

# Analysis Assignment 2

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## Code Explanation:

- ☐ I created a new static class called res that stores 3 parameters the 2 strings after the alignment and the alignment score which is a double
- ☐ There is a threshold used the returns 0.0 if the score is less than 1 to the power of -10 as the double has a very high accuracy
- ☐ First we initialize the temp array using the values that we already have from the inputted scoring matrix
- ☐ Dynamic programming is used to calculate the scores and places it in the temp array using the search or match or delete variables
- ☐ We then traceback the temp array and fill the strings that contain the alignment result to be able to output it
- ☐ The score is taken from the last cell in the temp array

## Time Complexity:

- ☐ Two loops for initializing the first row and first column.  $O(m + n)$
- ☐ Two nested loops for the dynamic programming section which fills the temp array.  $O(m*n)$
- ☐ Traceback loop will have complexity of  $O(\text{Max}(m,n))$
- ☐ Where m and n are the length of strings x and y respectively