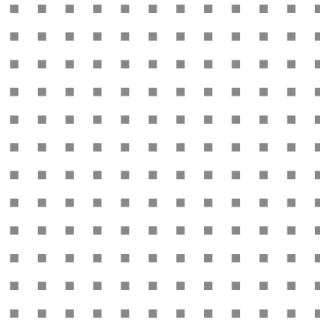

Code Sample - Fitting an Ellipse to points on a grid

Design a program capable of fitting an Ellipse to chosen points on a grid. The system should start with a single window containing a 20x20 grid of square points similar to this:



All points should start out gray. The user is allowed to toggle the individual points on the grid on and off. Add a button at the bottom of the window. When the user clicks this button, generate an ellipse that best fits the highlighted points. Create an iterative, geometric least squares-based algorithm that does not rely on an external library or code to find the best fit. Document each step of the algorithm in detail, including your reasoning for each step. Such a fit for a circle is shown below.

