INTERNATIONAL UNIVERSITY VNUHCM

PRINCIPLES OF PROGRAMMING LANGUAGES

LAB 1. PYTHON BASICS

PURPOSE: After this lab, you are able to write a simple program in Python by using built-in data types, control flows (if…else, for/while loops), input/output.

STEPS:

- If Python environment is not ready, please install it.
- Download and install an IDE for writing Python programs (e.g., PyCharm)

REFERENCES:

- Python @ W3Schools: https://www.w3schools.com/python/
- Python Tutorial: https://docs.python.org/3/tutorial/
- Other Python reference books on Google Drive.

EXERCISES:

1. Write a Calculator that can *add*, *substract*, *multiply* and *divide* two integers.
2. Write a program that allows a user to choose one of the shapes to display with stars (*) on the screen. Whenever a shape is chosen, its sizes (height, width, etc.) should be inputted by the user: a square (size), rectangle (height, width), triangle (height), diamond (height).

Users are allowed to choose an advanced option to display the shape:

- solid or hollow (with the default thickness of the line is 1 star);
- the thickness of the lines (represented by the number of stars and entered by the user).

For example:

- Hollow shapes:

```
*  *  *  *              *
*        *            *   *
*        *          *       *
*  *  *  *        * * * * * * *
```

- Solid shapes:

```
*  *  *  *              *
*  *  *  *            *   *
*  *  *  *          * *  *  *
*  *  *  *        * * * * * * *
```

HOW TO SUBMIT YOUR WORK: Please compress all your Python source code into a zipped file (GroupNumber.zip) and email it to the instructor (iu.subjects@gmail.com)