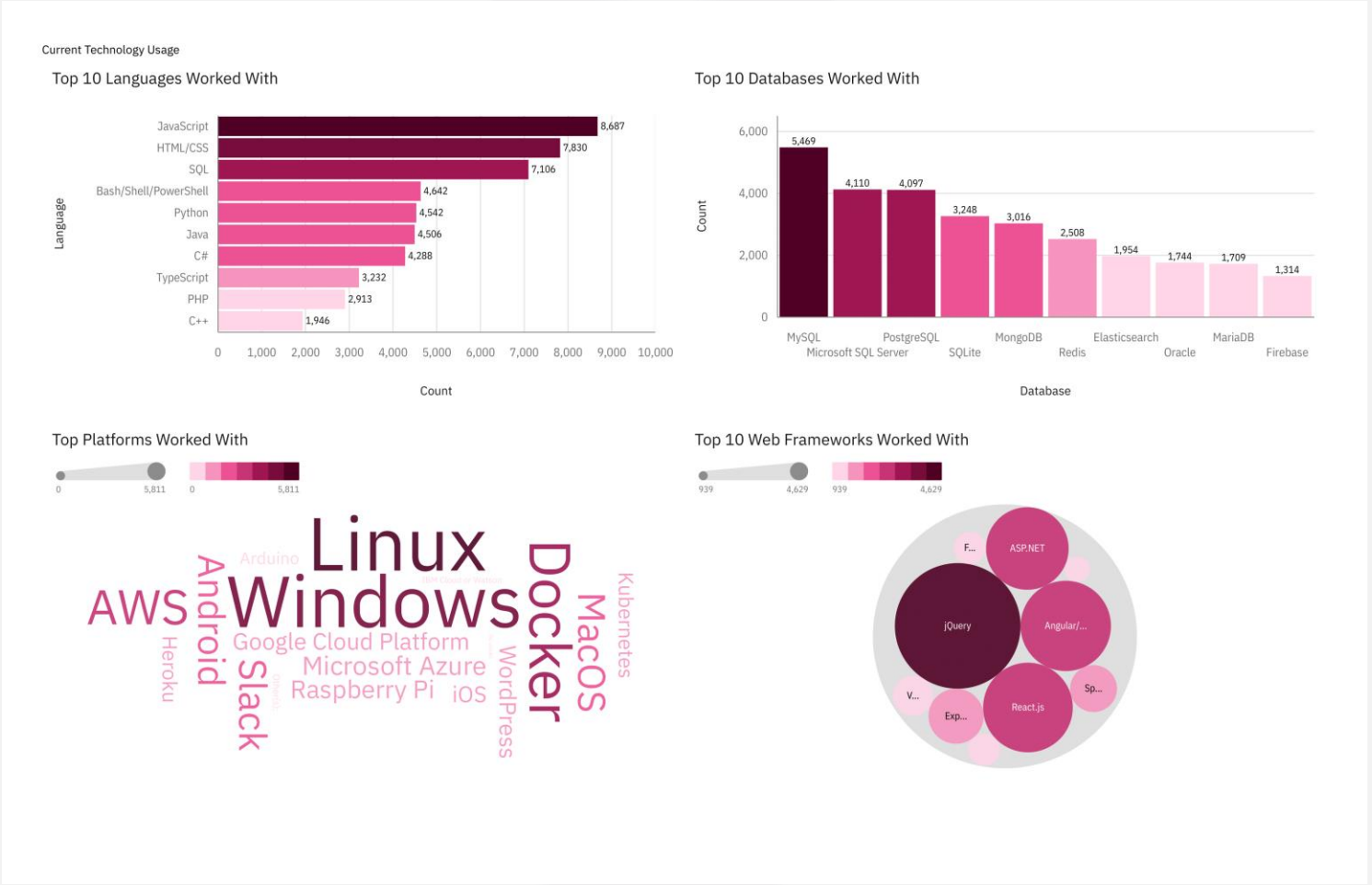


DASHBOARD

The GitHub link of my Cognos dashboard is:-

https://github.com/abdulqudusyusuf/IBM-data-analyst-capstone/blob/main/StackOverflow-Stats-Dashboard.pdf

DASHBOARD TAB 1



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DASHBOARD TAB 2

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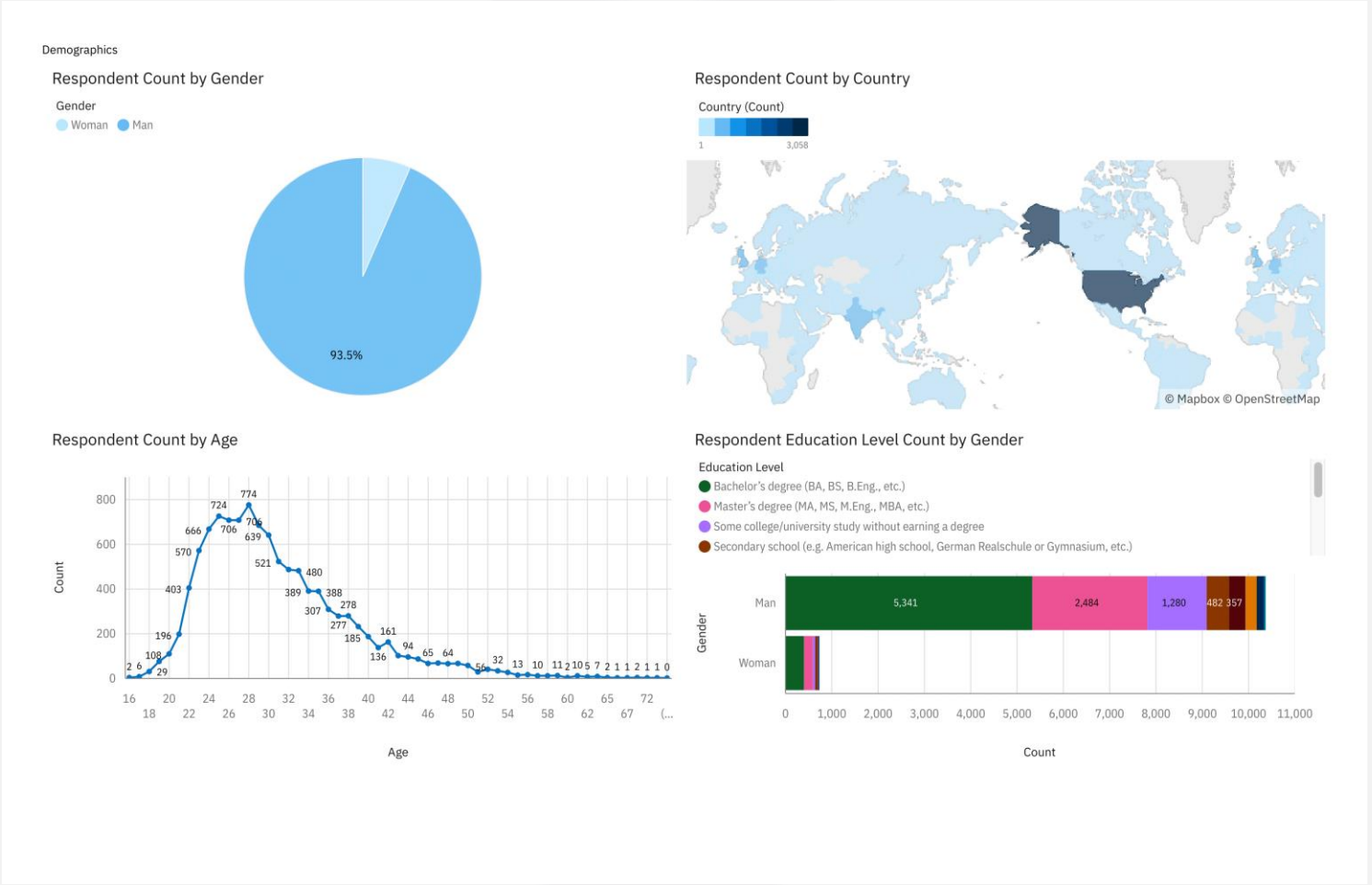
DASHBOARD TAB 3



DASHBOARD INSIGHTS

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 no 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 prioritize three key factors when selecting languages and technologies

1

Low Overhead & Declarative Design – Tools that simplify development and reduce complexity.

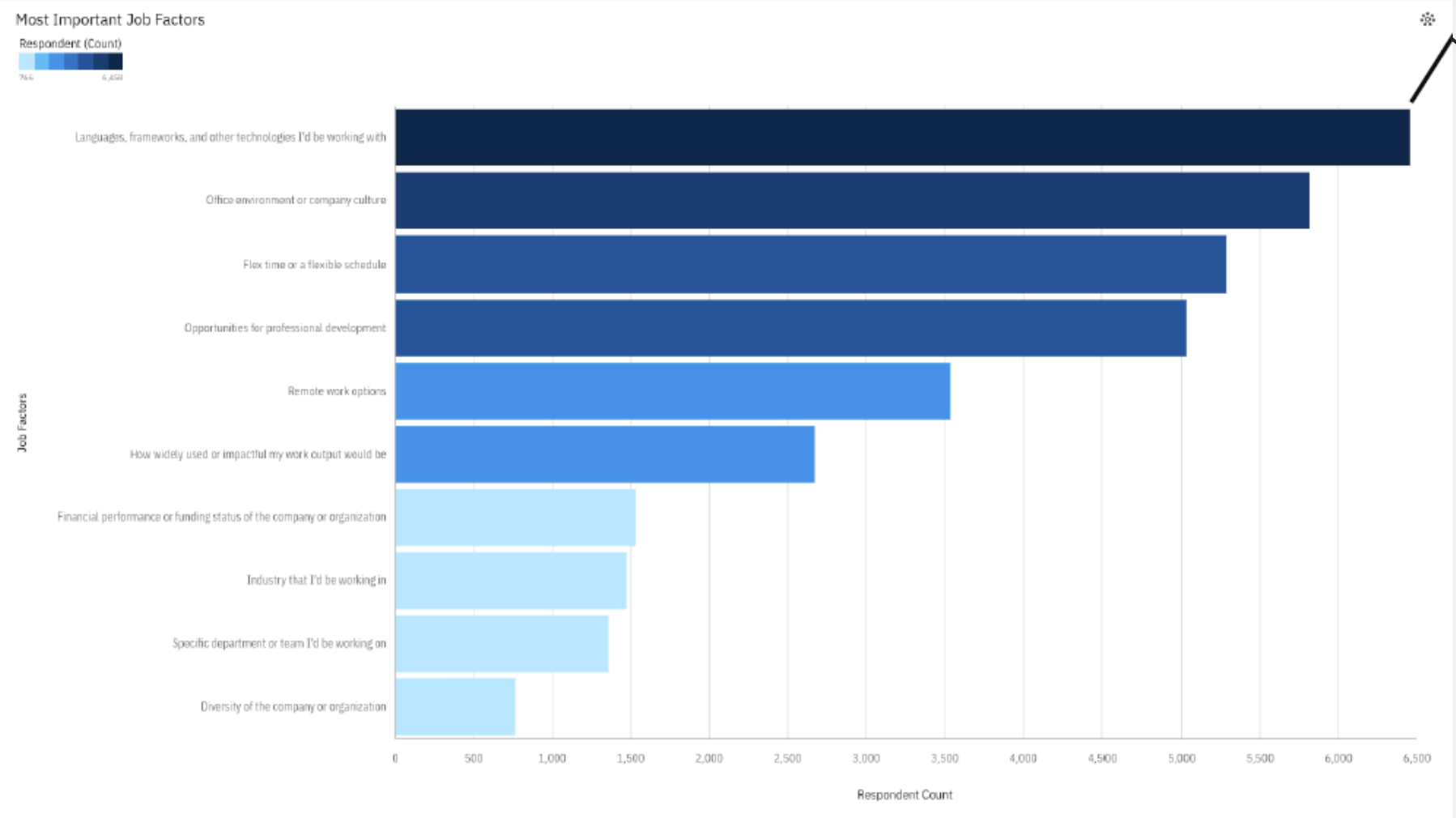
2

Simple & Readable Syntax – Languages that are easy to write and understand.

3

Error Prevention with Typing – Strongly typed systems that minimize bugs.

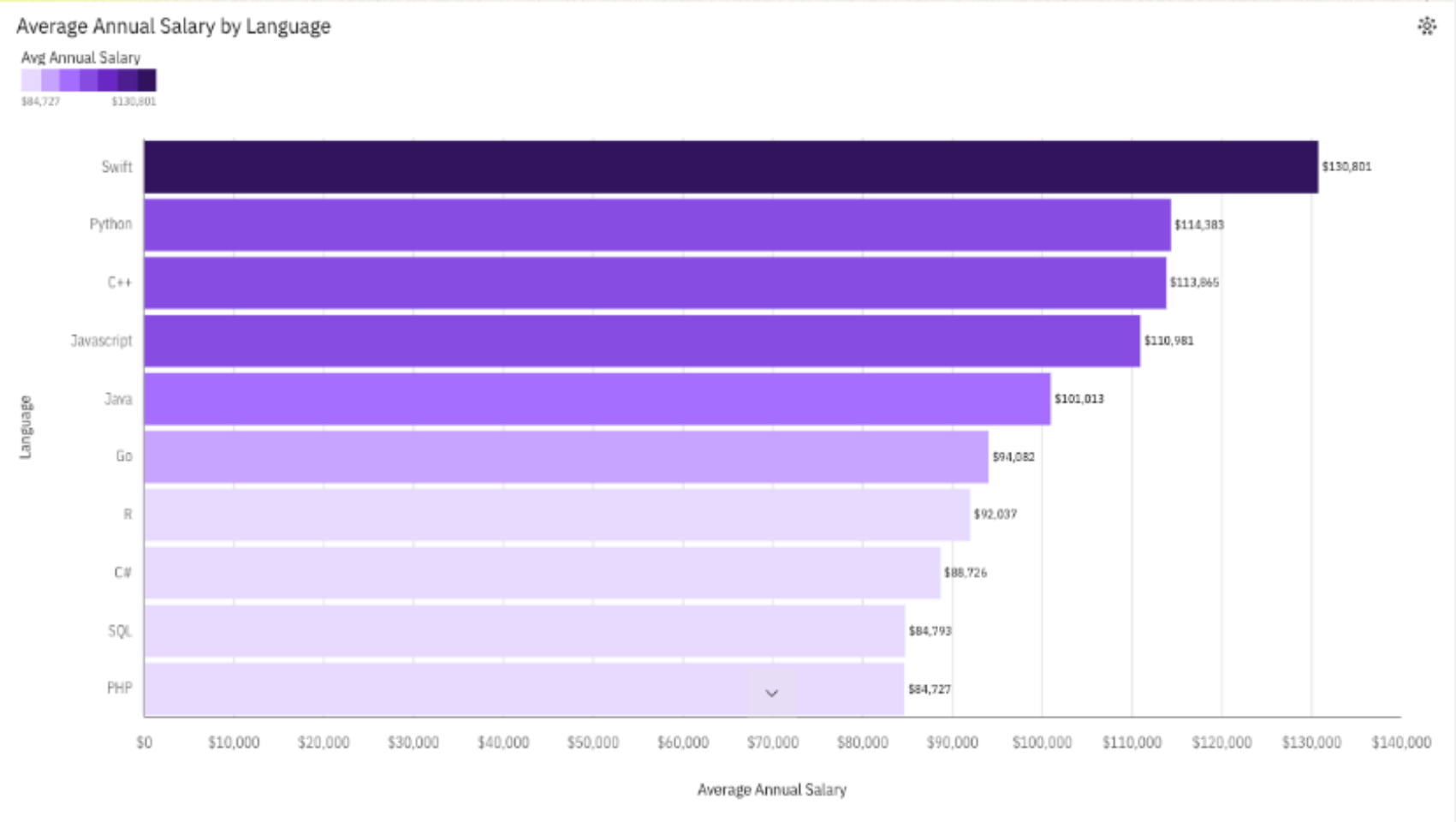
APPENDIX



TOP FACTOR

The Most Important Job Factor is the coding technologies respondents work with

POPULAR LANGUAGES



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