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Exercise 3.1

Write a FLTK program that elicits the length, width, and height of a box and then displays the volume of

the box. Hand in a listing of your program and a screen shot of the result after running the program.

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#include <FL/Fl.H>

#include <FL/Fl\_Double\_Window.H>

#include <FL/Fl\_Float\_Input.H>

#include <FL/Fl\_Button.H>

#include <FL/Fl\_Output.H>

#include <FL/fl\_ask.H> // fl\_alert is here

#include <math.h> // M\_PI, sqrt, and cos are here

#include <cstdlib>

#include <cstdio>

// some constants to make changes in layout easier

const int bh = 30; // button height

const int bw = 120; // button width

const int sp = 5; // a little space

const int h = 5\*(bh+sp)+sp; // window height

const int w = 2\*(bw+sp)+bw; // window width

// some global variables

Fl\_Float\_Input \*length = 0;

Fl\_Float\_Input \*width = 0;

Fl\_Float\_Input \*height = 0;

Fl\_Output \*volume = 0;

void calc\_CB(Fl\_Widget\*, void\* v)

{

char \* ptr = NULL;

double l = strtod(length->value(), &ptr);

double b = strtod(width->value(), &ptr);

double h = strtod(height->value(), &ptr);

if(l < 0.0 or b < 0.0 or h < 0.0)

{

fl\_alert("Length or width or height can not be negative.");

return;

}

char value[100];

sprintf(value, "%.2lf", (l\*b\*h));

volume->value(value);

volume->redraw();

}

int main()

{

Fl\_Double\_Window \*win = new Fl\_Double\_Window(w, h, "Calculate volume of a box");

win->begin();

int x = bw;

int y = sp;

length = new Fl\_Float\_Input(x, y, bw, bh, "Length l");

y += bh+sp;

width = new Fl\_Float\_Input(x, y, bw, bh, "width b");

y += bh+sp;

height = new Fl\_Float\_Input(x, y, bw, bh, "height h");

y += bh+sp;

Fl\_Button\* calc = new Fl\_Button(x, y, bw, bh, "Calculate Volume");

y += bh+sp;

volume = new Fl\_Output(x, y, bw, bh, "Volume");

y += bh+sp;

win->end();

length->value("0.0");

width->value("0.0");

height->value("0.0");

calc->callback(calc\_CB);

win->show();

return Fl::run();

}

