Lab Session 02: Strings and Bisection Search

In this lab we will take a closer look at string operations.

Steps:

1 - Create a new file in your Spyder window and save it as lab003.py. **Note the folder where you stored the files.**

2 – Enter the following code in your file:

```
import os

print("Fun with strings")
pics = os.listdir("Pictures")
for picture in pics:
     print(picture)
```

3 – Observe the output. There should be 17 lines produced by the program.

4 – Modify the program to count the number of pictures.

5 – Next, modify the program to print only the names of the cat photos or the dog photos. One way to do this is to use the "in" operator covered in the slides. Another way is to the .startswith() function, which tells us if a string starts with some substring or not. Practice in your IPython console to see how that works.

6 – Strings also have a .split() function, which is able to split a string on some character. Using this .split() function (and that's the hint…) devise a means to print the names of only the odd-numbered files e.g dogs_1, cats_3, etc. Additionally you may go further with this function and print only the filename without the extension e.g cats_1 instead of cats_1.jpg.

7 – Write a program that loads one integer and prints the sum of its odd digits. The output has to be in the form: "The sum of the odd digits in number n is d"

```
Test data:

Input: –131723

Output: The sum of the odd digits in number -131723 is 15
```

Hint: Watch out for negative numbers!

8 - Repeat Problem 6 for a set of integer numbers. Exit when an integer of "zero" value is entered. Here is a pseudocode for this task:

```
n = input("The first number: ")
  while n != 0:
      # do what needs to be done #
      n = input("The next number: ")
```

If you are familiar with break you might want to use it for a cleaner solution.

Test data:

`Input: 13, –17, 888, 616, 0`

`Output: (the required sums are: 4, 8, 0, 1`

9 – Return to Problem Set 1 and solve the third part of the question. You can refresh your memory by studying your past solution (to the A/B part if you have it) or the past questions.

Good hunting