# Genetic Alignment

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### Scoring Algorithm Analysis

Space Complexity: The scoring algorithm works by reusing two List<int> to calculate the new values. The first row always holds previous values, and the second rows is where the new values are computed. Then, after each iteration, the two lists are swapped and reused. Because the scoring algorithm uses two n-length rows, the total space complexity is 2n, which falls in the O(n) space complexity.

Time Complexity: The scoring algorithm still requires the same number of calculations to derive each cell in the DP table as the extraction algorithm does. This calculation is performed almost identically, by iterating over each cell (at most n2 cells), then calculating the minimum cost for moving down, right, or diagonally and assigning it to the new cell.