**BIL105E**

Introduction to Scientific and Engineering Computing

2010 Spring

**Report of HW2**

Date of Submission : 01.04 2010

Student Name :

Student Number :

Instructor :

CRN :

**1-Introduction**

The purpose of this homework is to draw a flowchart and write a C program that reads in a sequence of several circles from standard input (KEYBOARD), then

1) Find the circle that **intersects** with the most other circles, and print to standard output(SCREEN) the circle info and the number of circles that it intersects. If there is no

intersection, then program should print “There is no intersection” message.

2) Find the circle that **contains** the most other circles, and print to standard output(SCREEN) the circle info and the number of circles that it contains. If there is no

containment, then program should print “There is no containment” message.

A circle is specified in the coordinate system by its center (x , y) and its radius r.

**2-Development and Operating Environments**

***MS Windows***

The Dev-C++ 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 hw2.c -o hw2.exe -lm**

To run : **hw2.exe**

**3-Data Structures and Variables**

The followings are the variables and

their initial values:

float x[100]; //array for holding x coordinate of circles

float y[100]; //array for holding y coordinate of circles

float r[100]; //array for holding radius of circles

int intsect[100]={0}; //array for holding each circles’ sum intersection and firstly every circles assigned 0 intersection

int c[100]={0}; //array for holding each circles’ sum

containments and firstly every circles assigned 0 containment

int i,j; //these variables are loop counters

int maxi=0; //this is used for determining max intersection and first value is 0 so that if there is no intersection circle

int maxc=0; //this is used for determining max containment and first value is 0 so that if there is no containment circle

int n; //this variable determine number of circles

int countcon; //this is used for holding one value in arrays in which is the most containment

int countint; //this is used for holding one value in arrays in which is the most intersection

float k; //it is used for simplifying equations

**4-Program Flow**



**5-Conclusion**

In this homework, I have learned the followings:

In this homework, I have learned how to draw a complicated Flowchart with Microsoft Visio and paste it to my report (MS Word document).

I’ve learned to use the C arrays.

I’ve learned to use complicated loop commands with a lot of conditions.

I’ve learned to assign first value for arrays and what is it used for.