CS302 HW10

Problem 1
Compute the optimal alignment of strings 1221 and 2132 given a cost function defined such that

$$d(n_i, -) = n_i$$

$$d(-, n_j) = n_j.$$

$$d(n_i, n_j) = |n_i - n_j|$$

That is, the cost of deleting or inserting a symbol is equal to its value, and the cost of substituting one symbol for another is equal to the absolute difference in their values. For example, $d(2, 1) = 1$, $d(1, 3) = 2$, and $d(-, 4) = 4$.

Fill out the graph-looking dynamic programming matrix to the left with the optimal alignment costs and mark the corresponding link information on the graph-looking matrix to the right. When done, use backtracking to extract all possible alignments of the two strings.