BIL105E

Introduction to Scientific and Engineering Computing

2014 Spring

Report of HW1

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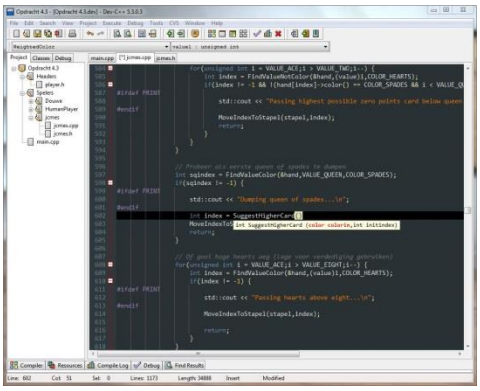
1- Introduction

The purpose of this homework is to develop a C program to analyze triangles in coordinate system. The program calculates edge lengths, area, center of gravity, medians and type of the triangle, if the triangle is valid.

2- Development and Operating Environments

MS Windows

Orwell Dev-C++ (version 5.5.3) environment has been used to write the source code, compile and run the program.



Unix

The source code has been also copied to Unix, then compiled and tested with the

GNU C Compiler. The following is the commands used:

To compile : **gcc -lm hw1.c –o hw1.exe**

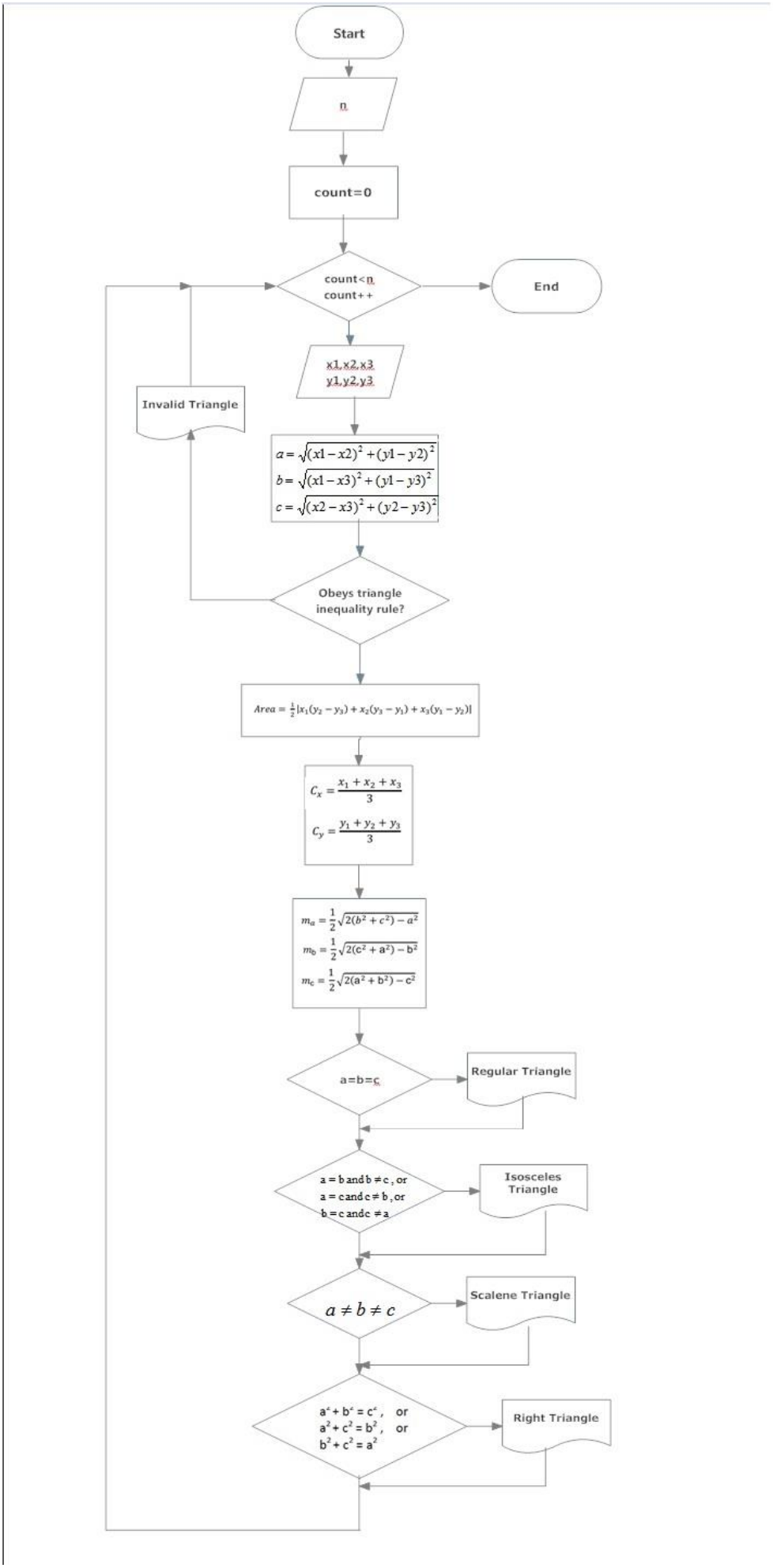
To run : **./hw1.exe**

3- Data Structures and Variables

No data structures were used in this program. The followings are the variables and their initial values:

```
int n;                                  // Number of triangles
float x1,x2,x3,y1,y2,y3;                // Coordinates of the triangle
float a,b,c;                            // Edge lengths
float area;                             // Area of the triangle
float centerOfGrv_x,centerOfGrv_y;      // Coordinates of center of gravity
float median_a, median_b, median_c;     // Lengths of medians
```

4- Program Flow



5- Conclusion

Running a C program Windows and Unix is learned and SmartDraw is used for flowchart in this project.