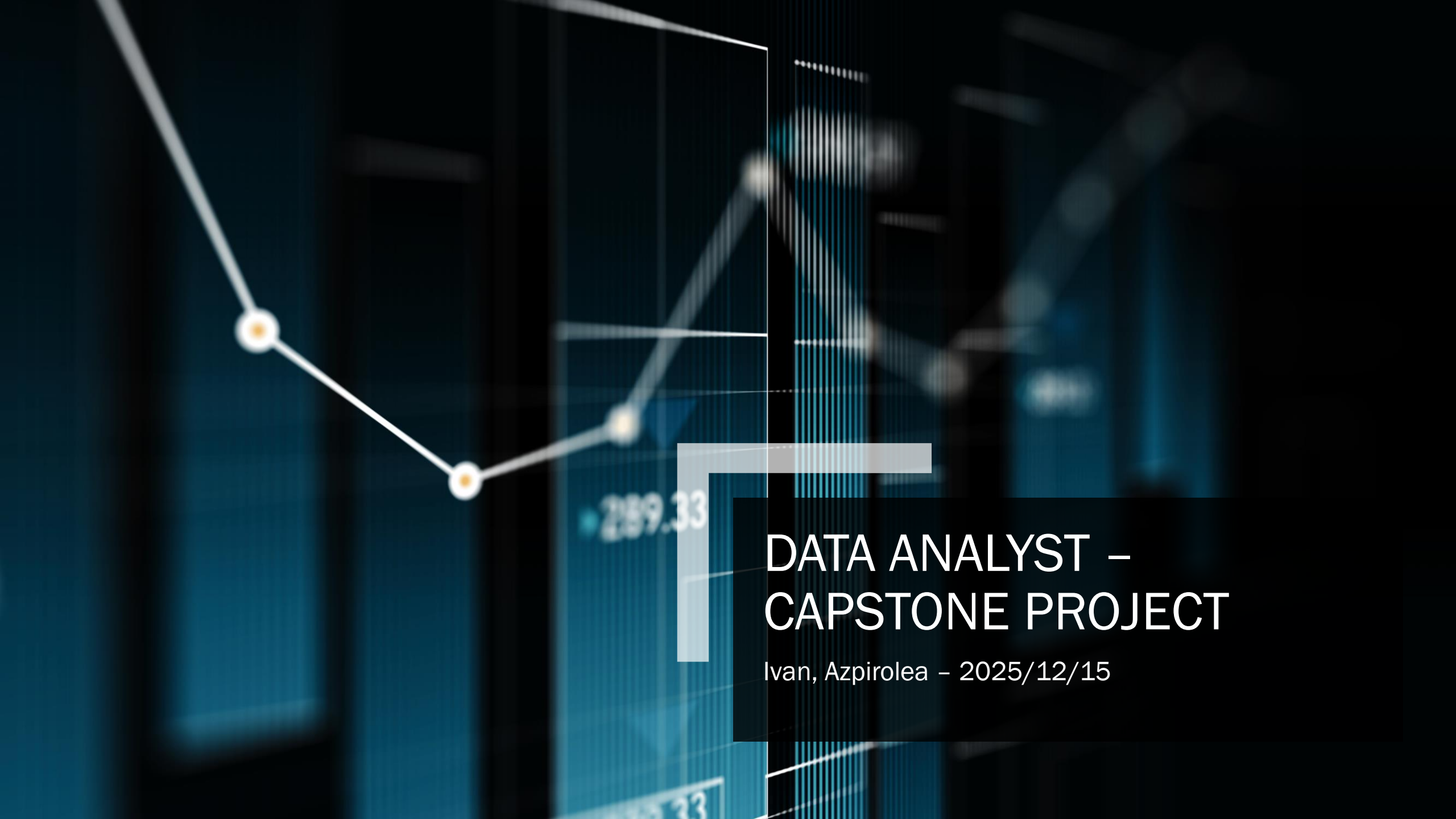


# DATA ANALYST – CAPSTONE PROJECT

Ivan, Azpirolea – 2025/12/15

# < OUTLINE >

- Executive Summary
- Introduction
- Methodology
- Results
  - Visualization (Charts)
  - Dashboard
- Discussion
  - Findings & Implications
- Conclusion
- Appendix

# < EXECUTIVE SUMMARY >

- **Easy is trending**

developers are looking for modern, simple sintax, efficent and scalable languages like TypeScript, JavaScript, Python and SQL.

- **Open-source is leading**

databases like PostgreSQL are preferred, which ranks highest in both current adoption and future intent.

- **We are moving to the Cloud**

the future points to cloud-native architectures, such as AWS, with tools that facilitate rapid development and scalability.

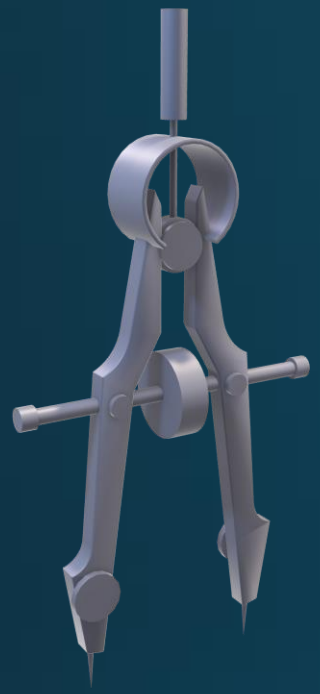
# < INTRODUCTION >

The purpose of the report aims to identify prevailing trends and emerging patterns within the software development ecosystem.

The most frequently asked questions that will guide our journey through the report are:

- " *What technologies are used and unused?* "
- *"What direction are they trending?"*
- *"What is the profile of the typical developer?"*

The value of this analysis lies in its ability to transform raw survey data into actionable insights.



# < METHODOLOGY >

1

Data used in this Project is from a Stack Overflow survey, where developers from worlwide answer through a series of questions. We collect this data using APIs and Web Scraping collection methods.

2

We first make an Exploratory Analysis to know our dataset. Then we clean the data to avoid errors that could result from bad quality entries, using Data Wrangling methods.:

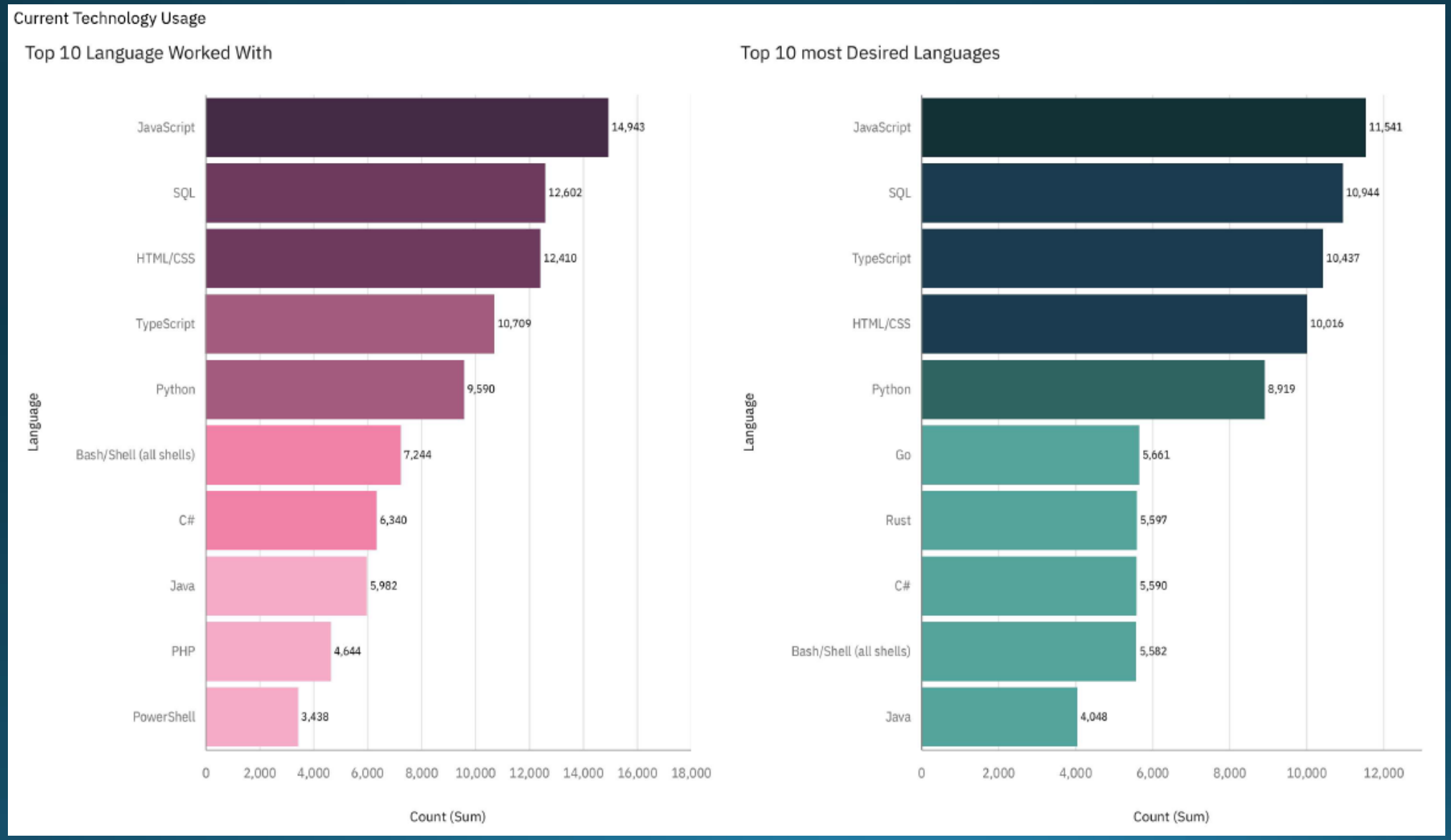
- Removing duplicates
- Imputing missing values
- Normalizing data

3

Create meaningful visualizations of the Data

# < RESULTS SECTION >

# PROGRAMING LANGUAGE TRENDS



## OVERALL INSIGHTS

The language trends indicates a continued dominance of web centric technologies, a shift toward type safety and scability, and growing curiosity about high-performance languages.

- FINDINGS

- JavaScript remains  the dominant language

- SQL is a fundation and enduring skill

- TypeScript show strong growth momentum

- Python remains highly relevant

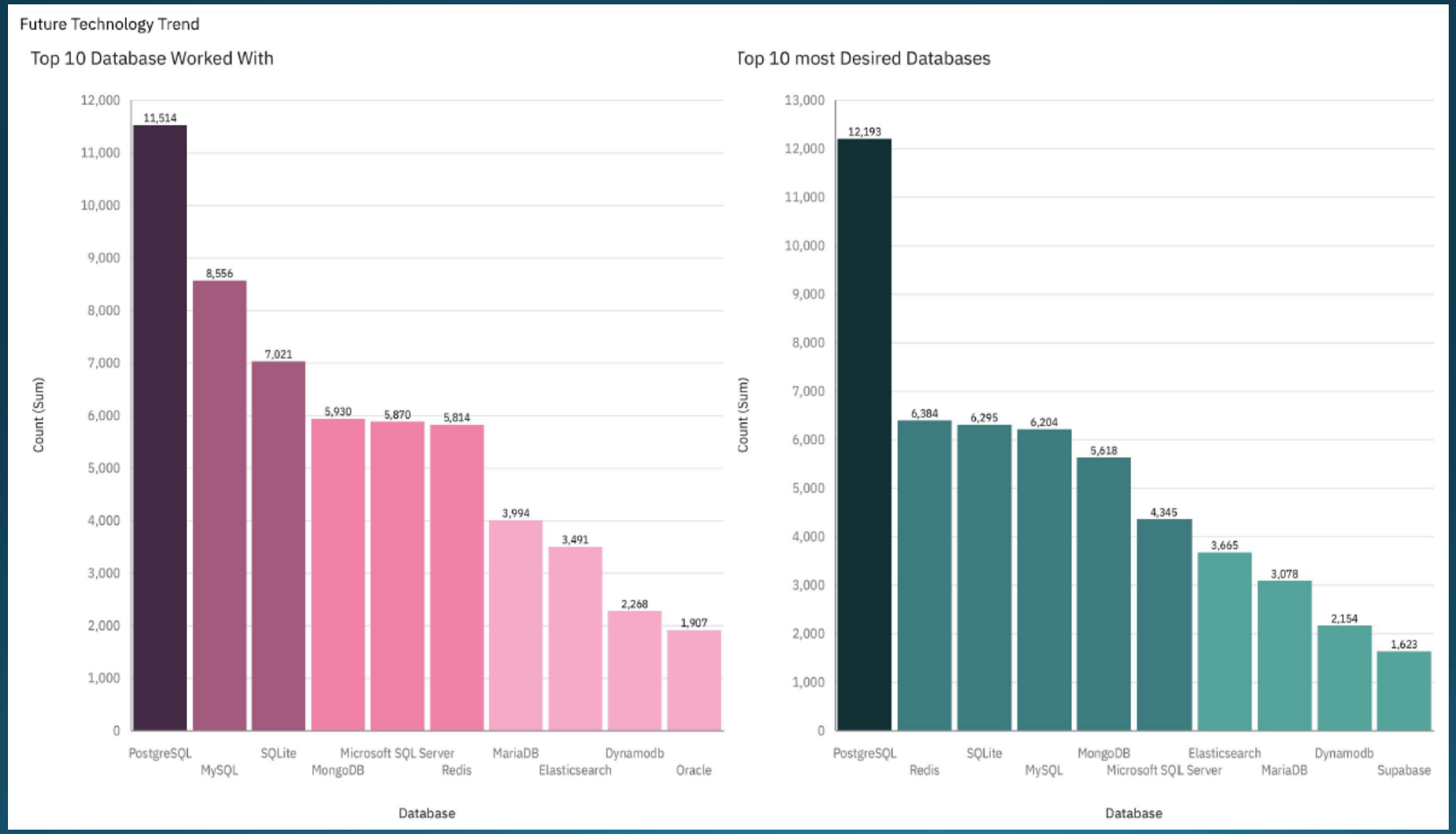
- IMPLICATIONS

- As cloud computing is trending, web-based languages are increasing interest.

- Traditional enterprise languages show declining future role.

- SQL skills will continue to be requiered across roles, from backenddevelopment to data analysis and engineering.

# DATABASE TRENDS



## OVERALL INSIGHTS

Current database trends shows mainly PostgreSQL architectures, but developers are incresingly interesed in NoSQL capabilities for scalability and performance and prepare for a gradual shift away from proprietary databases toward open- source and managed cloud-native solutions.

- FINDINGS

- PostgreSQL is the dominant present and future standard

- Open-source databases outperform propieraty alternatives

- NoSQL solutions (MongoDB, Redis) gain strategic importance

- IMPLICATIONS

- PostgreSQL is on top, it makes working with SQL easier, similar to what happens with language trends.

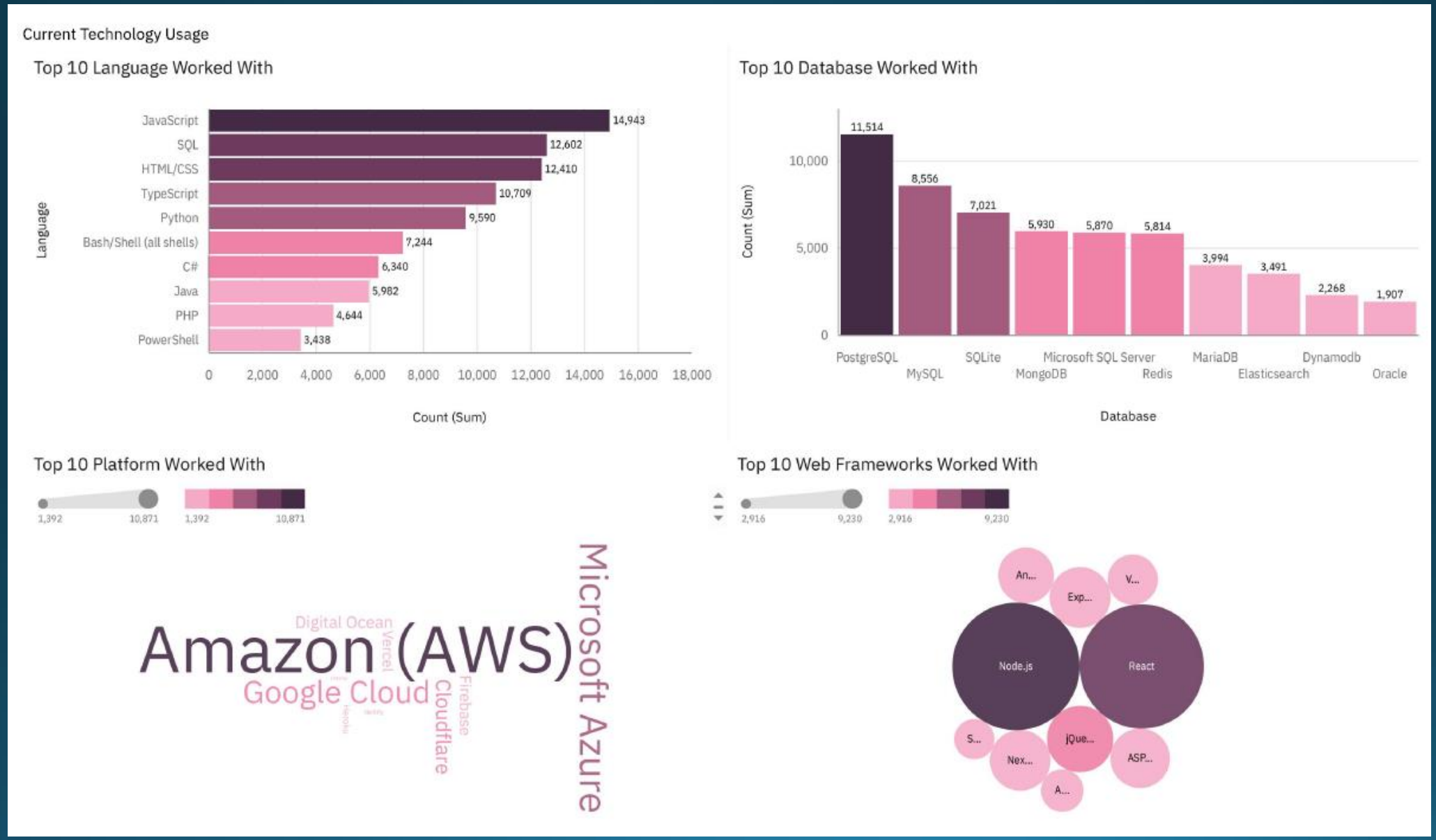
- Open-source databases outperform proprietary alternatives

- Cloud-native and managed databases are emerging rapidly

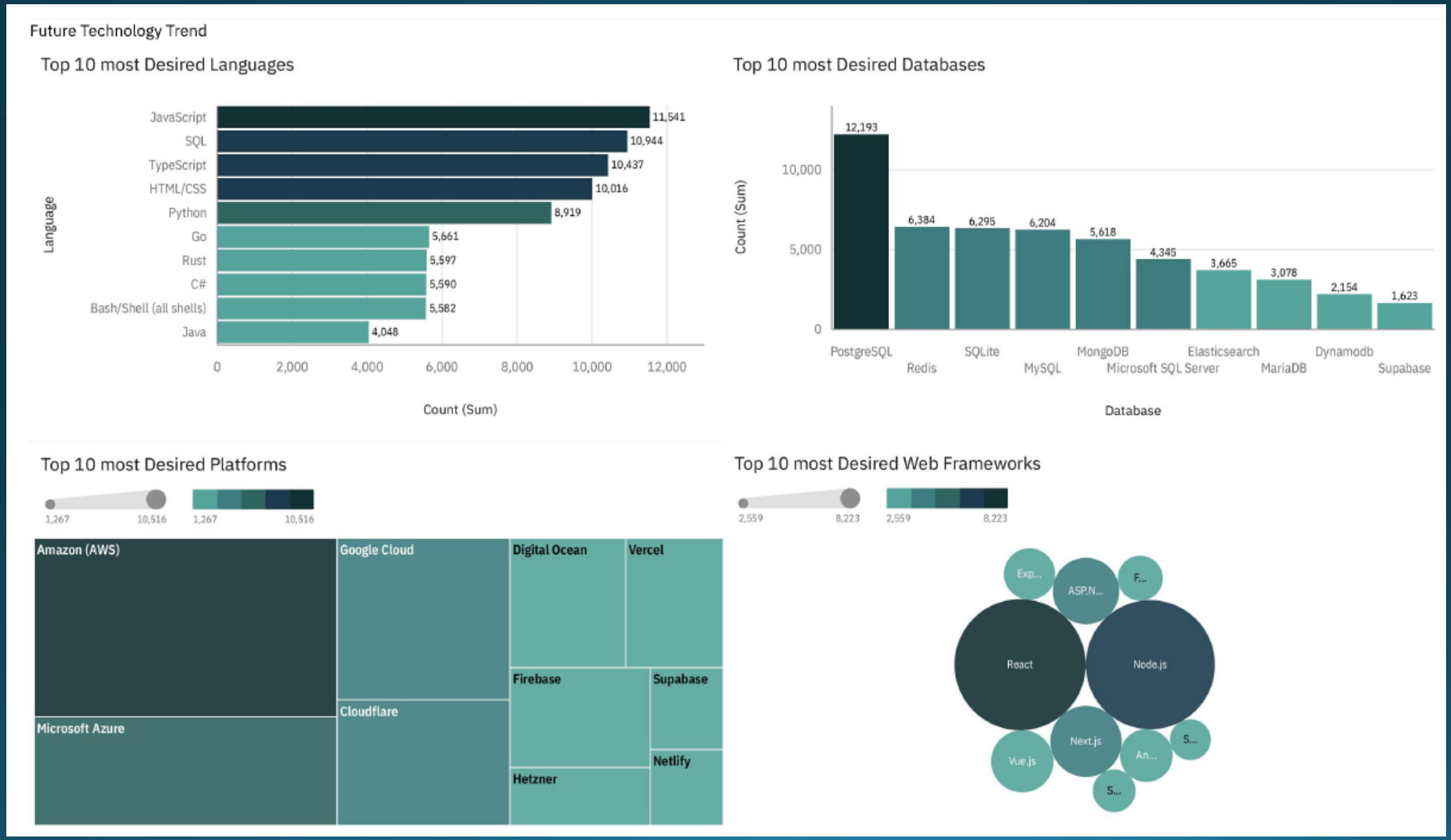
- Search and analytics databases remain niche but still important.

# < DASHBOARDS >

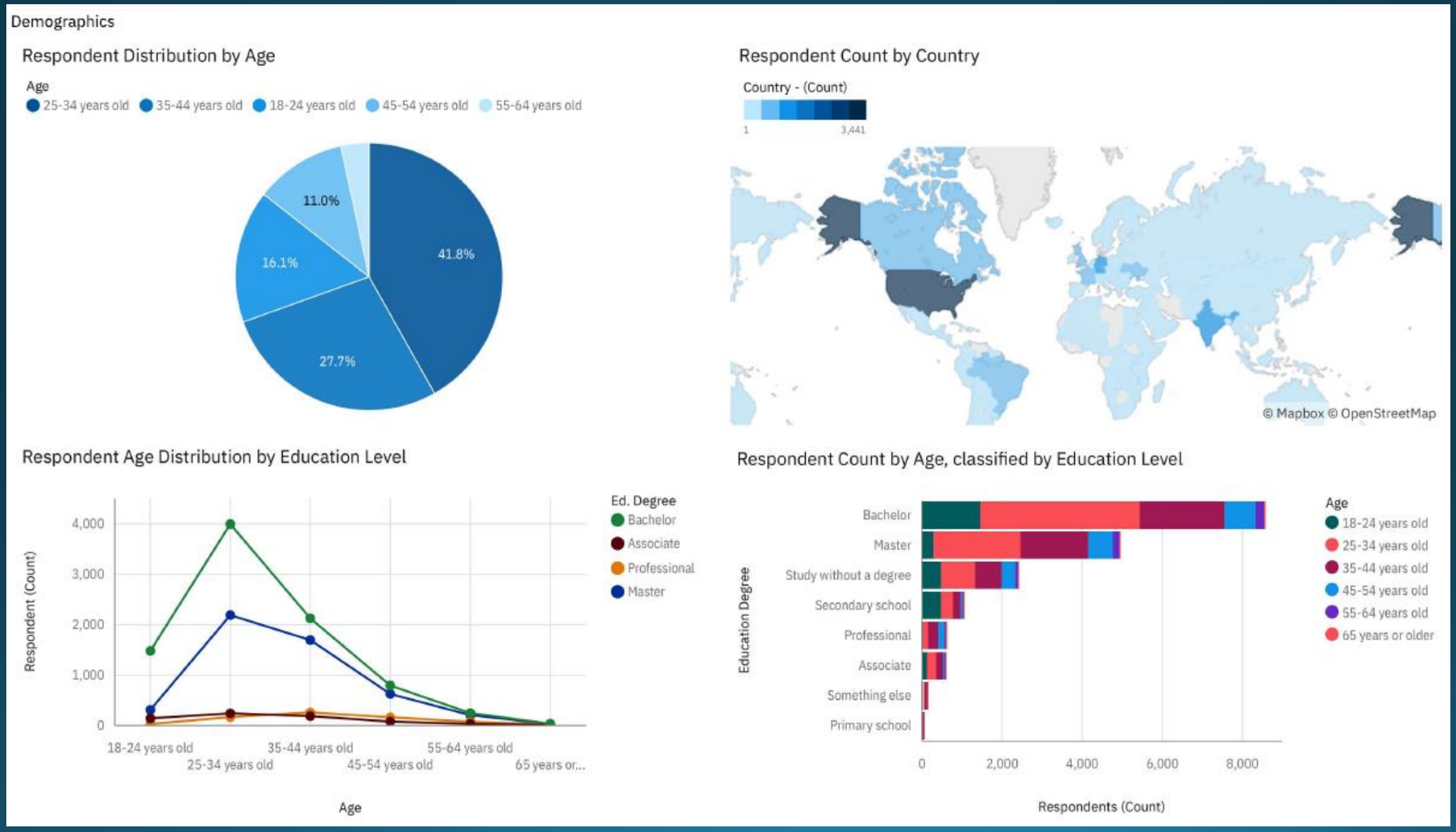
# DASHBOARD: Current Technology Usage



# DASHBOARD: Future Technology Trend



# DASHBOARD: Demographics



## WHAT'S THE TREND NOW?

The survey analysis reveals a current technology ecosysten dominated by JavaScript and web technologies, with a clear migration toward cloud-native solutions and open source tools.

Future trends indicate a growing interest in modern and efficent languages, while the demographic profile reveals that these decisions are primarily driven by young developers with strong technical backgrounds.

## WHERE ARE WE GOING?

## KEY CONCLUSIONS

- Most of the respondents are from english-speaking countries.
- Developers look up for modern, efficent and scalable technologies.
- There is a clear preference for open source software.
- The future points to cloud-native architectures.
- Software development combine traditional academic training and self-taught learning.

# < CONCLUSION >

1

**About this Project**

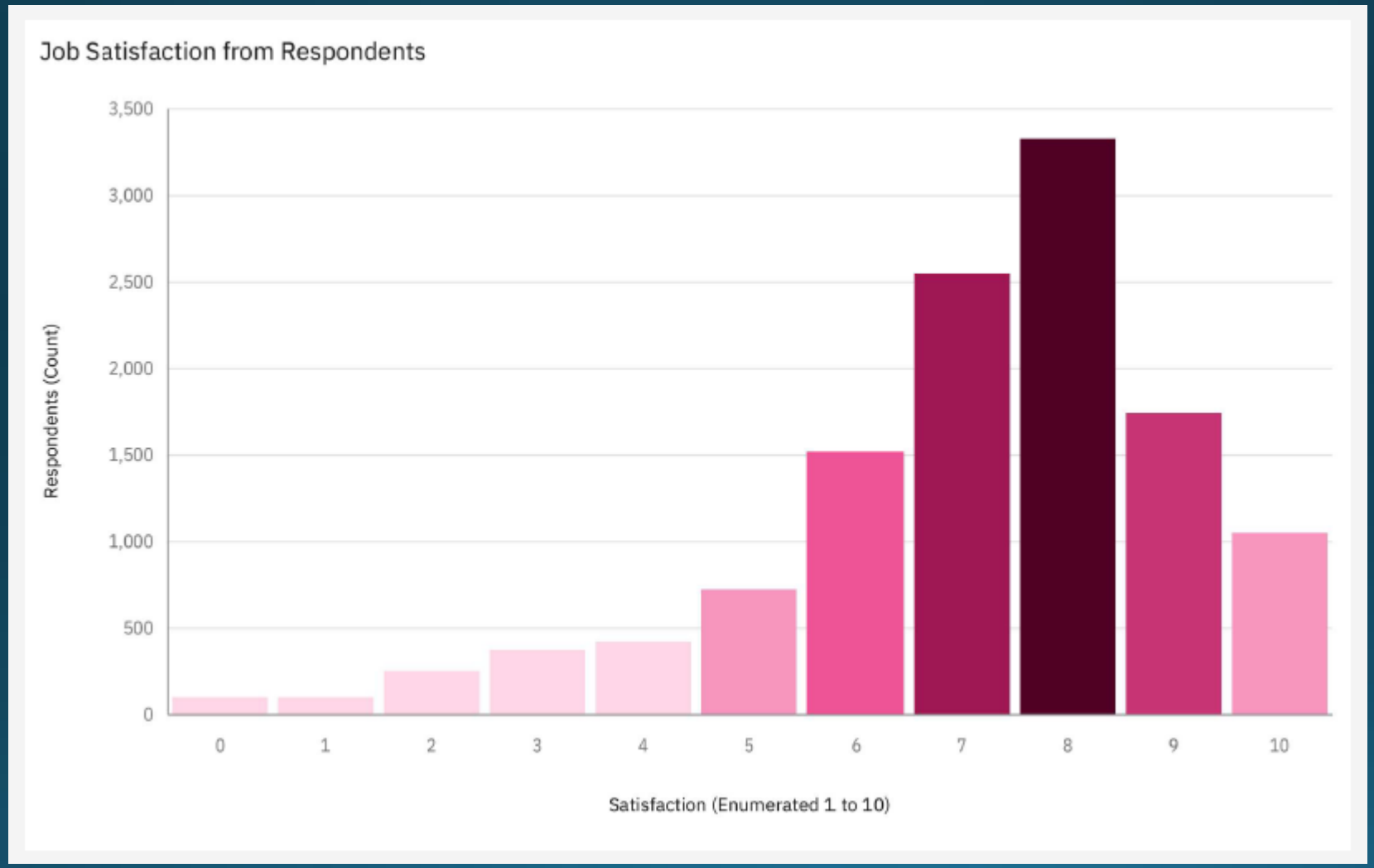
In this project, we managed to get meaningful information from scratch, were something like a simple survey can guide future company decisions, set trends and answer questions.

2

**About the results**

* Web and open-source technologies define the industry standard: The JavaScript ecosysten, PostgreSQL, and cloud platforms like AWS form the core of modern software development, combining widespread adoption with strong future demand.
* Scalability and performance are prefered: High level languages like TypeScript and Python, focused on developer productivity, are increasing among other trending technologies.

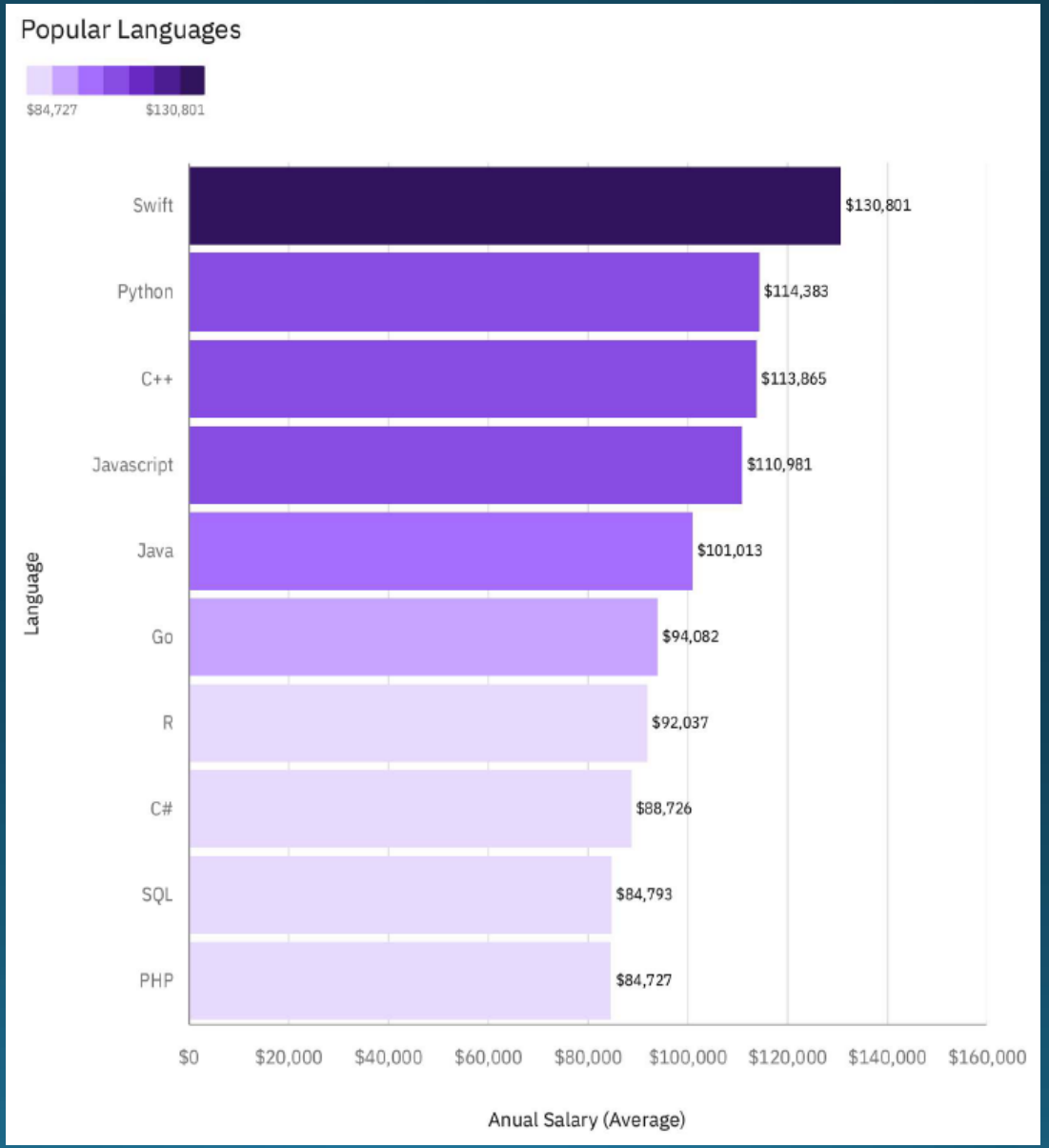
# APPENDIX

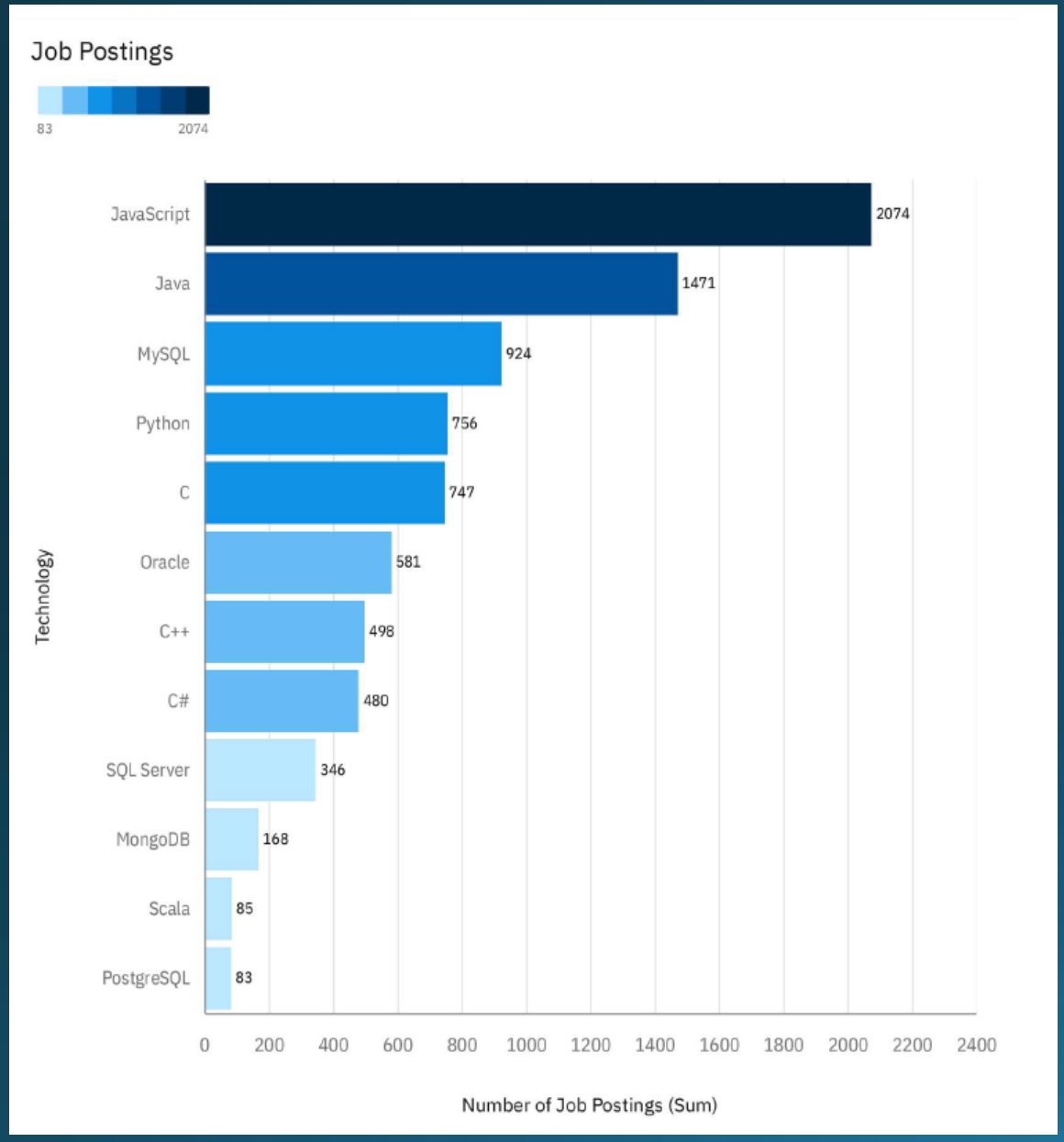



***Job satisfaction*** *question from the survey demostrate a good work enviroment among developers.*

## POPULAR LANGUAGES

*Additional chart from data retrieved from different data collection methods, in this case, web scraping.*






## JOB POSTINGS

*Additional chart from data retrieved from different data collection methods, in this case through web API calls.*

# THANK YOU!