Exercice : Map – Reduce

A) Map

Write a Python script, called **countlines.py**, that will count the total number of lines in each of some Shakespeare plays, e.g. by using the command line call
python countlines.py shakespeare/hamlet shakespeare/allswellthatendswell
To do this, first write a function **count_lines_in_file(filename)** that counts the number of lines in a file.
Then, use the **standard map** function to count the number of lines in each Shakespeare play, printing the result as a list.

Examples[1] :

1- python countlines.py shakespeare/hamlet shakespeare/coriolanus
=> [('shakespeare/hamlet', 228), ('shakespeare/coriolanus', 5836)]

2- python countlines.py shakespeare/ cymbeline shakespeare/allswellthatendswell

=> [('shakespeare/cymbeline', 5485), ('shakespeare/allswellthatendswell', 4515)]

B) Reduce

Modify your **countlines.py** script so that, in addition to printing out the total number of lines in each Shakespeare play, it also uses **reduce** to print out the total number of lines in all Shakespeare plays.

Examples :

1- python countlines.py shakespeare/hamlet shakespeare/coriolanus
=> [('shakespeare/hamlet', 228), ('shakespeare/coriolanus', 5836)]
The total number of lines is 6064.

2- python countlines.py shakespeare/ cymbeline shakespeare/allswellthatendswell
=> [('shakespeare/cymbeline', 5485), ('shakespeare/allswellthatendswell', 4515)]
The total number of lines is 10000.

[1] *On utilise les arguments de la ligne de commande pour récupérer les fichiers (sys.argv)*