

# Code



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# LeetCode - Easy



# 0009 - Palindrome Number

121

121 121 abcba

12321

12345678910111213141516171819202122 / 2

12345678910111213141516171819202122

Python Code / 2

```
class Solution:
    def isPalindrome(self, x: int) -> bool:
        if x < 0:
            return False

        number_str = str(x)
        result = False
        for i in range(0, int(len(number_str) / 2)): # 0 <= x <= 9 len / 2 0
            if number_str[i] == number_str[len(number_str) - 1 - i]:
                result = True
            else:
                result = False
        return result
```

list list

```
class Solution:
    def isPalindrome(self, x: int) -> bool:
        if x < 0:
            return False
```

```

number_str = str(x)
reverse_num = []
for i in range(0, len(number_str), 1):
    reverse_num.append(number_str[len(number_str) - 1 - i])

return "".join(reverse_num) == number_str

```

## Python - Slice

```

class Solution:
    def isPalindrome(self, x: int) -> bool:
        num_str = str(x)
        reversed_num = num_str[::-1] # Reverse slice
        return reversed_num == num_str

```

## Java String Char Array StringBuilder (String):

```

class Solution {
    public boolean isPalindrome(int x) {
        String numStr = String.valueOf(x);
        char[] numChrArray = numStr.toCharArray();
        StringBuilder builder = new StringBuilder();

        for(int i = 0; i < numChrArray.length; i++){
            builder.append(numChrArray[numChrArray.length - 1 - i]);
        }

        return numStr.equals(builder.toString());
    }
}

```

## String.charAt() Char Array:

```

class Solution {
    public boolean isPalindrome(int x) {
        String numStr = String.valueOf(x);
        StringBuilder reverseNum = new StringBuilder();











        for(int i = 0; i < numStr.length(); i++){

```

```
        reverseNum.append(numStr.charAt(numStr.length() - 1 - i));
    }

    return numStr.equals(reverseNum.toString());
}
}
```



-  0 
- 
-  (% 10)
- 
- 
-  (x 10)
- 
- 
- 

Java

```
class Solution {
    public boolean isPalindrome(int x) {
        if(x < 0){
            return false;
        }

        long temp = x;
        long reversed = 0;








        while(temp != 0){
            long y = temp % 10;
            reversed = reversed * 10 + y;
            temp /= 10;
        }
    }
}
```

```

    return x == reversed;
}
}

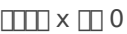




```



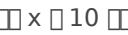
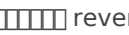


-  10  10  0 
- 
-  10 




```

class Solution {
    public boolean isPalindrome(int x) {
        if((x < 0) || (x != 0 && x % 10 == 0)){ //  x  0  10  0 
            return false;
        }

        long reversed = 0;

        while(x > reversed){ //  x  10  reversed loop
            long y = x % 10;
            reversed = reversed * 10 + y;
            x /= 10;
        }

        return (x == reversed) || (x == reversed / 10); // reversed / 10 
    }
}

```

# 0013 - Roman to Integer










Symbol	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000



- I can be placed before V (5) and X (10) to make 4 and 9.
- X can be placed before L (50) and C (100) to make 40 and 90.
- C can be placed before D (500) and M (1000) to make 400 and 900.



- 
  -  I  X  C 
  -  total 



```
class Solution(object):
    def romanToInt(self, s):
        """
        :type s: str
        :rtype: int
        """
        total = 0
```

```

formar_char = ''

for char in s:
    if char == 'I':
        total += 1
    elif char == 'V':
        if formar_char == 'I':
            total += 3 # [] 4 [] [] [] [] [] | [] [] [] XD [] [] [] [] []
        else:
            total += 5
    elif char == 'X':
        if formar_char == 'I':
            total += 8
        else:
            total += 10
    elif char == 'L':
        if formar_char == 'X':
            total += 30
        else:
            total += 50
    elif char == 'C':
        if formar_char == 'X':
            total += 80
        else:
            total += 100
    elif char == 'D':
        if formar_char == 'C':
            total += 300
        else:
            total += 500
    elif char == 'M':
        if formar_char == 'C':
            total += 800
        else:
            total += 1000
    formar_char = char
return total

```



if-else yandev...XD  
Map Map iterator for

```
class Solution(object):
    def romanToInt(self, s):
        """
        :type s: str
        :rtype: int
        """
        total = 0

        roman_map = {
            'I': 1,
            'V': 5,
            'X': 10,
            'L': 50,
            'C': 100,
            'D': 500,
            'M': 1000
        }

        for i in range(0, len(s)):
            if i != 0 and roman_map[s[i - 1]] < roman_map[s[i]]:
                # 
                total = total + roman_map[s[i]] - (roman_map[s[i - 1]] * 2)
            else:
                total += roman_map[s[i]]

        return total
```

str.replace() ...

Java

```
class Solution {
    public int romanToInt(String s) {
        HashMap<Character, Integer> romanMap = new HashMap<>();
        romanMap.put('I', 1);
```

```
romanMap.put('V', 5);
romanMap.put('X', 10);
romanMap.put('L', 50);
romanMap.put('C', 100);
romanMap.put('D', 500);
romanMap.put('M', 1000);

int total = 0;
for(int count = 0; count < s.length(); count++){
    if(count != 0 && romanMap.get(s.charAt(count)) > romanMap.get(s.charAt(count - 1))){
        total -= romanMap.get(s.charAt(count - 1)) * 2;
    }

    total += romanMap.get(s.charAt(count));
}

return total;
}
}
```

# 0014 - Longest Common Prefix



```
class Solution(object):  
    def longestCommonPrefix(self, strs):  
        """"  
        :type strs: List[str]  
        :rtype: str  
        """"  
  
        result = ""  
  
        # [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
        sorted_list = sorted(strs)
```

```

first = sorted_list[0]
last = sorted_list[-1]

for i in range(0, min(len(first), len(last))):
    if first[i] != last[i]:
        return result
    result += first[i]

return result

```

sorted() Python Array.sort()

Java code:

```

class Solution {
    public String longestCommonPrefix(String[] strs) {
        ArrayList<String> arraylist = new ArrayList<>(Arrays.asList(strs));
        arraylist.sort(Comparator.naturalOrder());

        StringBuilder samePart = new StringBuilder();

        String first = arraylist.getFirst();
        String last = arraylist.getLast();
        int count = 0;

        while(count < Math.min(first.length(), last.length())){
            if(first.charAt(count) == last.charAt(count)){
                samePart.append(first.charAt(count));
            } else {
                return samePart.toString();
            }
            count++;
        }

        return samePart.toString();
    }
}

```

# 0020 - Valid Parentheses



'(' '[' '{' '}', '}', ']' and ']'

"()[]{}" "({})" :Kappa:



Stack Stack Stack Stack Stack

```
class Solution(object):
    def isValid(self, s):
        """
        :type s: str
        :rtype: bool
        """
        if len(s) < 2:
            return False

        barket_stack = []

        for ch in s:
            if len(barket_stack) == 0:
                barket_stack.append(ch)
                continue

            temp = barket_stack.pop()

            if temp == '(' and ch == ')':
                continue
            if temp == '[' and ch == ']':
```

```
        continue
    if temp == '{' and ch == '}':
        continue
    barket_stack.append(temp)
    barket_stack.append(ch)

return len(barket_stack) == 0
```

list[-1]) Python slice (

# 0021 - Merge Two Sorted Lists



LinkedList LinkedList



Timeout Code:

```
# Definition for singly-linked list.
class ListNode(object):
    def __init__(self, val=0, next=None):
        self.val = val
        self.next = next

class Solution(object):
    def mergeTwoLists(self, list1, list2):
        """
        :type list1: Optional[ListNode]
        :type list2: Optional[ListNode]
        :rtype: Optional[ListNode]
        """

        head = ListNode()
        current = head

        while list1 != None and list2 != None:
            if list1.val <= list2.val:
                current.next = list1
```

```

        temp = list1.next
        current = list1
        list1 = temp
    else:
        current.next = list2
        temp = list2.next
        current = list2
        list2 = temp

    if list1 != None:
        current.next = list1
    if list2 != None:
        current.next = list2

    return head.next

```

ListNode(ListNode)

- list1 list2 list next list1
- list1 list1 list1.next
- list next list2 list2 list2.next
- list1 list2 None (null)
- list1 list2 LinkedList Node None (null) ListNode

LinkedList

# 0026 - Remove Duplicates from Sorted Array



**K**

case:

**Input:** nums = [0,0,1,1,1,2,2,3,3,4]

**Output:** 5, nums = [0,1,2,3,4,\_,\_,\_,\_,\_]

**Explanation:**

Your function should return k = 5, with the first five elements of nums being 0, 1, 2, 3, and 4 respectively. It does not matter what you leave beyond the returned k (hence they are underscores).



dupe K count

java

```
class Solution {
    public int removeDuplicates(int[] nums) {
        int dupeCount = 0;
        int count = 0;

        // 1 dupe
        while(count < nums.length - 1 - dupeCount){
            if(nums[count] == nums[count + 1]){
                // dupe + 1
                for(int j = count; j < nums.length - 1 - dupeCount; j++){
                    nums[j] = nums[j + 1];
                }
            }
        }
    }
}
```

```

        dupeCount += 1;
    } else {
        count += 1;
    }
}

// 1 out-of-bound
// + 1
return count + 1;
}
}

```

... LeetCode

LeetCode unique index unique index

```

class Solution {
    public int removeDuplicates(int[] nums) {
        int uniqueIndex = 1;

        for(int i = 1; i < nums.length; i++){
            // uniqueIndex
            if(nums[i] != nums[i - 1]){
                nums[uniqueIndex] = nums[i];
                uniqueIndex++;
            }
        }

        return uniqueIndex;
    }
}

```

# 0027 - Remove Element



**Input:** nums = [0,1,2,2,3,0,4,2], val = 2

**Output:** 5, nums = [0,1,4,0,3,\_,\_,\_]

**Explanation:** Your function should return k = 5, with the first five elements of nums containing 0, 0, 1, 3, and 4. Note that the five elements can be returned in any order.

It does not matter what you leave beyond the returned k (hence they are underscores).



```
class Solution {
    public int removeElement(int[] nums, int val) {
        int nonTargetIndex = 0;

        for(int i = 0; i < nums.length; i++){
            if(nums[i] != val){
                nums[nonTargetIndex] = nums[i];
                nonTargetIndex += 1;
            }
        }

        return nonTargetIndex;
    }
}
```

- 
- 
- 
-

# 0028 - Find the Index of the First Occurrence in a String



index

mississippi issip index 4



Time out



```
class Solution {  
    public int strStr(String haystack, String needle) {  
        int sameCount = 0;  
        int lastSuccess = 0;  
        int count = 0;  
  
        while(count < haystack.length()){  
            if(sameCount == needle.length()){  
                return count - sameCount;  
            }  
  
            if(haystack.charAt(count) != needle.charAt(sameCount)){  
                sameCount = 0;  
                if(lastSuccess != 0){  
                    count = lastSuccess;  
                    continue;  
                }  
            }  
            sameCount++;  
            count++;  
            lastSuccess = count - 1;  
        }  
        return -1;  
    }  
}
```

```

    }
} else {
    sameCount++;
    lastSuccess = count;
}
count++;
}


if(sameCount == needle.length() - 1){
    return haystack.length() - sameCount;
} else {
    return -1;
}
}
}




```






```

class Solution {
public int strStr(String haystack, String needle) {
    int index = 0;


    // 
    if(haystack.length() < needle.length()){
        return -1;
    }

    // 
    //  <= 
    for(index = 0; index <= haystack.length() - needle.length(); index++){
        int subCount = 0;

        // 
        for(subCount = 0; subCount < needle.length(); subCount++){
            if(haystack.charAt(index + subCount) != needle.charAt(subCount)){
                break;
            }
        }

        //  Count  index
    }
}

```

```
    if(subCount == needle.length()){  
        return index;  
    }  
}  
  
//   
return -1;  
}  
}
```

# 0035 - Search Insert Position



Index

Index

LeetCode

## Example 1:

**Input:** nums = [1,3,5,6], target = 5

**Output:** 2

## Example 2:

**Input:** nums = [1,3,5,6], target = 2

**Output:** 1

## Example 3:

**Input:** nums = [1,3,5,6], target = 7

**Output:** 4



Binary Search

Index + 1 +1:

```
class Solution {
    public int searchInsert(int[] nums, int target) {
        // Binary search
        int left = 0;
        int right = nums.length - 1;
```

```
int mid = 0;
```

```
while(left <= right){
```

```
mid = (left + right) / 2;
```

```
if(nums[mid] > target){
```

```
// mid [ ] [ ] [ ] [ ] [ ] [ ] target [ ] [ ]
```

```
right = mid - 1;
```

```
} else if (nums[mid] < target){
```

```
// mid [ ] [ ] [ ] [ ] [ ] [ ] target [ ] [ ] [ ]
```

```
left = mid + 1;
```

```
} else {
```

```
return mid;
```

}

}

//

//

//

```
if(nums[mid] < target){
```

```
return mid + 1;
```

```
} else {
```

```
return mid;
```

}

}

}

# 0058 - Length of Last Word



**Input:** s = " fly me to the moon "

**Output:** 4

**Explanation:** The last word is "moon" with length 4.



index = 1  index  reset



 2 

```
class Solution {
    public int lengthOfLastWord(String s) {
        int count = 1;
        int index = 1;
        int spaceCount = 0;

        if(s.length() < 1){
            return 0;
        }

        while(index < s.length()){
            if(s.charAt(index - 1) == ' ' && s.charAt(index) != ' '){
                count = 0;
            }
        }
    }
}
```

```
        if(s.charAt(index) != ' '){  
            count++;  
        }  
  
        index++;  
    }  
  
    return count;  
}  
}
```

# 0066 - Plus One



 + 1 



**Input:** digits = [1,2,3]

**Output:** [1,2,4]

**Explanation:** The array represents the integer 123.

Incrementing by one gives  $123 + 1 = 124$ .

Thus, the result should be [1,2,4].



**Input:** digits = [9]









**Output:** [1,0]



**Explanation:** The array represents the integer 9.

Incrementing by one gives  $9 + 1 = 10$ .

Thus, the result should be [1,0].



-  + 1  10  + 1 
- 
  - 
  -  -> 

 `new int[size + 1]` 

```
class Solution {  
    public int[] plusOne(int[] digits) {
```

```
int lastIndex = digits.length - 1;
int lastNum = digits[lastIndex];

lastNum += 1;

if(lastNum < 10){
    digits[lastIndex] = lastNum;
    return digits;
} else {
    digits[lastIndex] = 0;
    int carry = 1;

    for(int i = lastIndex - 1; i >= 0; i--){
        lastNum = digits[i] + carry;

        if(lastNum < 10){
            digits[i] = lastNum;
            carry = 0;
            break;
        } else {
            digits[i] = 0;
        }
    }

    if(carry > 0){
        int[] newArr = new int[digits.length + 1];
        newArr[0] = carry;

        for(int i = 1; i < newArr.length; i++){
            newArr[i] = digits[i - 1];
        }

        return newArr;
    } else {
        return digits;
    }
}
}
```



# 0088 - Merge Sorted Array



nums1 = [1,2,3,0,0,0], m = 3, nums2 = [2,5,6], n = 3

Output: [1,2,2,3,5,6]

**Input:** nums1 = [1,2,3,0,0,0], m = 3, nums2 = [2,5,6], n = 3  
**Output:** [1,2,2,3,5,6]  
**Explanation:** The arrays we are merging are [1,2,3] and [2,5,6].  
The result of the merge is [1,2,2,3,5,6] with the underlined elements coming from nums1.

nums1 = [1,2,3,0,0,0] sort [2,5,6]

## Code

Python 3.9.0 XD

```
class Solution(object):
    def merge(self, nums1, m, nums2, n):
        """
        :type nums1: List[int]
        :type m: int
        :type nums2: List[int]
        :type n: int
        :rtype: None Do not return anything, modify nums1 in-place instead.
        """

        for i in range(m, m+n):
            nums1[i] = nums2[m - i]

        # Sort: Bubble sort
        temp_index = 0
```

```
for i in range(0, m+n - 1):
    for j in range(0, m+n - 1 - i):
        if nums1[j] > nums1[j + 1]:
            temp = nums1[j]
            nums1[j] = nums1[j + 1]
            nums1[j + 1] = temp
```

# LinkedList - Java

Java

## Array

## Arrays

- `Arrays.asList(array)`: array List
  - ArrayList LinkedList
- `Arrays.sort(array)`: array

## 

## String Class

- `charAt(index)`: index
- `indexOf(a_Char)`: index
- `equals(str_Object)`:

## StringBuilder

- `append(element)`: Builder
- `toString()`: Builder

## Map

## HashMap

- `put(key, value)`: `key-value`
- `get(key)`: `key` `value`
- `remove(key [, value])`: `key` (`value` `value`)

# List

`List` `ArrayList` `LinkedList`

- `size()`: `ArrayList`
- `add([index], element)`: `ArrayList` (`index` `index`)
- `remove(object)` / `remove(index)`:
- `sort(comparator)`:
- `indexOf(element)`: `index`
- `getFirst()` / `getLast()`: