Assignment_4

March 30, 2024

```python
[1]: #Print numbers from 1 to 5 using a while loop.

num = 1
while num <= 5:
    print(num)
    num += 1
```

```
1
2
3
4
5
```

```python
[2]: #Calculate the sum of numbers from 1 to 10 using a while loop.

num = 1
total = 0

while num <= 10:
    total += num
    num += 1

print("The sum of numbers from 1 to 10 is:", total)
```

```
The sum of numbers from 1 to 10 is: 55
```

```python
[3]: #Calculate the factorial of a number using a for loop.

def factorial(n):
    result = 1
    for i in range(1, n + 1):
        result *= i
    return result

# Example: Calculate factorial of 5
number = 5
print("Factorial of", number, "is:", factorial(number))
```

Factorial of 5 is: 120

[4]:
```python
#Count the number of vowel in a string using a for loop.

def count_vowels(text):
    vowels = 'aeiouAEIOU'
    count = 0
    for char in text:
        if char in vowels:
            count += 1
    return count

# Example: Count vowels in a string
string = "Hello World"
print("Number of vowels in the string:", count_vowels(string))
```

Number of vowels in the string: 3

[5]:
```python
#Print a pattern using nested loop.


rows = 5

for i in range(1, rows + 1):

    for j in range(1, i + 1):
        print("*", end=" ")
    print()
```

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

[6]:
```python
#Generate a multiplication table using nested loops.


start = 1
end = 10


for i in range(start, end + 1):

    for j in range(start, end + 1):

        result = i * j
```

```python
        print(f"{i} * {j} = {result}", end="\t")
    print()
```

```
1 * 1 = 1       1 * 2 = 2       1 * 3 = 3       1 * 4 = 4       1 * 5 = 5
1 * 6 = 6       1 * 7 = 7       1 * 8 = 8       1 * 9 = 9       1 * 10 = 10
2 * 1 = 2       2 * 2 = 4       2 * 3 = 6       2 * 4 = 8       2 * 5 = 10
2 * 6 = 12      2 * 7 = 14      2 * 8 = 16      2 * 9 = 18      2 * 10 = 20
3 * 1 = 3       3 * 2 = 6       3 * 3 = 9       3 * 4 = 12      3 * 5 = 15
3 * 6 = 18      3 * 7 = 21      3 * 8 = 24      3 * 9 = 27      3 * 10 = 30
4 * 1 = 4       4 * 2 = 8       4 * 3 = 12      4 * 4 = 16      4 * 5 = 20
4 * 6 = 24      4 * 7 = 28      4 * 8 = 32      4 * 9 = 36      4 * 10 = 40
5 * 1 = 5       5 * 2 = 10      5 * 3 = 15      5 * 4 = 20      5 * 5 = 25
5 * 6 = 30      5 * 7 = 35      5 * 8 = 40      5 * 9 = 45      5 * 10 = 50
6 * 1 = 6       6 * 2 = 12      6 * 3 = 18      6 * 4 = 24      6 * 5 = 30
6 * 6 = 36      6 * 7 = 42      6 * 8 = 48      6 * 9 = 54      6 * 10 = 60
7 * 1 = 7       7 * 2 = 14      7 * 3 = 21      7 * 4 = 28      7 * 5 = 35
7 * 6 = 42      7 * 7 = 49      7 * 8 = 56      7 * 9 = 63      7 * 10 = 70
8 * 1 = 8       8 * 2 = 16      8 * 3 = 24      8 * 4 = 32      8 * 5 = 40
8 * 6 = 48      8 * 7 = 56      8 * 8 = 64      8 * 9 = 72      8 * 10 = 80
9 * 1 = 9       9 * 2 = 18      9 * 3 = 27      9 * 4 = 36      9 * 5 = 45
9 * 6 = 54      9 * 7 = 63      9 * 8 = 72      9 * 9 = 81      9 * 10 = 90
10 * 1 = 10     10 * 2 = 20     10 * 3 = 30     10 * 4 = 40     10 * 5 = 50
10 * 6 = 60     10 * 7 = 70     10 * 8 = 80     10 * 9 = 90     10 * 10 = 100
```

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