CMPS 150 – Lab 7 – March 8, 2017

The following is an exercise in using control structures, both decision statements and repetition statements. This exercise will be available on Moodle if you wish to use it again.

Log in to CMPS Lab

1. ***Copy/Save the lab source code file for today from the Moodle Lecture Site***

   Look for the files for today "lab7.py" and "lab7.fuel" and save the files to your machine.

2. ***At the Linux desktop, open a terminal window (i.e., command line window)***

   Do this by right-clicking on the desktop and selecting "Open Terminal" from the menu.

3. ***Launch IDLE.***

   `idle3.5`

   Or, on the MacMini, select "Go" from the menu bar, then "Applications" Find the Python 3.5 applications, double-click on it, and select "IDLE"

4. ***Open the source code file just copied to your home directory.***

   Select "File" from the menu bar, "Open" from the menu, then `lab7.py` from the list of files.

5. ***Edit the first two lines of the code to have* your *name/clid/section.)***

```
# Author:       Your-Name
# CLID/Section: Your-CLID & section-number go here
```

Write the code to process a file of exactly 15 sets of fuel consumption data. Each set of data contains:

- fuel type (this will be either 'S', 'P', 'R' or 'D')
- number of gallons of fuel

Each of these pieces of data will be on a line by itself, therefore the data file will be 30 lines (15 sets) long, which means you will be processing 15 sets of data. Each read of data should look like this:

```
fuelType = infile.readline().strip()
fuelAmount = eval(infile.readline())
```

We will discuss in class why the reading of string data (for the fuel type) must have the "strip" method added to it.

As you read each set of data, print a "neat & tidy" table of the total purchase (bill) for the fuel. The following is a table for each of the types of fuel:

Fuel Type	Price per Gallon	Description
S	$ 2.62	Super Unleaded
P	$ 2.36	Unleaded Plus
R	$ 2.12	Regular Unleaded
D	$ 2.35	Diesel

NOTE: You must use a for loop to process this file of data (for your submission to Moodle).

ANOTHER NOTE: Re-write this lab later using a while loop :-)

YET ANOTHER NOTE: Re-write it again as a sentinel-controlled while loop. Add more "sets" of data to your data file, but end the data with a fuel type of 'X' and gallons of 0 (zero).

6. Save your changes and run your code. ***(you can also simply press F5)***

7. Debug your code (perhaps you can skip this step).

If you have any errors in your code, the interpreter will produce an error, with a line number, where it detects there is a problem with your code. Return to the editor and correct the error. Run it through the interpreter again (step 6) until it runs with no errors.
Save the file by selecting File, then Save
Exit the editor by selecting File, then Quit.
NOTE: If you are not returned to a terminal prompt, press the <enter> key.

8. Sample Run

```
    Fuel Type        Gallons     Bill
-------------------------------------
Regular Unleaded       16.50    34.98
Diesel                 32.75    76.96
Super Unleaded         21.20    55.54
Unleaded Plus          15.90    37.52
Regular Unleaded       17.10    36.25
Diesel                 29.40    69.09
Regular Unleaded       15.25    32.33
Unleaded Plus          12.00    28.32
Super Unleaded         22.50    58.95
Regular Unleaded       14.80    31.38
Diesel                 28.80    67.68
Super Unleaded         20.60    53.97
Unleaded Plus          10.00    23.60
Regular Unleaded       13.20    27.98
Diesel                 25.00    58.75
```

9. Exit Python
Close the Python IDLE editor by clicking the X in the upper right corner (or selecting File/Exit from the menus).
Close the Python IDLE shell by clicking the X in the upper right corner (or typing Ctrl-D).

10. Exit Terminal
Close the terminal window by clicking the X in the upper right corner (or typing Ctrl-D).

11. Upload to Moodle
Get in a browser and login to Moodle.
Instead of going to the Lecture Section, go to YOUR specific Upload section on the Moodle site.
Here you will see the lab for today. Click on the link for Lab #7.
Click to "Add a Submission" then "Upload a File"
Select to "Choose a File" and go about the process of browsing/finding "lab7.py" on the computer
Select to "Upload this File"

When returned to the Upload screen, MAKE SURE to click on the "Save Changes" button.

You will be returned to the "Lab #7" screen. This time you should see your source code file listed on it.

12. Logout of Moodle

13. Logout of Linux
Logout is found on the System (toolbar at the top) menu.