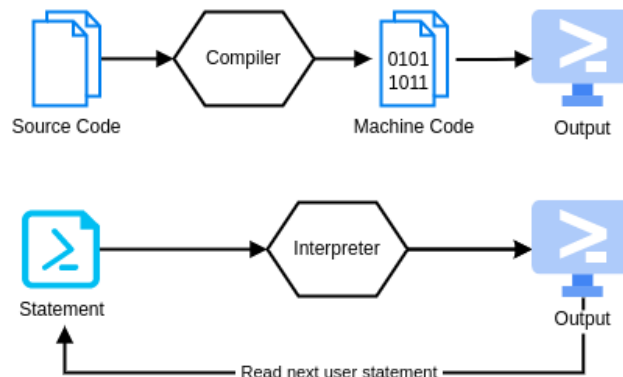Fundamentals of Computer Programming,
Project Description

TL;DR You are required to implement an interpreter for the Forth programming language.

Interpreter is a computer program that is used to directly execute program instructions written using one of the many high-level programming languages. An interpreter parses the high-level source code and then performs the commands directly, which is done line by line or statement by statement. The interpreter reads each statement of code and then executes it directly. In contrast, an assembler or a compiler converts a high-level source code into native (compiled) code that can be executed directly by the operating system (e.g. by creating a .exe program). Both compilers and interpreters have their advantages and disadvantages and are not mutually exclusive; this means that they can be used in conjunction as most integrated development environments employ both compilation and translation for some high-level languages. Programming languages that use interpreters include Python, Ruby, and JavaScript, while programming languages that use compilers include Java, C++, and C.

Forth is a language unlike most others. The thing that separates Forth from most other languages is its use of the stack. In Forth, everything revolves around the stack. Any time you type a number, it gets pushed onto the stack. If you want to add two numbers together, typing + takes the top two numbers off the stack, adds them, and puts the result back on the stack. Forth is very easy to learn, but it requires you to think in a different way than you're used to. That makes it a perfect language to broaden your coding horizons.

Project is to develop an interpreter for the Fourth programming language which allows the user to execute Forth code. To start, you can take a look at Easy Forth, an ebook to learn the Forth language which also contains an inline Forth interpreter. Try to implement as much as you can using the C programming language. The ultimate goal is to have your Forth interpreter playing the Snake game provided in the ebook. Let's see if you can achieve it.

References

- https://www.techopedia.com/definition/7793/interpreter
- https://skilldrick.github.io/easyforth/