SNS COLLEGE OF ENGINEE

Kurumbapalayam(Po), Coimbatore – 641 107
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Department of Artificial Intelligence an

Course Name: 23ITB201 Data structures a

II Year / III semester

Unit I – List ADT

Topic: Recursive and non recursive Alg

Recursion and Non recu

n?

gramming technique where a function calls **itself within its ov**

ion to **break down a problem into smaller subproblems**, wh

ve Algorithm?

hm is an algorithm that uses recursion to solve a problem. Rec

y have two parts:

ch is a condition that stops the recursion.

: Which is a call to the function itself with a smaller version of

rsion:

torial: The factorial of a number n is the product of all the integ
of n can be defined recursively as:

$$\textbf{factorial(n) = n * factorial(n-1)}$$

onacci sequence: The Fibonacci sequence is a sequence of num
the sum of the two preceding numbers.
equence can be defined recursively as:

$$\textbf{fib(n) = fib(n-1) + fib(n-2)}$$

Non-recursive algorithm

Algorithm, also known as an iterative algorithm, involves solvi
on of a series of instructions until a specific condition is met, ty
function to call itself.

e algorithms, non-recursive algorithms do not involve function
lize looping structures such as for-loops, while-loops, and do-w
e specific requirements of the problem and programming lang

epeats the same series of steps, manipulating the problem's inp
ved.

ctorial Number: .

f a loop to multiply the number with every other number small

mber 1.

)

um)

ctorial Number: .

f a loop to multiply the number with every other number small

mber 1.

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um)


thank
you