01/9/25

Task 8 Implement python generator and decorators

Aim: write a python program to Implement python generator and decorators

8.1 Write a python program that includes generator function to produce a sequence of numbers. The generator should be able to:

a) Produce a sequence of numbers when provided with start, end, and step values

b) produce a default sequence of numbers starting from 0, ending at 10, and with a step 1 if no values are provided.

Produce a sequence of number when provided with start, end, and step values.

Algorithm:

1) Define Generator Functions:
   * Define the function number_sequence (start, end, step=1).
2) Initialize current value:
   * set current to the value of start
3) Generate sequence:
   * while current is less than (or) equal to end
      * yield the current value of current
      * Increment current by step.
4) Get User Input:
   * Read the starting number (start) from user input
   * Read the ending number (end) from user input
   * Read the step value (step) from user input.
5) Create Generator Object:
   * Create a generator object by calling number_sequence(start, end, step) with user_provided values
6) print Generated sequence:
   * Iterate over the value produced by the generator.

Output

```
Enter the starting number : 1
Enter the ending number : 50
enter the step value : 5
1
6
11
16
21
26
31
36
41
46
```

Program:

```
def number_sequence(start,end,step=1):
    current =start
    while current<= end:
        yield current
        current += step
start = int(input("Enter the starting number :"))
end = int(input("Enter the ending number:"))
step = int(input("Enter the step value:"))
#create the generator
sequence_generator=number_sequence(start, end,step)
# print the generated sequence of no for
print(number)
```

Program:

```
def number_sequence(start, end, step=1):
    current = start
    while current <= end:
        yield current
        current += step
start = int(input("Enter the starting number :"))
end = int(input("Enter the ending number:"))
step = int(input("Enter the step value:"))
# Create the generator
sequence_generator = number_sequence(start, end, step)
# Print the generated sequence of no for
print(number)
```

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Result: Thus the Implement python generator & decorators-