

1.Two sum

PROGRAM:

```
def two_sum(nums, target):  
  
    temp= {}  
  
    for i in range(len(nums)):  
  
        complement = target - nums[i]  
  
        if complement in temp:  
  
            return [temp[complement], i]  
  
        temp[nums[i]] = i  
  
    return None  
  
nums = [2, 7, 11, 15]  
  
target = 26  
  
result = two_sum(nums, target)  
  
print(result)
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
[2, 3]  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

2.Add two numbers:

PROGRAM:

```
def add(a,b):  
    a.reverse()  
    b.reverse()  
    anum=int(''.join(map(str,a)))  
    bnum=int(''.join(map(str,b)))  
    c=[]  
    d=anum+bnum  
    while d>0:  
        r=d%10  
        c.append(r)  
        d=d//10  
    return c  
a=[2,4,3]  
b=[5,6,4]  
print(add(a,b))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
[7, 0, 8]  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

3. Median of 2 sorted arrays:

PROGRAM:

```
def median(nums1, nums2):  
  
    merged = sorted(nums1 + nums2)  
  
    n = len(merged)  
  
    if n % 2 == 0:  
  
        return (merged[n // 2 - 1] + merged[n // 2]) / 2  
  
    else:  
  
        return merged[n // 2]  
  
nums1 = [1, 2]  
  
nums2 = [3,4]  
  
print(median(nums1, nums2))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
2.5  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

4.Longest substring palindrome:

PROGRAM:

```
def palin(s):
    maxpalin=""
    for i in range(len(s)):
        for j in range(i,len(s)):
            substr=s[i:j+1]
            if substr==substr[::-1] and len(substr)>len(maxpalin):
                maxpalin=substr
    return maxpalin
string="babaaadaaa"
print(palin(string))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe
"
aaadaaa
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

5.Reverse a number:

PROGRAM:

```
def rev(num):  
    n=0  
    while num>0:  
        r=num%10  
        n=(n*10)+r  
        num=num//10  
    return n  
a=123  
print(rev(a))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
321  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

6.String to int:

PROGRAM:

```
def string(str):  
    return int(str)  
a="123"  
print(string(a))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
123  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

7.Palindrome or not:

PROGRAM:

```
def rev(num):  
    og=num  
    n=0  
    while num>0:  
        r=num%10  
        n=(n*10)+r  
        num=num//10  
    if n==og:  
        return True  
    else:  
        return False  
a=121  
print(rev(a))
```

OUTPUT:

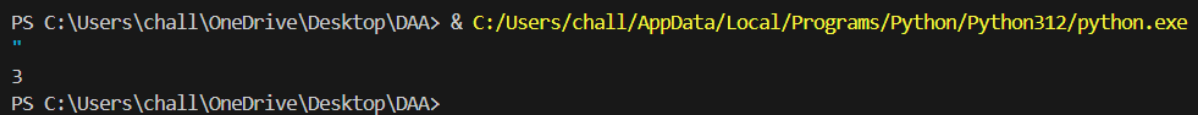
```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
True  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

8.Longest substring without repeating chars:

PROGRAM:

```
def length_of_longest_substring(s):  
  
    char_index = {}  
  
    start = 0  
  
    max_length = 0  
  
    for end in range(len(s)):  
  
        if s[end] in char_index:  
  
            start = max(start, char_index[s[end]] + 1)  
  
        char_index[s[end]] = end  
  
        max_length = max(max_length, end - start + 1)  
  
    return max_length  
  
s = "pwwkew"  
  
print(length_of_longest_substring(s))
```

OUTPUT:



```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
3  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```

9.Zigzag conversion:

PROGRAM:

```
def convert(s, numRows):  
  
    if numRows == 1 or numRows >= len(s):  
  
        return s  
  
    rows = [''] * numRows  
  
    index, step = 0, 1  
  
    for char in s:  
  
        rows[index] += char  
  
        if index == 0:  
  
            step = 1  
  
        elif index == numRows - 1:  
  
            step = -1  
  
        index += step  
  
    return ''.join(rows)  
  
a="PAYPALISHIRING"  
  
b=4  
  
print(convert(a,b))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe  
"  
PINALSIGYAHRPI  
PS C:\Users\chall\OneDrive\Desktop\DAA>
```


10.Regular Expression matching:

PROGRAM:

```
import re

def is_match(s, p):

    pattern = re.compile(p)

    return bool(pattern.fullmatch(s))

s = "ab"

p = ".*"

print(is_match(s, p))
```

OUTPUT:

```
PS C:\Users\chall\OneDrive\Desktop\DAA> & C:/Users/chall/AppData/Local/Programs/Python/Python312/python.exe
"
True
PS C:\Users\chall\OneDrive\Desktop\DAA>
```