Assignment3

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[1]:
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[5]:
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#1.        WAP to print the sum of the first n natural numbers using for loop
n = int(input("Enter the value of n: "))
sum = 0
for i in range(n+1):
    sum += i

print(f"Sum of first {n} natural numbers is {sum}")
```

```
Enter the value of n:  5
```

```
Sum of first 5 natural numbers is 15
```

[14]:
```
#2.        Count the number of even and odd numbers from a series of numbers P␣
 ↪to Q using for loop.

print("Finding the number of even and odd numbers from P to Q.")
p = int(input("Enter the value of P: "))
q = int(input("Enter the value of Q: "))

odd_num = 0
even_num = 0

if p < q:
    for i in range(q+1):
        if i == 0:
            continue
        if i >= p and i % 2 == 0:
            even_num+= 1
        elif i >= p and i % 2 != 0:
            odd_num+= 1

    print(f"From P to Q: \n Odd numbers are: {odd_num} \n Even numbers are:␣
 ↪{even_num}")
else:
```

```
    print("The value of q must be greater than p.")
```

```
Finding the number of even and odd numbers from P to Q.

Enter the value of P:  0
Enter the value of Q:  5

From P to Q:
 Odd numbers are: 3
 Even numbers are: 2
```

[36]:
```
#3.        Write a program to check entered number is prime or not (make use of␣
 ↪break)

n = int(input("Enter a number to check if its prime or not: "))

prime = True

if n == 0 or n == 1:
    print(f"{n} is not a prine number.")
else:
    for i in range(2, n):
        if n % i == 0:
            prime = False
            break
    if prime:
        print(f"{n} is a prime number.")
    else:
        print(f"{n} is not a prime number.")
```

```
Enter a number to check if its prime or not:  28

28 is not a prime number.
```

[15]:
```
#4.        Display the Fibonacci sequence up to nth term where n is provided by␣
 ↪the user (use while loop).

n = int(input("Enter the nth term:"))

a, b = 0, 1 # Initializing First two terms of fibonacci sequence
i = 1
while(i <= n):
    print(a, end = " ")
    c = a + b
    a = b
    b = c
    i += 1
```

```
Enter the nth term: 10

0 1 1 2 3 5 8 13 21 34
```

[25]:
```
# 5.        Print the following pattern using nested loop.
#          *
#         ***
#        *****

for i in range(1, 4):
    space = 3 - i
    stars = 2*i - 1

    print(" " * space, "*" * stars)
```

```
  *
 ***
*****
```

[27]:
```
#6.        WAP to traverse string using for loop

str = input("Enter a string: ")

for i in range(len(str)):
    print(str[i], end = "")
```

```
Enter a string:  Siddhant Jeevan Puranik
```

```
Siddhant Jeevan Puranik
```

[28]:
```
#7.        WAP to traverse string using while loop

str = input("Enter a string: ")
i = 0

while(i< len(str)):
    print(str[i], end="")
    i +=1
```

```
Enter a string:  Siddhant Jeevan Puranik
```

```
Siddhant Jeevan Puranik
```

[38]:
```
#8.        Demonstrate 5 string operations using string function

#1: len() -> Returns the length of the string.

string = "12345678"
print(len(string))

#2: lower() -> Returns the string in lowercase.

string = "hElLo WoRlD 1234"
print(string.lower())
```

```
#3: upper() -> Returns the string in uppercase.

string = "heLLo woRld 1234"
print(string.upper())

#4: isalpha() -> Returns true if all the characters in the string are␣
 ↪alphabetic, else returns False.

string = "Hello "
print(string.isalpha()) # Would Return False because of the space character.

string = "HeLLo"
print(string.isalpha()) # Would Return True as the string has only alphabetic␣
 ↪characters.

#5: strip() -> Removes all the space characters from the start and the end in a␣
 ↪string.

string = "     Please Remove  the unwanted spaces, Thanks!    "
print(string) # With spaces in the start and end
print(string.strip()) # Spaces are removed from the beginning and the end
```

```
8
hello world 1234
HELLO WORLD 1234
False
True
     Please Remove  the unwanted spaces, Thanks!
Please Remove  the unwanted spaces, Thanks!
```

[48]:
```
#9.        Demonstrate using continue statement in loop

print("The 'continue' statement helps skip the current iteration and skip to␣
 ↪the next iteration, while in a loop.")
print("It is often used with a condition so the current iteration is skipped␣
 ↪when the condition is met. \nExample: ")

for i in range(1, 10):
    if i == 4 or i == 7:
        continue # Here, the i = 4 and the i = 7 iteration will be skipped and␣
 ↪the next iterations will be executed.
    print(i)
```

```
The 'continue' statement helps skip the current iteration and skip to the next
iteration, while in a loop.
It is often used with a condition so the current iteration is skipped when the
condition is met.
```

Example:
1
2
3
5
6
8
9

[55]:
```
# 10.        Demonstrate use of Pass in loop and else with loop

print("Pass statement is used to represent empty block also known as a Suite.")
print("It does not perform any operations.")

for i in range(5):
    if i == 3:
        pass
    else:
        print(i)

print("\nElse is used to indicate that the loop has ran successfully without␣
 ↪breaking.")
print("Meaning that else will not execute for a loop which has been terminated␣
 ↪by the 'break' statement.")

for i in range(5):
    print(i)
else:
    print("Loop completed.")

print("\nUsing break: ")
for i in range(5):
    if i == 4:
        break
    print(i)
else:
    print("Loop completed.")
```

```
Pass statement is used to represent empty block also known as a Suite.
It does not perform any operations.
0
1
2
4

Else is used to indicate that the loop has ran successfully without breaking.
Meaning that else will not execute for a loop which has been terminated by the
'break' statement.
```

```
0
1
2
3
4
Loop completed.

Using break:
0
1
2
3
```