Computer Science 2300: Lab 7

Due: April 16, 2008

1 Edit Distance

In this lab you are going to implement the *Edit Distance* dynamic program in C++. You have to read from a file that contains two strings of characters on the first two lines. After running the *edit distance* algorithm on them, you will output the the cost. You will also need to backtrack on the solution to print out the actual optimal alignment of the strings.

The executable should take two command-line arguments. The first argument will be the name of the data file from which to read the string and and the second argument will be `0` or `1`. `0` indicates that you only need to calculate the edit distance cost, while `1` indicates that you should also print out the alignment of the strings. For example consider the contents of the following sample data file `data`:

```
polynomial
exponential
```

The sample output should be as follows:

```
>./editdistance data 0
>Cost:6
>./editdistance data 1
>--polynomial
>exponen-tial
>Cost:6
```

2 Grading

You have been provided with two data files `data1` and `data2`. `data1` contains small strings. You have to printout the correct alignment for this input. `data2` contains large DNA sequences and you will need to print out just the cost of alignment for this input. Show your work to the TA to receive full credit.