Iterative vs. Memoized LCS-Length

Peter Danenberg

September 14, 2008

Iterative LCS-Length (figure 1), whose complexity is asymptotically equivalent, performs more calculations than memoized LCS-Length (figure 2).

i, j	0	1	0	1	1	0	1	1	0
1	0	1	1	1	1	1	1	1	1
0	1	1	2	2	2	2	2	2	2
0	1	1	2	2	2	3	3	3	3
1	1	2	2	3	3	3	4	4	4
0	1	2	3	3	3	4	4	4	5
1	1	2	3	4	4	4	5	5	5
0	1	2	3	4	4	5	5	5	6
1	1	2	3	4	5	5	6	6	6

Figure 1: Paths calculated by iterative LCS-Length

i, j	0	1	0	1	1	0	1	1	0
1		1		1	1				
0	1	1	2	2	2				
0	1		2	2		3			
1		2		3	3		4		
0			3	3		4	4		
1					4		5	5	
0						5	5		6
1								6	6

Figure 2: Paths calculated by memoized LCS-Length