

This is done through a [bilinear interpolation](#) algorithm. It is a cool math trick that calculates the value of a point based on the values of those around it.

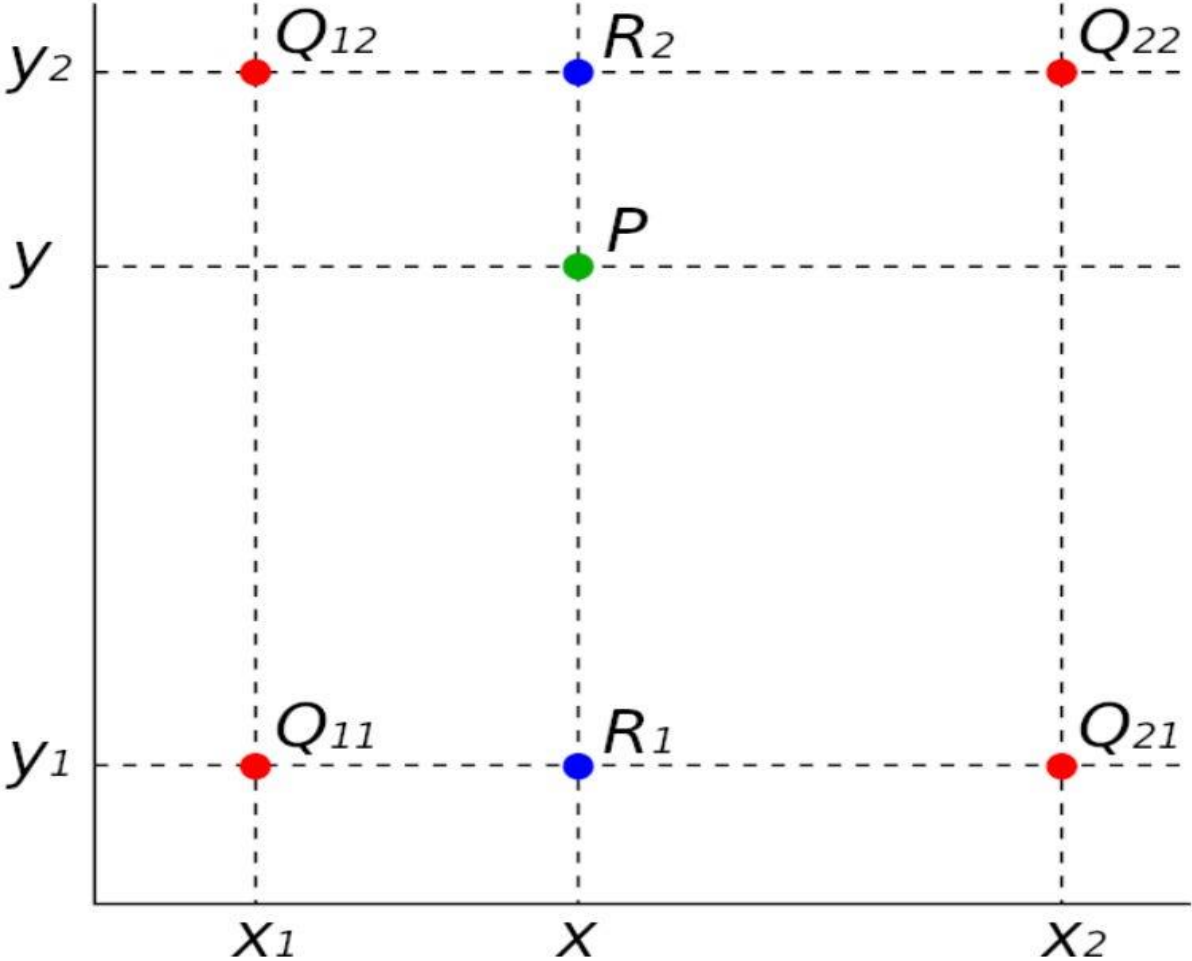


Image: x-engineer.org

Say you don't know the value of point P, but do know the value of points Q11, Q12, Q22, and Q21. Bilinear interpolation says you can calculate it with two linear interpolations along the x-axis and one along the y-axis.

Point  $R_1(x, y)$  is defined as:

$$R_1(x, y) = Q_{11} \cdot (x_2 - x) / (x_2 - x_1) + Q_{21} \cdot (x - x_1) / (x_2 - x_1)$$

Point  $R_2(x, y)$  is defined as:

$$R_2(x, y) = Q_{12} \cdot (x_2 - x) / (x_2 - x_1) + Q_{22} \cdot (x - x_1) / (x_2 - x_1)$$

The interpolated point  $P(x, y)$  is defined as:

$$P(x, y) = R_1 \cdot (y_2 - y) / (y_2 - y_1) + R_2 \cdot (y - y_1) / (y_2 - y_1)$$

Source : [https://www.instructables.com/Pocket-Sized-Thermal-Imager-Infrared-Thermometer/?utm\\_source=newsletter&utm\\_medium=email](https://www.instructables.com/Pocket-Sized-Thermal-Imager-Infrared-Thermometer/?utm_source=newsletter&utm_medium=email)