# CS 115 - Introduction to Programming in Python

## Lab 01

**Lab Objectives:** Input/output, data, expressions, branching

**Instructions:** For this assignment, you can use your favorite IDE (Spyder or Jupyter recommended). Upload your solutions as a single .zip file to the Lab01 assignment on Moodle before the end of your lab session. Use the following naming convention: **SS_Lab01_Surname_FirstName.zip** where SS is the section number 01, 02, 03, ..., & and Surname is your family name, & FirstName is first name. You must show and explain your solutions to your TA during your lab session and must answer their questions to get your grade by the end of your lab session (the week of Oct 7).

1. Write a program that prompts the user to read in two input values: a number of feet, followed on a separate line by a number of inches. The program should convert this amount to centimeters. Assume that all input values are ints. 1 foot is 12 inches and 1 inch is 2.54 centimeter. Here is a sample run of the program.

   **Sample Run:**

   This program converts feet and inches to centimeters.

   Enter number of feet: 4

   Enter number of inches: 8

   4 ft 8 in = 142.24 cm

2. Write a program that inputs a month from the user (an integer between 1 and 12) and displays the number of days in that month. For example, if the input month is 9 for September, it should display 30 because September has 30 days.
   Assume that the code is not being run during a leap year (that February always has 28 days). The following are the number of days in each month:

| **Month** | 1 Jan | 2 Feb | 3 Mar | 4 Apr | 5 May | 6 Jun | 7 Jul | 8 Aug | 9 Sep | 10 Oct | 11 Nov | 12 Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Days** | 31 | 28 | 31 | 30 | 31 | 30 | 31 | 31 | 30 | 31 | 30 | 31 |

   **Note:** Your program should validate the input. You should not store any data in a list.

   **Sample Run 1:**

   Enter the month (between 1 and 12 inclusive): 4

   30 days

   **Sample Run 1:**

   Enter the month (between 1 and 12 inclusive): 2

   28 days

3. Write a program that inputs three integers from the user and reports whether or not if one of the integers is the midpoint between the other two integers (exactly halfway between the other two integers). the midpoint could be the first, second or third one.

| | |
|---|---|
| **Sample Run 1:**<br>Enter the first integer: 2<br>Enter the second integer: 8<br>Enter the third integer: 5<br>5 is the midpoint of 2 , 5 , 8 | **Sample Run 1:**<br>Enter the first integer: 1<br>Enter the second integer: 8<br>Enter the third integer: 5<br>None is a midpoint of the others. |
| **Sample Run 2:**<br>Enter the first integer: 8<br>Enter the second integer: 4<br>Enter the third integer: 12<br>8 is the midpoint of 4 , 8 , 12 | **Sample Run 1:**<br>Enter the first integer: 9<br>Enter the second integer: 7<br>Enter the third integer: 3<br>None is a midpoint of the others. |