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EXPERIMENT-1

AIM: - Compute sum, subtraction, multiplication, division and exponent of given variables input by the user.

```
a=int(input("enter the value of a: "))
b=int(input("enter the value of b:"))
print(a+b)
print(a-b)
print(a*b)
print(a/b)
print(a**b)
```

```
enter the value of a: 4
enter the value of b:5
9
-1
20
0.8
1024


...Program finished with exit code 0
Press ENTER to exit console.
```

Output :

EXPERIMENT-2

AIM: - Compute area of following shapes: circle, rectangle, triangle, square, trapezoid and parallelogram.

Circle

```
pi=3.14
r=int(input("enter the radius:"))
area=pi*(r*r)
print("area of circle",area)
```

Output :

```
enter the radius:5
area of circle 78.5


...Program finished with exit code 0
Press ENTER to exit console.
```

Rectangle

```
l=int(input("enter the length: "))
b=int(input("enter the bredth: "))
area=l*b
print("area of rectangle:",area)
```

Output :

```
enter the length: 10
enter the bredth: 12
area of rectangle: 120


...Program finished with exit code 0
Press ENTER to exit console.
```

Triangle

```
h=int(input("enter the height: "))
b=int(input("enter the base: "))
area=1/2*b*h
print("area of triangle:",area)
```

Output :

```
enter the height: 5
enter the base: 4
area of triangle: 10.0


...Program finished with exit code 0
Press ENTER to exit console.
```

Trapezoid

```
a=int(input("enter upper base length: "))
b=int(input("Enter lower base length: "))
h=int(input("Enter height : "))
area=1/2*(a*b)*h
print("Area of trapezoid is : ",area)
```

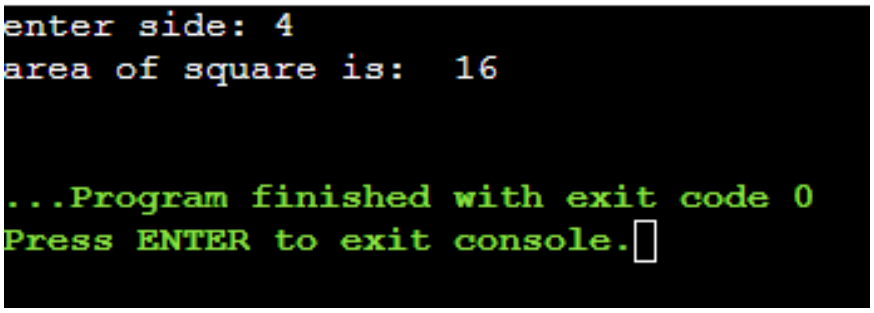
Output :

```
enter upper base length: 5
Enter lower base length: 10
Enter height : 8
Area of trapezoid is :  200.0


...Program finished with exit code 0
Press ENTER to exit console.
```

Square

```
s=int(input("enter side: "))
area=s*s
print ("area of square is: ",area)
```

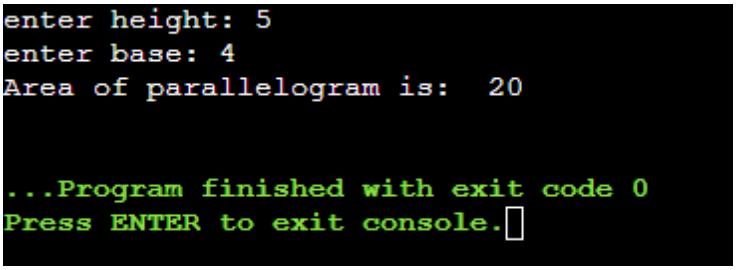
Output :



Parallelogram

```
h=int(input("enter height: "))
b=int(input("enter base: "))
area=b*h
print("Area of parallelogram is: ",area)
```

Output :

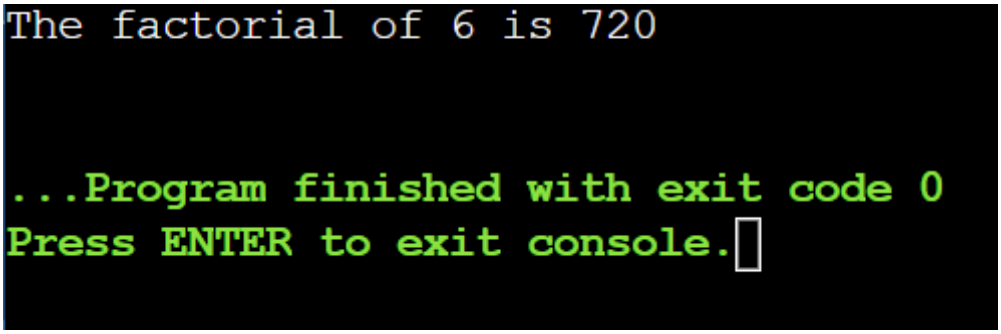


EXPERIMENT-3

AIM: - Compute factorial of a given number.

```
num = 6
factorial = 1
for i in range(1, num + 1):
    factorial *= i
print(f"The factorial of {num} is {factorial}")
```

Output :

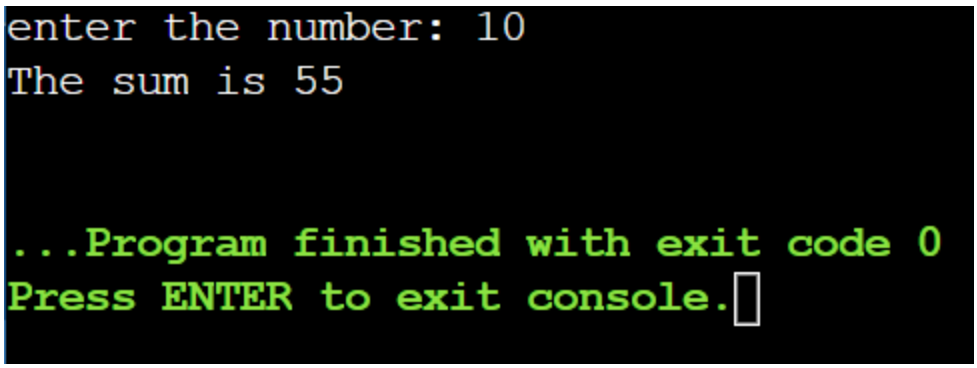


EXPERIMENT-4

AIM: - Compute sum of natural numbers from one to n number.

```
num = int(input("enter the number: "))

if num < 0:
   print("Enter a positive number")
else:
   sum = 0
   while(num > 0):
      sum += num
      num -= 1
   print("The sum is", sum)
```

Output :

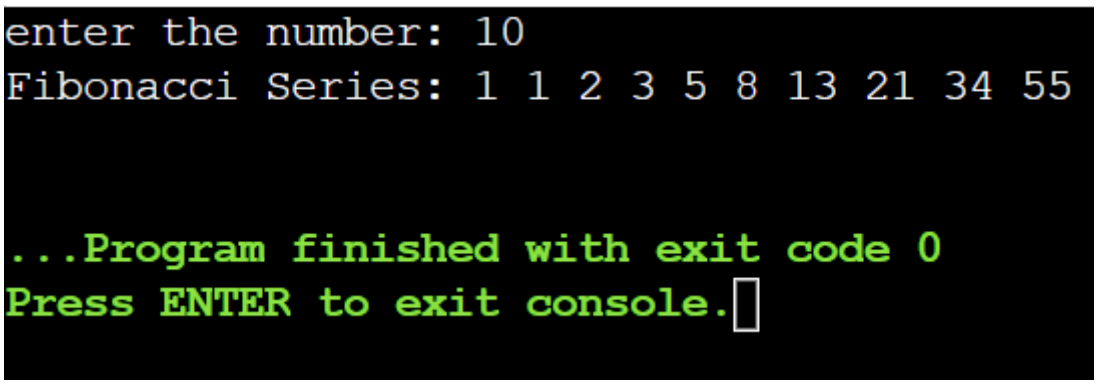


EXPERIMENT-5

AIM: - Print Fibonacci series up to n numbers e.g., 0 1 1 2 3 5 8 13…. n

```
num = int(input("enter the number: "))
n1, n2=1,1
print("Fibonacci Series:", n1, n2, end=" ")
for i in range(2, num):
    n3 = n1 + n2
    n1 = n2
    n2 = n3
    print(n3, end=" ")

print()
```

Output :

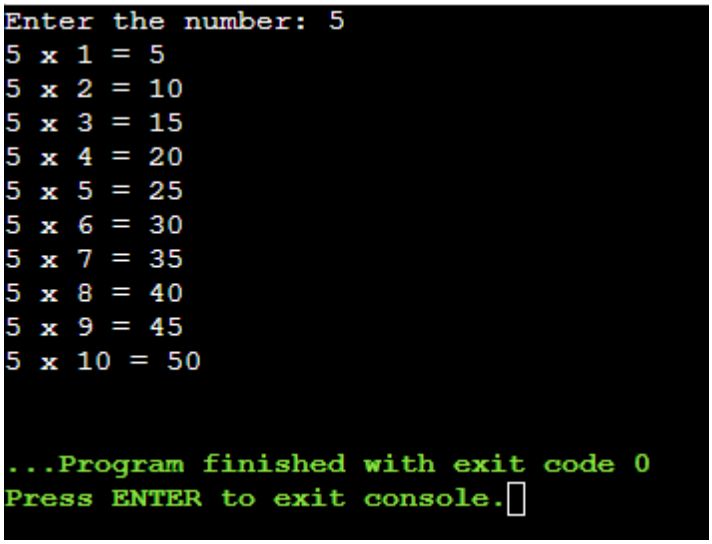


EXPERIMENT-6

AIM: - Print multiplication table of a number input by the user

```
number=int(input("Enter the number: "))
for i in range(1,11):
   print(number,"x",i,"=",i*number)
```

Output :

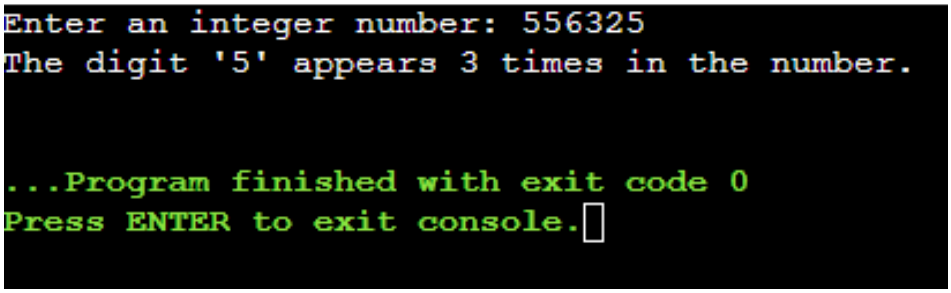


EXPERIMENT-7

AIM: - Count occurrence of a digit 5 in a given integer number input by the user.

```
number=input("Enter an integer number: ")
count_of_fives=number.count('5')
print(f"The digit '5' appears {count_of_fives} times in the number.")
```

Output :



EXPERIMENT-8

AIM: - Print numbers up to N which are not divisible by 3, 6, 9

```
A=int(input("Enter any number: "))
print("The numbers from 1 to",A)
print("not divisible by 3,6,9 are: ")
for i in range(1,A+1):
    if i%3!=0:
        print(i)
```

Output :

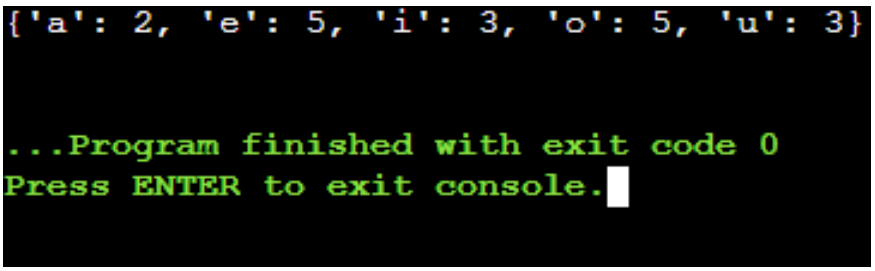
```
Enter any number: 5
The numbers from 1 to 5
not divisible by 3,6,9 are:
1
2
4
5


...Program finished with exit code 0
Press ENTER to exit console.
```

EXPERIMENT- 9

AIM: -Count occurrence of vowels.

```
vowels = 'aeiou'
ip_str = 'Hello, have you tried our tutorial section yet?'
ip_str = ip_str.casefold()
count = {}.fromkeys(vowels,0)
for char in ip_str:
   if char in count:
      count[char] += 1
print(count)
```

Output :

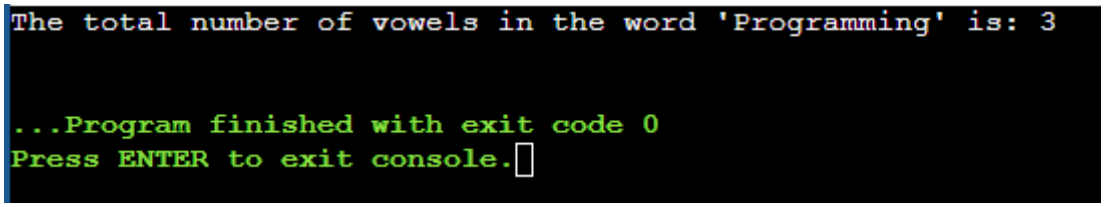


EXPERIMENT-10

AIM: -Count total number of vowels in a word.

```
def count_vowels_in_word(word):
    vowels = "aeiouAEIOU"
    count = 0

    for char in word:
        if char in vowels:
          count += 1

  return count
word = "Programming"
vowel_count = count_vowels_in_word(word)
print(f"The total number of vowels in the word '{word}' is: {vowel_count}")
```

Output :

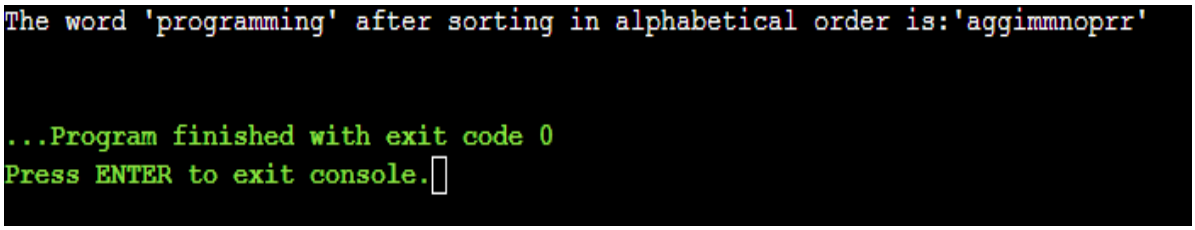


EXPERIMENT-11

AIM: -Display word after Sorting in alphabetical order.

```
def sort_word_alphabetically(word):

sorted_word = ''.join(sorted(word))

  return sorted_word

word = "programming"
sorted_word = sort_word_alphabetically(word)
print(f"The word '{word}' after sorting in alphabetical order
is:'{sorted_word}'")
```

Output :

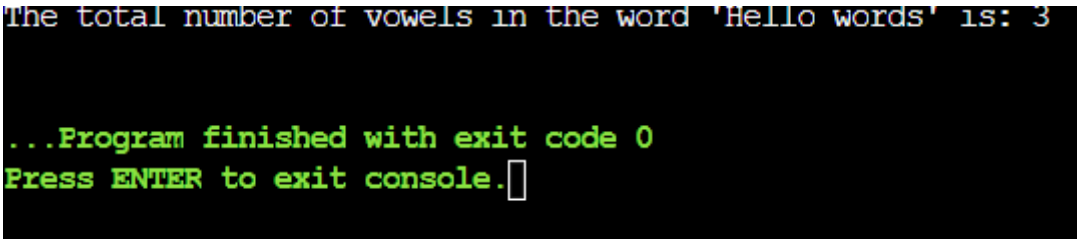


EXPERIMENT-12

AIM: Determine whether a string is palindrome or not.

```
def count_vowels_in_word(word):
    vowels = "aeiouAEIOU"
    count = 0

    for char in word:
        if char in vowels:
            count += 1

    return count
word = "Hello words"
vowel_count = count_vowels_in_word(word)
print(f"The total number of vowels in the word '{word}' is: {vowel_count}")
```

Output :

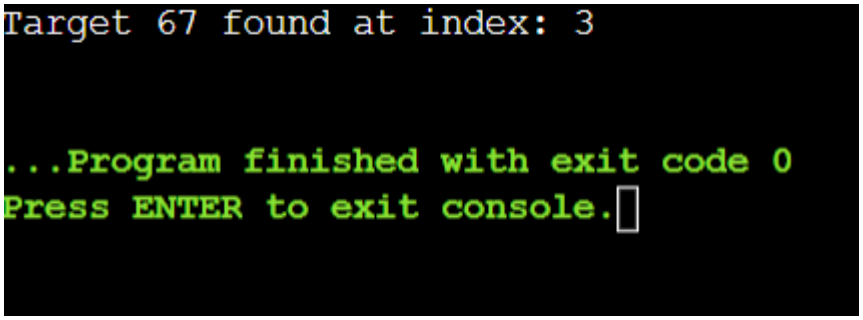


EXPERIMENT-13

AIM: -Perform sequential search on ordered list of given numbers.

```
def sequential_search(numbers, target):
    for index, number in enumerate(numbers):
        if number == target:
            return index  # Return the index if the target is found
    return -1  # Return -1 if the target is not found

# Example usage
numbers = [10, 23, 45, 67, 89, 5, 3, 15]
target = 67

result = sequential_search(numbers, target)

if result != -1:
    print(f"Target {target} found at index: {result}")
else:
    print(f"Target {target} not found in the list.")
```

Output :

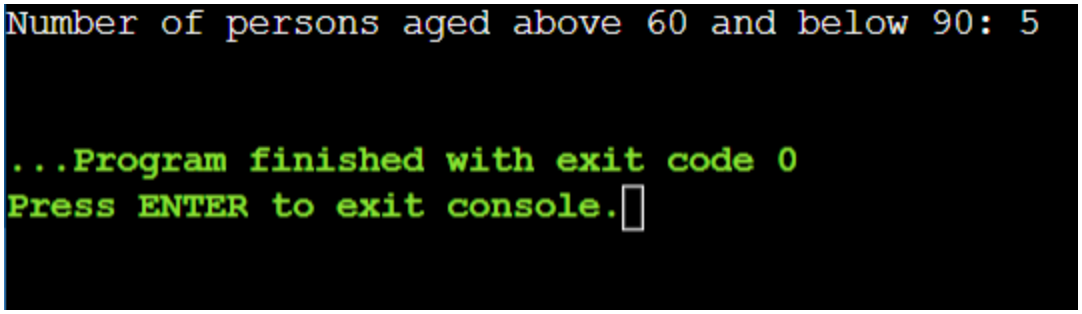


EXPERIMENT-14

AIM: - Count number of persons of age above 60 and below 90

```
ages = [45, 62, 75, 89, 34, 91, 58, 73, 85, 60, 90]  # Sample age data

count = 0
for age in ages:
    if 60 < age < 90:
        count += 1

print("Number of persons aged above 60 and below 90:", count)
```

Output :

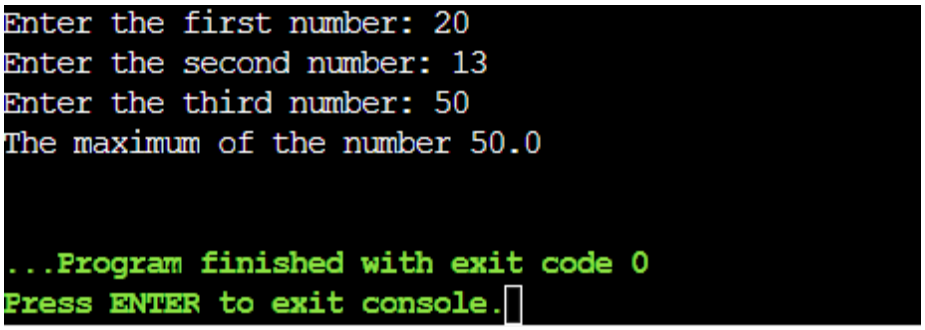


EXPERIMENT-15

AIM: - To find the Max of three numbers using functions.

```
def find_max(a,b,c):
  return max(a,b,c)
num1=float(input("Enter the first number: "))
num2=float(input("Enter the second number: "))
num3=float(input("Enter the third number: "))
maximum=find_max(num1,num2,num3)
print(f"The maximum of the number {maximum} ")
```

Output :



EXPERIMENT-16

AIM: - Compute transpose of a matrix.

```
def transpose(matrix):
    return [list(row) for row in zip(*matrix)]

matrix = [
    [1, 2, 3],
    [4, 5, 6],
    [7, 8, 9]
]

print("Original Matrix:")
for row in matrix:
    print(row)

transposed_matrix = transpose(matrix)

print("\nTransposed Matrix:")
for row in transposed_matrix:
    print(row)
```

Output :

```
Original Matrix:
[1, 2, 3]
[4, 5, 6]
[7, 8, 9]

Transposed Matrix:
[1, 4, 7]
[2, 5, 8]
[3, 6, 9]


...Program finished with exit code 0
Press ENTER to exit console.
```

EXPERIMENT-17

AIM: - Perform following operations on a list of numbers

1) Insert an element
2) delete an element
3) sort the list
4) delete entire list

```
numbers = [10, 20, 30, 40, 50]

# Function to insert an element at a specific position
def insert_element(lst, element, position):
    lst.insert(position, element)
    print(f"List after insertion: {lst}")

# Function to delete an element by value
def delete_element(lst, element):
    if element in lst:
        lst.remove(element)
        print(f"List after deleting element {element}: {lst}")
    else:
        print(f"Element {element} not found in the list.")

# Function to sort the list
def sort_list(lst):
    lst.sort()
    print(f"List after sorting: {lst}")

# Function to delete the entire list
def delete_entire_list(lst):
    lst.clear()
    print("List has been deleted.")

# Main program
def main():
    print("Initial list:", numbers)

    # Inserting an element
    insert_element(numbers, 25, 2)  # Insert 25 at index 2

    # Deleting an element
    delete_element(numbers, 30)  # Delete element 30
```

```
# Sorting the list
    sort_list(numbers)

   # Deleting the entire list
    delete_entire_list(numbers)

# Run the main function
if __name__ == "__main__":
    main()
```

Output :

```
Initial list: [10, 20, 30, 40, 50]
List after insertion: [10, 20, 25, 30, 40, 50]
List after deleting element 30: [10, 20, 25, 40, 50]
List after sorting: [10, 20, 25, 40, 50]
List has been deleted.


...Program finished with exit code 0
Press ENTER to exit console.
```

EXPERIMENT-18

AIM: Program to determine whether a triangle is isosceles or not?

```
A=input("enter first value: ")
B=input("Enter second value: ")
C=input("enter third value: ")

if A==B or A==C or B==C:
 print("It is isosceles triangle")
else:
   print("It is not isosceles triangle")
```

Output :

```
enter first value: 4
Enter second value: 5
enter third value: 6
It is not isosceles triangle


...Program finished with exit code 0
Press ENTER to exit console.
```