**Linear Search**

*Procedure:* Go through every elements then check if that is the correct value

*Big O:*

Best O(1)

Average O(N)

Worst O(N)

*Pseudocode:*

* Loop through array or list and check if the current array element is equal to the value
* If it is, return the index at which the element is found
* If the value is never found, return -1

**Binary Search**

*Procedure:* Rather than eliminating one element at a time, you can eliminate half of the remaining elements at a time. Binary search only works on sorted arrays.

*Big O:*

Best O(1)

Average O(logN)

Worst O(logN)

*Pseudocode:*

* Create a left pointer at the start, right pointer at the end
* While the left pointer is smaller than right pointer:
  + Create a pointer in the middle
  + If you find the value, return the index
  + If the value is too small, move the left pointer up
  + If the value is too big, move the right pointer down
* If you never find a value, return -1

**Naïve String Search**

*Procedure:* suppose you want to count the number of times a smaller string appears in a longer string

*Pseudocode:*

* Loop over a longer string
* Loop over a short string
* If the characters don’t match, break out of the inner loop
* If the characters match, keep going
* If you complete the inner loop and find a match, increment the count of matches
* Return the count