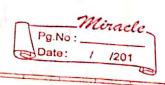
DAA. HW-1 Shivani Panchiwala. UTA ID- 1001982478 Askray containing integers from 1 to 10. but only number is missing (9 numbers in the array). (A). Pesudo code to find the missing number def missing (ask): total = 0 total = total + i seturn 55 - total Pesudo steps:-O. Define initial sum of elements in the array to be o.

O. Ahply a for loop to access every element in the array.

3. In every itteration add new element to total.

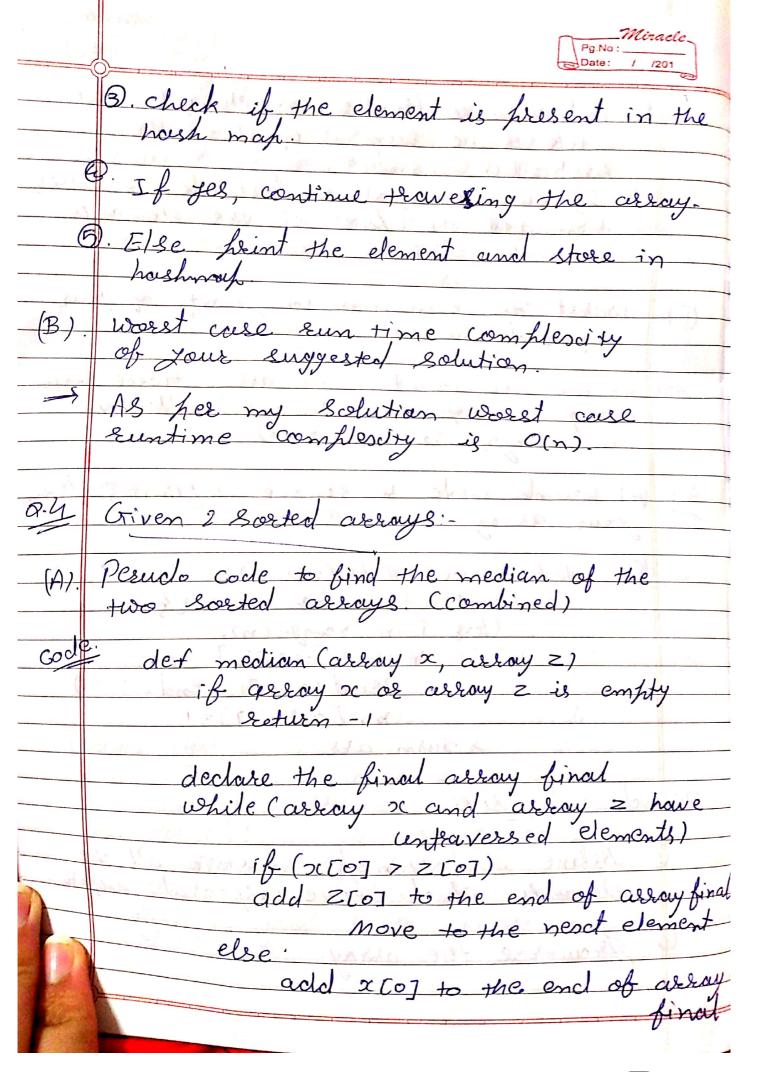
O. After loop ends return the answer by sub-tracting the total from the number As we howe, to elements, n*(n+1)/2 = 10*11/2 = 55.



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(D)	
D).	complexity of your suggested solution. As we are item to
1.15	Con the worlt call suntime
×.	complexity of your surgested and in
<u> </u>	1.
	As we are iteration of
	Once the time the ackay only and
	sensi me complexity will always
	for all cases.
00	As we are iterating the arkay only one once the time complexity will always remain o(n) for all cases.
- Q	triven an alkay of integers.
	Criven an array of integers:
(H).	of numbers whose sum is equal to a particular num
	of numbers without the find all hairs
-	harticular num.
	The state of the s
	Code.
10	-la () : 1 () : 1 () : 1
*	def pairs (n):
	Pairs = list ()
	for in range (0, n+1):
	for j in lange (0, n+1):
	If (it) ==n):
	Pairs - affend (tuffe ([i,j]))
	return pairs
	52
Pe	Esudo Stefs:
	and a system
	(i) (i) (ii) (ii) (ii) (ii) (ii) (ii) (
	G. Create an empty list.
	2. Apply a for loop to access every
	elements in the askay.
	3. Apply a second for look inside the
	3. Apply a second for loop inside the bevious loop to get every combination
	previous work to get every combination
	of elements.
Management of the state of the	
1	



50	
111	6. Add every combination of elements and check if the sum is equal to the
	check if the sum is equal to the
	particular number.
1.10	5. If sum is equal to particular number then add the pair of the elements
3	then add the hair of the elements
	into the list.
(B).	worst case sun time complexity of your
	worst case sun time complexity of your suggested solution.
	As we are iterating the array twice usen using 2 loops the time complexity will always remain o(n2).
	using 2 loops the time complexity
	well always remain O(n2).
8.3	(A) Derudo ando i
	(A). Pesudo code to remove duplicates from
	de Course
Coo	e. det remove-dups (arr, n):
-1	mp = {1:0 for in arre
	for in range cn:
	if mp [all [i]] == 0.
4.1	Print (arr [i] end = "")
	mf [art [i]]=1
	Leturn ark
-	and the first straight of the
Pesu	do code steps:
1	e ala basing in
	elements which have appeared before.
	elements which have appeared before.
4	
(3).	Fecurerse the array.
- ()-	



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	the section of
	move to the next element.
	while (or has untraversed elements)
	add x[0] to the end of final
	nove to the next element
	The state of the s
	while (2 hors untroversed elements)
	add 2 to 7 to the end of final Move to the next element.
	if (len (final) 1, 2 = = 0)
	median = (final [middle] +
Sec. 1	if (len (final) 1.2 = =0) median = (final [middle] + final [middle +1]/2.
	median = final [middle +1]
	pinal cmiddle +1]
	Leturn median.
	The top when end (A &) to day
(B).	worst case sun diver an 11.
	worst case sun time complexity of your
	0(m+h) 0(m+n)
	where m is length of allay 1
0	where m is length of array 1 n is length of array 2.
9.3	102 100 110 110
	Sort hoppen and what is the west
	Case been time complexity in term of
	big 0?
	tobic sit was the state of the

It depends on the steategy steategy bore choosing hivet. In early versions of arick sort where the left most of los eight most element is choosen as a fivot, the worst occur in the following cases. 1) Alray is already sorted in the Same order. Achay is already soleted in severse 3. All elements are the Same.
(a special case of care, 82) Therefore the time complexity of the Quick Sort algorithm in worst case is [N+(N-1)+(N-2)+(N-3)+...+2] $\frac{N(N+1)}{2}-1 = 0(N^2) = 0(n^2)$ Sort happen and what is the best case run time complexity in when does the best case of bubble The best care for bubble sort occurs
when the list is already Sorted of
nearly sorted. In the case where
the tist is already sorted, bubble
Sort will terminate after the first

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elle made.
is O(n).
y of Insertion the situation ge & worst

itelection, since no swaps we -> best case suntime complexity what is the sentime complexity Solt in all 3 cases ? Explain - which result is best, average Case complexity? world case: O(n2) when we apply insertion sort on a reverse sorted array, it will insert each clement at the beginning of the Sorted Sub-array, insertion Sort. Average case: O(n2) when the alray elements are in landom order, the average lunning time is >> Best case: o(n) When we initiate insertion sort Solted alray, it will only compare each element to its predecessor, there by Lequising netters to soft the already Solted array of nelements.