Exploring the Next Frontier of Software

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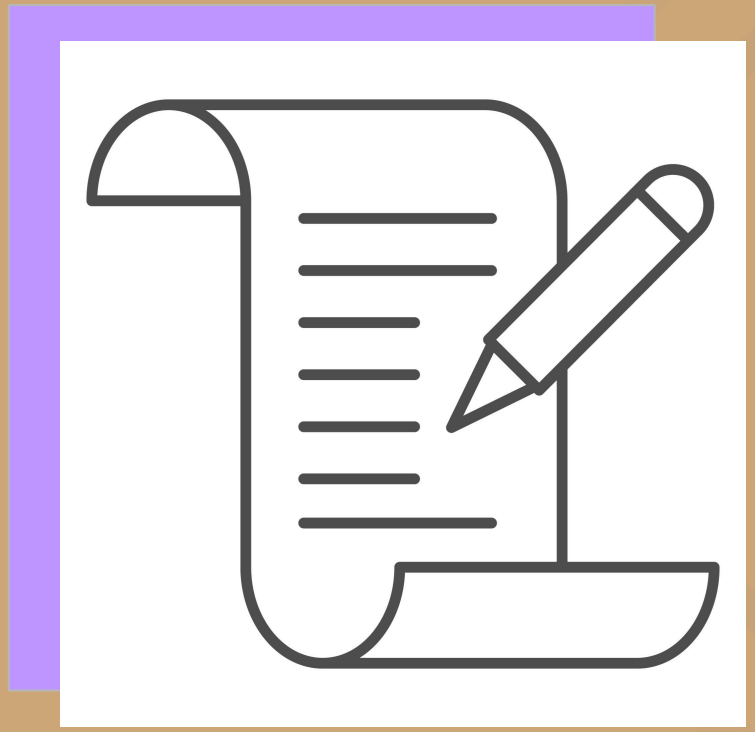
OUTLINE



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

EXECUTIVE SUMMARY

- This presentation will show a structured analysis based on data and insights from the Stack Overflow Developer Survey about coding technologies. Respondents of the survey consist of software developers, who provided the following insights on software development:
    - Current technological patterns and adoptions
    - Emerging technological trends
    - Developer demographics
- Presentation Goals
    - Provide decision-makers with actionable, data-driven insights into developer preferences and behaviors
    - Support strategic initiatives in recruitment, product development, and technological planning
    - Deliver visual trends that encourage discussion, inform prioritization, and guided decision making on software technology usage.

INTRODUCTION

- As the world is changing and growing around us, technology advances with it. Understanding the job trends, and knowing how to present data clearly and persuasively is a key impact factor thrusting our data-driven choices.
- Purpose
    - To equip others with tools to communicate compelling data that supports career transitions, language development, and future insight.
- Target Audience
    - Analyst, Tech Leaders, educators, career advisors, data professionals, and HR teams
- Values

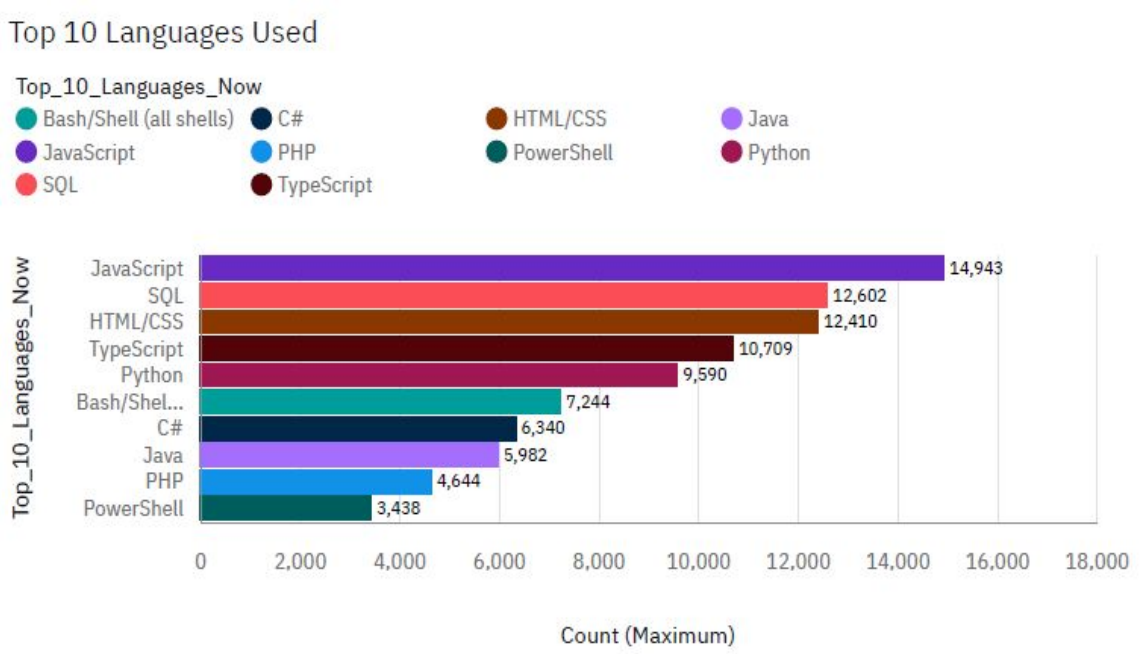
    Deliver clear relevant, accessible, visual insights, and evidence

METHODOLOGY

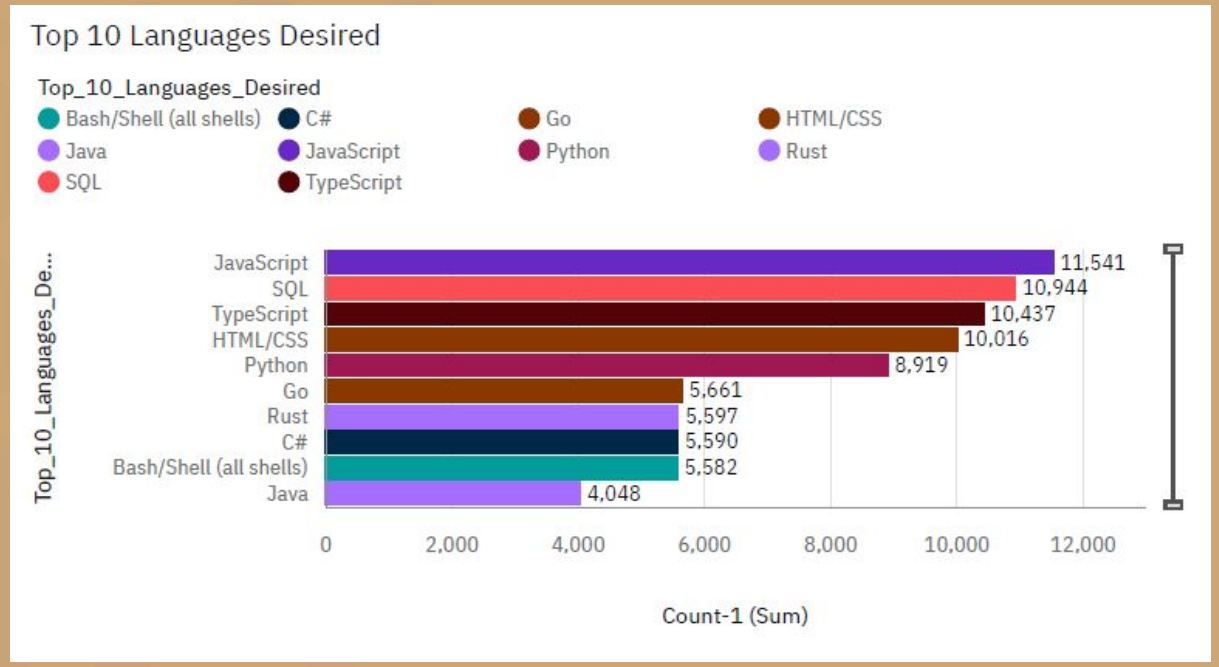
- Data Source
  - Website via (Stack Overflow)
- Data Collection
  - Collect data provided a direct link to the csv file detailing about 65,000 respondents (survey_data_update.csv)
- Data Wrangling
  - Used panda dataframes to aggregate the data detailed mainly about the current choices and desired choices of programming languages, databases, platforms and web frames
- Exploratory Data Analysis
  - Determine the most currently used and desired technologies
- Data Visualization
  - Bar Charts, Line Plots, Heat Maps, Pie Charts
- Analytical Focus
  - Four Main Domains of Technology:
    - Programming Languages, Databases, Platforms, and Web frameworks
- Demographics
  - Based on Respondents Age, Country, and Educational Levels

PROGRAMMING LANGUAGE TRENDS

Current Year



Next Year



PROGRAMMING LANGUAGE TRENDS - FINDINGS & IMPLICATIONS

Findings

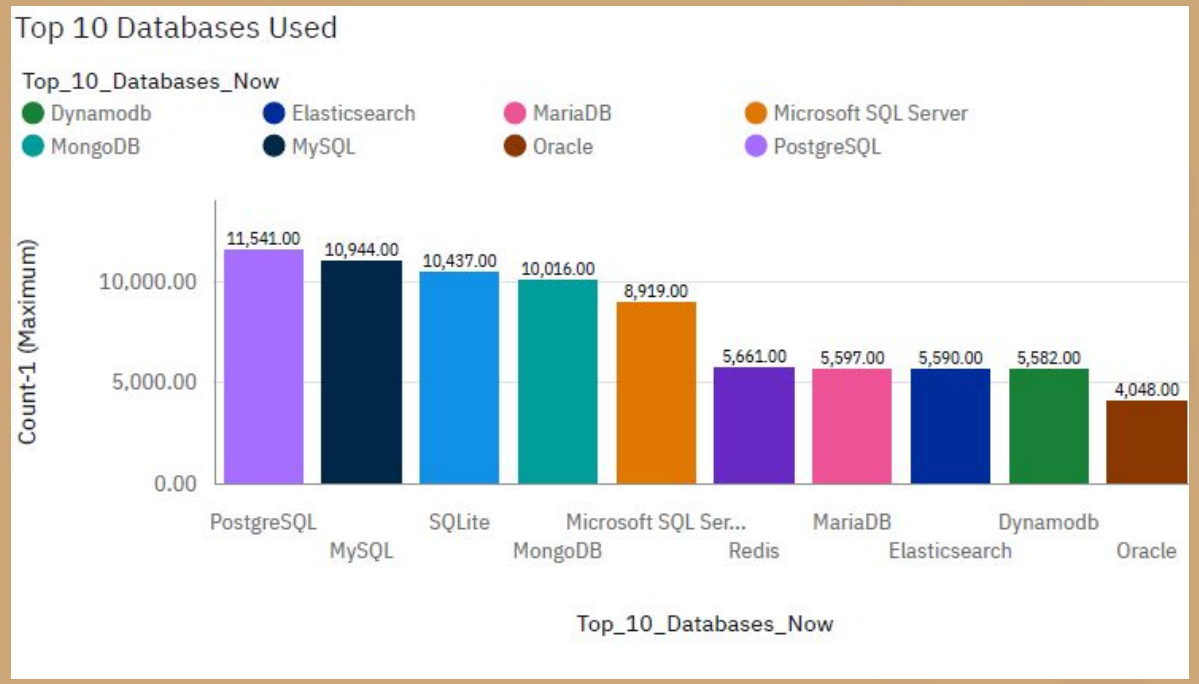
- JavaScript, SQL, HTML/CSS are currently the most-used programming languages.
- Respondents want to learn how to use JavaScript, SQL, TypeScript, and HTML/CSS more than any other language.
- Fewer respondents have a desire to learn C# and Java in emerging technology.

Implications

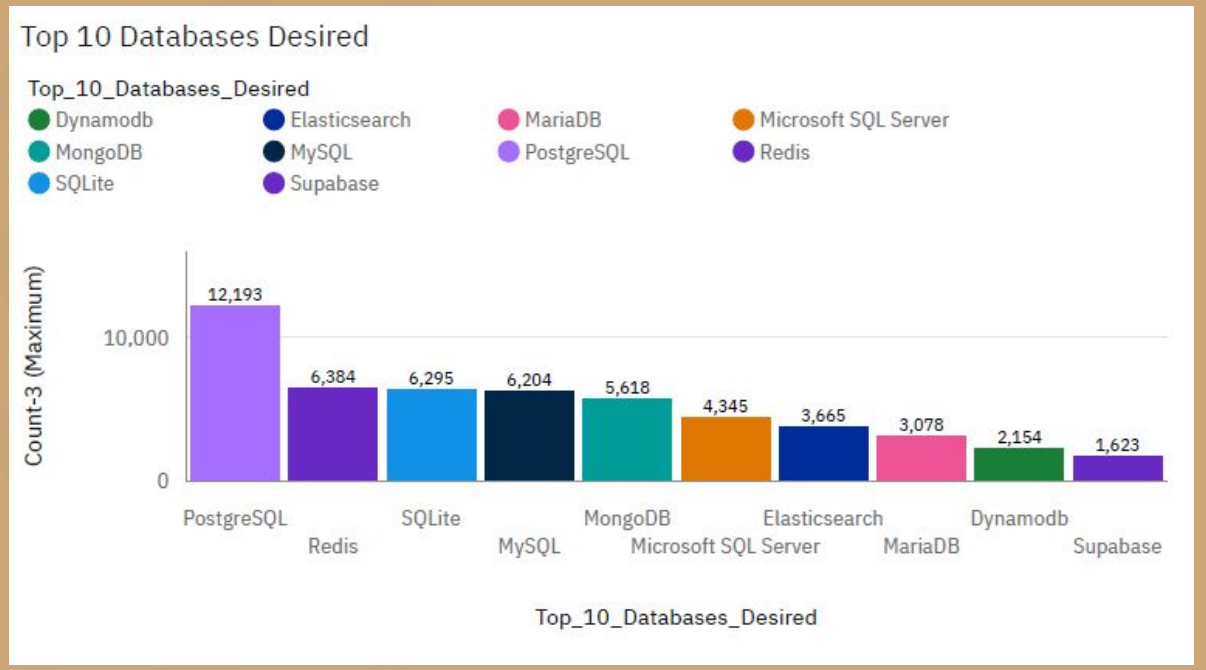
- The capabilities and the implementation of the top chosen languages offer more versatility and need.
- Learners should start prioritizing JavaScript, SQL, TypeScript, Python, HTML/CSS for better job options.
- Certain languages are becoming obsolete compared to popular languages, as desires shift.

DATABASE TRENDS

Current Year



Next Year



DATABASE TRENDS - FINDINGS & IMPLICATIONS

Findings

- There is greater usage SQL suites, MongoDB and Redis.
- Almost double the amount of people want to learn how to work with the PostgreSQL compared to Redis.
- SQL is a highly sought-after Database Program in the current day and in the future.

Implications

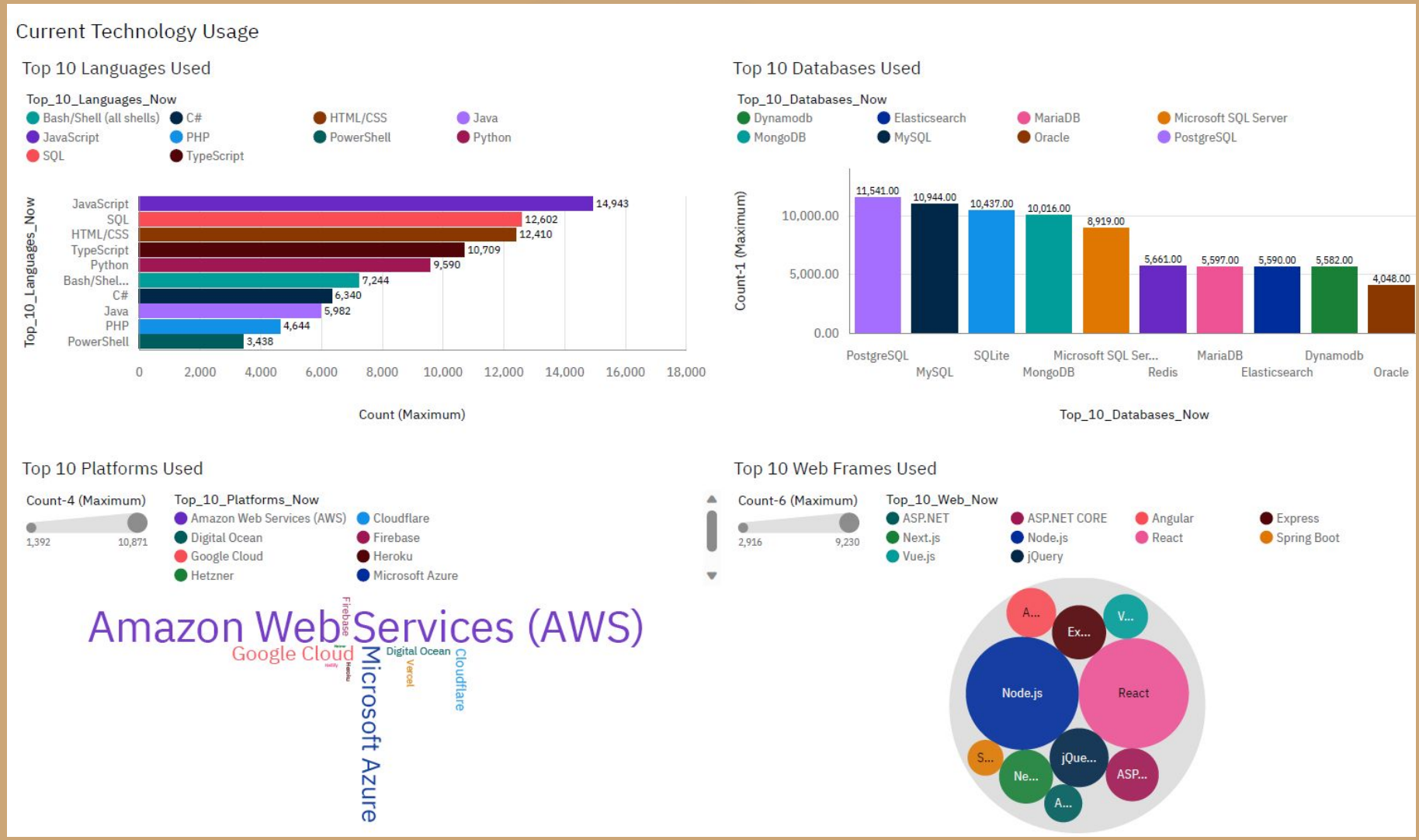
- Recruiters and Organizations should be prioritizing SQL suites(PostgreSQL, SQLite, MySQL) based on use and desire.
- Oracle is currently highly utilized, but few are looking to learn it in the future.
- Companies should start preparing for a transition from older database use to newer database languages.

DASHBOARD

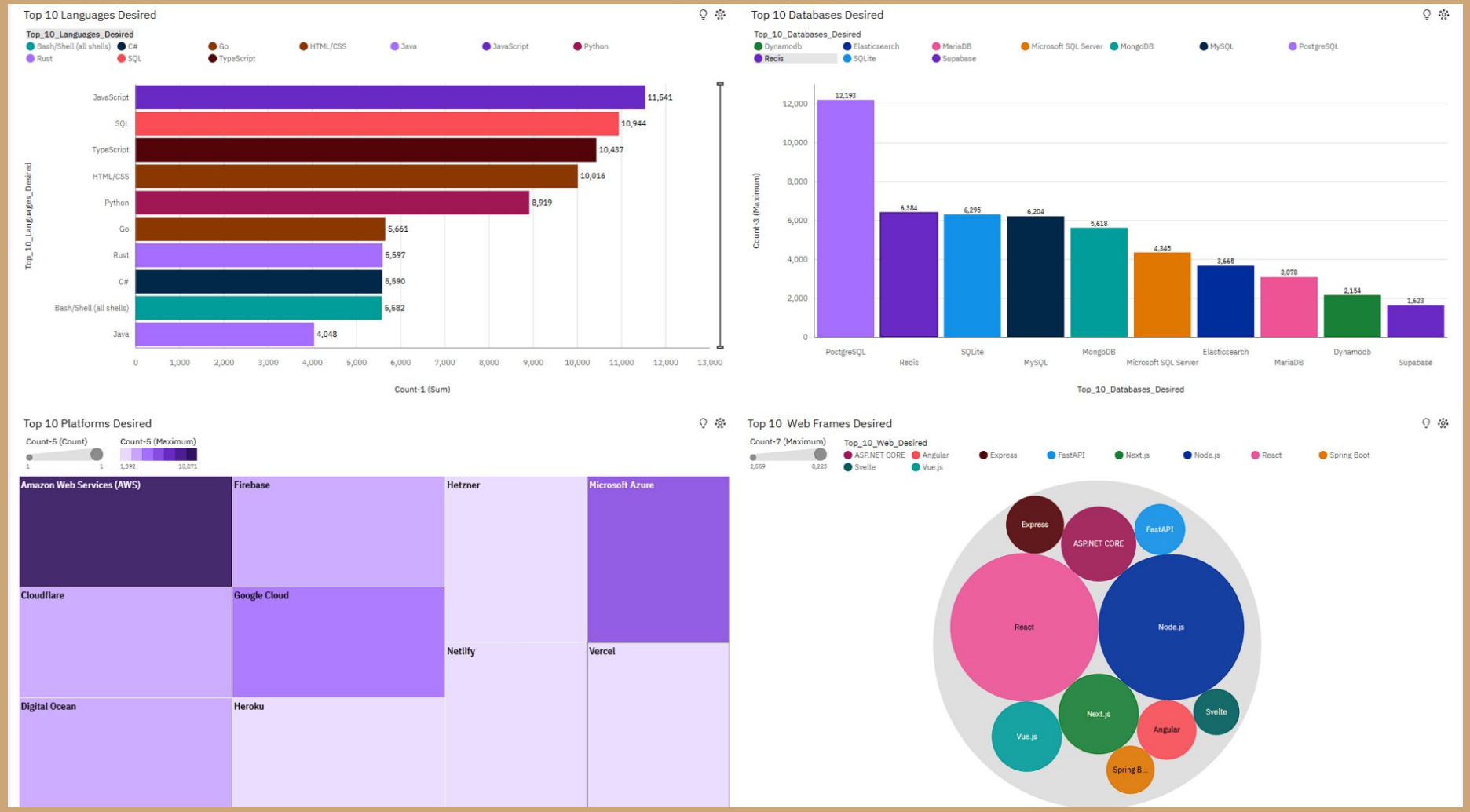
The following Dashboards will be shown in the next few slides:

- Current Technological Usage
- Future Technological Usage
- Demographic

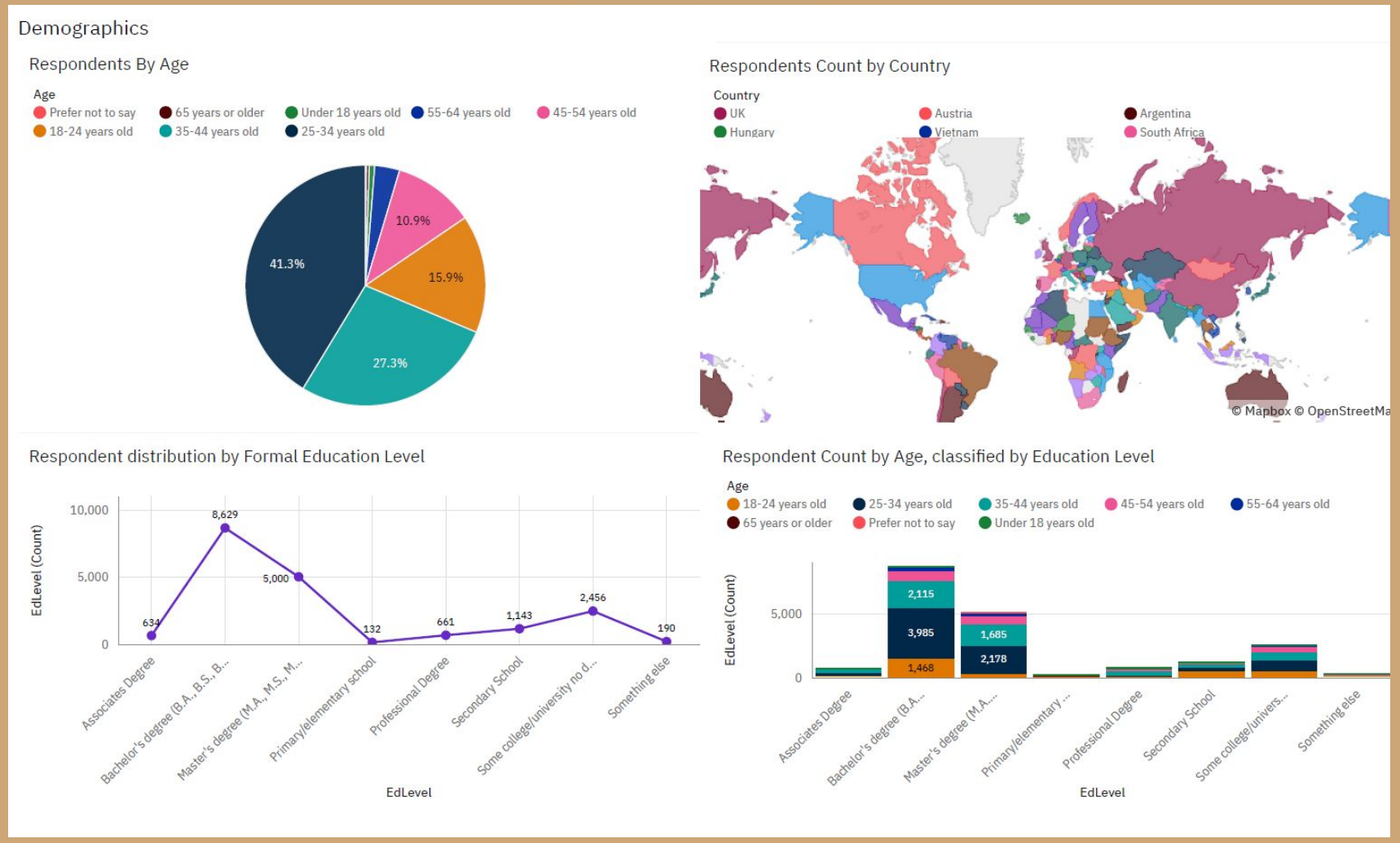
DASHBOARD TAB 1



DASHBOARD TAB 2



DASHBOARD TAB 3



Skills Network

DISCUSSION

Based on the above aggregation of data, we can see that plenty of respondents would like to learn how to program using JavaScript, SQL, TypeScript, and HTML/CSS.

Databases using the languages PostgreSQL, Redis, SQLite, and MySQL will be in high-demand for coming/current organizations.

Amazon Web Services and Microsoft Azure are still broadly-utilized platforms, while Vercal is losing traction in the technological environment.

Additionally, an equal amount of respondents already know or show interest in learning React and Node.js as a Web Frame.

All of these emerging languages are beneficial and momental for the future of software advancement, demanding respondents to pivot and invest in these languages for potential job prospects.

OVERALL FINDINGS & IMPLICATIONS

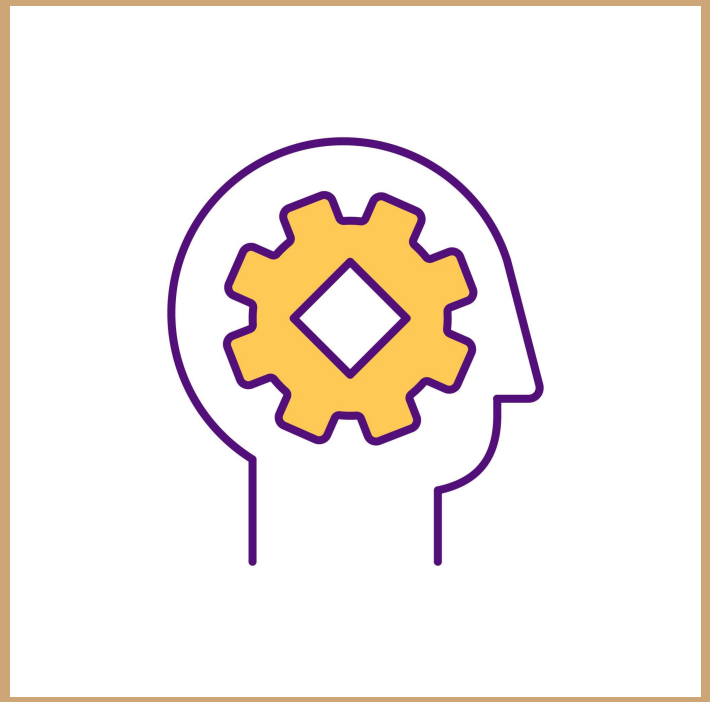
Findings

- The demand for Amazon Web Services continues to increase.
- React, Node.js, and Next.js are the main Web Frames developers desire for future learning.
- A small number of individuals know Oracle and have little desire to learn.

Implications

- Amazon Web Services will likely be a widely-known and utilized language.
- Oracle has become an obsolete language.
- Plenty of companies are transitioning to the use of React, Node.js, and Next.js are web frame language use.

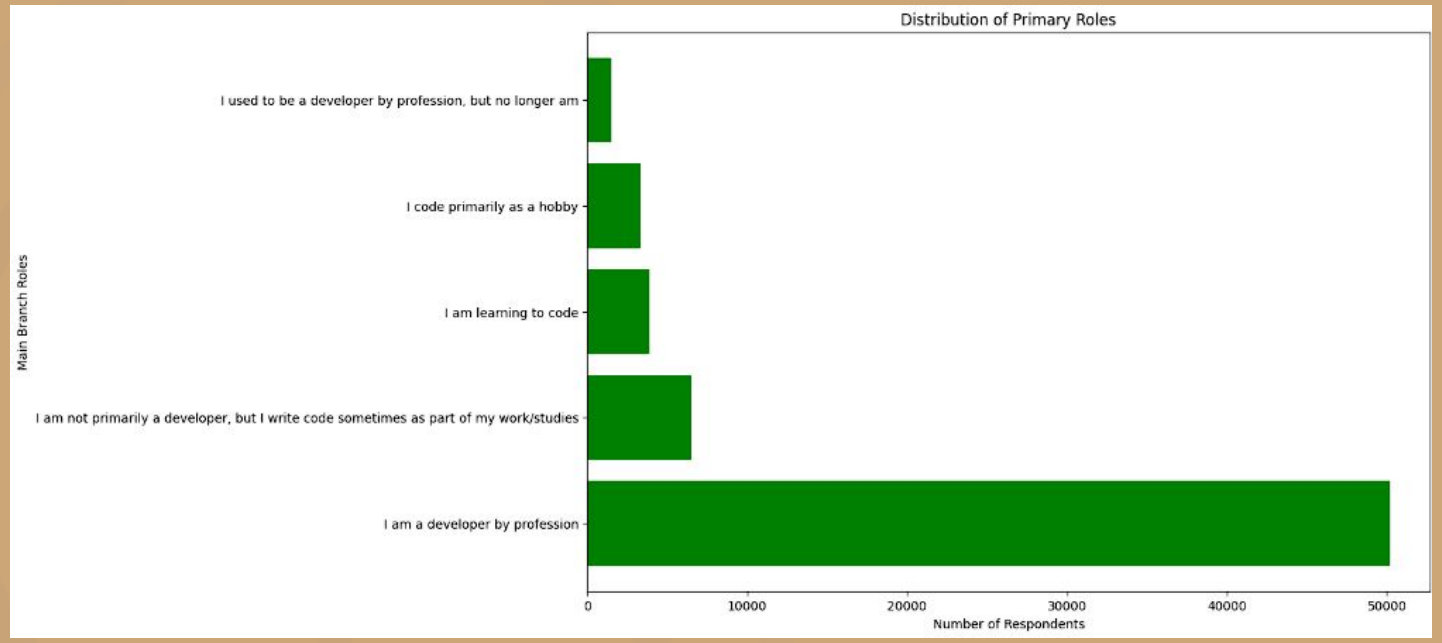
CONCLUSION



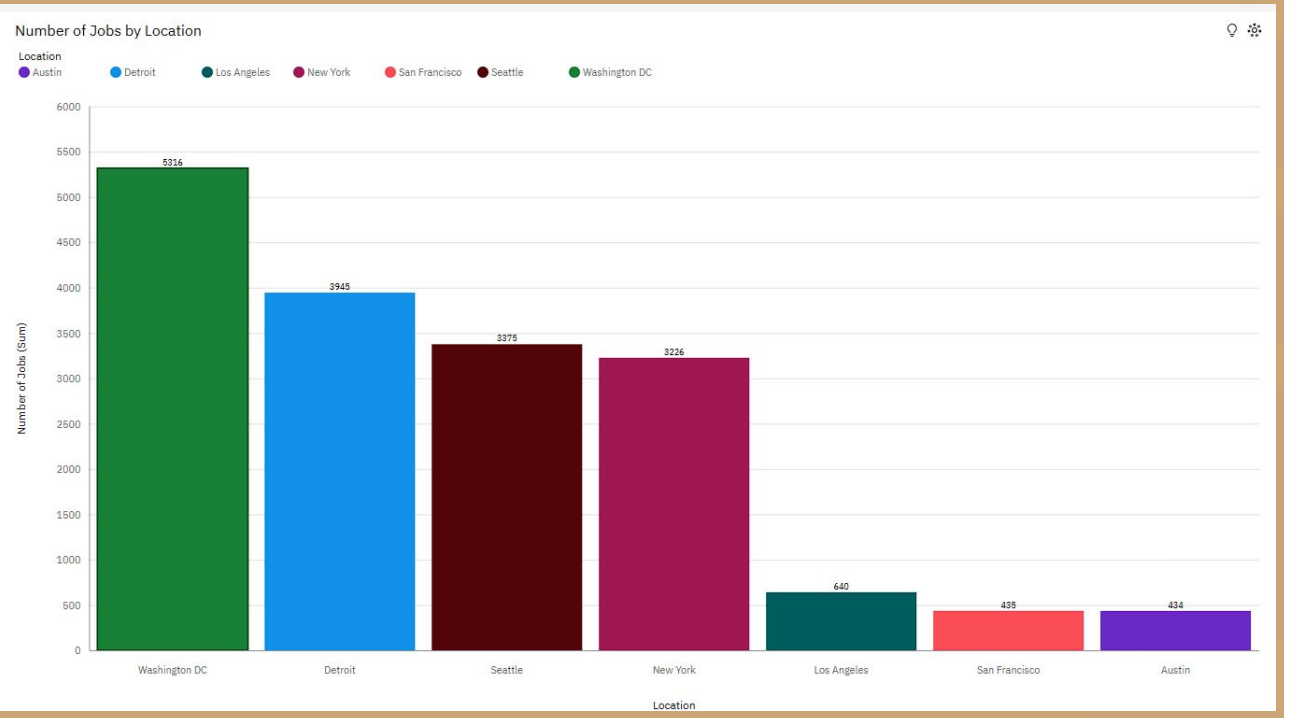
- Future software applicants should invest their time in learning JavaScript, PostgreSQL, Amazon Web Services, and React/Node.js
- Retention and recruitment could be contingent on learning new languages as times change.
- A majority of respondents are 25-34 years old and a minimum bachelor's degree.
- Respondents of the survey come from all over the world, allowing for a wide variety of data and a holistic approach when comparing data.

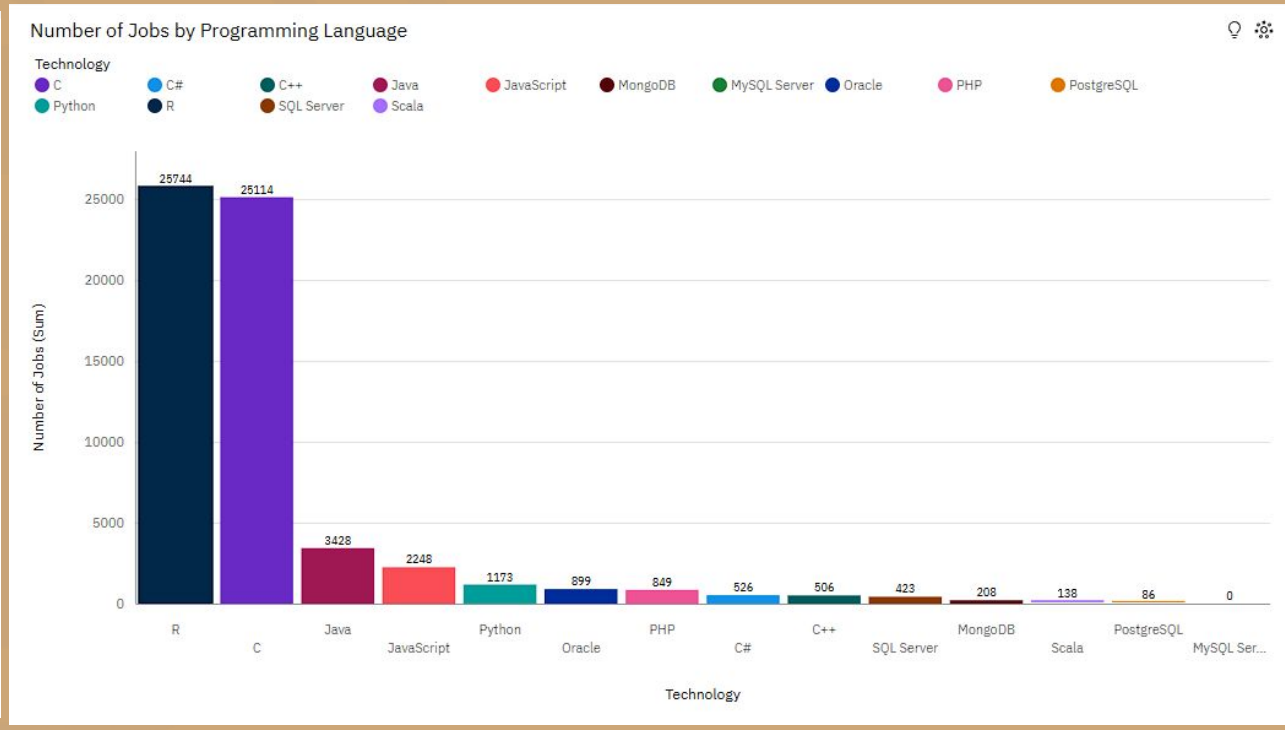
APPENDIX

MORE VALUE



JOB POSTINGS





POPULAR LANGUAGES