

Today's agenda
Today's agenda b Recursion
b How to write Recursive code.
THOM TO PROPERTY COOK.
Why recursion? Ly Tree Ly Bockbacking
La Tree
6 Bockbocking
(x DP >>2 Ama 2am
6 DP ~ Amazon 6 Croath -> Croogle
Chock - Choogle
MANDOFICO



Recussion:

b Junction Calling itself.

ind perpose add (n, y); ind temps: mult (temps, 20); ind temps: mult (temps, 75); section may; soop (temps); int Sub (int n, int) section may; subt 25 mult 2	main C) 1		int add Cint m, inty 21
ind templ: add (n, y); ind templ: mult (templ, 30); ind templ: Sub (templ, 75); setum nxy; 3 S.o.p (templ);	id n:10;		- return onty;
int temps: mult (temps, 30); int mult (int n, int temps: Sub (temps, 75); setum nxy; S.o.p (temps);	in y = 20)		3
> int temp3: Sub (temp2, 75); setum nxy; 3 S.o.p (temp3);	ind temple	add (m, y);	
S.o.p (temp3);			· ·
	> int temp3:	Sub (temp2, 75);	3 setum nxy;
	S-0-p	(temp3)	
Subt years Subt years Subt years Subt years Subt years			int Sub Cint m, inty
Subt 2000	3		> return n-y;
and the second s	Subt 2000		3
Cafe Jeso	7-30		
al Jes	2230		
	coal year		
	The state of the s		
temp2 = 825 +cmp2 = 900	Jeno3 = 825		
" (A. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	an 1 3 = 20		



1/ Thought Process



<i>Q)</i>	Given N, find Sum of	no-s form (1N).
	Three magical ste	Ps of occursion.
	Faith: what your that	Junction Should do and have Juith He Junction works.
	main logic: Solving you	Smaller instance of some footlern
0	Base Condition! Solution	n to Smallest SubPooblem.
——in	d lum (int N) 1	Faith! Given N, Calcubre 4
U	if (N==1) { return 1; 3	othern Sum of N humbers.
	int temps Sum (N-1);	main logie:
	return temp +N;	Sum (n)
3		Sum (N-1) -> temp
		base ose:

Jam (1) = 1



int lum (int N) {				
1 if (No.1) & return 1; 3			Nei	1
2 ind temps Sum (N-1);		Sund		
Plus sewis sum (M-1).	, [ř t		
3 return tempth;	77	Sum	11.2	123
		7 4	-temP21	
3	3	()	- CANTAL	
		Y		123
		Sum	A 2 3	
Sum(N) 4	/		2:11	
		6		
Sum (N-1) 4		Sum	424	123
Sum (N-1) 4		1	tend=6	
4		10		
Sun (N·2) &	/		n=4	
		maint)		
1				
Sum (n-3)4				
-	\longrightarrow) 	
0 18				
	•/			
Sum (1)				



a) find Jactorial of N.

En: N:3 -> 3+2+1=6

N=4 -> 4 * 3 * 2 * 1: 24

ind fact (int N) {

Jaith: Given N, Calculate &

if (N:=1) { return 1; }

seturn factorial of N.

int temp = fact (N-1); main logic:

octum Not temps

3

Joes (m)

fact (1) = 1

lact (N-1) -> temp

lact (4) 6+4:24 Bose case:

lact(3) 2+3:6

Jact (3) 2+3:6

fact (2) 1+2=2

Boear till 9:37Pm

foct(s)

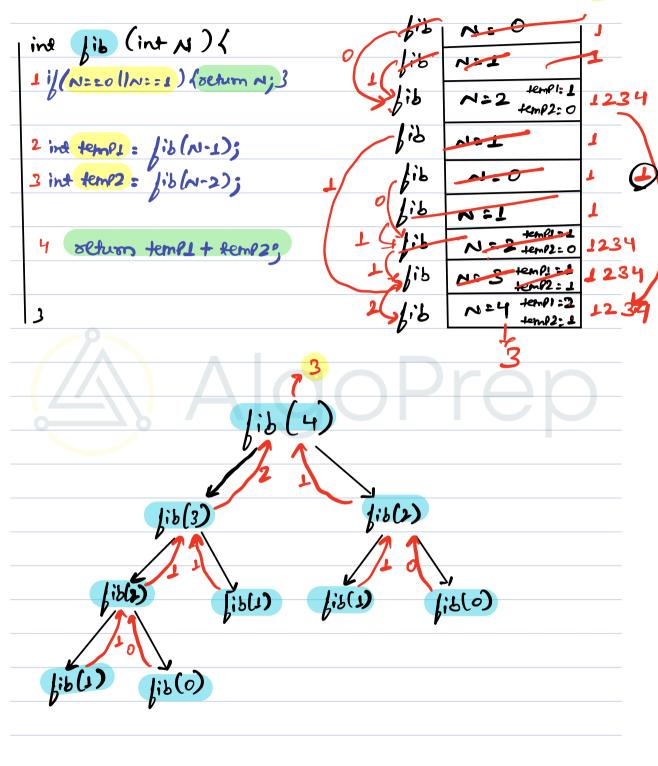


d fact (int N)	1;3			
		foot	Not	
2 ind temp = fact (N	~1);	food	No 2 tent I	123
3 octum N#ter	mp	2/	Alas	123
3		6(1	temp: 2	
		pet	12-47:6	123
	Alc	(24	Pre	D



Print Nth fibonacci number (m. 0 1 1 2 3 5 8 13 21 34 55 fib(N) = fib(N-1) + fib(N-2); int fib (int M) { Faith: Given N, Calculate f if(N=20|N=1) (beturn N; 3 return Nth fibonacci number. int temps = fib(N-1); int temps = fib(N-2); fib(N) Seturn temps + temps fib(N-1) Base Case:







1) Point incolasing L Given N, Point	all the numbers from 1-20.
	12345
void inc lint ~) {	Faith: Given N, Point no. for
if (N:=1) (Point (1);	1 to N.
octum; j	
ine (N-1);	main logic:
s.o.p(n);	(1,2,3,4
3	Bose case: 4 Point (1) for MESI.



أسعما	<u> </u>	-
نالم	Nº2	123
inc	N23	123
سعن	AL H	123
	نهجا	ine Ale 2

1 2 3 4 A D Prep

