Examples for Hirshberg's

Sam McCauley

June 18, 2020

Let's say our problem is to find the series of edits between String 1 = testing and String 2 = aaatestingaa. This is the final test case in testData.txt. The correct answer is dddmmmmmmmdd.

The following is the dynamic programming table generated for this instance. My implementation has the "empty" row and column; your implementation may not.

		a	a	a	t	e	s	t	i	n	g	a	a
	0	1	2	3	4	5	6	7	8	9	10	11	12
t	1	1	2	3	3	4	5	6	7	8	9	10	11
е	2	2	2	3	4	3	4	5	6	7	8	9	10
\mathbf{S}	3	3	3	3	4	4	3	4	5	6	7	8	9
t	4	4	4	4	3	4	4	3	4	5	6	7	8
i	5	5	5	5	4	4	5	4	3	4	5	6	7
n	6	6	6	6	5	5	5	5	4	3	4	5	6
g	7	7	7	7	6	6	6	6	5	4	3	4	5

The following is the tree of recursive calls for the same example, with String1 = testing and String2 = aaatestingaa. In each tree node I have written both strings (labelled '1' and '2'), as well as the solution string (labelled 'S'). The following tree is for my implementation, and may not be identical to yours. (In particular, my base case had String1 of length 1 or String2 of length 0; furthermore I rounded down when dividing String1.)

