CST0006 – Computer Programming Foundations

INTRODUCTION to WEEK05

In this lecture and lab section we are going to go over all the things we learned in this weeks lecture. We will use variables and data types, change them, add them together and just have fun exploring what they can and can't do. Understanding data types is a foundational block in building a functional program.

For the Python work we can just save a "test.py" file within our "2018W_CST0006_LAB05" folder.

Variables

We are going to test the variables in a scripted language.

Open the python interpreter in your chosen operating system.

For Linux/Mac type python3 on the command line. For windows open IDLE.

Now, type the following and hit enter:

```
1 + 1
```

You should see the number 2. Python interpreted the line, did the mathematical calculation and printed the result. Normally in most languages, this is done manually in 2-3 steps.

Now we're going to test this in Thonny, create a test.py file in Thonny if you haven't already done so.

In Thonny, under the Shell tab, type the following and hit enter:

```
1 + 1
```

You should see a 2. Thonny has a built-in shell like we get with IDLE or from the *nix command line. (If you get anything different, it's probably an oversight by the Thonny development team).

Now in the Editor tab (test.py) we are going to create a script that does the same thing, type the following and run the code:

```
1 + 1
```

Nothing Happened? That's because we're running from a script, and we need to specifically tell the Python interpreter to do what we want it to do.

```
print(1 + 1)
```

Data Types

Next we are going to explore the different data types we can play with.

To do this, we are going to create a variable in Python by using the assignment operator.

```
num = 1
```

Now we can print the data type of our variable called “num”

```
print(type(num))
```

Here we are using two different functions. The type function which takes a parameter and prints its type. In this case, we are using a variable that is holding an integer. However, because we are running this as a script, we also need to use the print() function.

You can try to use type in the shell, which will print the type as well.

For the rest of the lab, use the answer sheet. Fill it out and submit for marks.