COSC 4370 - Homework 1

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1 Objective

The assignment requires the rasterization of an ellipse. The equation that we will be using is $\left(\frac{x}{12}\right)^2 + \left(\frac{y}{6}\right)^2 = 64$. The parameters are where x>= 0.

2 Method

There is only one method that needs to be used called midEllipse(), this function uses the midpoint algorithm to calculate the region 1 and 2 of each individual quadrant. Considering we are only doing when x>= 0, we must only do 2 quadrants, the 2nd and 4th quadrants.

3 Implementation

We used the given structure of BNP to create the implementation, we created a box of 300 by 300 and made the fill region width and height 300 both as well. In order to compliment the 6 and 12 x and y-intercept of the ellipse we converted the numbers to the 100-> where 6 = 60 and 12 = 120. This was to not have such a pixely ellipse but rather get an almost perfect ellipse form.

In order to run the code one must simply compile and run the main file. There is no input needed from the user, code will ouput a simple output.bmp file which should open an image of a ellipse in the center where x>=0. The image below is the ouput.