Intro to Computing Lab 1 Wednesday, January 14th

Objectives:

- let me get to know you a bit better
- you become familiar with the lab computers
- make sure the IDLE will work within your account

Part A: Completing some additional questions

Yesterday I asked you to complete a fairly short information sheet. I actually have a number of things I would like you to respond to but we just don't have enough time on the first day of class. To get started today, please complete my "Getting to Know You" the long version (I will give you a paper copy of this in class).

Part B: Logging on and Setting up

Logging on to the CNS network

1. Locate a free computer in Wright 112 (these same procedures will work in the Wright 339 or ITT 335 labs)
2. The computers in this lab are "dual boot" - that is, they run both Windows and Linux. We will be using the Windows side of things. If you happen to sit at a computer that is booted into Linux then you will need to reboot the machine into Windows (You will know you are in Linux if the login screen is titled "GNOME Desktop Manager). To reboot the machine:
   - Select "Action" and then "Restart" from the appropriate menu at the top of the login box.
   - Press "Restart" if it asks you to confirm this action.
   - As the machine reboots it will scroll a bunch of text on the monitor. Eventually it will come to a black screen with a menu on it. Use the arrow keys to highlight "Windows" if it isn't already highlighted and press the Enter button.
3. Once you are sitting at a computer that is booted into Windows, you will need to log on:
   - Press Alt-Ctrl-Del at the same time
   - When you see the box labeled "Login Instructions" click on the "OK" Button to advance to the next screen
   - Finally, you will get a standard Windows log-in screen
   - Use the same username and password you use for most ITS computers on campus (your CATID)
   - make sure that "AD-ITS" is selected in the section marked "Log on to:"
   - Wait until the system logs you in. **This process may take a few minutes the first time you log on in the lab**.

Creating a directory for this class

In order to keep your files for this course together and in a place where they can be easily accessed from multiple locations, you will want to create a couple of folders for your course materials.

1. Open up the graphical representation of the computer by selecting "Start | My Computer " or selecting My Computer from the desktop
2. Select (double click) on the icon for the network drive named "Math-CS" that should be towards the bottom of this window.
3. When this drive opens up notice that the address field says "P:\" For this reason I will refer to this as the "p drive" (tricky, I know!)
4. Select the icon labeled "810-051-fienup" This is the directory for this course.
5. Select the icon for the folder labeled with your username.
6. Create a new folder in this directory and give it the name lab1. You can do this by right clicking in the empty area and selecting "New | Folder" and then renaming the folder that is created.
7. Use the "Back" button to return to examining the contents of the course directory.
8. Select the directory labeled *commom*

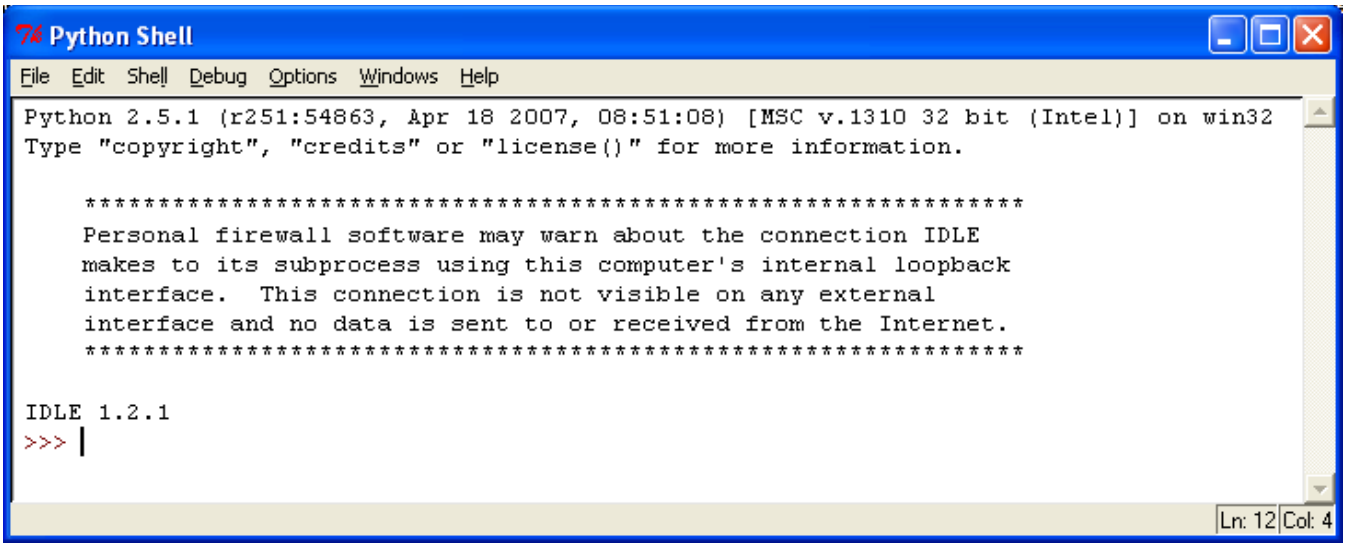
9. Select the subdirectory labeled lab1
10. Copy the wageCalc.py file from this directory and paste it into you lab1 directory you created in step 6.

Now you should be ready to explore one of the main tools we will use this semester - IDLE.

Part C: Using IDLE in Interactive Mode

During this course you will use IDLE as a tool to explore programming. IDLE is a free IDE (Integrated DeveLopment Environment) of the Python programming language which gets installed when you install Python. You can follow the instructions in Appendix A of the textbook to install Python and IDLE from the CD included with the textbook.

1. Launch IDLE by selecting "Start | All Programs | Programming | Python 2.5 | IDLE (Python GUI)"
2. When IDLE starts up it should look like:



This is Python's interactive mode window. This means that you can type in a Python statement at the >>> prompt and then hit the *Enter* key to send it to the Python interpreter to be converted to machine language and then executed. (Note: If you ever find IDLE "hung up" and cannot get a new prompt, the interpreter is likely is a state where it is waiting for you to input some data. Hitting *Ctrl-c* will send a keyboard interrupt and should get you back to a prompt. It can also be used to interrupt any running command.)

Try the following:

1. At the prompt (>>>), type: A = 100
2. This assigns the variable A the integer value of 100. Recall that a variable is a named spot in memory. Python inferred the type to be an integer ("int"). We can check the value of a variable by typing its name at the prompt (>>>). Check A's value.
3. Python infers the type of a variable by the type of value assigned to it. Since an integer value (100) was assigned to A, Python knows that A is of typing "int" (short for integer). We can check the type of variable A by typing at the prompt (>>>): type(A)
4. At the prompt (>>>), type: B = A
5. What value do you expect B to have? What is the actual value of B?
6. If you increment A's value by typing the assignment statement: A = A + 1
7. What value do you expect A and B to have? What is the actual value of A and B?
8. A variable, say A, can be reassigned a value of a different type. At the prompt (>>>) type: A = 'cat'

9. Now, what is the value and type of A?
10. What do you expect C's value to be if you type the following command? C = A + ' and mouse'
11. What is C's value?
12. What happens if you type the following command? C = B + A Why?
13. What happens if you type the following command? C = A + B Why?

After you have answered the above questions, raise your hand and we'll check your work.

Part D: Using IDLE to Develop Programs

Normally you will be using IDLE to develop a program and save it in a file. We'll practice by using the simple wage calculation program (wageCalc.py) copied in Part A.

1. In IDLE's menu-bar select File | Open and navigate to your copy of wageCalc.py on the P: drive
2. A second IDLE window should pop up containing a simple Python program to calculate gross pay
3. Run the program by select Run | Run Module in the wageCalc.py window
4. Enter 10 hours worked and an hourly pay rate of 8.25
5. After the program runs in the Python Shell, you can query values of its variables by typing the name of the variable at the prompt (>>>). What is the value of the payRate variable?
6. Return the wageCalc.py window and add a greeting to the program. Something with **your name** in it like: print 'Hello Mark Fienup, thank to for using the Wage Calculator'
7. Rerun the program to test it.
8. Print the program by selecting the File | Print menu option in the wageCalc.py window.

After you turn in your modified wageCalc.py program and the background surveys, you are free to leave.

Do not forget to "log off" of the machine you are working on.