1. **Problem statement:**

To ask user to input three numbers and then put them from lowest to the highest and compute the mode/average number of the three numbers. Finally, to display the grade at given mode/average number.

**2. Analysis:**

Inputs: three numbers

Outputs: the correct order of three numbers (from lowest to highest), the mode/average number and the grade at given mode/average number.

Additional requirements: none

1. **Design:**

Algorithm (inside the main function)

-1. Declare variables

-2. Ask user to input three initial numbers

-3. Read the input integer number and store the value of such an integer number into a, b, c

-4. Use the rank function to show the correct order of three numbers (from lowest to highest)

-5. Use the mode\_average function to compute the mode/average value of three input numbers and return the value to the variable m

-6. Display the value of m on the screen

-7. Use if else statement to decide which grade the given value should be and display it on the screen

Algorithm (outside the main function)

The rank function

-1. Get three numbers from main statement and not return any value

-2. Use if statement to change the order of three numbers

-3. Display the three numbers in the correct order

The mode\_average function

-1. To input three numbers from main statement and return a mode/average value

-2. Use if else statement to compute the mode/average value

-3. Return the value to the main statement

**4. Implementation**: see C code in file 1405347\_3-1.c with comments.

**5. Testing:**

The C program was tested by carrying out a set of experiments and the C program output was verified successfully. For instance,





