Lab #6

Due Date: 09/30/2018, 11:59PM

Instructions:

- The work in this lab must be completed alone and must be your own. Do not copy code from online sources. That is considered plagiarism.
- Use the starter code provided on this CANVAS assignment. Do not change the function names or given started code on your script
- The file name must be LAB6.py (incorrect name files will get a -1 point deduction)
- A doctest is provided as an example of code functionality. Getting the same result as the doctest does not guarantee full credit. You are responsible for debugging and testing your code with enough data.
- Each function must return the output (Do not use print in your final submission, otherwise you get a -1 point deduction)
- Do not include test code outside any function in the upload. Printing unwanted or ill-formatted data to output will cause the test cases to fail. Remove all your testing code before uploading your file. Do not include the input() function in your submission.

Goal:

[10pts] Write the class *Vector* that supports the basic vector operations. Such operations are addition (+) and subtraction (-) of vectors of the same length, dot product (*) and multiplication (*) of a vector by a scalar. All methods must **return** (not print) the result

- You must use the special methods for those three operators in order to override its behavior
- You will need other special methods to achieve a legible object representation.
- Dot product and multiplication by scalar use the same operator, so you must check the type of the object in order to decide which operation you have to perform
- For addition and subtraction, you must check that vectors have the same length
- **The dot product results in a scalar, not a Vector**
- **The rest of the methods must return a Vector object**
- Test your code, this is how you ensure you get the most credit out of your work!!
- When returning error messages, make sure your string contains the word 'error'
- Check the doctest for object behavior examples. Vector size is variable
- Hint: Section 3.3.7 in https://docs.python.org/3/reference/datamodel.html

Deliverables:

- Submit your code in a file name LAB6.py to the Lab6 CANVAS assignment before the due date