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M23B23/004

BSCS

Question 1

a) A list is used because it is suitable for iterating through an array as well as allowing easy indexing and access to the elements

b) Initializing MaxSum allows us to give the algorithm a correct starting point for comparison since some of the array elements are negative and if not initialized, an incorrect result will be given as output

c) The loop iterates through the list using “i” and uses the sumz variable to keep track of the sum of sub arrays. If sumz is negative, it resets to 0 ensuring that negative sub arrays are not included in the sum

d) The code identifies the maximum sub array sum by comparing maxSum with sumz. If sumz becomes greater than maxSum, maxSum is updated with the value of sumz. This update occurs when the algorithm finds a sub array with a sum greater than the previously recorded maximum sub array sum.

e) The algorithm has a linear time complexity which is due to the single loop that iterates through the list once. This approach is efficient and performs well even with large input lists.

Objectives

1) C

2) B

3) B

4) A

5) C

6) C

7) A

8) B

9) A

10) B