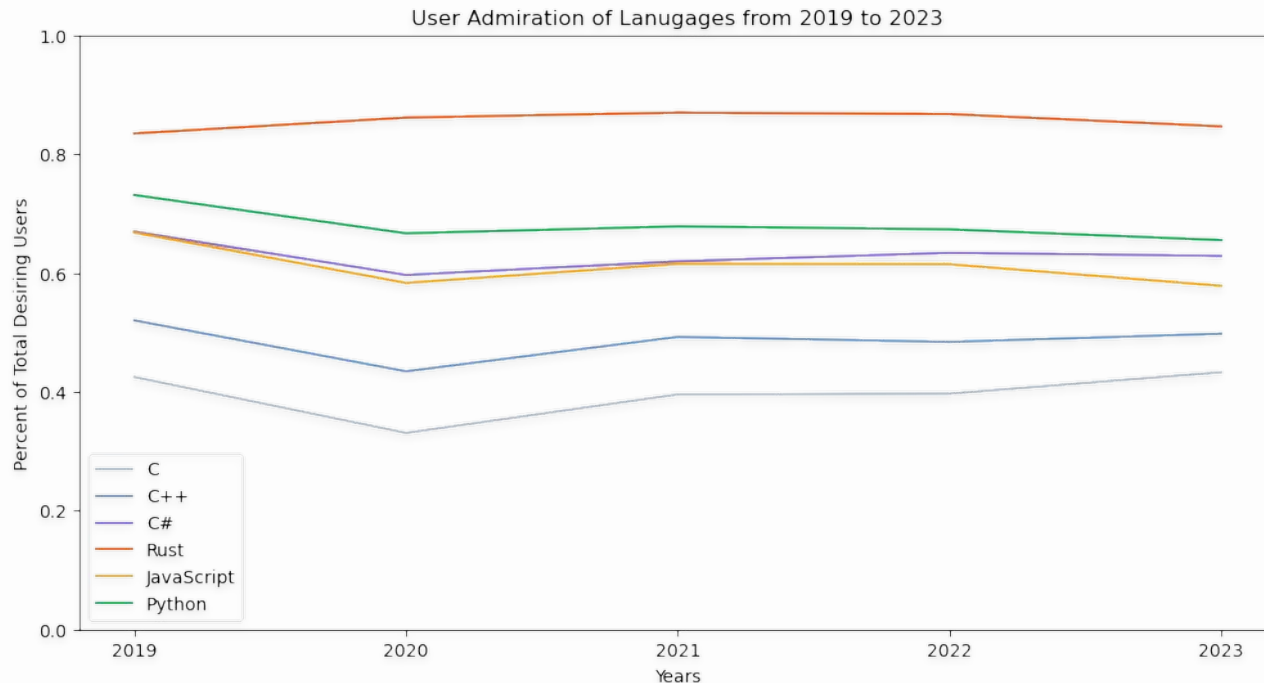


The Best Programming Language to Learn: A Data-Driven Approach

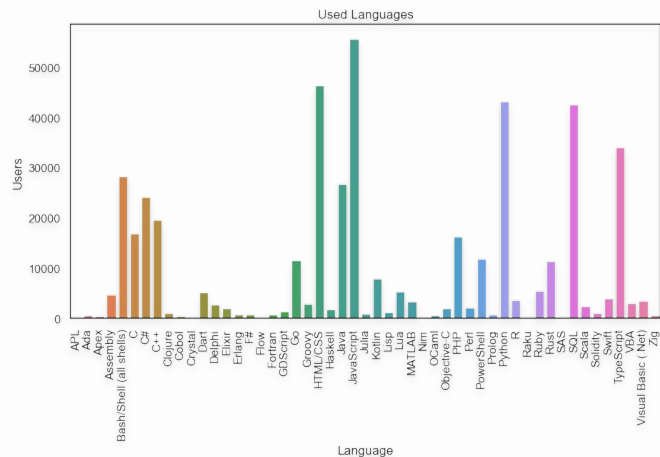
A study by Xander Lutz

Abstract

This study offers a comprehensive, data-driven analysis to guide individuals in selecting the best programming language based on factors such as popularity, salary potential, and user satisfaction.

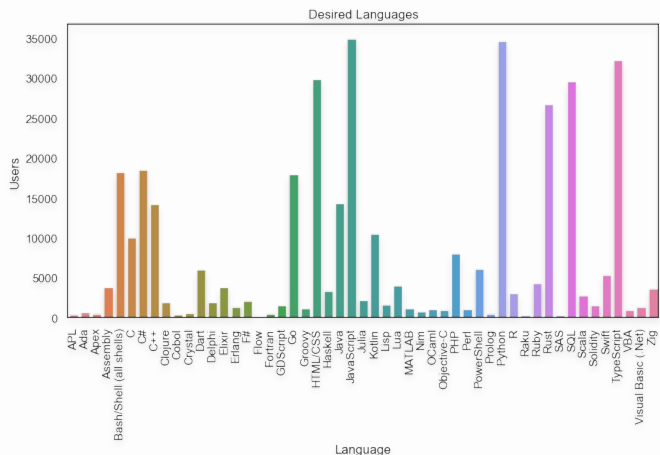


The key takeaway from this presentation is Rust's growing popularity, particularly in the United States, where it is often linked with higher salaries and satisfaction among developers.



What should I be learning?

Time is a finite resource, and making efficient decisions is vital in ensuring a productive and successful future. For software engineers, selecting the right programming language to learn can significantly impact their career trajectory.



Why this study?

Despite the abundance of articles on this topic, many lack empirical evidence and rely on heavily personalized opinions. This presentation seeks to fill that gap by providing a thorough analysis of programming languages based on validated data.

Data

StackOverflow Developer Survey

- Years Covered: 2011-2023
- Respondents (2023): 89,184
- Data Anonymization: Pseudonymization, replacing identifiers with random IDs
- Deduplication: Comparing the results from the same IP address, retaining the most complete response

JetBrains Developer Survey

- Years Covered: 2017-2023
- Respondents (2023): 26,348
- Data Anonymization: Pseudonymization, replacing identifiers with random IDs

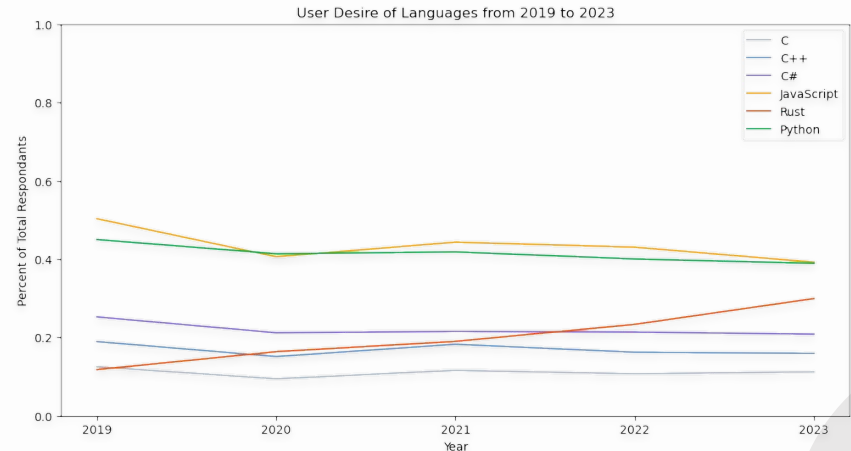
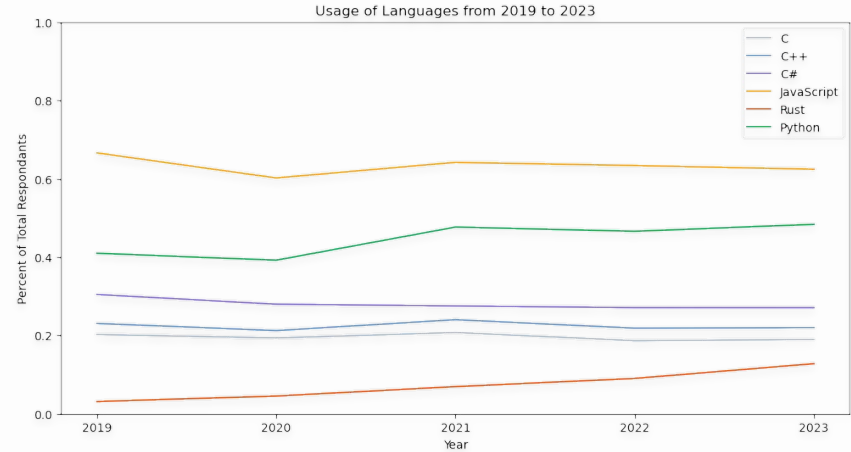
Results

Rust

Rust has experienced a notable increase in popularity and desirability in recent years. In the United States, Rust developers often earn higher salaries compared to those using other languages. Rust is praised for its rich ecosystem of tools and libraries, catering to a wide range of development needs.

JavaScript

JavaScript is one of the most widely used programming languages. However, it faces challenges such as lower admirability among developers and relatively lower average salaries. Despite its extensive use in web development, these drawbacks may influence its appeal to new learners.



What should **YOU** take away?

Popularity

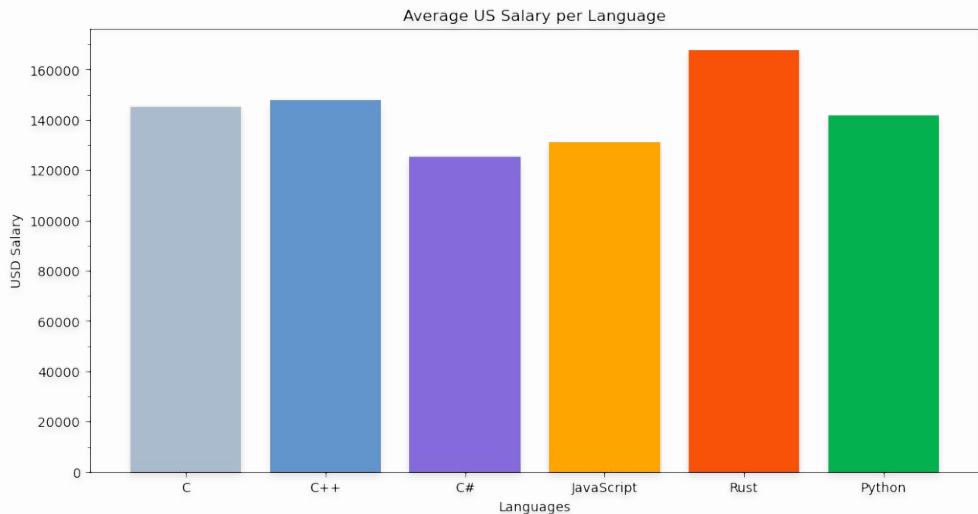
JavaScript leads in usage but trails in user satisfaction and salary potential.

Desirability

Rust ranks higher in terms of desirability and user satisfaction.

Salary

Rust developers in the United States earn higher average salaries.



Limitations

Geographical Scope

Salary calculations are limited to the United States

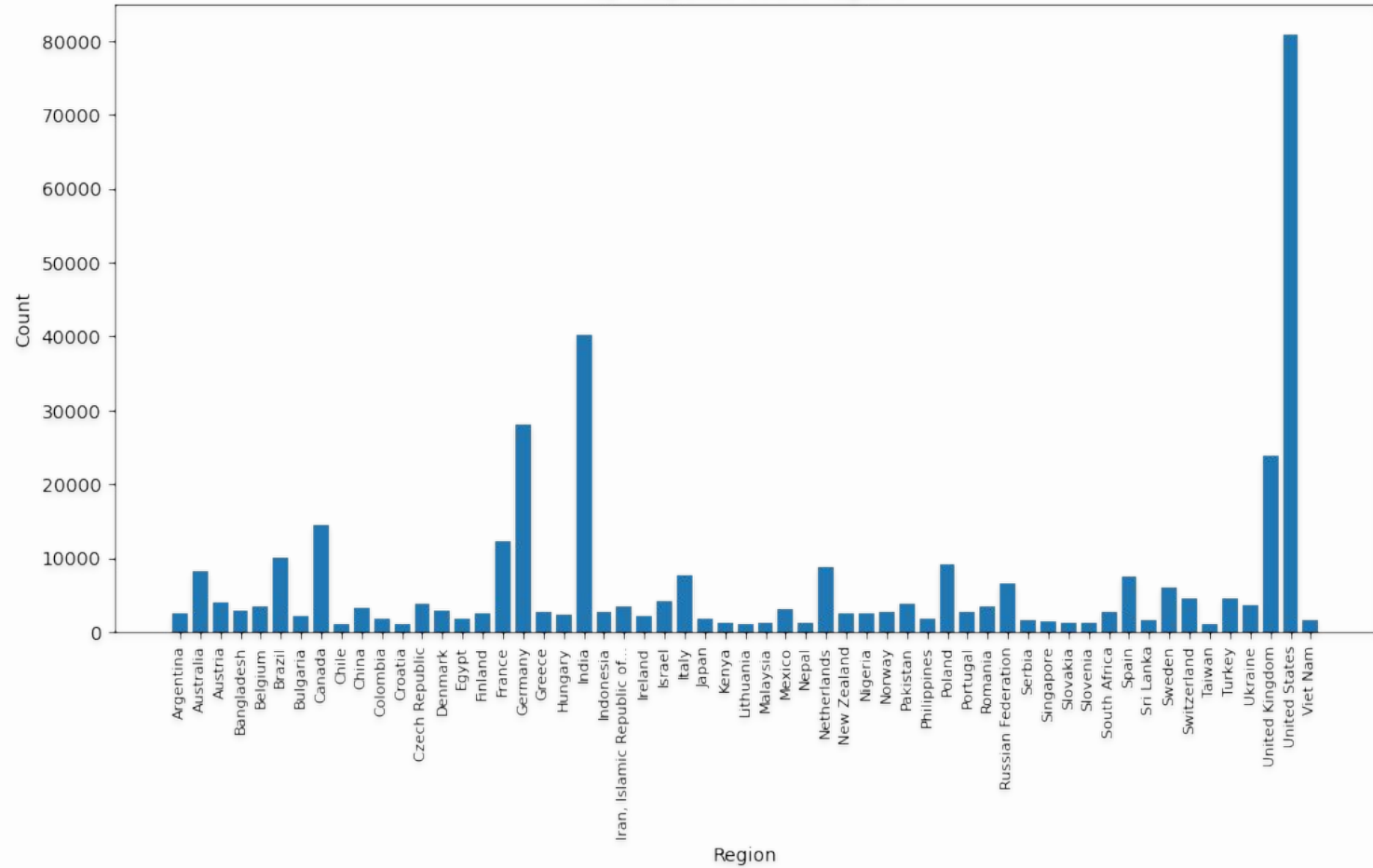
Survey Restrictions

Unfortunately because of the laws on import and export of data in the United States the survey could not be distributed in Crimea, Cuba, Iran, North Korea, and Syria.

Representation

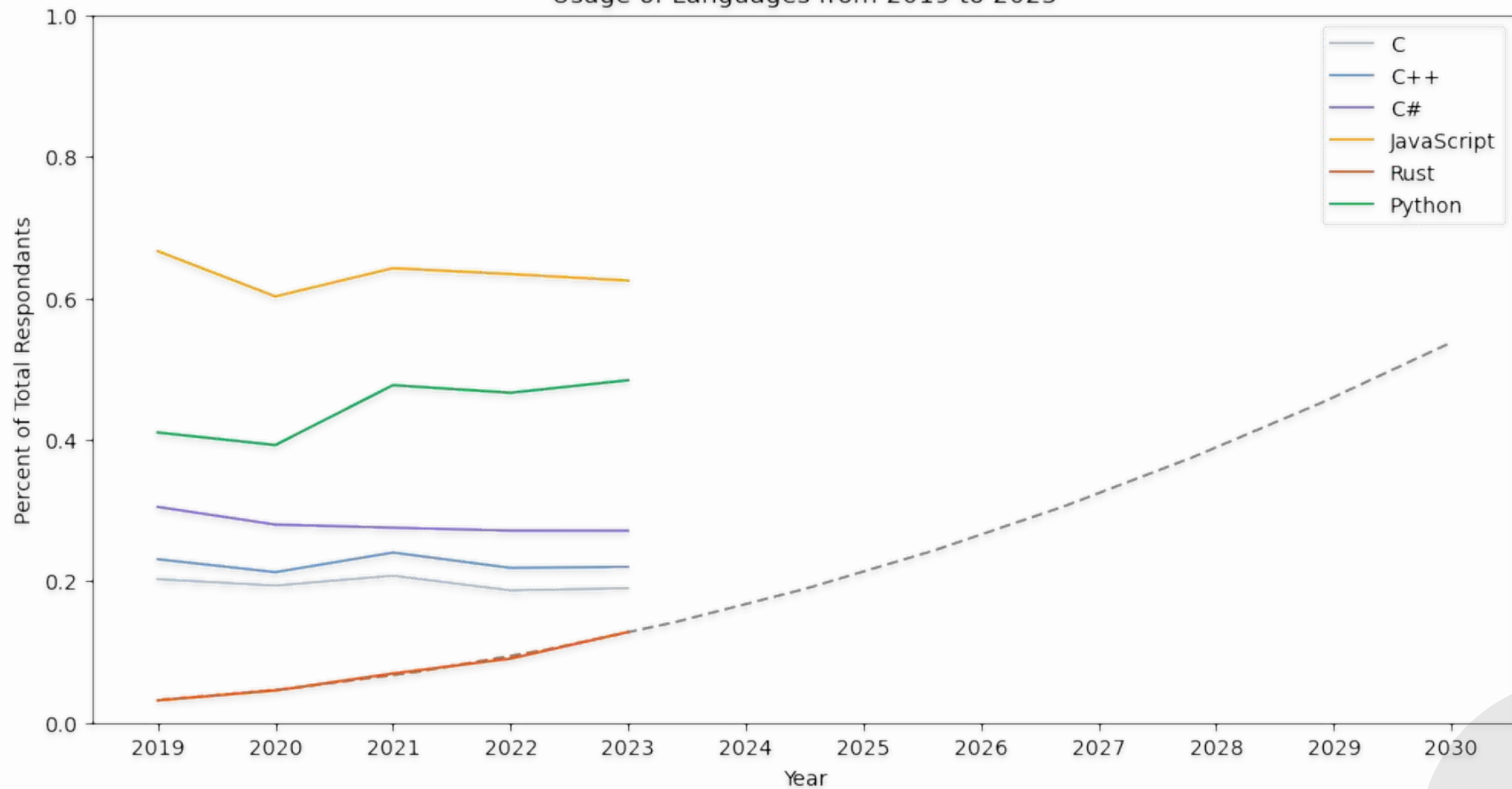
Some regions are represented unevenly.

Top Response Count Regions

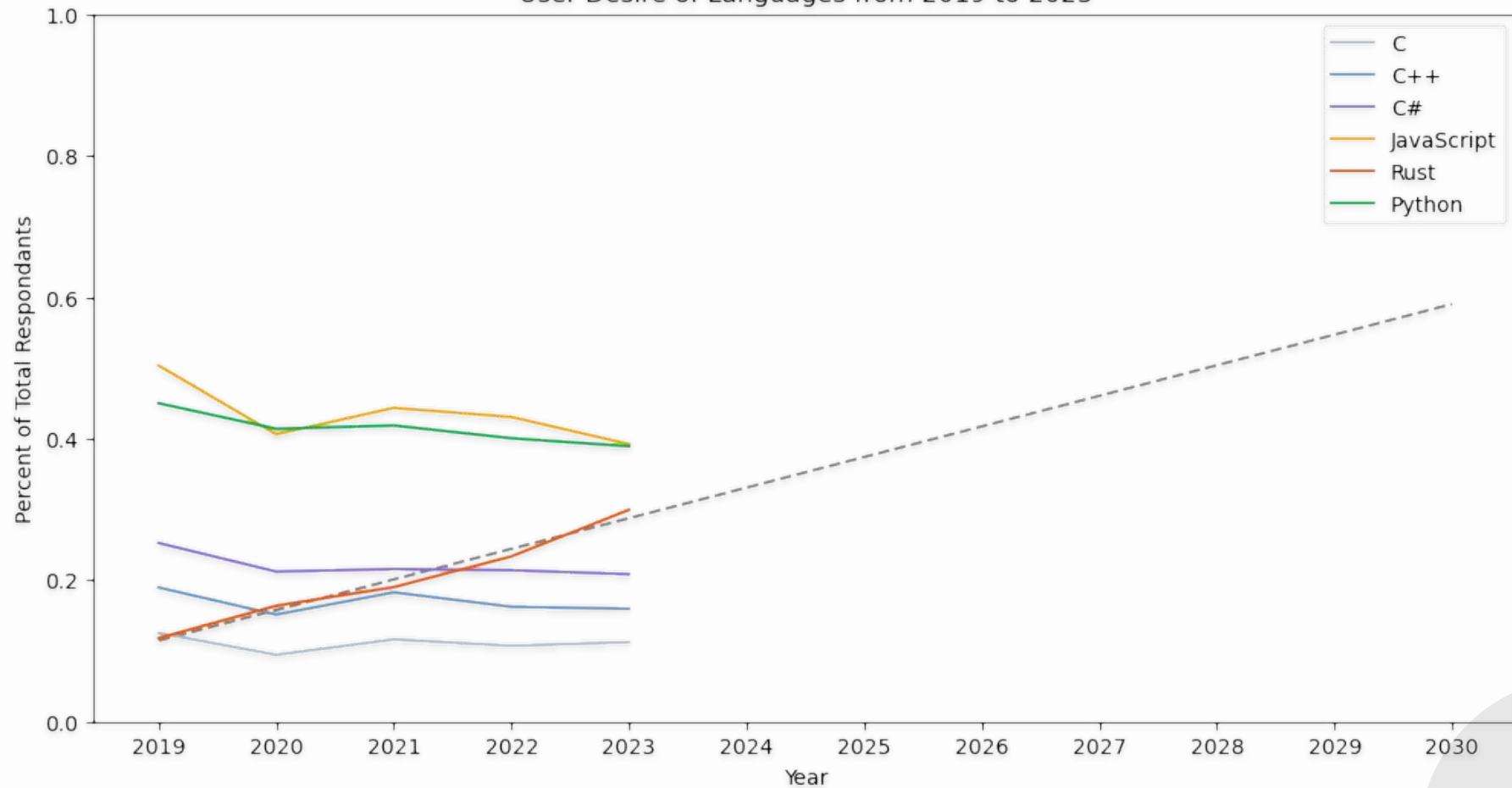


Predictions

Usage of Languages from 2019 to 2023



User Desire of Languages from 2019 to 2023



Conclusion

Rust is emerging as a highly desirable programming language, offering strong salary potential and high user satisfaction due to its focus on safety, concurrency, and performance. Its robust ecosystem, with excellent tooling and community support, further enhances its appeal, making it an attractive option for developers, particularly in specialized fields like systems programming. In contrast, JavaScript, despite its dominance in web development, shows lower desirability and salary potential, possibly due to market saturation and its association with entry-level roles. For new software engineers, especially in the U.S., Rust presents a promising career path with long-term benefits.