**Objects: unordered, key value pairs**

Ex: let instructor = {

firstName: “Kelly”,

isInstructor: true,

favoriteNumbers: [1, 2, 3, 4]

}

*When to use objects:*

* When you don’t need order
* When you need fast access/ insertion and removal

*Big O of Objects:*

* + Insertion – O(1)
  + Removal – O(1)
  + Searching – O(N)
  + Access – O(1)

*Big O of Object Methods:*

* + Object.keys – O(N)
  + Object.values – O(N)
  + Object.entries – O(N)
  + hasOwnProperty – O(1)

**Arrays: ordered lists**

Ex: let names = [

“Michael”,

“Melissa”,

“Andrea”

];

*When to use arrays:*

* When you need order
* When you need fast access/ insertion and removal

*Big O of Objects:*

* + Insertion – Depends
    - If insert at the end => O{1}
    - If insert at the beginning => O(n) because we have to re-index all n elements
  + Removal – Depends
    - If remove at the end => O(1)
    - If remove at the beginning => O(n) because we have to re-index all n elements
  + Searching – O(N)
  + Access – O(1)

*Big O of Array Methods:*

* + push – O(1)
  + pop – O(1)
  + shift – O(N)
  + unshift – O(N)
  + concat – O(N)
  + slice – O(N)
  + splice – O(N)
  + sort – O(N\*logN)
  + forEach/map/filter/reduce/etc – O(N)