**PROBLEM**:

Write a program to compute the area of a parabola, with input data in one file, and output data in another file. A file, *lab4.c*, is provided with some of the print statements in it.

The formula we will use is:

area = 2LD Where: area = the area of a parabola

3 L = the length of the opening

D = the depth of the parabola

**INPUT/OUTPUT DESCRIPTION**:

The input will be a file called **lab4.dat**. Each line or record of the file will consist of two numbers: the length and depth of a parabola. Use an *fscanf* statement in a *while* loop to repeatedly get each set of values.

The output will be a file, **lab4.txt**, showing on each line, the length, depth, and area of a parabola.

**ALGORITHM DEVELOPMENT**:

Open the data file **lab4.dat** and do the appropriate error checking

Open the output file **lab4.txt** and do the appropriate error checking

Print your name and the column header lines needed

while ((fscanf(..., &length, &depth)) == 2)

| Compute the area of the parabola

| print the length, depth, and area.

|\_

Print a final empty line.

Close the two files

**DEFINED OUTPUT APPEARANCE**: (showing only 2 of the expected 4 lines)

Ruthann Biel. Lab 4.

Data on Parabolas

Length Depth Area

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12.60 24.80 208.320

5.60 7.80 29.120

**REMINDERS**:

* Include your name and Lab 4 in your comment block, and in your output.
* All numeric variables are to be **double**.
* The formula has implied multiplication which in C means, we must use the \* .
* Some printf and fprintf statements are included in lab4.c for you.

**TO GET THE FILES YOU NEED:**

First move to your class folder by typing: **cd csc60**

The following command will create a directory named **lab4** and put all the needed files into it below your csc60 directory.

Type: **cp -R /gaia/home/faculty/bielr/files\_csc60/lab4 .**

Spaces needed: (1) After the **cp** ^^ *Don’t miss the space & dot.*

(2) After the **-R**

(3) After the directory name at the end & before the dot.

When you are finished, your lab4 directory should list: **lab4.c, lab4.dat**

**WARNING - VIEWING OUTPUT**

When you run the program, it will seem like nothing is happening.

That is because the whole thing is going to **lab4.txt**.

To view that file, type: **cat lab4.txt**

**PREPARE YOUR FILE FOR GRADING**

When all is well and correct,

Type: **script StudentName\_lab4.txt** *[Script will keep a log of your session.]*

Type: **gcc lab4.c** to compile the code

Type: **a.out** to run the program

Type: **cat lab4.txt** to show contents of the output file

Type: **exit** to leave the script session

**Turn in your completed session:** (16 points)

Go to Canvas and turn in:

1. lab4.c
2. your script session (StudentName\_lab4.txt).