CS-UY 1114 LAB 10, Spring 2018

In this lab, you will learn about files, specifically:

- Reading and writing to a file
- Looping through a file line by line

Programming Questions:

1. Write a function, write_name(filename, first_name, last_name), that writes the full name consisting of first_name and last_name to a single line in a file called filename.

Example Usage:

```
write_name('write_name_test.txt', 'Charles', 'Darwin')
```

2. Write a function, write_random_numbers(filename, n), that writes n random integers in the range of 1 to 100, inclusive, to a file called filename, one on each line.

For example:
write_random_numbers('lab11_q2.txt', 5) would generate a text file named 'lab11_q2.txt' with the following contents:
56
23
42
89
15

3. Write a function, sum_column(filename), that should read a file that has exactly one integer on each line and return the sum of these integers. You may use the textfile you generated in Problem 4.

4. An HTML table, in its simplest form, consists of tags and contents. The format of the table is defined by the tags. In this exercise, you will be using the following tags:

```
<html> ... </html>
<table> ... </table>
<th> ... </th>
<tr> ... </tr>
<td> ... </td>
```

Like parentheses, HTML tags always appear in pairs and define the format for anything enclosed. For example, this is what the tag means and how it is used:

<html> and </html> declares that the content inside the tags is in HTML format
<table> and </table> defines whatever is inside a table
<tr> and </tr> defines **one row**
<th> and </th> defines table header
<td> and </td> defines row data

As an example, the statements in the left textbox generate the table shown on the right:
Write a function, html_table_generator(lst, file_to_write_to), that should take a 2-dimensional list as argument and a filename that represents the name of the html file. When you open the resulting file with a browser, you should see an HTML table. Your function should be general enough to work with any number of rows and columns.

The 2-dimensional list should look like this:

```
[[‘Header1”, “Header2”, ”Header3”, “Header4’], [“R1C1”, “R1C2”, “R1C3”, “R1C4”], [“R2C1”, “R2C2”, “R2C3”, “R2C4”], [“R3C1”, “R3C2”, “R3C3”, “R3C4”]]
```

The first list inside the list should always be the header of the HTML table. All subsequent lists should represent a row of data in the HTML Table. The output should look like this:

Here’s an example of a complete HTML5 document with a table.

```html
<html>
    <table>
        <tr>
            <th>Header 1</th>
            <th>Header 2</th>
            <th>Header 3</th>
            <th>Header 4</th>
        </tr>
        <tr>
            <td>R1C1</td>
            <td>R1C2</td>
            <td>R1C3</td>
            <td>R1C4</td>
        </tr>
        <tr>
            <td>R2C1</td>
            <td>R2C2</td>
            <td>R2C3</td>
            <td>R2C4</td>
        </tr>
        <tr>
            <td>R3C1</td>
            <td>R3C2</td>
            <td>R3C3</td>
            <td>R3C4</td>
        </tr>
    </table>
</html>
```

Here's how the above HTML file looks like in a browser