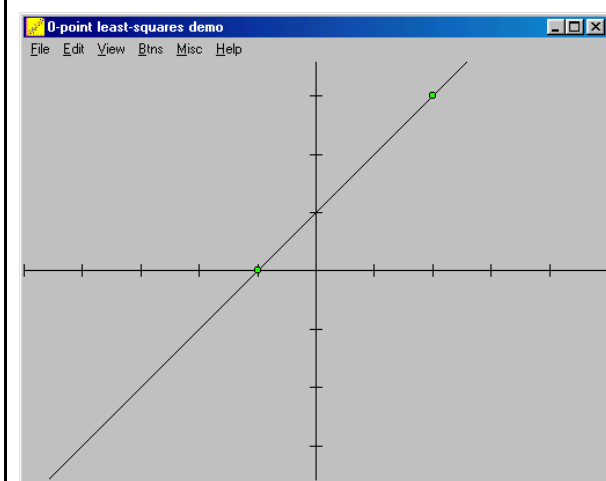


Least Squares Line Demo

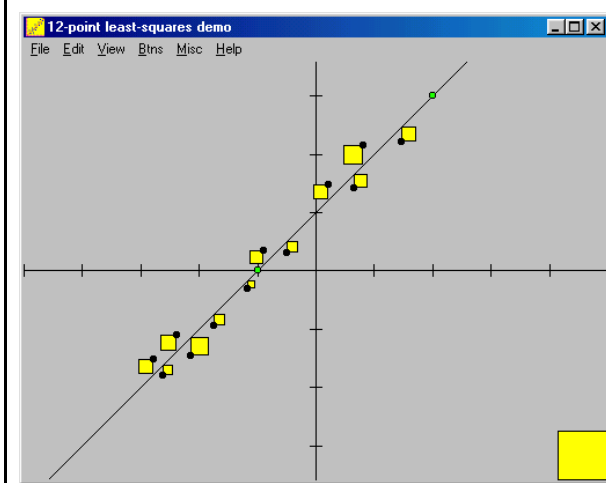
Overview: This is an excellent tool for introducing the intuitive concept of the meaning of the Least Squares Regression Line. It should be appropriate for Junior High to Senior High students beginning a study of scatter plots and lines of best fit. This demo does NOT show students how to calculate the line of best fit.



Select WINDOW - DEMOS- Least Squares

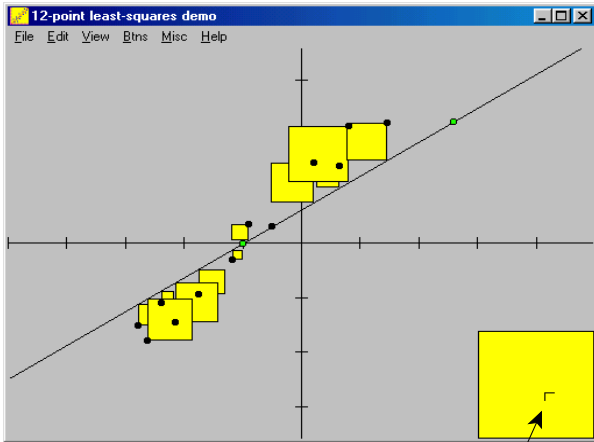


When this screen appears, notice the green points on the line. These are “handles” that will allow you to click and drag the least squares line once you have plotted some points after the next step.



Use RIGHT CLICKS on the mouse to plot a few points at random .

The square in the bottom right corner is the sum of the areas of all the squares constructed from each point to the line.



Boundary of Least
Squares total area

By LEFT CLICKING and DRAGGING on one of the handles, the line of best fit can be rotated. Visually, we can see the line no longer fits the data well, and we can see the square representing total area in the bottom right corner has increased beyond the area set by the line of best fit in the previous screen shot.

By experimenting with the handles and moving the line to several positions, we can see visually that the line of best fit appears to be the one that minimizes the total area of the squares from each point to the line. The line that gives this best fit is called the LEAST SQUARES REGRESSION LINE.