

fibonacci Series:-

0 1 1 2 3 5 8 13 21 34 ...  
~~0~~ ~~1~~ ~~1~~ ~~2~~ ~~3~~ ~~5~~ ~~8~~ ~~13~~ ~~21~~ ~~34~~ ...  
 0 1 2 3 4 5 6 7 8 9 ...

n=7  
~~a = 0 1 1 2 3 5 8~~  
~~b = 1 1 2 3 5 8 13~~  
~~c = 1 2 3 5 8 13~~  
~~i = 2 3 4 5 6 7 8~~

fib(n) {  
 int a = 0;  
 int b = 1;  
 for (2 to n) {  
 int c = a + b;  
 a = b;  
 b = c;  
 }  
 return b;  
}

n=5  
~~a = 0 1 1 2 3~~  
~~b = 1 1 2 3 5~~  
~~c = 1 2 3 5~~  
~~i = 2 3 4 5~~

n	b	a
0		
1		
2	1	0
3	1	
4	2	1
5	3	2

→ 5

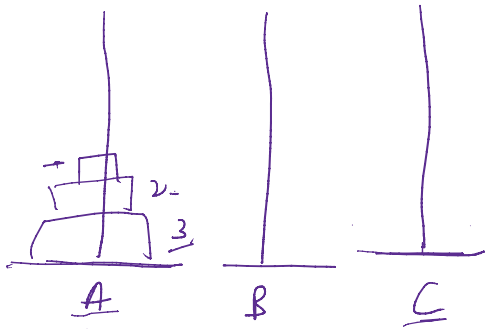
n=5  
 int fib(n) {  
 1 if (n == 0 || n == 1) return n;  
 2 int b = fib(n-1);  
 3 int a = fib(n-2);  
 4 return a + b;  
}

n	b	a
4	2	1

→ 3

n=4  
 int fib(n) {  
 1 if (n == 0 || n == 1) return n;  
 2 int b = fib(n-1);  
 3 int a = fib(n-2);  
 4 return a + b;  
}

Tower Of Hanoi :- n=2



=> No larger disk can be placed on to a smaller disk.

=> Only make one move at a time.

0				
0				
1	A	B	C	<del>1 2 3 4</del>
0				
0				
1	B	C	A	<del>1 2 3 4</del>
2	B	A	C	<del>1 2 3 4</del>
0	A	C	B	<del>1</del>
0	C	B	A	<del>1</del>
1	C	A	B	<del>1 2 3 4</del>
0	B	A	C	<del>1</del>
0	A	C	B	<del>1</del>
1	A	B	C	<del>1 2 3 4</del>
2	A	C	B	<del>1 2 3 4</del>
3	A	B	C	<del>1 2 3 4</del>

$n=3$   $A \rightarrow C$   
 $S \quad D$   
 $3 \quad A \quad B \quad C$   
 tower of Hanoi( $n, S, H, D$ )

1 if ( $n == 0$ ) return;

2 tower of Hanoi( $n-1, S, D, H$ );

3 Sout( $n+1 \rightarrow$  " [S  $\rightarrow$  D] );

4 tower of Hanoi( $n-1, H, S, D$ );

}

1- [A  $\rightarrow$  C]

2- [A  $\rightarrow$  B]

1- [C  $\rightarrow$  B]

3- [A  $\rightarrow$  C]

1- [B  $\rightarrow$  A]

2- [B  $\rightarrow$  C]

1- [A  $\rightarrow$  C]

1- [A  $\rightarrow$  C]

2- [A  $\rightarrow$  B]

1- [C  $\rightarrow$  B]

3- [A  $\rightarrow$  C]

1- [B  $\rightarrow$  A]

2- [B  $\rightarrow$  C]

1- [A  $\rightarrow$  C]

