

Write a program to calculate final grades for a class similar to this one. The grades have been stored in a text file in the following format.

1. Each Line represents one student.
2. There are no blank lines in the file.
3. Each line contains six fields separated by blanks.
4. There may be more than one blank between two fields.
5. The first field is the last name.
6. The second field is the first name.
7. The third field is social security number.
8. The fourth, fifth, and sixth fields are scores for test 1, test 2 and test 3.
9. There is no limit to the length of the first or last name.
10. There is no limit to the number of students in the class.

Test 3 is worth twice as much as test 1 or test 2. The final score is determined by the following formula: $\frac{X + Y + 2Z}{4}$. X is the score for test 1, Y is the score for test 2, and Z is the score for test 3. Calculate this formula using integers, with as much accuracy as possible.

Assign letter grades based on the final score:

- A - 90-100
- B - 80-89
- C - 70-79
- D - 60-69
- F - 0-59.

Print two lists, the first must be in alphabetic order by last name. The second must be in descending order by final score. Each list should give First Name, Last Name, Final Score, and Grade. Left justify names, right-justify the final score.

YOU MUST use linked lists and dynamic allocation to store your data. It is safe to assume that no name will exceed 1000 characters. It is OK to truncate names to 20 characters in order to print nice columns in your lists, but *YOU MUST STORE THE FULL NAME IN YOUR PROGRAM!*

Test data will be supplied some time later in the week.

You may, if you wish, test for your own first and last name, and change your own grade to an A, if it isn't already. Don't test for social security number, the test file *will not* contain valid social security numbers.