Introduction to Python II (Exercises 02)

1) Datetime module

   Write a function called extradays() that receives a date and an integer representing a number of extra days to be added to the passed date.

   Calculate the new date inside the function and return it.

2) Write a function datecomp() that receives two dates. The function calculates the number of days between the two dates and returns it. The function will also return the Boolean value **True** if the first date is earlier than the second date. The function returns two values.

   Test the function by prompting for two date values and passing them to the function

   Note: Use the method datetime.datetime.strptime() from the datetime module to convert your string dates (from input()) to date variables.

3) Bonus: Create a script that uses a function called simpleLogging. The function will receive a string with a message. Open a file for appending and write a line to the file in this format:

   SEQ DateTime Message (Where SEQ is 001, 002, 003, etc).

   Call the function from your main section in random intervals of 1 to 5 seconds. Call the function 10 times. Then read the file and display its content.

4) List Comprehensions (Simple)

   Write a program that uses a List Comprehension to do the following:

   . Starting with the following list:

   [2,-5,4,6,0,-3,-4,7,8,-8,-7,-1,1]

   . Create a new list with the square of all integers that are positive and odd.
   . Create a new list with the square of all integers that are positive and even.

   The result will be the following lists:

   [49,1]
   [4, 16, 36, 0, 64]

5) Rewrite the following small program using a list comprehension (instead of the looping structure found on the given code).

##This program creates a list that includes the word's length from all the words in a sentence, excluding the word "the". If you enter a dot at the end of the sentence, make sure to remove it (you can use trim())

Note: First try running the "original" program. (Just type it in your editor!)
See what the intended output is. The rewrite it by using a List Comprehension.

```
sentence = input("Enter a sentence: ")
words = sentence.strip(".").split()
word_lengths = []
for word in words:
   if word.upper()  != "THE":
      word_lengths.append(len(word))

print("Lengths of words found (Other than 'The'):", word_lengths)
```