Exercise 1 - on pattern matching module

a. Write a Python script that matches a string that has the letter a followed by zero or more b's.

b. Write a Python script that matches a string that has the letter a followed by three b's.

c. Write a Python script to find sequences of one upper case letter followed by lower case letters.

e.g : 'Exercises On Pattern Matching' is the sample string.

or use this example : 'ExeRciSes On PaTtern MatChing'

d. Write a Python script that matches a word containing letter 'z', not at start or end of the word

e. Write a Python script to match a string that contains only upper and lowercase letters, numbers, and underscores.

f. Write a Python script to check for a number at the end of a string.

g. Write a Python program to find the substrings within a string.

Sample text : 'Python exercises, PHP exercises, C# exercises'

Pattern :'exercises'

Text to display : 'There are 3 instances of exercises in the input string.'

h. Write a Python script to remove all whitespaces from a string.

i. Capture pattern groups using pattern.search(string).groups() method. We have discussed in the class about group() method which stores the pattern.

groups() will group patterns into distinct groups.

for eg: if string is 'an example word:cat!!'

and pattern is r'word:(\w)(\w)\w',

then pattern.search(str).group() would print 'word:cat'

and pattern.search(str).groups() would print ('c', 'a') since you are grouping the patterns.

Exercise 2 - on functions and modules

a. Write a Python script to convert a date of yyyy-mm-dd format to dd-mm-yyyy format.

b. Write a Python script that counts lines and characters in a file (similar in spirit to “wc” on Unix).

code a Python module called library.py, which defines 3 fucntions :

countLines(file) function that reads an input file and counts the number of lines in it.

countChars(name) function that reads an input file and counts the number of characters in it.

countWords(name) function that reads an input file and counts the number of characters in it.

call library methods from other script by passing a filename

Exercise 3 : Telephone directory

Enter your first name,last name and phone seperated by comma. Input as many names as possible until you type 'stop' to break the loop.

Use pattern matching to validate whether the phone number you enter is Indian number of U.S number . An Indian phone number has 10 digits continously 8888888888

whereas U.S phone number has the following format : 303-460-8907.

Store the first name , last name, phone and country, and date timestamp into a output file called 'telephone_directory'.

country should be either India, U.S based on your validation using pattern matching.

let date timestamp be the current time and let it be of the format 'dd-mm-yyyy HH:MM:SS'.

Use 'Others' as country if pattern matching fails on either Indian or U.S patterns.

Give a report to print number of Indian records, U.S records and 'Others' records.

And within U.S records, print the person details who share the same area. the first 3 digit of U.S phone number is the area code. try using pattern.search(string).groups() method.