Lab 1

PART A (2 marks, due end of class)

1. If you have not already done so, install **Python 3.12** (or later) on your laptop:
   a. Download and install from https://www.python.org/downloads/

2. If you have not already done so, install **PyCharm 2024** (or later) on your laptop:
   a. Apply for a free student license at https://www.jetbrains.com/student
      Note: The Community Edition is acceptable as well.
   b. If you sign-up with your my.bcit.ca e-mail, you get access to the Professional Edition
   c. Download and install the PyCharm IDE

3. Create a new Python project in PyCharm:
   a. Create a new "Pure Python" project called Lab1 using a "Virtualenv" and Python 3.10 (or later version) as the base interpreter.
   b. Create a new python file in your project called lab1a.py.
   c. Write the code to produce the following output, **plus put your name into a comment at the top of the file**. Follow all PEP guidelines.

      Hello World!

      This is my first python program!

   d. Run the lab1a.py program by right clicking on the file name and selecting Run. It should output Hello World in the console area of PyCharm.
   e. Take a screenshot of the output of running lab1a.py in PyCharm.

4. Show your output to your instructor in class to confirm whether your output is correct (Online: Optional).

5. Upload your **screenshot and lab1a.py** file to the Learning Hub
   (Activities -> Assignments -> Lab 1).

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Part B (10 marks, due before next lecture)

1. Use your project you created in Part A
2. Create a new Python file called lab1b.py
3. Write the code as per the following specifications
   a. Print the statement "Enter your name:"
      Get the user's name from the console and save it to a variable called **name**

   b. Print the statement "Enter x value:", get the x value from the console and save it to a variable called **xStr**

   c. Print the statement "Enter y value:", get the y value from the console and save it to a variable called **yStr**

   d. Create a variable called **x** and assign it the integer value of **xStr**
      Create a variable called **y** and assign it the integer value of **yStr**.

   e. Calculate the following using your **x** and **y** variables and the appropriate arithmetic operators:
      - The sum of **x** and **y** (i.e., x plus y), assigning it to a variable called **total**
      - The difference of **x** and **y** (i.e., x minus y), assigning it to a variable called **diff**
      - The product of **x** and **y** (i.e., x times y), assigning it to a variable called **prod**
      - The division of **x** and **y** (i.e., x divided by y), assigning it to a variable called **div**

   f. Using print statements, display the following each on a separate line:

      <name> your calculations are:
      <x> + <y> = <total>
      <x> - <y> = <diff>
      <x> * <y> = <prod>
      <x> / <y> = <div>

      Where the <x>, <y>, <total>, <diff>, <prod>, <div> are the actual values of those variables. For instance, for a **name** of Johnny, **x** of 10 and **y** of 8:

      Johnny your calculations are:
      10 + 8 = 18
      10 – 8 = 2
      10 * 8 = 80
      10 / 8 = 1.25

Note: Use print statements with comma separated values. DO NOT use f-strings or formatted strings as we have not covered that yet.

       g. Add a comment to your code describing how (or if) the calculated values would be different if you converted them to floats rather than ints.

       h. Print the string "The calculations are complete."

       i. Include at least 4 *descriptive* comments in your code (i.e., not just single letters or word) and use whitespace to separate groupings of code

       j. Always end your program with a single blank line (i.e., press return after your last line of code)

4. Take a screenshot of your output
Upload your **screenshot <u>and</u> lab1b.py** file to the Learning Hub
(Activities -> Assignments -> Lab 1).