Simulation GUI

For this assignment, you will create a JComponent-based Swing GUI for the SIM. The GUI will be used to configure the simulation in several ways:

0. Increase the size of the grid _model_ from 5x12 to 10x24.
1. A slider to change the duration of the stoplights between 10 and 60 seconds.
2. A checkbox and entry field to indicate whether to stagger the timing of each stoplight by a given number of seconds from the others at adjacent streets. If the checkbox is selected, then the given number of seconds between 1 and half the light duration.
3. A drop down list to create and display a grid for a given quadrant:

   Quadrant 1: (1,1) to (12,5)
   Quadrant 2: (1,5) to (12,10)
   Quadrant 3: (12,1) to (24,5)
   Quadrant 4: (12,5) to (24,10)

When vehicles move off a quadrant they should appear on any other displayed quadrant that they enter. If a grid is created after the simulation starts, it should be initialized from the corresponding portion of the underlying model.

Vehicles still enter from the West and drive off directly off the East side of the grid.

4. A button to start and pause the SIM.
5. A button to shutdown the SIM.