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| **College of Engineering**  Computer Science & Eng. Dept.  **Course:** CMP 321L Programminglanguages Lab | A picture containing logo  Description automatically generated | **Course Professor:** Dr. Michel Pasquier  **Lab Instructor:** Praveena Kolli  **Office:** EB2-126  **Phone**: 971-6-5152352  **e-mail**: pkolli@aus.edu  **Semester**: Summer 2022 |

**Lab 0: Getting Started with Python**

**Objectives:**

* Install Python and development tools
* Get familiar with Python scripts and interpreter
* Define variables of different types
* Employ conditional and loop statements
* Use Python array lists and functions

**Due date: No submission required for this lab**

This lab is not graded, so submission is optional. However, if you do submit answers to the exercises, feedback will be given. Only one team member needs to submit.

**Useful resources:**

* Download Python and IDLE: <https://www.python.org/downloads/>
* Alt. download the Spyder IDE: https://www.spyder-ide.org/
* Alt. download Anaconda: https://www.anaconda.com/products/individual
* List class documentation: https://docs.python.org/3/tutorial/datastructures.html

**Exercise 1: Variables, operations, printing**

Write a Python script to:

* Define variables a, b, and c, which are the coefficients of the equation ax2 + bx + c, with values 5, 6, and 1, respectively.
* Calculate the discriminant: d = b2 – 4ac.
* Print the two solutions of the above equation: and .

**Exercise 2: Conditional statements and loops**

Write a Python script to:

* Print the sum of odd and even numbers between 1 and 1000 using a single ‘for’ loop and ‘if/else’ statement.
* Print the same using two separate loops, one for odd numbers and one for even numbers (so that no conditional statement is needed).

**Exercise 3: Conditional statements and loops**

Write a python script that finds the Least common multiple (LCM) of two positive integers. For example, LCM(4, 6) is 12 and LCM(5, 7) is 35.

**Exercise 4: list and list functions**

Write a Python script to:

* Define a list containing student grades: 40, 86.5 , 67.8, 55, 43.7, 85.
* Add to the list the following two grades: 96 and 71.
* Sort the list and prints it.
* Read all fail grades (50 and below) from the list and insert them into a new list.
* Print the fail grades list, one grade per line.

**Exercise 5: list and loops**

Write a python script that has two lists of numbers, e.g.: lst1 = [1,2,3,4] and lst2 = [3,1,2,4], and

checks if the two lists have same numbers irrespective of the order.