**CS 1450 Intro to Object Oriented Programming -**

**Midterm Assignment**

Spring 2023 Semester

Date of Assignment: 3/1/2023

Deadline: 3/8/2023 by Midnight

Total points: 150 points

Instructor: Patrik Boloz, M.S.

Create these three classes and either have them all in one file or you can have separate files for all classes. (it's your choice). Each successfully created and tested class will be worth 50 points. Please include screenshots of your code and output in this document and submit it along with your Python code.

1) Create a class called Mood. This class will start with an attribute called self.computer\_mood = "Neutral". Then create these 4 methods called angry, sad, happy, and neutral, which will change self.computer\_mood to their respective moods and will print out a message, how the computer feels, when those methods are called/used. Test the class by creating an object from the class and use all methods to change the computer's mood.

2) Create a class called Calculator, that will have two arguments in \_\_init\_\_() called: num1, num2. Then create two attributes self.num1 and self.num2 that will be used throughout the Calculator class. Create 4 methods called class\_red, class\_div, class\_add, class\_mult to do reduction, division, addition, and multiplication, respectively. Then test it out on the two numbers, that will be chosen by using the user's input.

3) Create a class called School\_Class, that starts with an attribute called self.class\_list, which will start as an empty list. Create three methods called add\_student, delete\_student, change\_student. Create an interactive menu, where a user will be able use those three methods to add a student to the list, delete a student from the list, and change the student's name (take a look at our earlier examples of an interactive menu with Bank and Account classes). Then test it out on your interactive menu.