Quest1: Basic Python Quest

Download from Canvas:

- basicPythonQuest.py
- test_basicPythonQuest.py

Task:

- Your mission is to complete the functions defined in **basicPythonQuest.py** and pass all the tests in **test_basicPythonQuest.py**.
- Each function contains a documentation comment that describes what each function must do to pass the tests. Each function returns an incorrect value so that the code will compile. Your task is to add code so that the tests will be satisfied.
- `Some functions contain a comment of the form:`
  `constraint: MAY NOT USE: sorted( ) function or sort library`
  `This means that you must use only basic Python data manipulation to implement the function.`
- The goal of this Quest is to give you an opportunity to practice basic Python data manipulation skills.

How to run the tests:

Setup files

- The easiest way to run the tests is to use FTP to transfer **basicPythonQuest.py** and **test_basicPythonQuest.py** to your Lyle account on one of the Lyle servers.
- After your code is copied, login to the Lyle server using **PuTTy** or use **ssh** to do a remote login from your PC or Mac using a command window.

Run pytest

- Be sure to have your code file and the test file in the same directory
- At the command prompt simply type: pytest -x
- Pytest will search your directory for any python programs that begin with **test_** and execute the tests. Several tests will be run on each function you need to write.
- The -x option means stop after first failure. This is recommended. The output will either be a single dot '.' to indicate that the test passed, or an 'F' to indicate failure.
- Work on each test until you have all dots indicating success

Writing the code

You may use an IDE or editor on your local PC to write the code or you can write code directly on the Lyle server. Most students prefer to develop code on their local PC or Mac and then upload the files to the Lyle server and run PyTest on the server.

Do I need to use the Lyle Server to run PyTest?

It is possible to run pytest from an IDE such as PyCharm or Sublime, but it involves importing the pytest package. Feel free to do this but you will need to investigate how to do this on your own. Some related notes can be found below.

How can I transfer files to one of the Lyle servers using FTP?

- Windows users download and use WINSCP
- Mac users use Filezilla or CyberDuck or another FTP program to upload files
- **Login to one of the Lyle servers** (genuse26.lyle.smu.edu - or any genuse machine in the range from 26 – 52)

How can I execute code on the Lyle server?

- Login to one of the genuse machines using PuTTY (windows) or (mac) execute **ssh** from a command window to a lyle server. For example at a prompt type:
  %ssh <userid>@genuse25.lyle.smu.edu (% means the prompt, <userid> is your Lyle userid)
- Navigate the to directory where you uploaded the two files and run pytest
  %pytest -x
  Pytest will find your test_ files and run them. The -x means show the first failure only. If you leave off the -x you will see all the failures (often confusing). Work one failure at a time.

How can I use my PC or Mac to run the tests?

- To do this you will need to have Python3 installed and available to run from the command line.
- Windows Users:
  - check Python version: >python -V (should show Python 3.6.X)
    - if you get 'not recognized' you need to have the path Python3 directory on your PATH variable
  - check that you have pytest on your path: >pytest –version (should show 3.3.x)
    - if not found you need to run pip (the python package installer)
    - >pip install pytest
      - if you do not have pip, look up how to install
- Mac Users
  - Mac comes with python2 installed NOT python3.
  - The install of Python3 requires xcode.
  - see: http://docs.python-guide.org/en/latest/starting/install3/osx/

When Done ...

Upload TWO files to Canvas: Quest1 Link

1. A PDF with:
   a. Class Header Information
   b. Source code (not test code) neatly formatted (no line wrap)
   c. Output of your test results

2. A ZIP file with:
   a. the above PDF file
   b. source code (.py file)
   c. test code (.py file)

How should I format my PDF submission?

The PDF you submit should begin with the following sections:

CLASS: CSEXXXX
NAME: lastname, firstname
SMUID: 12345678
QUEST: <Quest Name>

CODE:
<Code displayed neatly with no line wrap. Your code should contain your ID and coding name which you can make up (e.g. Super Coder 99, etc.) Do not copy code from others. Do not lend your code to others. Violations will have consequences>

OUTPUT:
<Screen capture of your output. Be sure that your output is readable and has a font size that can be read without magnification. If you capture output that is white on black make sure it is readable. >

.