let said opt(i) represent the largest sum of subsequences from a(1) to a(i)

then for opt(1) we have

opt(1) = a(1)

opt(2) = MAX(a(1),a(2))

let them to be the base case

then recursively:

we have opt(i) = MAX(opt(i-1),opt(i-2)+A(i))

this will takes O(2n) = O(n) in the worst case.