Chapter 2, Extra Credit Problem Number 6

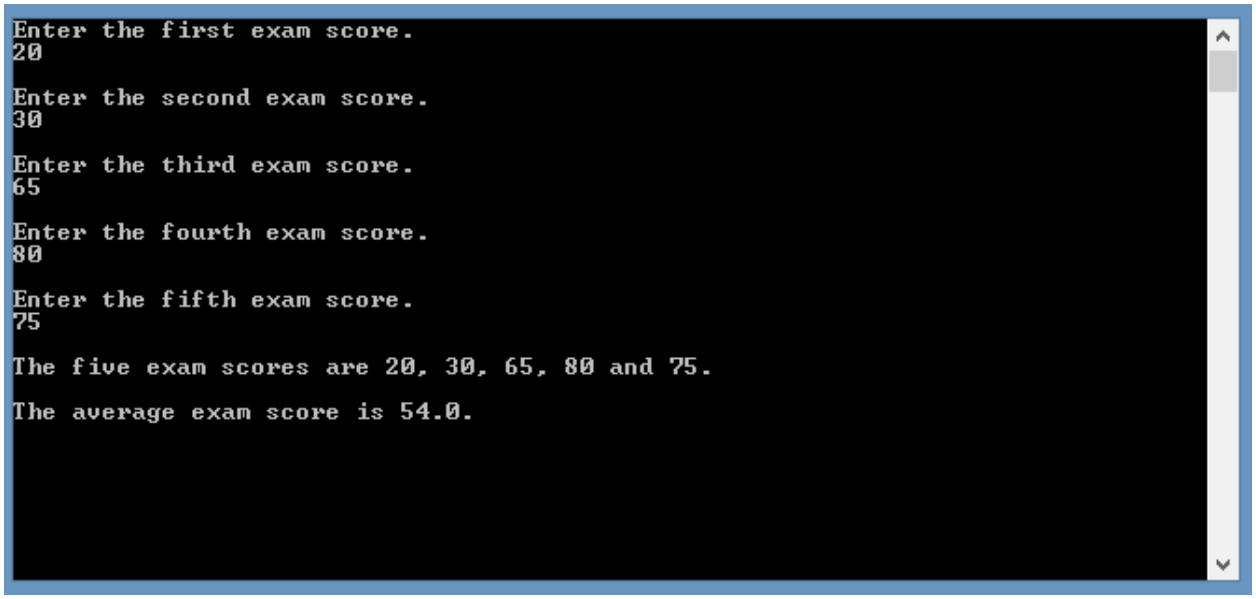
Problem Analysis:
The problem asks to generate an average (or mean) exam score from a user's input of five individual exam scores. The input that is needed is the five exam scores and the output is the average exam score. The five exam scores are labeled by identifiers *inputScore1*, *inputScore2*, *inputScore3*, *inputScore4* and *InputScore5* and are recorded as string values; the output identifier is labeled *avgScore*. In order to calculate the average exam score, the string values first have to be converted to the double data type; then, a formula is generated that will add up the five input exam scores to generate a total score and then divide that by the number of exam scores counted, which is five. Each of the five exam scores will use the double data type to represent that these scores are whole numbers greater than or equal to zero, but may be represented with a decimal in case partial credit is given. The average exam score will be represented in the double data type and fixed to one decimal place since the division will result in a remainder in some cases.

Modification: I modified the problem to allow for two possible scenarios based on whether the five exam scores are entered as values greater than or equal to zero, or something else. If the scores are greater than or equal to zero, the program will compute the average exam score. Otherwise, the program will display an error message and will terminate.

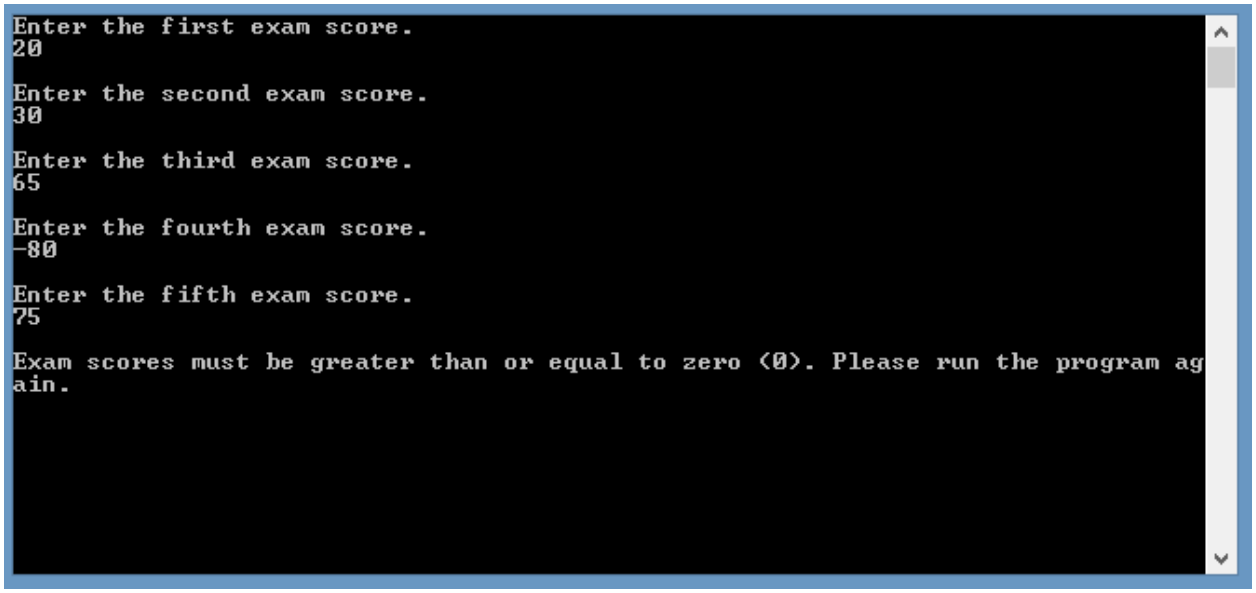
Class Diagram:

ExamScores
-exam1: int -exam2: int -exam3: int -exam4: int -exam5: int -count: int -avgScore: double

Screenshots:



Screenshot of program where the exam scores are being recorded and then calculated using the formula: avgScore = (exam1 + exam2 + exam3 + exam4 + exam5) / 5. The user is then shown an output of the exam scores they entered as confirmation. Then, the average score is calculated and displayed. This will only display if the scores are entered as values that are greater than or equal to zero.



Screenshot of program where an error message is displayed. This will only display if the scores entered as values that are less than zero.