

Traffic Light Mathematical Model

Values for red light duration, yellow light duration and green light duration on initial traffic light are R_1, Y_1, G_1 respectively, where R_1, Y_1, G_1 are assigned by the user.

The following must hold true: $R_1, Y_1, G_1 \in \mathbb{Z}^+$ and $G_1 - 2 \geq R_1$

If these two conditions are held then the following model is used for the second traffic light.

$$R_2 = Y_2 + G_1$$

$$G_2 = R_1 + G_1$$

$$Y_2 = R_1 + G_2$$