Lab Ada1 CECS 524 Sp 2019 Due EOL Today

Turn in one Word file or pdf

1. A screen shot of the output of Distance\_To\_Origin.adb for at least one run
2. The modified Ada file Distance\_To\_Origin.adb saved as Distance\_between\_Points.adb
3. A screen shot of the output of the modified program from 2.

Ada! Our first. Let’s start off simple: cut and paste the code below into a text (notepad, wordpad, etc) editor and save the file as Distance\_To\_Origin.adb. This short program introduces several topics:

1. Ada program structure – a single “main” and no subs
2. Ada RECORD types – not all that different from a struct in C
3. Simple Ada IO – each data type has its own
4. “Importing” libraries into Ada programs – WITH
5. Elipitcal references with USE
6. How to compile, link and execute an Ada program

Here it is:

WITH Ada.Text\_IO;

WITH Ada.Float\_Text\_IO;

WITH Ada.Numerics.Elementary\_Functions;

USE Ada.Numerics.Elementary\_Functions;

PROCEDURE Distance\_to\_Origin IS

TYPE Point IS RECORD

X : Float;

Y : Float;

END RECORD;

Point1 : Point;

Distance : Float;

BEGIN

Ada.Text\_IO.Put(Item => "Enter X Coordinate >");

Ada.Float\_Text\_IO.Get(Item => Point1.X);

Ada.Text\_IO.Put(Item => "Enter Y Coordinate >");

Ada.Float\_Text\_IO.Get(Item => Point1.Y);

Distance := Sqrt(Point1.X \*\* 2 + Point1.Y \*\* 2);

Ada.Text\_IO.Put(Item => "Distance to the origin is ");

Ada.Float\_Text\_IO.Put(Item => Distance, Fore=>1, Aft=>2,Exp=>0);

Ada.Text\_IO.New\_Line;

END Distance\_to\_Origin;

To compile you either need to set the path to MinGW\bin or compile in that directory. Probably should do the former and not the latter. But I did it!

All the following takes place at the Command Prompt (fake DOS window thingy)

To Compile

C:\MinGW\bin>gcc -c Distance\_To\_Origin.adb

To Link

C:\MinGW\bin>gnatbind Distance\_To\_Origin

Create the executable

C:\MinGW\bin>gnatmake Distance\_To\_Origin

gnatbind -x distance\_to\_origin.ali

gnatlink distance\_to\_origin.ali

To run it just type the name

C:\MinGW\bin>Distance\_To\_Origin

After the run take a screen shot. Then change the program to compute the distance between 2 points. So you’ll need to add another Point variable, prompt the user to input the values, modified the calculation, modify the output to say something like “The distance between the points is “ and then the distance.

In case you forgot the distance formula google it!