Programming assignment #4:

Now that the second exam has been given and graded, students often ask about their average grade in the course, and what grade they need to get on the final exam to get a _____ in the class. In order to answer these questions completely, you are charged with writing a program that addresses these questions. According to the syllabus, the overall grade in the course is determined by the following:

- Homework: 15%
- Quizzes: 10%
- Exam 1: 20%
- Exam 2: 20%
- Final Exam: 35%

Your assignment, should you choose to accept it, is to write a computer program to accomplish the following:

1. Open a text file containing class performance data, which will be called Grades.txt. This data will be stored in the following format:

   NAME, HW AVERAGE, QUIZ AVERAGE, EXAM 1 GRADE, EXAM 2 GRADE

   All values are out of 100 points (scaled)

2. The program calculates the current numerical average in the class, based on the weights specified above (with 2 places past the decimal)
3. The program determines the current letter grade, based on the traditional scheme: [90,100] = A, [80,90) = B, [70, 80) = C, [60,70) = D, [0,60) = F
4. The program calculates the minimum final exam grade needed to get an A in the class. If it is not possible, use "Not possible" rather than a numerical score. If the final exam grade is negative, use 0 rather than the negative number.
5. The program calculates the minimum final exam graded needed to get a B in the class. If it is not possible, use "Not possible" rather than a numerical score. If the final exam grade is negative, use 0 rather than the negative number.
6. The program calculates the minimum final exam grade needed to get a C in the class. If it is not possible, use "Not possible" rather than a numerical score. If the final exam grade is negative, use 0 rather than the negative number.
7. The program calculates the minimum final exam grade needed to get a D in the class. If it is not possible, use "Not possible" rather than a numerical score. If the final exam grade is negative, use 0 rather than the negative number.

8. The program writes this data to a text file, called GradeAnalysis.txt. The file should contain the information in the following format:

   NAME, HW AVERAGE, QUIZ AVERAGE, EXAM 1 GRADE, EXAM 2 GRADE, AVERAGE, GRADE, FINAL A, FINAL B, FINAL C, FINAL D

The following sample data can be used to test your program:

Mouse Mickey, 80, 94, 75, 86
Duck Donald, 90, 54, 45, 55
Jetson Elroy, 100, 90, 87, 95
Doo Scooby, 55, 43, 24, 56
Chief Master, 67, 87, 66, 46
Am I Will, 85, 75, 65, 55

The output should contain these values (but obviously in the proper format...this is to possibly help you check your calculations (but I could have an error in my formulas). It is not to specify your final file contents (your data should be separated by commas, each student should have all of their data on one line, etc...my copy/paste process led to tables, which I did not have time to get rid of. Hopefully you get the idea, though). If you have any questions, or need clarification, be sure to ask.

Mouse Mickey	80	94	75	86	82.46	B	Not Possible	75.43	46.86	18.29
Duck Donald	90	54	45	55	59.85	F	Not Possible	Not Possible	88.86	60.29
Jetson Elroy	100	90	87	95	92.92	A	84.57	56.00	27.43	0.00
Doo Scooby	55	43	24	56	43.92	F	Not Possible	Not Possible	Not Possible	89.86
Chief Master	67	87	66	46	63.31	D	Not Possible	Not Possible	82.43	53.86
Am I Will	85	75	65	55	68.08	D	Not Possible	Not Possible	73.57	45.00