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6	a.) Write a program that accepts a list from user. Your program should reverse the content of list and display it. Do not use reverse () method. b) Find and display the largest number of a list without using built-in function max (). Your program should ask the user to input values in list from keyboard.	
7	Find the sum of each row of matrix of size m x n. For example, for the following matrix output will be like this: 2 11 7 12 5 2 9 15 8 3 10 42 Sum of row 1 = 32 Sum of row 2 = 31 Sum of row 3 = 63	

8	a) Write a program that reads a string from keyboard and display: * The number of uppercase letters in the string. * The number of lowercase letters in the string. * The number of digits in the string. * The number of whitespace characters in the string. b) Python Program to Find Common Characters in Two Strings. c) Python Program to Count the Number of Vowels in a String.	

Program 1: A Write a Python Program to Calculate the Area of a Triangle

Solution:

```
a=int(input("Enter first side "))
b=int(input("Enter second side "))
c=int(input("Enter third side "))
s=(a+b+c)/2
area=(s*(s-a)*(s-b)*(s-c))**0.5
print('area of triangle is ',area)
```

Output:

```
Enter first side 2
Enter second side 3
Enter third side 4
area of triangle is  2.9047375096555625
```

Program 1: B Write a Python Program to Swap Two Variables

Solution:

```
a = int(input("Enter first Number: "))
b = int(input("Enter second number: "))
first_number = b
second_number = a
print("After Swapping the TWO, the result is: ")
if a == b:
    print("Both numbers are already same!")
else:
    print("The first number is: ", first_number)
    print("The second number is: ", second_number)
```

Output:

```
Enter first Number: 23
Enter second number: 34
After Swapping the TWO, the result is:
The first number is:  34
The second number is:  23
```

Program 1: C Write a Python Program to Convert Celsius to Fahrenheit

Solution:

```
Celsius = int(input("Enter the Value of temperature in Celsius: "))
Fahrenheit = (Celsius * (9/5)) + 32
print("The temperature in Fahrenheit is: ", Fahrenheit)
```

Output:

```
Enter the Value of temperature in Celsius: 42
The temperature in Fahrenheit is:  107.60000000000001
```

Program 2: A Write a Python Program to Check if a Number is Odd or Even

Solution:

```
num = int(input("Enter any number: "))
if num % 2 == 0:
    print("Number is even")
elif num == 0:
    print("Number is zero")
else:
    print("Number is odd")
```

Output:

```
Enter any number: 23
Number is odd
Enter any number: 22
Number is even
```

Program 2: B Title of program: Write a Python Program to Check if a Number is Positive, Negative or 0

Solution:

```
num = int(input("Enter any number: "))
if num < 0:
    print("Number is Negative")
elif num > 0:
    print("Number is Positive")
else:
    print("Number is Zero")
```

Output:

```
Enter any number: 65
Number is Positive
Enter any number: -5
Number is Negative
Enter any number: 0
Number is Zero
```

Program 2: C Write a Python Program to Check Armstrong Number

Solution:

```
def is_armstrong_number(number: int) -> bool:
    num_str = str(number)
    num_digits = len(num_str)
    armstrong_sum = 0
    for digit in num_str:
        armstrong_sum += int(digit) ** num_digits
        return armstrong_sum == number
num = int(input("Enter a number: "))
if is_armstrong_number(num):
    print(f"{num} is an Armstrong number.")
else:
    print(f"{num} is not an Armstrong number.")
```

Output:

```
Enter a number: 34
34 is not an Armstrong number.
Enter a number: 2
2 is an Armstrong number.
```

Program 3: A Write a Python program to check if a given number is Fibonacci number?

Solution:

```
n=int(input("Enter the number "))
c=0
a=1
b=1
if n==0 or n==1:
    print("Yes")
else:
    while c<n:
        c=a+b
        b=a
        a=c
if c==n:
    print("Yes")
else:
    print("NO")
```

Output:

```
Enter the number 35
NO
Enter the number 5
Yes
```

Program 3: B Write a Python program to print cube sum of first n natural numbers.

Solution:

```
# Returns the sum of series
def sumOfSeries(n):
    x = (n * (n + 1)  / 2)
    return (int)(x * x)



# Driver Function
n = 5
print(sumOfSeries(n))
```

Output:

```
225
```

Program 3: C Write a Python program to print all odd numbers in a range.

Solution:

```
num = int(input("Enter the range upto which odd number have to be printed: "))
odd_num = []
even_num = []
for i in range(num + 1):
    if i % 2 == 0:
        even_num.append(i)
    else:
        odd_num.append(i)
for i in odd_num:
     print(i, end=" ")
```

Output:

```
Enter the range upto which odd number have to be printed: 23
1 3 5 7 9 11 13 15 17 19 21 23
```

Program 4: A Write a Python Program to Print Pascal Triangle

Hint: Enter number of rows: 4

```
      1
    1   1
  1   2   1
1   3   3   1
```

Solution:

```
from math import factorial as fact
num = int(input("Enter the number of rows in pascal's triangle: "))
for i in range(num):
    for j in range(num-i+1):
        print(end=" ")
    for j in range(i+1):
        print(fact(i)//(fact(j)*fact(i-j)), end=" ")
    print()
```

Output:

```
Enter the number of rows in pascal's triangle: 5
      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
```

Program 4: B WAP to Draw the following Pattern for n number:

1 1 1 1 1

2 2 2 2

3 3 3

4 4

5

Solution:

```
rows = int(input("Enter the number of rows: "))
for i in range(1, rows + 1):
    for j in range(rows - i + 1):
        print(i, end=" ")
    print()
```

Output:

```
Enter the number of rows: 5
1 1 1 1 1
2 2 2 2
3 3 3
4 4
5
```

Program 5 Write a program with a function that accepts a string from keyboard and create a new string after converting character of each word capitalized. For instance, if the sentence is "stop and smell the roses" the output should be "Stop And Smell The Roses"

Solution:

```
def capistr(string):
    string2 = ""
    x = string.split()
    for i in x:
        d = i.capitalize()
        string2 += d + " "
        print(string2)
string1 = input("Enter the string: ")
capistr(string1)
```

Output:

```
Enter the string: stop and smell the roses
Stop
Stop And
Stop And Smell
Stop And Smell The
Stop And Smell The Roses
```

Program 6: A Write a program that accepts a list from user. Your program should reverse the content of list and display it. Do not use reverse () method.

Solution:

```
list1 = []
non = int(input("How much elements you want in list: "))
for i in range(non):
    num = int(input(f"Enter number {i+1}: "))
    list1.append(num)
    print()
    print("The original list: ")
    print(list1)
    print()
    print("The reversed list: ")
list2 = []
for i in range(len(list1)-1, -1, -1):
    list2.append(list1[i])
    print(list2)
```

Output:

```
How much elements you want in list: 5
```

```
Enter number 1: 32

The original list:
[32]

The reversed list:
Enter number 2: 45

The original list:
[32, 45]

The reversed list:
Enter number 3: 67

The original list:
[32, 45, 67]

The reversed list:
Enter number 4: 91

The original list:
[32, 45, 67, 91]

The reversed list:
Enter number 5: 83

The original list:
[32, 45, 67, 91, 83]

The reversed list:
[83]
[83, 91]
[83, 91, 67]
[83, 91, 67, 45]
[83, 91, 67, 45, 32]
```

Program 6: B Find and display the largest number of a list without using built-in function max (). Your program should ask the user to input values in list from keyboard.

Solution:

```
numbers = []
non = int(input("How much elements you want in list: "))
for i in range(non):
    num = int(input(f"Enter number {i+1}: "))
    numbers.append(num)
print("User-Input List: ")
print(numbers)
if len(numbers) > 0:
    highest = numbers[0]
    for num in numbers:
        if num > highest:
            highest = num
    print(f"The highest number from list is: {highest}")
```

Output:

```
How much elements you want in list: 3
Enter number 1: 32
Enter number 2: 45
Enter number 3: 76
User-Input List:
[32, 45, 76]
The highest number from list is: 76
```

Program 7 Find the sum of each row of matrix of size m x n. For example, for the following matrix output will be like this:

2	11	7	12
5	2	9	15
8	3	10	42

Sum of row 1 = 32

Sum of row 2 = 31

Sum of row 3 = 63

Solution:

```
def sum_of_rows(matrix):
    row_sums = []
    row_number = 1
    for row in matrix:
        row_sum = sum(row)
        row_sums.append(row_sum)
        print(f"Sum of row {row_number} = {row_sum}")
        row_number += 1
    return row_sums
matrix = [[10, 5, 17], [3, 8, 20], [15, 25, 23]]
row_sums = sum_of_rows(matrix)
```

Output:

```
Sum of row 1 = 32
Sum of row 2 = 31
Sum of row 3 = 63
```

Program 8: A Write a program that reads a string from keyboard and display:

*** The number of uppercase letters in the string.**

*** The number of lowercase letters in the string.**

*** The number of digits in the string.**

*** The number of whitespace characters in the string.**

Solution:

```
input_string = input("Enter a string: ")
uppercase_count = 0
lowercase_count = 0
digit_count = 0
whitespace_count = 0
for char in input_string:
    if char.isupper():
        uppercase_count += 1
    elif char.islower():
        lowercase_count += 1
    elif char.isdigit():
         digit_count += 1
    elif char.isspace():
         whitespace_count += 1
print("Number of uppercase letters:", uppercase_count)
print("Number of lowercase letters:", lowercase_count)
print("Number of digits:", digit_count)
```

```
print("Number of whitespace characters:", whitespace_count)
```

Output:

```
Enter a string: Hello World
Number of uppercase letters: 2
Number of lowercase letters: 8
Number of digits: 0
Number of whitespace characters: 1
```

Program 8: B Python Program to Find Common Characters in Two Strings.

Solution:

```
string1 = input("Enter the first string: ")
string2 = input("Enter the second string: ")
common_characters = []
for char in string1:
    if char in string2:
        if char not in common_characters:
            common_characters.append(char)
if common_characters:
    common_characters_str = ", ".join(common_characters)
    print("Common characters in the two strings:", common_characters_str)
else:
    print("No common characters found.")
```

Output:

```
Enter the first string: Hello World
Enter the second string: Saturn
Common characters in the two strings: r
```

Program 8: C Python Program to Count the Number of Vowels in a String.

Solution:

```
input_string = input("Enter a string: ")
input_string = input_string.lower()
vowel_count = 0
vowels = {'a', 'e', 'i', 'o', 'u'}
for char in input_string:
    if char in vowels:
        vowel_count += 1
print("Number of vowels in the string:", vowel_count)
```

Output:

```
Enter a string: Saturdayss
Number of vowels in the string: 3
```