Advanced Web Development and Web Scraping
Spring 2020
Assignment #6 – Python programming

Note: You may complete this assignment by creating either a Jupyter Notebook or a Python script. In both cases, you should clearly label each question number (using either a comment or a Jupyter Notebook cell). This assignment must be turned in by ***hard copy*** at the beginning of class on the due date.

1. Store your first name, last name, and the number of courses you are taking in 3 different variables. Then output a statement of the form

   Mary Smith is taking 4 classes

   where *Mary*, *Smith*, and *4* are stored in the 3 variables.

2. Create a *list* that contains the following courses:
   CSC 210, MAT 243, MAT 244, CSC 231, CSC 301, CSC 450.

   a. Use the *len* function to output the number of courses in the list

   b. Use a loop to iterate through each course in the list and output all CSC courses (these are courses that contain *CSC*).

   c. Use a loop to iterate through each course in the list and output all CSC courses that are 200 level or higher. Hint: For a single course, e.g.,

      ```
      course = 'CSC 301',
      ```

      then the code `course.split()` returns a list containing two elements, `'CSC'` and `'301'`. In addition, for a string `s = '301'`, obtaining the first character of s using slicing will return `'3'`. Finally, you can convert a string to an integer using the `int()` function.

3. Create a Python dictionary for at least 3 courses that allows someone to look up the time of the course. For example, looking up *CSC-301* would return *MWF, 11:00 – 11:50*. Use the code below to prompt a user to enter the name of a course, which is stored in the variable `course`. Then either output the time the course is offered or *Course not found* if the course is not in the dictionary.

```
course = input('Enter a course: ')
```

4. In the Python web scraping module *BeautifulSoup* (which we will cover soon), element attributes are stored as Python dictionaries, where the keys of the dictionaries are the element attributes (such as *style*) and the values of the dictionary are the corresponding attribute values (such as *background-color: yellow*). Create a dictionary that represents each of the elements below (Note that your dictionary for (a) should have one key-value pair and your dictionary for (b) should have two.

a.
```
<div id = "section1"> This is section 1 </div>
```

b.
```
<h1 id = "heading" style = "color:red;">
Welcome to my Homepage
</h1>
```