**Using seq1 and seq2, can you reproduce the alignments from figure 5.9, 5.11, 5.12?**

**5.9**

$ python assignment1\_joris.py -seqA THISLINE -seqB ISALIGNED -gap\_penalty 8 -end\_gap\_penalty 8

**Result:**

ISALIGNED

||

THISLINE-

Identity: 22.2222

**5.11**

**$** python assignment1\_joris.py -seqA THISLINE -seqB ISALIGNED -gap\_penalty 4 -end\_gap\_penalty 4

**Result:**

ISALIGNED

|| || ||

IS-LI-NE-

Identity: 66.6667

**5.12**

**$** python assignment1\_joris.py -seqA THISLINE -seqB ISALIGNED -gap\_penalty 4 -end\_gap\_penalty 4

does not give the same result

**Describe your traceback strategy in words. In case of equal scores from multiple cells, which direction is preferred?**

The parent\_matrix object is filled positions of the “parent column”. The traceback starts at the extreme bottom right of the matrix and traverses back using the indexes of the parents until the topleft position is reached. Diagonal is always preferred because it makes more sense to do an actual alignment instead of a gap. Next left is preferred over top, but I don’t necessarily have good reasons for that decision.

**When you align seq1 and seq2 using different linear gap penalties, ranging from 1 to 20 (and no separate end gap penalty), how many different alignments do you get? List the different alignments. Explain the differences, given the settings.**

*When the gap cost increases past 4 the most optimal/true alignment can no longer be made.*

**Sizes 1,2,3,4**

ISALIGNED

|| || ||

IS-LI-NE-

**Sizes 5,6**

IS-ALIGNED

|| ||

THISLI-NE-

**Sizes 7 t/m 20**

ISALIGNED

||

THISLINE-