

# Be a Dynamo!

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Assume that you have an array of integers  $C$  with indexes  $1 \dots n$ .  
Consider the following recurrence:

$$A(i) = \begin{cases} 1 & \text{if } i < 5 \text{ or } i > n - 5 \\ \min(C[i - 1] + A(i - 1), C[i - 2] + A(i - 2)) & \text{if } 5 \leq i < \lfloor \frac{n}{2} \rfloor \\ \min(C[i - 1] + A(i - 1), C[i + 1] + A(i + 1)) & \text{if } i = \lfloor \frac{n}{2} \rfloor \\ \min(C[i + 1] + A(i + 1), C[i + 2] + A(i + 2)) & \text{otherwise} \end{cases}$$

Convert this to an efficient dynamic programming solution that computes  $A(\lfloor \frac{n}{2} \rfloor)$ . Your solution should take  $C$  (and  $n$  if desired) as a parameter. Feel free to assume you have a helper function `IsPow2(x)` that returns true if  $x$  is a power of 2.

