Lab Assignment 2

* **School:** Foothill Community College
* **Class:** Python II CS21B
* **Term:** Winter 2018
* **Due** Tuesday by 11:59pm
* **Points** 22.5
* **Submitting** a file upload
* **Available** Jan 17 at 8pm - Jan 25 at 11:59pm 8 days

Programming with Files

Application:  Data Analysis and Handling Input Errors

*Make sure that you have read and understood*

* ***Unit module2***
* ***Helpful Python3 tutorial links:***
  + [***Control Flow Tools*** .](https://docs.python.org/3/tutorial/controlflow.html)
  + [***Reading and Writing Files***.](https://docs.python.org/3/tutorial/inputoutput.html#reading-and-writing-files)
  + [***Errors and Exceptions***.](https://docs.python.org/3/tutorial/errors.html)

before submitting this assignment.  Hand in only one submission.

**Understand the Application**

It makes sense that the quality of a data analysis summary is contingent on the quality of the original data set.

This week’s program will perform a data verification of data files throwing an exception if the data input file violates certain conditions.  If the data file is valid the program will process the data set.

**The Program Spec**

Write a program that enforces the following expectations of a data set file:

* The file must exist
* The data in the file must have the following format:

1. The file must start with an integer, n
2. The file must contain n data values

The program prompts the user for the name of a file.  The file is expected to contain data values.  The first line of the file should contain the total number of values, and the remaining lines contain the data.

Three key potential errors to program for include:

* The file might not begin with an integer
* There might not be a sufficient number of data values
* There may be additional input after reading all data values

For a valid data file, the processing data task is to compute the sum of all the data values in the file.  Print out a result message and resultant sum for a valid data file.

**Deliverable:  yournameLab2.py**  Your source code solution and a copy of the run pasted into your source submission file.  Be sure to comment out your run so that your **.py** file will still run in the grader test bed.

**Input Error Checking:** 5 test files are provided to use as test cases for your program.  4 test cases are expected to raise exception conditions.  1 test case is a valid data set.  The test files include:  bad1.dat bad2.dat bad3.dat bad4.dat good.dat

**Test Run Requirements:**  Use the provided 5 test files as your test run validator.

Here are some other tips and requirements:

1.    Keep provided test files intact

2.    Use a while loop to run all 5 test files as your input test suite to generate submission run output

3.    Provide an appropriate display message both for invalid and valid data files.

Here is a sample **partial** run:

Please enter the file name: bad1.dat  
Error: file contents invalid.  
...  
Please enter the file name: good.dat  
The sum is 55

* [bad1.datPreview the documentView in a new window](https://foothillcollege.instructure.com/courses/5088/files/840099/download?verifier=FRGyDJxZuDde0iwhfjolRKkhXv04IXLquIHAUza5&wrap=1)
* [bad2.datPreview the documentView in a new window](https://foothillcollege.instructure.com/courses/5088/files/840100/download?verifier=az83qLYUHwoa06fwgP3ebPqCxPZJjL3RwoU8SGjp&wrap=1)
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