

# Assignment 2: Problem Solving in Computer Lab

**Course :** Python programming – Module I

**Instructor:** Sandeep Pabbathi

**Note :** Write the Python code for the following problems in a notebook file named Assignment2.ipynb and save it on your machine in the Computer Lab.

## Problem 1: Rounding Numbers in Python

- Round 12.8 down to 12.
- Round 12.8 up to 13.
- Round 12.2 up to 13

## Problem 2: User Input and Output

- Ask the user (via input) for their name and age.
- Print the message:  
My name is XXX and my age is YYY.

## Problem 3: Grade "A" Eligibility Check

- Use comparison and logical operators to check if a student is eligible for grade "A".
- Criteria:  
score  $\geq$  85 and attendance  $\geq$  90

## Problem 4: Number Range and Even Check

Given:

- Variable *num*

Question:

- Check if *num* is between 50 and 100 (inclusive) and is even.

### **Problem 5: Swap Two Variables Without a Third Variable**

- Given:  
a = 10, b = 5
- Swap the values such that:  
a = 5, b = 10
- Without using a third variable.

### **Problem 6: Leap Year Check**

- Check if a given year is a leap year or not.

### **Problem 7: Health Insurance Eligibility**

Eligibility criteria:

- Age is between 18 and 60 (inclusive),
- No smoking habit (smoker is False),
- AND either:
  - Exercises regularly (exercises\_regularly is True),
  - OR has a healthy BMI (bmi < 25).