# CS2530 – A04 Generic Collections

## Description:

Create a console application called **A04**.
Write and test the following two public methods: FindDuplicateWordsInSentence() and ModifyList()
Create private (helper) methods as needed in order to structure your code.

### Ad FindDuplicateWordsInSentence():

- Read in a sentence from the user input.
  Treat uppercase and lowercase letters the same and ignore any punctuation.
- Choose an appropriate generic collection to store the individual words and a corresponding number indicating how often that word appeared in the sentence
- Explain in a comment your choice of collection
- List all the words followed by the number (count)
- Display how many words appeared more than once in the sentence
- List the shortest word (or all the words that tie for shortest word)
- List the word that appeared most often (or all the words that tie for shortest word)

EXAMPLE:

**Input:**

The optimist thinks this is the best of all possible worlds; the pessimist fears it is true.

**Output:**

```
the 3
optimist 1
thinks 1
this 1
is 2
best 1
of 1
all 1
possible 1
worlds 1
pessimist 1
fears 1
it 1
true 1

Number of words that appeared more than once: 2
Shortest word(s): is of it
Word that appeared most often: the
```

### Learning Objectives:

- Practice the use of generic collections
- User the internet to learn about Random, mean, mode, median, and range
- Develop algorithms to solve a problem

### Turn in:

Zip up your solution and name it **A04.zip**.
Turn it in via Canvas.
Make sure to include a comment with your name, course and assignment in each source code file

### Ad ModifyList():

- Create a generic List of integers
- Create an instance of Random use 17 as the seed argument for the constructor
- Insert 25 random numbers from 20 to 80 (inclusive) - print out the list
- Remove every third List element - print out the list
- Insert the first 5 prime numbers on position 3 – print out the list
- Reverse the list – print out the list
- Sort the list – print out the list
- Calculate mean, mode, median and range
  Print out the results. Make sure to label them as you print them out.