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ECE 118 Lab 2

#include "library.h"

//Part 1//

/\*

void draw\_star(int const length){

//length is the length of each if the ten lines that make up the star

set\_pen\_width(5);

set\_heading\_degrees(90);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

}

void main(){

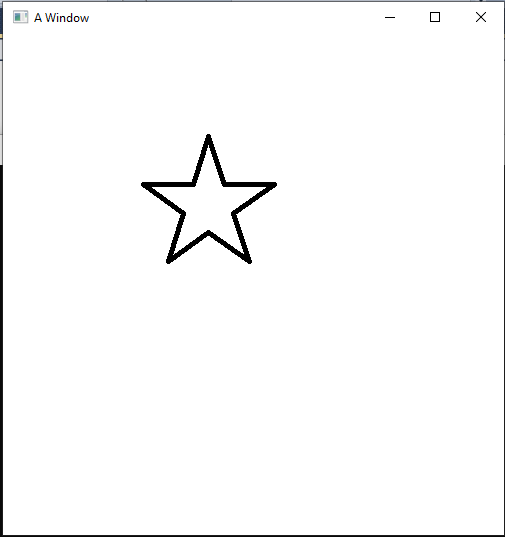
make\_window(500,500);

move\_to(140,150);

draw\_star(100);

}

\*/



//Part 2//

/\*

void draw\_star(int const length){

//length is the length of each if the ten lines that make up the star

start\_shape();

set\_pen\_width(5);

set\_heading\_degrees(90);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

turn\_right\_by\_degrees(144);

draw\_distance(length);

turn\_left\_by\_degrees(72);

draw\_distance(length);

}

void main(){

make\_window(500,500);

move\_to(140,150);

draw\_star(50);

move\_to(182,275);

draw\_star(50);

move\_to(318,275);

draw\_star(50);

move\_to(360, 150);

draw\_star(50);

move\_to(250, 70);

draw\_star(50);

move\_to(100, 300);

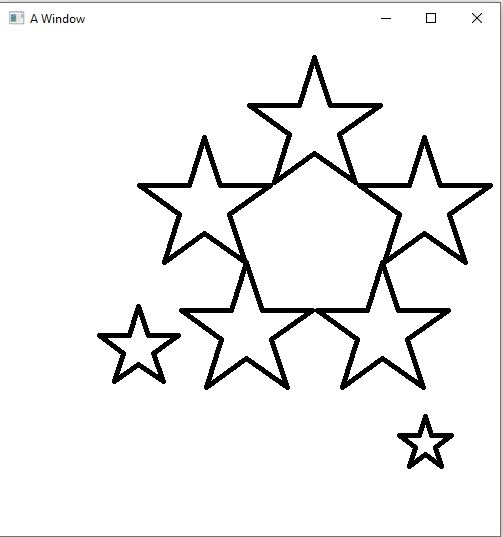
draw\_star(30);

move\_to(400, 400);

draw\_star(20);

}

\*/



//Part 3 Couloring it in

/\*

void draw\_star(int const length){

//length is the length of each if the ten lines that make up the star

start\_shape();

set\_pen\_width(5);

set\_heading\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

}

void main(){

make\_window(500,500);

set\_pen\_color(color::blue);

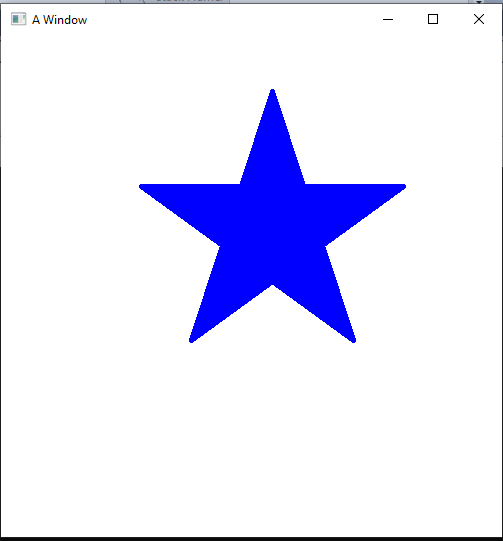
move\_to(140,150);

draw\_star(100);

fill\_shape();

}

\*/



//Part 4 Lone-Star Program

/\*

void draw\_vertical\_stripe(int const length, int const width){

//vertical stripe 100\*200

start\_shape();

set\_pen\_width(2);

set\_heading\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(width); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(width); note\_position();

}

void draw\_horizontal\_stripe(int const length, int const width){

//horizontal stripe 200\*100

start\_shape();

set\_pen\_width(2);

set\_heading\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(width); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(90);

draw\_distance(width); note\_position();

}

void draw\_lone\_star(int const length) {

start\_shape();

set\_pen\_width(2);

set\_heading\_degrees(90);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

set\_pen\_color(color::white);

fill\_shape();

}

void main(){

make\_window(300,200);

set\_pen\_color(color::blue);

move\_to(0,200);

draw\_vertical\_stripe(100,200);

fill\_shape();

set\_pen\_color(color::red);

move\_to(102,200);

draw\_horizontal\_stripe(200,100);

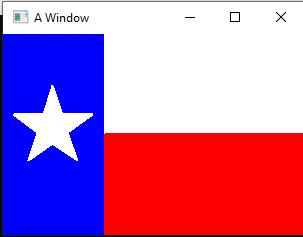
fill\_shape();

move\_to(10,80);

draw\_lone\_star(30);

}

\*/



//Part 5 Row of Star

/\*

void draw\_star(double const length){

//length is the length of each if the ten lines that make up the star

start\_shape();

set\_pen\_width(1);

set\_heading\_degrees(162);

set\_pen\_color(color::white);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

fill\_shape();

}

void row\_of\_six\_stars(double const size, double const length, double const line)

{

double side = (.809 \* (.06\*length)/2);

double spacing = (.033 \* size);

move\_to(spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(3\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(5\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(7\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(9\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(11\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

}

void row\_of\_five\_stars(double const size, double const length, double const line)

{

double side = (.809\*(.06\*length)/2);

double spacing = (.033\*size\*2);

move\_to(spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(2 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(3 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(4 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(5 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

}

void main(){

const double height = 200;

const double width = 2.0\*height;

make\_window(width, height);

set\_pen\_color(color::dark\_blue);

fill\_rectangle(0.0, 0.0, (0.4\*width), (0.5385\*height));

move\_to((0.063\*width), (0.027\*height));

set\_pen\_color(color::white);

//row\_of\_six\_stars(width, height, 1);

row\_of\_five\_stars(width, height, 1);

}

\*/





//Part 6

/\*

void draw\_star(double const length){

//length is the length of each if the ten lines that make up the star

start\_shape();

set\_pen\_width(1);

set\_heading\_degrees(162);

set\_pen\_color(color::white);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

fill\_shape();

}

void row\_of\_six\_stars(double const size, double const length, double const line)

{

double side = (.809 \* (.06\*length)/2);

double spacing = (.033 \* size);

move\_to(spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(3\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(5\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(7\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(9\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(11\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

}

void row\_of\_five\_stars(double const size, double const length, double const line)

{

double side = (.809\*(.06\*length)/2);

double spacing = (.033\*size\*2);

move\_to(spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(2 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(3 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(4 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(5 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

}

void main(){

const double height = 200;

const double width = 2.0\*height;

make\_window(width, height);

set\_pen\_color(color::dark\_blue);

fill\_rectangle(0.0, 0.0, (0.4\*width), (0.5385\*height));

move\_to((0.063\*width), (0.027\*height));

set\_pen\_color(color::white);

row\_of\_six\_stars(width, height, 1);

row\_of\_five\_stars(width, height, 2);

}

\*/



//Part 7 The American Flag

/\*

void draw\_star( double const length)

{

start\_shape();

set\_pen\_width(1);

set\_heading\_degrees(162);

set\_pen\_color(color::white);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

turn\_right\_by\_degrees(144);

draw\_distance(length); note\_position();

turn\_left\_by\_degrees(72);

draw\_distance(length); note\_position();

fill\_shape();

}

void draw\_stripes(double const width, double const height, int const a)

{

double const bar\_height = (height/13);

if (a == 0)

{

set\_pen\_color(color::dark\_red);

fill\_rectangle(0.0, bar\_height\*a, width, bar\_height);

}

else if (a % 2 == 1)

{

set\_pen\_color(color::white);

fill\_rectangle(0.0, bar\_height\*a, width, bar\_height);

draw\_stripes(width, height, a-1);

}

else

{

set\_pen\_color(color::dark\_red);

fill\_rectangle(0.0, bar\_height\*a, width, bar\_height);

draw\_stripes(width, height, a-1);

}

}

void row\_of\_six\_stars(double const size, double const length, double const line)

{

double side = (.809 \* (.06\*length)/2);

double spacing = (.033 \* size);

move\_to(spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(3\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(5\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(7\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(9\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

move\_to(11\*spacing, ((.054\*length\*line)-((side/.809))));

draw\_star(side);

}

void row\_of\_five\_stars(double const size, double const length, double const line)

{

double side = (.809\*(.06\*length)/2);

double spacing = (.033\*size\*2);

move\_to(spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(2 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(3 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(4 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

move\_to(5 \* spacing, (.054\*length\*line)-((side/.809)));

draw\_star(side);

}

void main()

{

const double height = 800;

const double width = 2.0 \* height;

const double stripeh = height/13.0;

make\_window(width, height);

draw\_stripes(width, height, 13);

set\_pen\_color(color::dark\_blue);

fill\_rectangle(0.0,0.0,(0.4\*width), (.5385\*height));

move\_to((.063\*width),(.027\*height));

set\_pen\_color(color::white);

row\_of\_six\_stars(width, height, 1);

row\_of\_five\_stars(width, height, 2);

row\_of\_six\_stars(width, height, 3);

row\_of\_five\_stars(width, height, 4);

row\_of\_six\_stars(width, height, 5);

row\_of\_five\_stars(width, height, 6);

row\_of\_six\_stars(width, height, 7);

row\_of\_five\_stars(width, height, 8);

row\_of\_six\_stars(width, height, 9);

}

\*/

