# Lesson 4

**Reading:**

* The Rust Programming Language Introduction, Chapter 4.1
  + https://doc.rust-lang.org/book/

**Assignments:**

* Lesson 3 Lab due

**Preflight**:

* Review the handout prior to class

**Lesson Goals**:

* Understand Ownership in Rust
* Remember the Stack & Heap

**Motivation:**

* “*Ownership* is a set of rules that govern how a Rust program manages memory. All programs have to manage the way they use a computer’s memory while running. Some languages have garbage collection that regularly looks for no longer-used memory as the program runs; in other languages, the programmer must explicitly allocate and free the memory. Rust uses a third approach: memory is managed through a system of ownership with a set of rules that the compiler checks.”

**Lecture**:

* Take *ample* time to review the stack and the heap
* Discuss the difference between garbage collection and compiler checks
* Discuss the variable scope and how variables behave in different manipulative instances
* Present ownership & functions

**Lab:**

* Ownership Lab