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Subject:Python(workshop) **Subject Code:PCCCs393**

Assignment2

1.WAP to calculate the sum & average of first 10 numbers.

INPUT:-

```
sum = 0
i = 1
while i <= 10:
    sum += i
    i += 1
average = sum / 10
print("Sum of first 10 numbers is: ", sum)
print("Average of first 10 numbers is: ", average)
```

OUTPUT:-

```
Sum of first 10 numbers is:  55
Average of first 10 numbers is:  5.5
```

2 WAP to read the numbers until-1 is encountered.Also count the -ve,+ve and zeroes extended entered by user.

INPUT:-

```
pos=0
neg=0
zero=0
i=0
while True:
    num = int(input("enter any number :"))
    if(num== -1):
        break
    elif(num>0):
```

```
            pos +=1
        elif(num==0):
            zero +=1
        else:
            neg +=1
           i=i+1
print("positive number is:",pos)
print("negative number is :",neg)
print("zero number is:",zero)
```

OUTPUT:-

```
enter any number :-5
enter any number :-5
enter any number :-3
enter any number :-6
enter any number :1
enter any number :2
enter any number :3
enter any number :1
enter any number :3
enter any number :-1
positive number is: 5
negative number is : 4
zero number is: 0
```

3.WAP to read charecter until a * is encountered.Also count the no. Of uppercase,lowercase and numbers entered by user.

INPUT ;-

```
# Initialize counters
uppercase_count = 0
```

```
lowercase_count = 0
digit_count = 0

# Reading characters until '*' is encountered
while True:
    char = input("Enter a character (* to stop): ")

    if char == '*':
        break
    elif char.isupper():
        uppercase_count += 1
    elif char.islower():
        lowercase_count += 1
    elif char.isdigit():
        digit_count += 1

# Print the counts
print(f"Number of uppercase letters: {uppercase_count}")
print(f"Number of lowercase letters: {lowercase_count}")
print(f"Number of digits: {digit_count}")
```

OUTPUT ;-

Enter a character (* to stop): M

Enter a character (* to stop): S

Enter a character (* to stop): D

Enter a character (* to stop): h

Enter a character (* to stop): o

Enter a character (* to stop): n

Enter a character (* to stop): i

Enter a character (* to stop): *

Number of uppercase letters: 3

Number of lowercase letters: 4

Number of digits: 0

4.WAP to accept a no. & show the sum of digits.

INPUT :-

```
# Accept a number from user
num = int(input("Enter a number: "))

# Initialize variables
original_number = num
sum_digits = 0

# Calculate sum of digits
while num > 0:
    digit = num % 10
    sum_digits += digit
    num //= 10

# Print the sum of digits
print(f"Sum of digits of {original_number} is: {sum_digits}")
```

OUTPUT; -

Enter a number: 7777777

Sum of digits of 7777777 is: 49

5.WAP to calculate GCD of two numbers.

INPUT :-

```
# Input two numbers from user
num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))

# Initialize variables
a = num1
b = num2

# Calculate GCD using Euclidean algorithm
while b != 0:
    a, b = b, a % b

# Print the GCD
print(f"GCD of {num1} and {num2} is: {a}")
```

OUTPUT;-

Enter first number: 7

Enter second number: 11

GCD of 7 and 11 is: 1

6.WAP to reverse a number.

INPUT:-

```
# Input a number from user
num = int(input("Enter a number: "))

# Initialize variables
reversed_num = 0
original_num = num

# Reverse the number using a while loop
while num > 0:
    remainder = num % 10
    reversed_num = reversed_num * 10 + remainder
    num //= 10

# Print the reversed number
print(f"Original number: {original_num}")
print(f"Reversed number: {reversed_num}")
```

OUTPUT:-

Enter a number: 11082005

Original number: 11082005

Reversed number: 50028011

N.B. Q1-Q6 using while loop

7.WAP to calculate factorial of a number.

INPUT :-

```
# Input a number from user
num = int(input("Enter a number: "))
```

```
# Initialize factorial to 1
factorial = 1

# Calculate factorial using a for loop
for i in range(1, num + 1):
    factorial *= i

# Print the factorial
print(f"Factorial of {num} is: {factorial}")
```

OUTPUT: -

```
Enter a number: 7

Factorial of 7 is: 5040
```

8.WAP to check whether a given no. Is prime or composite.

INPUT:-

```
# Input a number from user
num = int(input("Enter a number: "))

# Initialize flag to check if number is prime
is_prime = True

# Check if the number is prime or composite
if num > 1:
    # Iterate over potential divisors from 2 to sqrt(num)
    for i in range(2, int(num**0.5) + 1):
        if num % i == 0:
            is_prime = False
            break
else:
```

```
    is_prime = False

# Print the result
if is_prime:
    print(f"{num} is a prime number.")
else:
    print(f"{num} is a composite number.")
```

OUTPUT: -

```
Enter a number: 7

7 is a prime number.
```

9.WAP to print the sum of series.

1+1/2+1/3+1/4+.....+1/n

INPUT: -

```
# Input the value of n from user
n = int(input("Enter the value of n: "))

# Initialize sum variable
sum_series = 0.0

# Calculate sum of the series
for i in range(1, n + 1):
    sum_series += 1 / i

# Print the sum of the series
print(f"Sum of the series 1 + 1/2 + 1/3 + ... + 1/{n} is: {sum_series}")
```

OUTPUT: -

```
Enter the value of n: 7
```

Sum of the series 1 + 1/2 + 1/3 + ... + 1/7 is: 2.5928571428571425

10.WAP to sum of squares of even numbers.

INPUT:-

```
# Input the value of n from user
n = int(input("Enter the value of n: "))

# Initialize sum variable
sum_of_squares_even = 0

# Calculate sum of squares of even numbers
for i in range(2, n + 1, 2):
    sum_of_squares_even += i ** 2

# Print the sum of squares of even numbers
print(f"Sum of squares of even numbers up to {n} is: {sum_of_squares_even}")
```

OUTPUT:-

Enter the value of n: 7

Sum of squares of even numbers up to 7 is: 56