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DEPARTMENT OF INFORMATION TECHNOLOGY

Subject: Data Structure & Algorithm using Python(1st assignment)

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BATCH: 2020-2021

1)Write a python program to print the following pattern

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

Input:

```python
def triangle(n):


    k = n - 1


    for i in range(0, n):


        for j in range(0, k):
            print(end=" ")


        k = k - 1


        for j in range(0, i+1):


            print("* ", end="")


        print("\r")


n = 5
triangle(n)
```

Output:

```
PS E:\Career\Coding\Python\DSA> python -u "e:\Career\Coding\Python\DSA\Assignment1.py"
    *
   * *
  * * *
 * * * *
* * * * *
```

2. Write a python program to print Pyramid of Natural Numbers Less than 10

Pattern:

1
2 3 4
5 6 7 8 9

Input:

```python
current_num = 1
stop = 2
rows = 3

for i in range(rows):
    for column in range(1, stop):
        print(current_num, end=' ')
        current_num += 1
    print("")
    stop += 2
```

Output:

```
PS E:\Career\Coding\Python\DSA> python -u "e:\Career\Coding\Python\DSA\pyramid_of_natural_numbe.py"
1
2 3 4
5 6 7 8 9
```

3.)Write a Python program to print the Fibonacci series.

Input:

```python
nterms = int(input("How many terms? "))

n1, n2 = 0, 1
count = 0


if nterms <= 0:
   print("Please enter a positive integer")

elif nterms == 1:
   print("Fibonacci sequence upto",nterms,":")
   print(n1)

else:
   print("Fibonacci sequence:")
   while count < nterms:
      print(n1)
      nth = n1 + n2
      n1 = n2
      n2 = nth
      count += 1
```

Output:

```
PS E:\Career\Coding\Python\DSA> python -u "e:\Career\Coding\Python\DSA\fibonacci_series.py"
How many terms? 6
Fibonacci sequence:
0
1
1
2
3
5
```