

70) PERMUTATION SEQUENCE

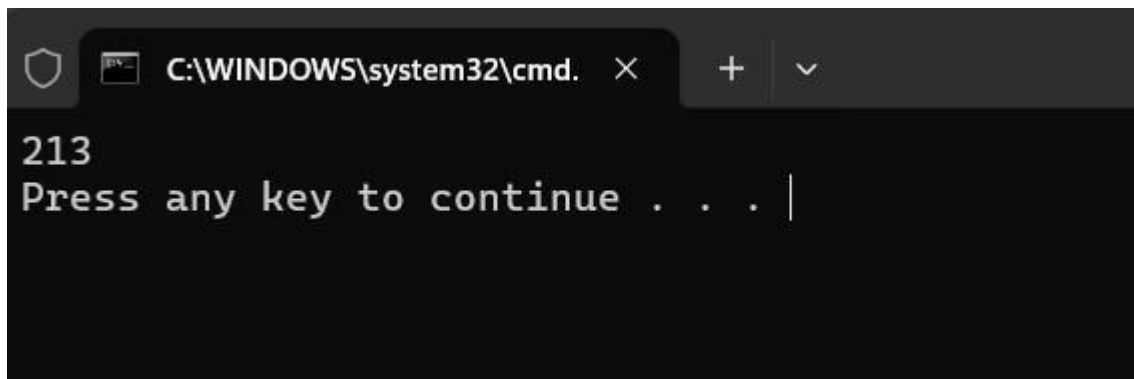
The set [1, 2, 3, ..., n] contains a total of $n!$ unique permutations.

CODE:

```
def getPermutation(n, k):
import math    factorials =
[1] * n
    digits = [str(i) for i in range(1, n+1)]
        for i in range(2, n):    factorials[i] =
factorials[i-1] * i
            k -= 1    result = []    for i in
reversed(range(n)):    index = k //
factorials[i]    k %= factorials[i]
        result.append(digits.pop(index))

    return ''.join(result) a=3
k=3
print(getPermutation(a,k))
```

OUTPUT:

A screenshot of a Windows command prompt window. The title bar shows the path 'C:\WINDOWS\system32\cmd.' and standard window controls. The command prompt displays the output '213' on the first line and 'Press any key to continue . . . |' on the second line, indicating the program has finished execution and is waiting for a key press.

TIME COMPLEXITY : $O(2^n)$