Sean Eaton

CSS501

Program 2, Part 2

String X:

ACCGTCTTAGCGATCAACACATTTAACAACGCGCCGCACCCCCCGTCAAACGAGCTTTTGGGCTCTTGTCCTTTTACAAGCTTCACGACGCATACAGCCTTGATCAACGGTTTGATCTGTCTCCCTTCAGCTGGCTTTAAAGGACATACATATGAAGGCCTTAATAAGGTCCGGGAACTCCACATATTCGGTACTGGGCAAACCCCATGAACCACCTCAACATGAAGAGTCCGAGGACTCTCACGATCCACCAATGCAGATCGGAACTGTGCGATCGCGTAATGAGCCGAGTACTTGGTTTGTGTTTAGGTTATGGGGGCCGGGAGCCGGTTCAATATAAGGAAGTAGTTGCAGATTAGTTGTTGCGAACGGTCATAAATTTGATGGGTAAACGTGAACTTAACAAACCGTGATAGCTAATCCTATGCATCCCTTACGTGGATCGACTCGAGTACCCAGGTGAACCGACTACTTGATAACCGGAAATCGCGGTATAAAAGCGCTCACGGTCAGGAGATATACCTCCAAGCAGTAGTCTTTCTGAGCCTAGAGTAGTAAATTACAGGGACGATGTCTTTTACCGAGGCAACATTTTATTGAGAATCACATGAGGCACAGGTAAAGGCGACATCACGATCGAGATCAACCCCTACTTGTTCAAAACATTGAGAACCAGCTCTGTTTTGGAACCTAGAAAGATAACGCATCCGCTTGATATTCCACGGCTTGTCCCTCTTGTGCGGTCCATCTATCGGAGTTTCCTCCGATACGACCCGCAATGTTTCCAGGCGTACGGTACTTTATGAATACACTCGCGCTGTAACCTGTTATGTGAAACACACACGACAGAGCTTCGCGTGGGCCCAGCGACCCGGTAATACTACATCACCGCACACGACCTCGAGCAGTCTTTGCCGGCGTCCGTAAGTAGTCTAAAGTTGTGTTGATGCTTGGGGTTAAAGCTAAATCGTCCGCAGAATACGACTCTCATCCCAAT

String Y:

ACCCGCACGCGCTTTGGTCTAGATTCTAGCTCCAACTTGCCTGCTAGATACTCTGTTAAAAGATGGTTTTACAACCCCCTCCTCTGTCCCTGGGGTATTATATAATACGTCGGATAGTCAGGTACAAATACAAGTGGGTGGGAATACTTTTCCTCGGATCCTAGACCACGGATTACTGCGTGGTTGACAAGAGTCGGCCCGGAGGGAAACGTGAAGGTTAGTGCAATTAAAGTCTCTAATGTGAAGCCTCCGCGAAGCGAGGAGTTTCTGAGATCGAGTACTATTTAGAGTTCGAAATCACGGCTTAACCTCACTGCCACGCATAACTTGCCGGCAATCCAGTTTTGCAACGATACTTAATTTGTGCAGCTCATCTTTGCTGTCCAGAAATAGAGCTAGTCGATCTCATCTTGCGGGTAGCCAGAAGTCCTACCGTCTCCTCCATGTAGCTTAAAAATTTCGGTGAGGATCAAAAATGATAAACGTGACAGGTAAGCTCCTACGTCTATCCTATGACCCCCGCGGCAGAATAGGTTGGTAGTGTTAGTGCGTGAGCTGGTAGAATAGAGCACACTTAGGGAAACGGGAACCGTTATGTAGGGCTGCGACACACAAAAAAGTGTTCGTTGGTAAGCTGCCTCTCCACTAAACAGGATTTCTCTGGATGATCCCATCGAAGCAAGTTACGCACCACGCCGAGGCGGACCCTGGTACTAGCTGCCCCCCCCTTTATGGGGCGCTCGTACATCAAGATGATCGCGGACTCAACCTGATTACGAGTTGTCCAAGTAGTCCAGGGTAAGAGAAACTGGAGAGA

Longest Common Subsequence:

ACCGCAGCGCCAATTTACAACGCCGCACCGTAAAAGTGGTTTTACAACCCCCTCCTTGTCCGGTTTATTTCTCTAGTCAGGTACAAAACAATGGTGGGAATACTTTTCTGGACCTAACCACGGATCCGGGTTGACAAGAGTCGGCCCGGAGGGAACGTGAGGTTAGTCAATTAAAGTTCAATGTGTGCGAACGGATTTTGAGGGTACTATTAACAAACCGGCTAACCTATGCCCCTACTTGCCGGCCCAGTGAACGATACTTAATTTGCGCTCACGGTCAGAAATAGAGTAGTCTTTCTGCGGTAGAAATTACCGTCTTCCAGGCAAATTTTGAGATCAATGAGGACAGGTAAGCTCACGTCATCAACCCCCGCAAAATTGGAGTGTTTGGACTGAGATAAGCACCTTGAAACGGGCCTTTGTGGGTCCACACAGTTTCTGTAAGCTGTTCCACTACGGATTTTGATATCCCTGAAGAGTACCACCACGCCGGGCGGACCCGGTACTACTGCCCCCCCCTTTGGGCGCCGTAATCAAGTGATCGGGAAACTAAATGTCCGCAGAAAGACTAAA

LCS Length:

573 characters

Runtime performance of lcs\_it\_test (iteratively finding lcs of two strings with local 2D matrix)\*:

Estimated Big-O: O(nm)

Runtime performance of lcs\_re (recursively finding lcs of two strings)\*:

Estimated Big-O: O(2n)

\*Note: Max time value set to 70,000 on both plots so comparison is clear

\*Note2: I’m not sure why, but excel wouldn’t let me pick more straight-forward x-axis values on the graph for lcs\_it\_test (for example: 1, 50, 100, 150, etc)