

Wheels! (optional extension)

This assignment is due March 11th, 2004, 11:59pm (Pacific Time).

Description

In addition to the basic requirements, the following additional conditions apply to the wheels. You have to pay $\$c_1$ for pressing the right arrow key on each wheel and $\$c_2$ for pressing the left arrow key on each wheel. Now you have to minimize the total cost for reaching from an initial configuration to the final configuration.

For this, the input file will remain the same. However, you will have to accept two additional command line arguments which prescribe the cost for right and left key presses for each wheel. Thus the program will accept the command line arguments as follows:

```
wheels <inputfile> <outputfile> <right-cost> <left-cost>
```

where the right-cost and left-cost are integers signifying the cost in dollars of pressing the right and left key, respectively, on any wheel.

As you can see, the original assignment is a special case of bonus question if c_1 and c_2 are equal. However, the result will differ if we specify different costs for right and left key presses. For example, the result of the first input given above will be the following if the cost of pressing the right and left key were \$1 and \$20 respectively.

```
Input #1
8 0 5 6
9 0 5 6
0 0 5 6
0 0 6 6
0 0 7 6
0 0 8 6
0 0 9 6
0 0 0 6
0 0 0 7
0 1 0 7
```

0 2 0 7

0 3 0 7

0 4 0 7

0 5 0 7

1 5 0 7

2 5 0 7

3 5 0 7

4 5 0 7

5 5 0 7

6 5 0 7

6 5 0 8

Minimum keypresses required :20

Total cost : 20

Input #2

There is no way to reach from source to destination

Grading

This assignment is worth 25 extra points.