

1.Two-sum

```
def two_sum(n, target):
```

```
    index = {}
```

```
    for i, num in enumerate(n):
```

```
        complement = target - num
```

```
        if complement in index:
```

```
            return [index[complement], i]
```

```
    index[num] = i
```

```
n = [2, 7, 11, 15]
```

```
target = 9
```

```
print(two_sum(n,target))
```

```
class ListNode:
```

```
    def __init__(self, val=0, next=None):
```

```
        self.val = val
```

```
        self.next = next
```

2.Add Two numbers

```
def addTwoNumbers(l1, l2):
```

```
    dummy = ListNode(0)
```

```
    current = dummy
```

```
    carry = 0
```

```
    while l1 or l2 or carry:
```

```
        sum_val = (l1.val if l1 else 0) + (l2.val if l2 else 0) + carry
```

```
        carry, val = divmod(sum_val, 10)
```

```
        current.next = ListNode(val)
```

```
        current = current.next
```

```
        l1 = l1.next if l1 else None
```

```
        l2 = l2.next if l2 else None
```

```
    return dummy.next
```

```
l1 = ListNode(2, ListNode(4, ListNode(3)))
```

```
l2 = ListNode(5, ListNode(6, ListNode(4)))
```

```
result = addTwoNumbers(l1, l2)
```

```
while result:
```

```
    print(result.val, end=" ")
```

```
    result = result.next
```

3.Longest substring

```
def longest_substring(s: str) -> int:
```

```

char_index_map = {}
start = max_length = 0
for end, char in enumerate(s):
    if char in char_index_map and char_index_map[char] >= start:
        start = char_index_map[char] + 1
    char_index_map[char] = end
    max_length = max(max_length, end - start + 1)
return max_length

s = "abcabcbb"
print(longest_substring(s))

```

4. Median sorted array

```

def findMedianSortedArrays(n1, n2):
    nums = sorted(n1 + n2)
    n = len(nums)
    if n % 2 == 1:
        return nums[n // 2]
    else:
        return (nums[n // 2 - 1] + nums[n // 2]) / 2.0

n1 = [1, 3]
n2 = [2]
print(findMedianSortedArrays(n1, n2))

```

5. longest_palindromic_substring

```

def longest_palindromic_substring(s):
    def is_palindrome(s):
        return s == s[::-1]

    longest_palindrome = ""
    for i in range(len(s)):
        for j in range(i, len(s)):
            substring = s[i:j+1]
            if is_palindrome(substring) and len(substring) > len(longest_palindrome):
                longest_palindrome = substring
    return longest_palindrome

s = "babad"
print(longest_palindromic_substring(s))

```

6. Zig zag

```

def convert(s: str, numRows: int) -> str:

```

```

if numRows == 1 or numRows >= len(s):
    return s

rows = [""] * numRows

row, step = 0, -1

for char in s:
    rows[row] += char

    if row == 0 or row == numRows - 1:
        step = -step

    row += step

return "".join(rows)

input = "PAYPALISHIRING"

num_rows = 3

print(convert(input, num_rows))

```

7.Reverse

```

num=1234

rev=0

while num!=0:

    rem=num%10

    rev=rev*10+rem

    num//=10

print(rev)

```

8.Str into integer

```

str="42"

print(int(str))

```

9.Palindrome

```

num=127

temp=num

rev=0

while num>0:

    rem=num%10

    rev=rev*10+rem

    num=num//10

if temp==rev:

    print("palindrome")

else:

    print("not palindrome")

```

10.Regular expression matching

```

import re

```

```
p = "aa"
s = "a"
p = r"{}".format(p)
p = re.compile(p)
if p.fullmatch(s):
    print("true")
else:
    print("false")
```