

Lab 12 Class and Objects

Please test the correctness of your program in **Q1**, **Q2** and **Q3** on **PASS**.

Q-3. [Will be marked]

Modify the program in **Q-2** such that the program defines an array of triangles `Triangle arr[10]` and sort them based on their areas.

The program should let the user input the sides of n triangles (where n is an integer input by the user and $1 \leq n \leq 10$) and store them in the array. The program should sort and print all triangles in ascending order based on their areas (if there are two or more triangles with the same area, print them in the original order that they are defined).

Assume that all inputs are valid, i.e., n is within the range specified, and those three sides can form a triangle.

Expected Outputs:

Example 1.

Enter a number between 1 and 10:

4

Enter the sides of triangle 1:

3 3 3

Enter the sides of triangle 2:

3 4 5

Enter the sides of triangle 3:

3 4 5

Enter the sides of triangle 4:

3 2 3

Area of triangle 4: 2.83

Area of triangle 1: 3.90

Area of triangle 2: 6.00

Area of triangle 3: 6.00

Example 2.

Enter a number between 1 and 10:

5

Enter the sides of triangle 1:

6 6 6

Enter the sides of triangle 2:

4 5 6

Enter the sides of triangle 3:

7 8 9

Enter the sides of triangle 4:

3 4 5

Enter the sides of triangle 5:

5 7 5

Area of triangle 4: 6.00

Area of triangle 2: 9.92

Area of triangle 5: 12.50

Area of triangle 1: 15.59

Area of triangle 3: 26.83