</> **CodeCrafters**   ☰

Build your own Interpreter

Learn about tokenization, ASTs, tree-walk interpreters and more.

Start Building   GO 🐍 Ⓡ ◣ ⭐ 🗻 ⓩ

ℹ️ This challenge is free to try when it's in beta. We keep challenges in beta for a few weeks to gather feedback.

This challenge follows the book **Crafting Interpreters** by Robert Nystrom.

In this challenge you'll build an interpreter for **Lox**, a simple scripting language. Along the way, you'll learn about tokenization, ASTs, tree-walk interpreters and more.

Before starting this challenge, make sure you've read the "Welcome" part of the book that contains these chapters:

- **Introduction** (chapter 1)
- **A Map of the Territory** (chapter 2)
- **The Lox Language** (chapter 3)

These chapters don't involve writing code, so they won't be covered in this challenge. This challenge will start from chapter 4, **Scanning**.

Stages

>_ Scanning: Empty file	VERY EASY
>_ Scanning: Parentheses	MEDIUM
>_ Scanning: Braces	EASY

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>_ Scanning: Other single-character tokens   MEDIUM

>_ Scanning: Lexical errors   MEDIUM

>_ Scanning: Assignment & equality Operators   MEDIUM

>_ Scanning: Negation & inequality operators   MEDIUM

>_ Scanning: Relational operators   MEDIUM

>_ Scanning: Division operator & comments   MEDIUM

>_ Scanning: Whitespace   MEDIUM

>_ Scanning: Multi-line errors   MEDIUM

>_ Scanning: String literals   HARD

>_ Scanning: Number literals   HARD

>_ Scanning: Identifiers   HARD

>_ Scanning: Reserved words   MEDIUM

Parsing Expressions

>_ Booleans & Nil   HARD

>_ Number literals   MEDIUM

>_ String literals   MEDIUM

>_ Parentheses   MEDIUM

>_ Unary Operators   MEDIUM

>_ Arithmetic operators (1/2)   MEDIUM

>_ Arithmetic operators (2/2)   MEDIUM

>_ Comparison operators   MEDIUM

>_ Equality operators   MEDIUM

>_ Syntactic errors   MEDIUM

Evaluating Expressions

>_ Literals: Booleans & Nil   HARD

>_ Literals: Strings & Numbers   MEDIUM

>_ Parentheses	MEDIUM
>_ Unary Operators: Negation & Not	MEDIUM
>_ Arithmetic Operators (1/2)	MEDIUM
>_ Arithmetic Operators (2/2)	MEDIUM
>_ String Concatenation	MEDIUM
>_ Relational Operators	MEDIUM
>_ Equality Operators	MEDIUM
>_ Runtime Errors: Unary Operators	MEDIUM
>_ Runtime Errors: Binary Operators (1/2)	MEDIUM
>_ Runtime Errors: Binary Operators (2/2)	MEDIUM
>_ Runtime Errors: Relational Operators	MEDIUM

Statements & State

>_ Print: Generate output	MEDIUM
>_ Print: Multiple statements	MEDIUM
>_ Expression statements	EASY
>_ Variables: Declare variables	EASY
>_ Variables: Runtime Errors	EASY
>_ Variables: Initialize variables	EASY
>_ Variables: Redeclare variables	EASY
>_ Assignment operation	MEDIUM
>_ Block syntax	MEDIUM
>_ Scopes	MEDIUM

> " There are few sites I like as much that have a step by step guide. The real-time feedback is so good, it's creepy!

Ananthalakshmi Sankar
Automation Engineer at Apple

" I think the instant feedback right there in the git push is really cool. Didn't even know that was possible!

Patrick Burris
Senior Software Developer, CenturyLink

Programming challenges for seasoned developers.

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