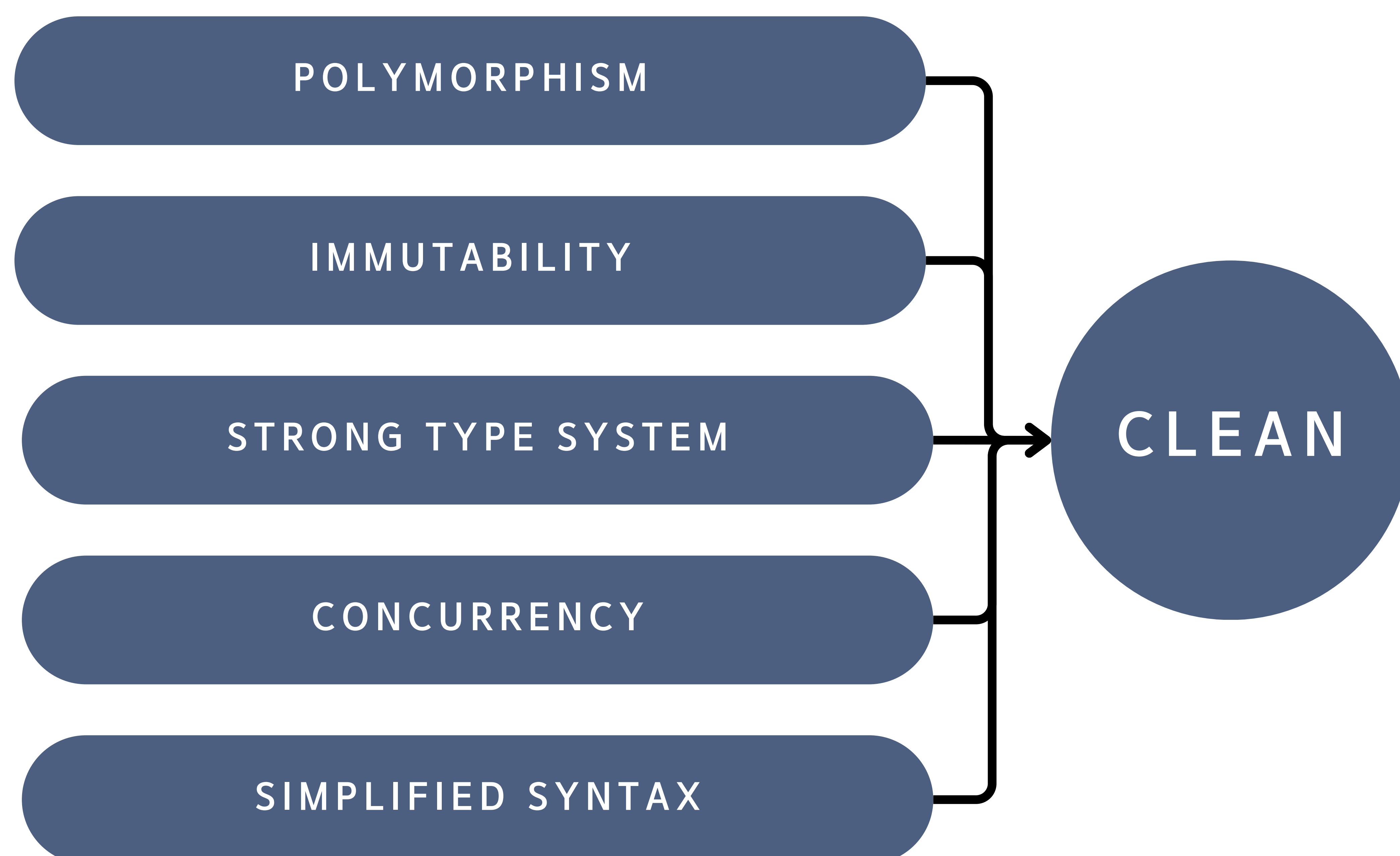


# PROGRAMMING EDUCATION USING A FUNCTIONAL PROGRAMMING LANGUAGE

Yuri Kim, Seoyeon Oh, Soyeon Jeong, Seongbin Park

## INTRODUCTION

The choice of programming language significantly influences a student's initial experience with coding, shaping their understanding, engagement, and success. This poster argues that Clean is a language that simplifies possible complexities that can pose significant challenges to beginners for fostering a positive and productive learning experience.

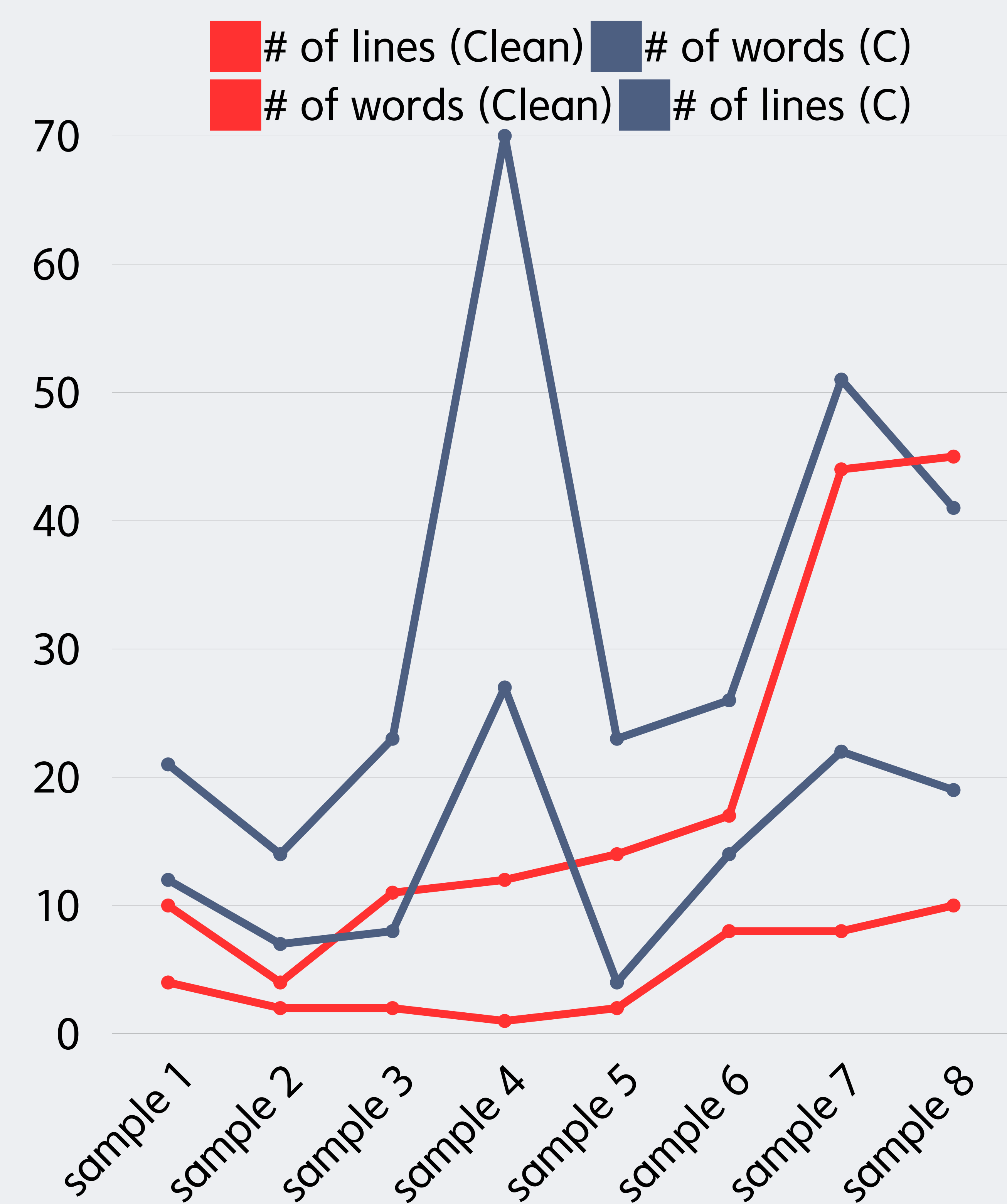


## OBJECTIVES

- Evaluate Clean Programming Language:** To assess the potential benefits of using the Clean programming language in introductory programming courses.
- Comparison with Traditional Languages:** To compare Clean with a traditional language like C, focusing on basic programming tasks such as sequencing, conditional statements, iterations, and termination.
- Analyze Cognitive Load:** To analyze how Clean's features impact the cognitive load and overall comprehension for beginners.
- Promote Effective Learning:** To provide insights into how adopting Clean can enhance engagement and success in learning fundamental programming concepts.

## RESULTS

A comparative analysis was conducted between Clean and the C programming language, focusing on basic programming tasks. C code, on average, required approximately six times more lines and four times more words than Clean code, highlighting Clean's ability to produce concise and readable code.



## DISCUSSION

Clean's mathematical function-inspired syntax and high-level abstractions allow students to focus on understanding fundamental programming concepts without being overwhelmed by complex syntax rules. For future work, we plan to conduct a substantial user study to assess Clean's actual impact on learning, comparing it with other programming languages.

- Corresponding author: Seonbing Park
- Email: hyperspace@korea.ac.kr