# Section 3: Analyzing Performance of Arrays and Objects

## 12. 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

## 13. Section Introduction

<https://cs.slides.com/colt_steele/built-in-data-structures-25>

### OBJECTIVES

* Understand how objects and arrays work, through the lens of Big O
* Explain why adding elements to the beginning of an array is costly
* Compare and contrast the runtime for arrays and objects, as well as built-in methods

## 14. The BIG O of Objects

Insertion >>> O(1)

Removal >>> O(1)

Searching >>> O(n)

Access >>> O(1)

## BIG O of Objects Methods

Object.keys >>> O(N)

Object.values >>> O(N)

Object.entries >>> O(N)

hasOwnProperty >>> O(1)

## 15. When are Arrays Slow?

BIG O of Arrays

insertion >>> It depends....

Removal >>> It depends....

Searching >>> O(n)

Access >>> O(1)

## 16. BIG O of Array Methods

**What is the big O for pushing into an array?**

O(1)

**What is the big O for shifting into an array?**​

O(n)

**What is the big O for the forEach function**​

O(n)