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**TEST 1**

QUESTION 1

lst = [14,8,-23,4,6,10,-8,5,5,11]

maxSum = lst[0]

sumz = 0

for i in range(0, len(lst)):

sumz += lst[i]

if sumz <0:

sumz = 0

elif maxSum < sumz:

maxSum = sumz

print("Maximum sub Array Sum =", maxSum)

1. The data structure being used to store the numbers in the code is a list. A list is a data structure that stores a collection of items in a linear order.
2. Initializing maxSum with the first element of the list also makes the algorithm more efficient. If maxSum were not initialized, the algorithm would have to check each element of the list to see if it is greater than the current maximum sum. This would be more time-consuming than simply initializing maxSum with the first element of the list and then only checking the remaining elements if the current sum is greater than maxSum.
3. The for loop iterates through the list by incrementing the variable i which is the index from 0 to len(lst) - 1. The purpose of the sumz variable is to store the sum of the elements in the current subarray. It is updated within the loop by adding the current element of the list to it.
4. The code identifies the maximum subarray sum by starting with the sum of the first element in the list which is **maxSum** and then adding each subsequent element to the sum. If the sum becomes negative, the sum is **sumz** which is **zero**. If the sum is greater than the current , the maximum sum is updated to the new sum. The code prints the maximum sum at the end.
5. The time complexity of this code is O(n), where n is the length of the list. This is because the code iterates through the list once, and each iteration takes constant time. The choice of data structure and algorithm contribute to its efficiency by allowing the code to access and update the list quickly.The algorithm uses a for loop to iterate through the list, which is a simple and efficient way to access the elements.

QUESTION 2.(practical)

QUESTION 3(Objectives)

1. C
2. B
3. B
4. A
5. D
6. A
7. A
8. d
9. B
10. A