## Algorithms

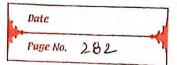
## 20. Miscellaneous

Handwritten by pankaj kumar

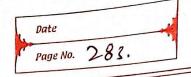
## Miscellane our

pate Page No. 2-8/

	kadanais Algorithms
9	Dutch Mational Plag (Three Pointer).
	the state of first on such as the time that the
	golden the say and paper the exercise.
	J=910: [v=151-00-0-10-10-10-10-10-10-10-10-10-10-10-
	(2 am = [1] 0 p; 1
Frank Been	How hyper of the grand was a second and
1	there are dele more sold and will all
	End of the many colonies of the state of
3	
Ly Comy	a third one the loop and has the said of adding a
B-300 & 0	is not contact the first only
	How His side and the out out and of
6000	is a section the same son the men does it was noting in
	- Alder that element
- 1000 PAY	commend of country the sending days was for
and wearing	a tip - media ly life about standard of the little of the standard of the
	the entire of when you where your in maximum.
of beeser	int max Sto Assaul (verso lings to oran) received
	104 and 1212 Language 12
	10 = 41-11 WI
	for first costs man story it is
	5 that = 1 mm [1]
	Jana Mis) +1
	2006 2106 SAPANA - CJEARCE
	CAPANAT PARATOR
	5 (17 24 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	January Ji
	O = KND3



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Kadaneir Algorithm! maximum sybarray sym in an Array
Given an integer away am find the contiguous sybgorgy.
(containing at legit one number) Allies
(containing at least one number) which has the largest symp
The Tubaran
$\underbrace{\text{EX!-} \left( \right) \text{ am} = [-2, 2, -3, 4, -1, 2, 2, 2, -5, 4]}_{\text{CD}}, 6/p = 6$
@ am=[1]; 0/9:2
Maive Approach: 4 sing two loop :- by generating all Mongy with
their sum and take maxim sym. O(n2)
Optimal solution- kadanes Algorithm (o(n):-
therate over the loop and find the sym by adding every element
 3111 2011 000000 0000 0000 0000000000000
 STORY WAS THOSE
after that element
V. Totaliera
at every step compare the sym to previous maxim sym and
accordingly store the makin subarraging annex culture
the ending of subgrowy where sym is maximum.
ode?
int max Syb Array (vector cints & nyms, vector cints & sybgray) of int ans = INT-MIM, sym zo:
1/18 tart = 0;
For Lind 120; ic nums. size(); i-f-f)
SUM-1= NYMSEIT;
it (sym > gn x) or
subaray. clears;
sybarray. push_back(s);
5 Sybaray, p434-back(i);
if (symco)x
S4M=0; (F.0(a))
S = S = S = I + 1; $S = S = I + 1;$ $S =$



(a)	Dutch Mational Plag algorithm: (Three pointer Approach :- (Sort an array of Or, 1, and 25):  Sx:- Onymr = [2, 0, 2, 1, 1, 0] (2) nymr = [40, 17]  op:- (0,0, 1,1,2,2] off:- [0,1,2]
	:- (Sort an away of Or, 1/4 and 21):
	( ) Doymr = [2, 0, 2, 1, 1, 0] (2) nyms = (40, 1)
	0/1- To, 1, 2, 27 O/1- To, 1, 2)
	07.7 (070, 71.7)
	Donnach 110 love southed (OCN 103/19)
	- Leaving count of values (05, 25\$25) and then
	Approach 2:- beeping count of values (05, 15 f 25) and then  Approach 2:- beeping count of values (05, 15 f 25) and then  Update the goody. by over writing. O(N) + O(N)
3	Approach 3:- 3-pointer Approach (Dutch Hational Flag Alg
	promoter named , low, mic
	in this approach, are will be using 3 pointers named, low, mis
	and high, we will be using these & pointers to move around
	Un trating The primary down there is to
	left and 2s to the Hight and and the since
<b>}</b>	be in the middle
	Step : O initialize, low = col, mid = col, high = con-13
	(2) (9) if ar mid ]==0; then swap (4r (104) 140 (112)).
	(1) if 900 (mid) == 1; Suap (900 conid] (900 chigh ) high
	Code:
	wid contolors (vector lint) & nums) of
	int lo = 0   thi= nums. size()-1;mit=0; while (mid<=hi)~
	Switch (nums Emid )
	Care 0:
	swap (nyms [10++] 1 nyms [mid++]);
	breek;
	mid++s
	(9) to 2:
	Surap (hums [mid], nums [hi];
	E break?
	5 /T(: 0(m)
	150121