Task-2(a)

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Imple mentation\_01 complexity Explanation: pun in the following function will fibo (5) level-1; funcial-2 fib6(4 fibo (1)\_lovel-2; fi 60(2) fibo(2) Abo (3) 1/+10 (i) fibo(o) fibo(i) f; bo(1)

In this case the time complexity would depend on number of hindren califinity While calculating the time complexity we formulate the idea roughly from tracing Total no. of function call = 20+2'+22+23+..+2n-1

[we put n-1 because the series

Stants from o] we can see 1) follows the is a geometrical a = first term and p= common Patio and Sum of Geometrical Progression Sn = a (p2-1) d=: 12/8/5/11/10/=di20 (27-1) =22-1 - time complexity is o (2").

The time complexity for the given code Sweet hybrou sap! - to tal times

In this case the functions is called only once and the top loop puns more or less (0-1) intimestations phoons in the Explanation time complexity will be 100 (n) on it rouns conotted to opo loop which we call Companison pri et gribogon 1000 astest Implementation - et is sto faster their implementation OL. In implementation-02, memoization is used Somumber of tractioned calls is reduced dpastically intov will be assigned to trustenances the rested looks will only Pun when value, of variable (ans) will be "not sorted." Now, the tester loop iterates through all the clapsent of the given army which takes (6) time thence the Bubble sont con be performed in O(n) time complexity, for best case (alocal) sonted array).