Exercise 10– Matrix Multiplication

Due Friday 30th October 2020 by 23:55. (2 marks)

For this exercise, you are to find the optimal order for multiplying a sequence of matrices.
Note: you do not actually have to perform any matrix multiplications.

As usual, your program will prompt for the name of an input file and the read and process the data contained in this file.

The file contains the following data.

N, the number of matrices to be multiplied together
N pairs of integers which are the row and column dimensions of each matrix.

E.g. The following input

```
3
3 4
4 2
2 5
```

Defines a problem in which we are to multiply three matrices, say M[0], M[1] and M[2], where:
M[0] has 3 rows and 4 columns;
M[1] has 4 rows and 2 columns;
M[2] has 2 rows and 5 columns.

Output for the program is the value of best(0,N), the minimum number of multiplications required to compute the matrix R = M[0]xM[1]x…xM[N-1].

You may leave your solution as a memoized, recursive formulation if you have problems formulating the looped iterative scheme.

As usual, do not use classes or STL.

Submit ex10.*ext* via moodle as usual where *ext* is one of c, cpp, java or py.