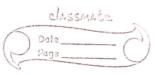
(05/06/2003) * Time Complexity Time Required to Pun the coole/program Time complexity of an algorithm quantities the amount of time taken by a program to run a function of length of Input Cog 2 int ni char; int ato; Porlint ist; (con; itt) · Brilint isl; iconsist) a=a+1; linear of to n. Space Complexity How much space Required for run the coole/prog - Running time should be minimum Space should be minimum to execut / Peun the program Then program should be efficient & fast

Store Coursely - Total Spacer Regalroad is 12 Byla Rogram space will be constant it does not depend on Input. into , int a = o , int i these all are Variable & Variable is 00 4 bytes 50 4 × 3 5 10 . Byten ... FOR PITTON OF SINC N - Int. on [n]; (int n) Space complexity is of to n. * Case in Mont Care ... y Pyrage cak. W. Best Can. Search . 20 10 5 100 300 17 238 r= 233. * = 20 - The element which got in Riest comparition is could best care - The element which need to compare multiple time for at last, or element not got it called worth are Program Regulard more time mont can line Complexity: - at last element will get

Pert can Time Complexity: got element at Aut position

Constant O(1).



	Space complexity		
	fire all a second of the secon		
209	int n; total space Required is 12 Bytes		
	cin >> n;		
	int a = 0: _ a bytes. Troyram space will be constant		
	cinstn; — Program space will be constant int a = 0; — 4 bytes it does not depend on Input. For (int i = 1; i <= n; itt)		
	interprint a = 0; int i these all ar		
	(a = a+1): Variable & Variable is 0.5 4 bytes 20		
	8 4.x 3 = 12. Byteo::		
<u> </u>	g Array OF Size N.		
	int om (n) itself (int n) or the		
	Space complexity is of ton:		
	· · · · · · · · · · · · · · · · · · ·		
*	Cases		
	i. Worst case		
	ji. Average cak		
	iii. Best case		
	210		
-	Search 20 10 5 100 300 17 238.		
	x= 233.		
	X = 20.		
	- The element which got in Riest comparition is could Best car		
	- The element which need to compare multiple time, or at		
	last, or element not got is called worst rate		
	Program Required more time		
	Program Complexity: - at last planeaute will ach		
	worst can Time Complexity: - at last element-will get		
	D. Completely Control of the position		
	Best can Time Complexity: got element at Ant position		
11	Constant O(1)		

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		(C. 11)
	- Average care	$\frac{a_1+2+3+\dots a_n}{n} = \frac{A(n+1)}{2}$
	Total Home	n
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12	Annual Space Conference Conferenc	1
	Best Case Complexity	: d n (pirectly proposional
	word care complexity	bo n)
	Average lake complexity	: A h
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	mest con t	$\begin{array}{ccc} & & & & & & & & & & & & & \\ & & & & & &$
	Average:	\rightarrow \bigcirc (n)
	Time complexity	'man dad
	eag int n,m;	eg int nimi
	(in >> n >> m)	でいかかかか。
	For (int i=1; i(=n;itt)	(inhabo)
	, n.	(ntial; ilen; itt)
	a=ati;	1
	9	For (j =1; j < =m; j+1)
	for (int jai) jeam; jata)	4
	1	2 - " \ m od()'
	a=a+1; ->m.	a=a+ rand();
,	0	•
	9	
1	Olb	O (nm)
	0 (n+m)	
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	and the second control to the second control	11111 11111
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		The said was too
		·
BO SEA	11	The state of the s

Int n, m; int n', cin >>n>>m; cinsn's for(inti=1); (=n; 14) { = n int a so; isn; For (mij=1; j(n;j+t) +m. while (ix=1) For (inticijikenjint) a = at rand U; 01D: Of Both 100ps are there then (nxm). n 7 1. D (nxm + n) = Comparibbn or anchion O(n) is faster than (p^2) . $n n^2 n^3$ not lunit lunit lunit n=2 2 unit 4 unit 8 wit n=3 Bunit qunk- 24 anic 0 (n3) is slower $O(n) < O(n^2) < O(n^3)$ b logn n-1 I unit ounit n=2 & onit 109,2=1. 0=1014 1024 on1+ 1092 (2) 1000922 O (logh) Require 12st the than O(n) o(logn) is better, that o(n) # sqrt(n) 10gn 10g - algorithm thour Run Irne (is better than book