**CSE 1321L: Programming and Problem Solving I Lab**

**Lab 13**

**Python Review**

# Content



# Overview

This lab will consist of using some of the concepts we have covered throughout the semester. Use this lab as a sample question to prepare for the final lab section exam.

As with previous weeks, your submission should have the appropriate file name:

- Lab13A.py

Lastly, make sure you review the sample output and make sure the output of your program follows the exact same format including the input statements, print statement, etc.

As always, user input is shown in **red** and **bold**.

# Lab13A: Weather Analyzer

You are tasked with developing a Weather Analyzer application that helps identify trends in daily temperatures. The user will input the recorded temperatures for several days, and your program will determine the following things:

- **The number of heatwaves.**
  - A sequence of days will be considered a heatwave if 3 or more consecutive days have a temperature above 30 degrees Celsius.
- **The longest cold streak.**
  - Count the longest consecutive number of days with temperatures below 15 degrees Celsius.
- **The average temperature of the entire dataset.**

At the end, your program will display the results, including the days when heat waves and cold streaks occurred.

## Requirements:

- The user will input daily temperatures in a single input prompt statement.
- Each temperature represents reading for a single day.
- Multiple temperatures can be entered by separating them with spaces.
- The program should calculate and determine the amount of heat waves.

- The program should calculate and determine the longest cold streak.
- The program should calculate and determine the average temperature of all the days.
- The average temperature output should be rounded or fixed to 2 decimal places.

## Hints:

- To process the user input (consisting of numbers separated by a space), you can use the **.split()** string function.
- This function can separate a string based on a delimiter value that you have to pass as an argument.

## Sample Output #1

```
Enter temperatures for each day separated by space:
32 33 34 29 12 10 14 25 26 30 31 32 33

Number of heat waves: 2
Longest cold streak: 3 days
Average temperature: 26.23°C
```

## Sample Output #2

```
Enter temperatures for each day separated by space:
10 12 14 16 18 20 25 28 30 32 33 34 35 10 11 12

Number of heat waves: 1
Longest cold streak: 3 days
Average temperature: 21.25°C
```

## Submission Instructions:

- Programs must follow the output format provided. This includes each blank line, colons (:), and other symbols.
- Programs must be working correctly.
- Programs must be written in Python.
- Programs must be submitted with the correct **.py** format.
- Programs must be saved in files with the correct file name:
  - Lab13A.py
- Programs (source code files) must be uploaded to Gradescope by the due date.