#include "library.h"

//A1

/\*

void print\_from(int a, int b){

if( a <= b ){

print(a);

new\_line();

print\_from(a + 1, b);

}

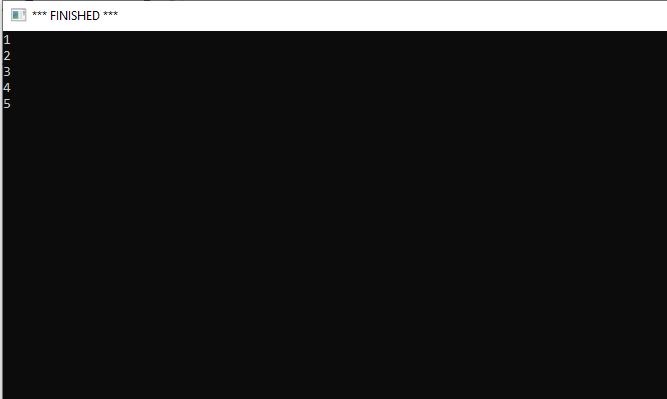
}

void main(){

print\_from(1,5);

}

\*/



//A2 exotic canada

//A2.1

/\*

void print\_from(int a, int b){

if( a <= b ){

print(a);

new\_line();

print\_from(a + 5, b);

}

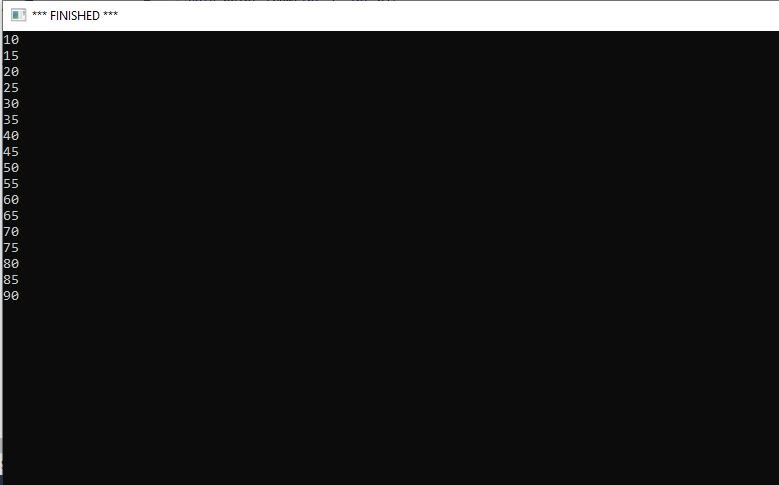
}

void main(){

print\_from(10,90);

}

\*/



/\*

//A2.2

// 1 mile = 1.609344km

void mph\_kph(int x, int y){

if( x <= y ){

print(x);

int a = x \* 1.609344;

print(" mph is ");

print(a);

print(".");

new\_line();

mph\_kph(x + 5, y);

}

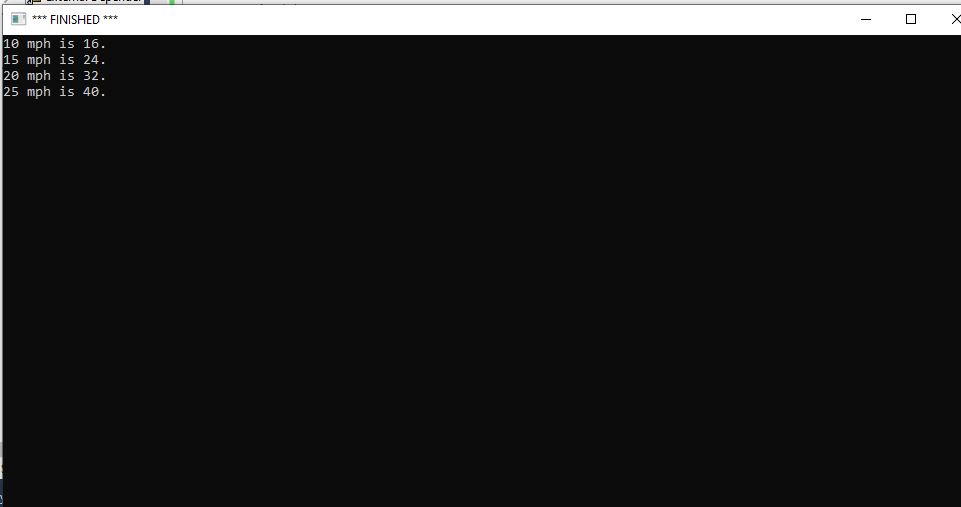
}

void main(){

mph\_kph(10,25);

}

\*/



//A2.3 kmpl - us liquid gallons

//1 liguid gallon = 3.78541 L

// 1 mile = 1.609344km

//range 10 - 50 kmpl (increments of 5)

/\*

void kmpl\_conversion(int a, int b){

//a is kmpl

//output is mpg

if(a <= b){

print(a);

float x = (a\*(1/1.609344)\*(3.78541/1));

print(" kmpl is ");

print(x);

print(" mpg.");

new\_line();

kmpl\_conversion(a+5, b);

}

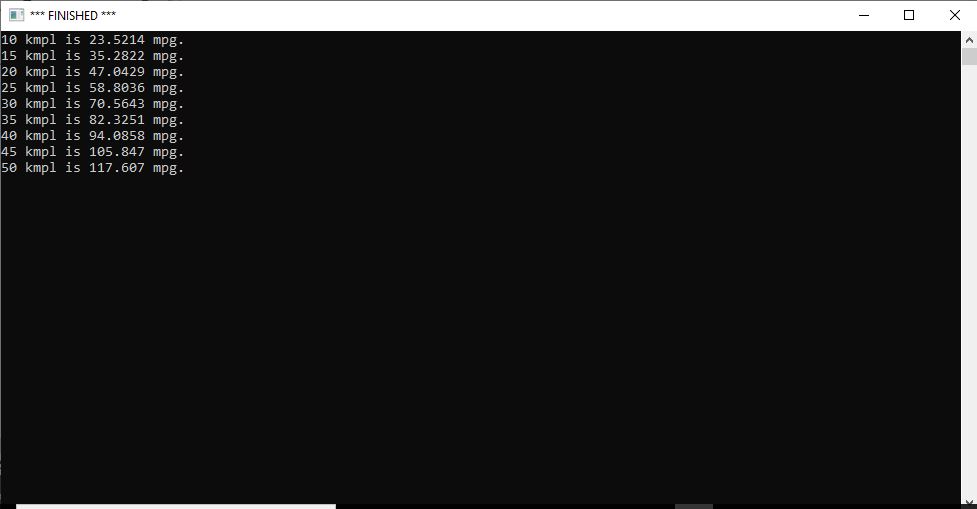
}

void main(){

kmpl\_conversion(10, 50);

}

\*/



//A2.4a

//1USD = 1.23CAD

//Mean Fuel: 1.276 CA$ per liter

//2000 miles road trip, car fuel efficiency 28kmpl

/\*

void print\_km(int a){

if(a>0){

print(a);

}

}

void print\_CA(int a){

if(a>0){

double b =((a/29)\*1.276);

b = (int( b \*100)/100.0);

print(b);

}

}

void print\_mile(int a){

if(a>0){

double b =(a/1.609344);

b = (int( b \*100)/100.0);

print(b);

}

}

void print\_USD(int a){

if(a>0){

double b =((a/29)\*1.276)/1.23;

b = (int( b \*100)/100.0);

print(b);

}

}

void print\_mpg(int a){

if(a>0){

double b = (a/1.609344)\*1.352;

b = (int( b \*100)/100.0);

print(b);

}

}

void road\_trip\_calc(int a){

print("If I am planning to take a ");

print\_km(a);

print(" km road trip, in Canada, in a car with a fuel efficiency of 29.23kmpl, I need to spend ");

print\_CA(a);

print(" CA$ for fuel. A ");

print\_mile(a);

print(" mile road trip in Canada will cost me ");

print\_USD(a);

print(" USD in a car with fuel efficiency of ");

print\_mpg(a);

print(" mpg.");

new\_line();

new\_line();

}

void main(){

road\_trip\_calc(1000);

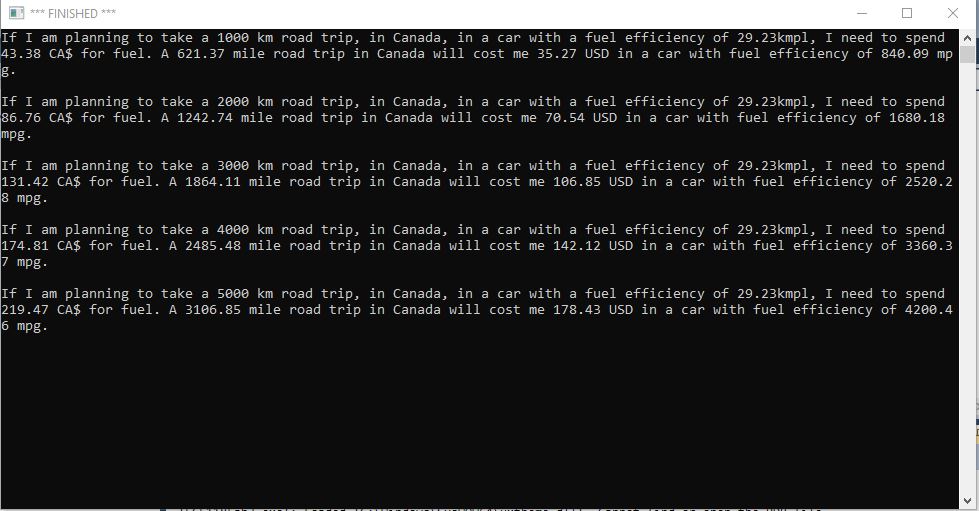
road\_trip\_calc(2000);

road\_trip\_calc(3000);

road\_trip\_calc(4000);

road\_trip\_calc(5000);

}



\*/

//A2.2b

/\*

void print\_kmpl(int a){

if(a>0){

print(a);

}

}

void print\_CA(int a){

if(a>0){

double b = ((5000/a)\*1.276);

b = (int(b\*100)/100.0);

print(b);

}

}

void print\_mile(int a){

if(a>0){

double b = (a/1.609344);

b = (int(b\*100)/100.0);

print(b);

}

}

void print\_USD(int a){

if(a>0){

double b =((5000/a)\*1.276)/1.23;

b = (int( b \*100)/100.0);

print(b);

}

}

void print\_mpg(int a){

if(a>0){

double b = (a/1.609344)\*1.352;

b = (int( b \*100)/100.0);

print(b);

}

}

void road\_trip\_calc(int a){

print("If I am planning to take a 5000km road trip, in Canada, in a car with a fuel efficiency of ");

print\_kmpl(a);

print(" I need to spend ");

print\_CA(a);

print(" CA$ for fuel. A ");

print\_mile(a);

print(" mile road trip in Canada will cost me ");

print\_USD(a);

print(" USD in a car with fuel efficiency of ");

print\_mpg(a);

print(" mpg.");

new\_line();

new\_line();

}

void main(){

road\_trip\_calc(20);

road\_trip\_calc(25);

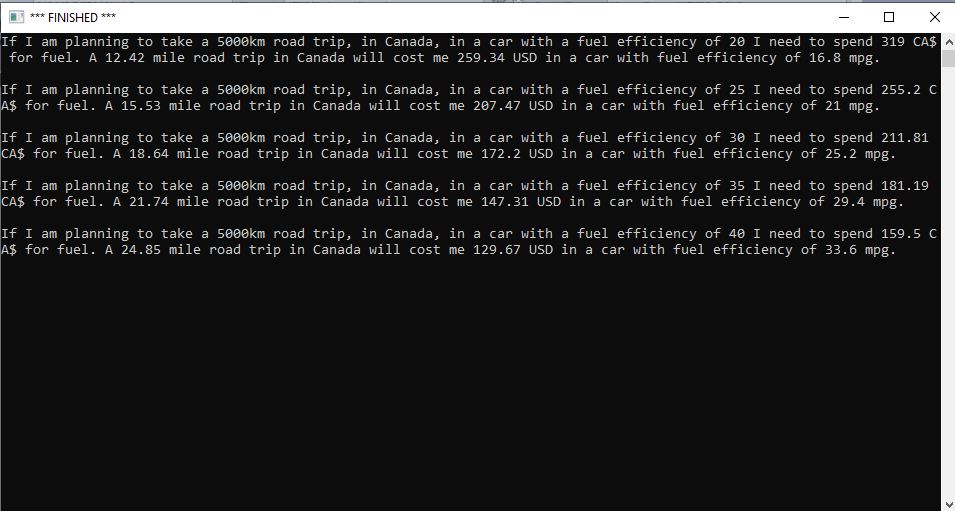
road\_trip\_calc(30);

road\_trip\_calc(35);

road\_trip\_calc(40);

}

\*/



//B1

/\*

void print\_stars(int N){

if(N>0){

print("\*");

print\_stars(N-1);

}

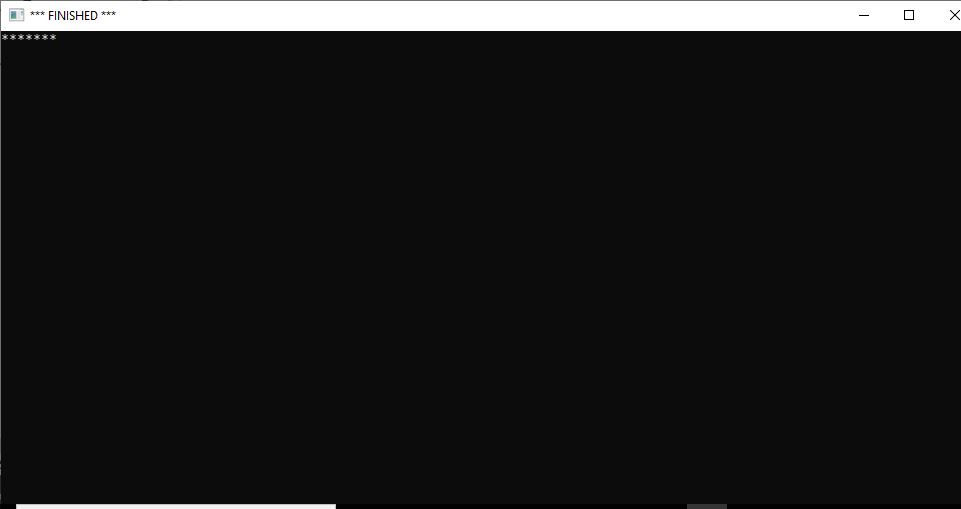
}

void main(){

print\_stars(7);

}

\*/



//B2

/\*

void print\_spaces(int N){

if(N>0){

print("\_");

print\_spaces(N-1);

}

}

void main(){

print\_spaces(7);

}

\*/



//B3

/\*

void print\_dots(int x){

if(x>0){

print(".");

print\_dots(x-1);

}

}

void print\_stars(int N){

if(N>0){

print("\*");

print\_stars(N-1);

}

}

void dotsstars(int A, int B){

if(A>0 && B>0){

print\_dots(A);

print\_stars(B);

}

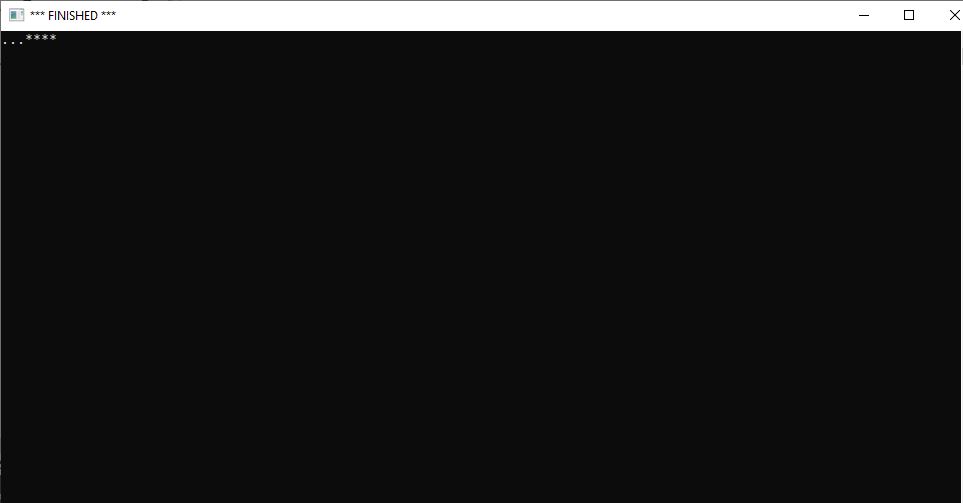
}

void main(){

dotsstars(3,4);

}

\*/



//B4

/\*

void print\_down(int const d){

if(d>0){

print(d);

}

}

void print\_up(int const u){

if(u>0){

print(u);

}

}

void sequence(int const a, int const b){

if(a>0){

print\_down(a);

print\_up(b);

new\_line();

sequence(a-1, b+1);

}

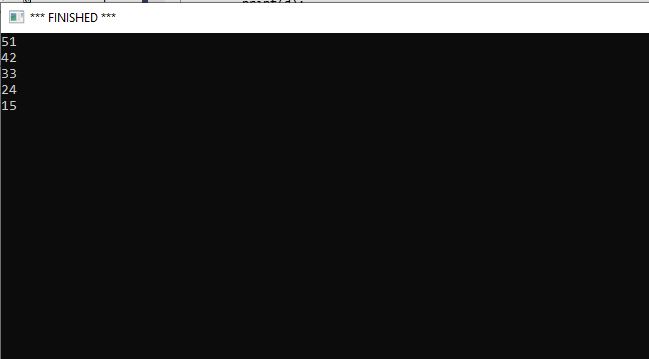
}

void main(){

sequence(5,1);

}

\*/



//B5

/\*

void dots(int const dt){

if(dt>0){

print(".");

dots(dt-1);

}

}

void stars(int const st){

if(st>0){

print("\*");

stars(st-1);

}

}

void triangle(int const a, int const b){

if(a>0){

stars(b);

dots(a);

new\_line();

triangle(a-1, b+1);

}

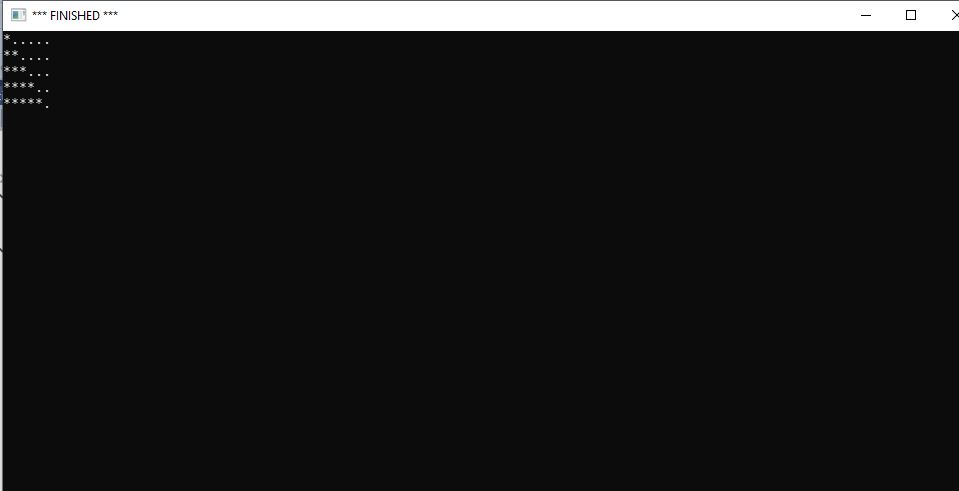
}

void main(){

triangle(5,1);

}

\*/



//C1

/\*

double const pi = acos(-1.0);

void draw\_circle(int d, int a){

turn\_right\_by\_degrees(1);

//a = (2\*pi\*(d/2))/360;

draw\_distance(a);

if(d<360){

draw\_circle(d+1,a);

}

}

void main(){

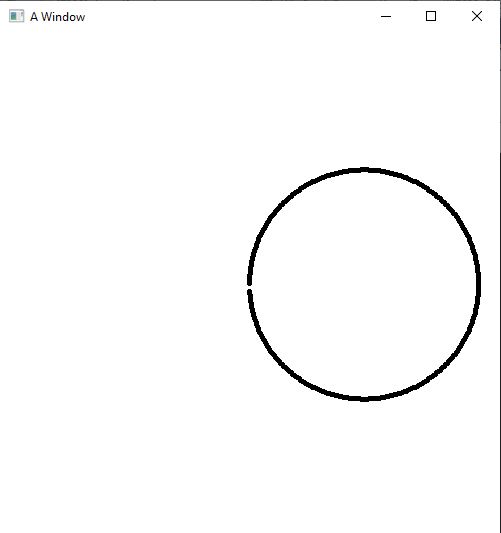
make\_window(500,500);

set\_pen\_width(5);

draw\_circle(5,2);

}

\*/



//C2 Part 1

/\*

double const pi = acos(-1.0);

void draw\_circle(int d, int a){

turn\_right\_by\_degrees(1);

draw\_distance(a);

if(d<360){

draw\_circle(d+1,a);

}

}

void make\_cannon(int x, int y, int a){

move\_to(x-a\*60,y);

draw\_circle(0,a);

}

void make\_cannon\_body(int x, int y, int a){

move\_to(x,y);

set\_heading\_degrees(0);

turn\_right\_by\_degrees(a);

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

draw\_distance(55);

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

draw\_distance(245);

turn\_left\_by\_degrees(88);

draw\_distance(100);

turn\_left\_by\_degrees(88);

draw\_distance(380);

turn\_left\_by\_degrees(90);

draw\_distance(120);

turn\_left\_by\_degrees(90);

draw\_distance(22);

}

void main(){

make\_window(2000,500);

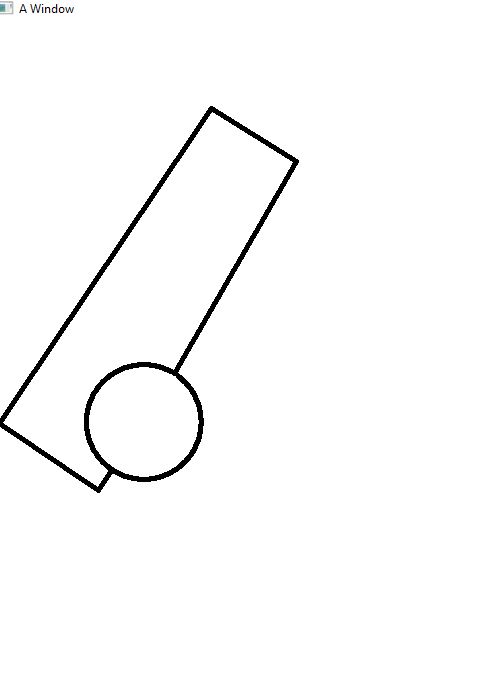
set\_pen\_width(5);

make\_cannon(150,400,1);

make\_cannon\_body(150,400,30);

}

\*/



//C2 Part 2

/\*

double const pi = acos(-1.0);

void draw\_circle(int d, int a){

turn\_right\_by\_degrees(1);

draw\_distance(a);

if(d<360){

draw\_circle(d+1,a);

}

}

void make\_cannon(int x, int y, int a){

move\_to(x-a\*60,y);

draw\_circle(0,a);

}

void make\_cannon\_body(int x, int y, int a){

move\_to(x,y);

set\_heading\_degrees(0);

turn\_right\_by\_degrees(a);

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

draw\_distance(55);

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

draw\_distance(245);

turn\_left\_by\_degrees(88);

draw\_distance(100);

turn\_left\_by\_degrees(88);

draw\_distance(380);

turn\_left\_by\_degrees(90);

draw\_distance(120);

turn\_left\_by\_degrees(90);

draw\_distance(22);

}

void main(){

make\_window(2000,500);

set\_pen\_width(5);

make\_cannon(150,400,1);

make\_cannon\_body(150,400,75);

}

\*/

