# Section 7: Recursion

## 39. PREREQUISITES

Prerequisites For This Section

It is strongly recommended you first complete the following sections before working through this section:

* Section 1: BIG O NOTATION

Slides: <https://cs.slides.com/colt_steele/searching-algorithms-22>

## 40. Story Time: Martin & The Dragon

The non-recursive way which is called iterative or iteratively

The recursive way - The idea is basically taking one problem and doing it over and over on a smaller piece or on a changing piece until you hit some endpoint which we call the base case.

## 41. Why Use Recursion?

Objectives

* Define what recursion is and how it can be used
* Understand the two essential components of a recursive function
* Visualize the call stack to better debug and understand recursive functions
* Use helper method recursion and pure recursion to solve more difficult problems

### What is recursion?

A process( a function in our case) that calls itself

# It's EVERYWHERE!

* JSON.parse / JSON.stringify
* document.getElementById and DOM traversal algorithms
* Object traversal
* Very common with more complex algorithms
* It's sometimes a cleaner alternative to iteration

Question 1:

**What tool does JavaScript use to manage function invocations?**

* ​The call stack

Question 2:

**What is a base case?**

* ​A situation when the recursion ends