# CSE 4283 / 6283 – Software Testing and Quality Assurance
## Assignment-2, 100 Points

## Objective

Apply test-driven development (TDD) to implement a set of software requirements. Write unit tests to provide adequate coverage of a code-base using your chosen unit testing framework and test runner.

## Scenario

You are to create an application that allows the user to select and run each function and receive a correct response from the program. The new development manager requires that you code the application using a test-driven development approach. We define a unit as a function or method in a class with a single responsibility. The project should be developed and maintained using a GitHub repository.

## Requirements

Command Line Interface - Develop a command line app that prompts the user to enter the input (although a GUI is not required, you can create one if you want). For now, the app must have the following functionality.

1. **Body Mass Index -** Input height in feet and inches. Input weight in pounds. Return BMI value and category:

| BMI | Category |
|---|---|
| <18.5 | Underweight |
| 18.5–24.9 | Normal weight |
| 25–29.9 | Overweight |
| >=30 | Obese |

   (See formula linked in the Notes & Resources section).

## Project Report

Write a report summarizing your efforts. Your report should consist of the following content:

- **(4 pts) Report should be Professionally Organized** - Include Names, NetID, and Github username on the first page of the report.

- **(30 pts) Discuss each function and associated tests:** For each function/method in your code: **(i)** describe what the function does **[10 pts] and (ii)** write all the test cases for the function **[20 pts].**

- **(15 pts)** Discuss which boundary testing technique you followed to choose your test cases and why.

- **(5 pts)** Induce boundary shift by 0.1 at the lower boundary of "Normal Weight" and give a screen shot of the code snippet with this boundary shift problem.

- **(15 pts)** Did your test cases catch this boundary shift problem? Why or why not?

- **(15 pts) Detailed setup and execution instructions:** The application should be compatible with Windows 10 OS. Include links to download the application **[5 pts]**, instructions to setup and execute the application **[10 pts].**

- **(16 pts)** Provide screenshot showing that the application returns correct output for all four BMI categories [4 pts for each category].

## Notes & Resources

- BMI Formula - http://extoxnet.orst.edu/faqs/dietcancer/web2/twohowto.html

**Turn-in the report on Canvas.**