Script started on Fri 09 Mar 2018 01:13:13 PM PST

[leesam@sp1:21]> cat lab5.h

//Lab 5 header file

#include <stdio.h>

#include <stdlib.h>

#include <math.h>

#define IN\_FILE "lab5.dat"

#define OUT\_FILE "lab5.out"

/\* function prototype \*/

void find\_two\_radii (double a, double b, double c,

double\*radius\_inside, double\*radius\_outside);

[leesam@sp1:22]> cat lab5.c

/\*-------------------------------------------------------\*/

/\* Sam Lee. \*/

/\* LAB 5, function that "returns" more than one value \*/

/\* Given the sides of a triangle, find the radius of \*/

/\* circles, one inscribed in a triangle, and the other \*/

/\* circumscribed about a triangle. \*/

#include "lab5.h"

int main(void)

{

double a, b, c; /\* sides of the triangle \*/

double radius\_inside; /\* radius of the inside circle \*/

double radius\_outside; /\* radius of the outside circle \*/

FILE \* data\_in; /\* input file pointer \*/

FILE \* data\_out; /\* output file pointer \*/

/\* Open the two required files \*/

data\_in = fopen(IN\_FILE, "r");

if (data\_in == NULL)

{

printf("Error on fopen file %s \n", IN\_FILE);

exit(EXIT\_FAILURE);

}

data\_out = fopen(OUT\_FILE, "w");

if (data\_out == NULL)

{

printf("Error on fopen file %s \n", OUT\_FILE);

exit(EXIT\_FAILURE);

}

/\* Print headers \*/

fprintf(data\_out, "\nSam Lee. Lab 5. \n\n");

fprintf(data\_out, " Triangle Sides Radius-Of-Circle \n");

fprintf(data\_out, " A B C Inside Outside \n");

fprintf(data\_out, "-------------------- ------ ------- \n");

/\* Loop thru the values to compute the two radii \*/

while ((fscanf(data\_in, "%lf%lf%lf", &a, &b, &c))== 3)

{

find\_two\_radii(a, b, c, &radius\_inside, &radius\_outside);

fprintf(data\_out,"%5.2f %5.2f %5.2lf %8.2f %8.2f \n",

a, b, c, radius\_inside, radius\_outside);

}

fprintf(data\_out,"\n");

fclose(data\_in);

fclose(data\_out);

return EXIT\_SUCCESS;

}

/\*-----------------------------------------------------------\*/

[leesam@sp1:23]> cat find\_two\_radii.c

#include <stdio.h>

#include <stdlib.h>

#include <math.h>

void find\_two\_radii(double a, double b, double c, double \*radius\_inside, double \*radius\_outside)

{

double s = .5\*(a+b+c);

\*radius\_inside = sqrt((s-a)\*(s-b)\*(s-c))/s;

\*radius\_outside = (a\*b\*c)/(4\*sqrt((s\*(s-a)\*(s-b)\*(s-c))));

return;

}

[leesam@sp1:24]> cat makefile

radii: lab5.o find\_two\_radii.o

gcc lab5.o find\_two\_radii.o -o radii -lm

lab5.o:lab5.h

find\_two\_radii.o: lab5.h

[leesam@sp1:25]> touch lab5.h

[leesam@sp1:26]> make

cc -c -o lab5.o lab5.c

cc -c -o find\_two\_radii.o find\_two\_radii.c

gcc lab5.o find\_two\_radii.o -o radii -lm

[leesam@sp1:27]> radii

[leesam@sp1:28]> cat lab5.9 [Kout

Sam Lee. Lab 5.

Triangle Sides Radius-Of-Circle

A B C Inside Outside

-------------------- ------ -------

3.70 5.00 4.20 0.46 2.55

6.80 3.00 5.90 0.40 3.41

4.00 3.30 6.10 0.35 3.31

5.60 7.30 5.60 0.55 3.69

[leesam@sp1:29]> exit

exit

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