Lab: Calculating Student Grades with Parallel Arrays

This assignment should demonstrate the use of parallel arrays in a C++ program. This program reads a file named "data.txt" as input. The first line of the file contains an integer number *n (where, n<=100)*. The file uses blank lines to separate between each set of inputs. For example, after the fist blank line, we can read *n* score values. After that there is a second blank line followed by *n* first names. Lastly, after the third blank line there will be *n* last names. The scores, first names, and last names are grouped based on the order in which they appear in the file. For example,

Position	Score	First Name	Last Name
0	73	Palmer	Roselee
1	69	Lu	Rashad
2	89	Leonard	Jaime
3	82	Katrina	Cedric

The first value in the score list is for the student named, Palmer Roselee. The second value in the score list is for the student named Lu Rashad, and the third value in the score list is for the student named, Leonard Jaime, etc.

After reading these values, your program should calculate the letter grade for the student based on the score value. You should use a function to determine the letter grade. The function can be implemented as the following:

```
char calculateGrade(float score)
{
        // this function uses the score value to calculate the grade as the following:
        // if the score is between 90 and 100 then the grade is A
        // if the score is between 80 and 90 then the grade is B
        // if the score is between 70 and 80 then the grade is C
        // if the score is between 60 and 70 then the grade is D
        // if the score is between 50 and 60 then the grade is E
        // else the grade is F
        // returns the calculated grade to the calling function
}
```

Finally, the your program should display the first name, last name, score, and grade information to the console. You should use a function to display the information to the console. The function prototype is given in the following:

```
void displayRecord(string fName, string lName, float score, char letterGrade);
```

The main function reads the values from the file and uses three arrays to store scores, first names, and last names. Further, it loops through all the score values and calculates the letter grade for the score by using the calculateGrade function. Lastly, the program displays the name, score, and the calculated grade for each of the students. The sample input and output of the program are shown below:

Sample Input

```
4

73
69
89
82

Palmer
Lu
Leonard
Katrina

Roselee
Rashad
Jaime
Cedric
```

Sample Output

```
Palmer Roselee      73    C
Lu Rashad           69    D
Leonard Jaime       89    B
Katrina Cedric      82    B
```

Bonus:

Use the above program to show the detailed information of the student who has the maximum grade in the class. For example, for the above input your program should display

```
Maximum grade is achieved by the following student:
Leonard Jaime       89    B
```