Lab 3: Intro to Python

Recall that in the previous lab session, we worked on RAPTOR, a flowchart interpreter. In this lab session, you will write simple Python codes for a given problem.

Activity 1: Installation and getting started

- Get the required software from the college's FTP site.
- Familiarize yourself with the development environment.

Activity 2: Hands-on

First off, see what version of Python you are using. One way is using the "sys" module.

```
import sys
Print ("My Python's version is: ", sys.version)
```

I. Figure out the data type of each of the following.
   a. 132
   b. 132.0
   c. 2e+9
   d. 'kuzu'
   e. "Hello there"
   f. [1, 2, 3]
   g. (1, 2, 3)
   h. 5 + 6j

II. Evaluate the following expressions manually first wherever possible (assume Python 3). Be mindful of operator precedence.

a. 12 – 5 * 3 + 1
b. 6 * 4 ** 2 + 5 / 3
c. 9 // 2 * 1 – 7 ** 0
d. 2=2
e. 2==2
f. 3!=4 and 5>5
g. 3!=4 and 5>5 or 10<-10
h. Not (2<4 or 1<>3)

III. Write a Python program for each of the following:

1. Notice the difference among the following Python statements:

```
i.  Print ( "I love Bhutan!" )
ii.  Print ( "I \t love \t Bhutan!" )
iii.  Print ( "I \n love \n Bhutan!" )
```

   Note your observation.

2. Ask the name and age of a user and then display the message, "Kuzu zangpo, <name>. You are <age> years old." (Replace <name> and <age> by the user's actual inputs).

3. Take an integer number from the user and display its square root and cube root. (You may use the Math module/library).

4. Receive two floating-point numbers from the user and compute the sum, difference, product, quotient, and remainder of the numbers.

5. Compute the area and circumference of a circle.

6. Calculate the volume of a sphere given a radius.

7. Find the area of a triangle given its 3 sides. Apply Heron's formula.

8. Convert some of the algorithms/flowcharts you have written/designed so far into Python codes.