# Chapter 2

# Stacks

## 2.1 Introduction

The **stack** is another simple yet pervasive data structure. You may have heard the word **stack** used to refer to a pile of things, for example, a stack of books. This comparison can be used to easily understand the functionality of a **stack**.

## 2.2 Description

Also, **stack** may also refer to the set of technologies that are being used for a project. Make sure not to confuse the two, we are talking about data structures here. **Stacks** work in a LIFO (last-in first-out) manner unlike the **queue**. This means the last thing to enter the stack will be the primary target for removal. Let's bring back the stack of books comparison back; when adding to the stack of books, you put something on the top, and when removing something from the stack, you also take from the top.

## 2.3 Implementation

- **push**
  **Push** is used to add something to the top of the stack
- **pop**
  **Pop** is used to remove from the top of the stack

## 2.4 Examples

1. Push
   **Push** 9 onto the following stack (arrows point towards the top).

   $$8 \rightarrow 1 \rightarrow 0$$

   $$Ans : 9 \rightarrow 8 \rightarrow 1 \rightarrow 0$$

2. Pop
   What do you get when you **pop** from the solution to the previous question?

   $$Ans : 9$$