**Requirement of the program**

To be able to read in the shape base on the X and Y axis base on the data that user have to input base on name of the shape , the type of the shape as well as the X and Y axis on the location of the of all the points. For cross shape there is 12 XY points need while for square and rectangle only need 4, but for circle it requires the centre of the circle as well as the diameter of the circle to calculate the information. After adding the information of the shape next is to calculate the area of each and every shape followed by printing out the shape report. Each shape will be given a unique id starting from 0 base on which shape did u key in first. Next step is to sort the shape by area ascending or decreasing order or by special type and area .

To compile the files into the exe type you will have to insert the code below including the the original cpp files as well as the other .h and .cpp supporting files

g++ -std=c++11 8379166\_a2.cpp Circle.cpp Circle.h ShapeTwoD.cpp ShapeTwoD.h Rectangle.cpp Rectangle.h Cross.cpp Cross.h Square.cpp Square.h -o csci251\_a2.exe

**Program Design**

A screenshot of a computer flowchart

Description automatically generated

**Summary of implementations**

I started off with the main menu as it is what the user first see. After that I started to troubleshoot on how to key in all the shape with it being WS or NS, shape name , (x,y) of the shape. After that calculate the area then to sorting of the the data input.

**Reflection on program development**

The whole assignment was not easy I did quite a lot of digging and got help online as well as friends. I would hope that the program for C++ could be slightly easier as the whole process was really hard and was not what I was expecting for a project from school and I have not done any C++ coding before as I have only learn C# back in poly. While doing the project it got abit confusing as I tend to get mixed up with the python code from my other class with this class C++