LeetCode 1

Description

Two Sum
Given an array of integers, return indices of the two numbers such that they add up to a specific target.

You may assume that each input would have exactly one solution, and you may not use the same element twice.

Thought

A normal way to solve is to use a nested forloop to iterate through all the possible combinations of [x,y].

A better way is to use a hashmap, with integer as the key, and the value as its index. By iterating the original array, we can check if target-arr[i] exit in our hashmap, if yes, then return [i, hashmap.get(target - arr[i])];

Solution

```java
class Solution{
  public int[] twoSum(int[] nums, int target){
    Map<Integer, Integer> map = new HashMap<Integer, Integer>();

    for (int pos = 0; pos < nums.length; ++pos) {
      if (map.containsKey(target - nums[pos])) {
        return int[]{ map.get(target = nums[pos]), pos};
      }

      map.put(nums[pos], pos);
    }
    throw new IllegalArgumentExeption("no solution");
  }
}
```

Takeaways

- Bucket model: forloop to hashmap