# CSE 1321L: Programming and Problem Solving I Lab

## Assignment 1    100 points

## Solving Problems

**What students will learn:**
1) Problem solving
2) Terminology
3) Basic program structure
4) Input and output with the user
5) Basic calculations and those calculations requiring an intermediate solution

**Overview:** For most of you, this will be the first time you've done any programming, which is exciting! The write-up of this first assignment will be a little longer than others because we want you to have an understanding of how things are going to roll out the rest of the semester. Advice: Start early (certainly not the day the assignment is due), practice, and ask a lot of

**Assignment 1A:**
**Construct a Mailing Address:**

## Assignment 1B:
**Loan Payment Calculator**

You're applying for a car loan and want to calculate your monthly payment. The monthly payment can be calculated using the formula:
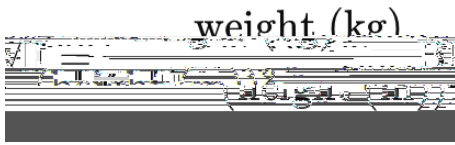
Where:
- P is the loan amount (principal).

## Assignment 1C:

### Body Mass Index (BMI) Calculator

Body Mass Index (BMI) is a measure of body fat based on height and weight. The formula to calculate BMI is:

$$BMI = \frac{weight\ (kg)}{[height\ (m)]^2}$$

Write a Python program that prompts the user for their weight in kilograms and height in centimeters. The program should calculate the user's BMI and categorize it into one of four categories: Underweight, Normal weight, Overweight, or Obesity.

### BMI Categories:
- **Underweight:** BMI less than 18.5
- **Normal weight:** BMI between 18.5 and 24.9
- **Overweight**: BMI between 25 and 29.9
- **Obesity:** BMI 30 or above

### Instructions:
1. Prompt the user to enter their weight in kilograms as a floating-point number.
2. Prompt the user to enter their height in centimeters as a floating-point number.
3. Convert the height from centimeters to meters by dividing the height by 100.
4. Calculate the BMI using the formula and round it to one decimal place.
5. Assign a number (1 to 4) to the BMI category using arithmetic operations:
   - Category 1 represents Underweight.
   - Category 2 represents Normal weight.
   - Category 3 represents Overweight.
   - Category 4 represents Obesity.
   - Use arithmetic to assign the correct category number based on the BMI value.
6. Output the BMI value and the corresponding category number.

**Hint:** You can use arithmetic operations to combine boolean expressions (True/False) and convert them into numerical values that correspond to the different BMI categories.

Output:

```
Enter your weight in kilograms: 70
Enter your height in centimeters: 175
Your BMI is: 22.9
You are classified as: 2 weight
```

## Submission:
1. You will submit 3 separate files – one for each of the assignments above.
2. Upload separate files (one for each assignment) to the assignment submission folder in Gradescope. Do NOT submit homework in D2L.
3. Submit your work by the due date.