Infrared sensors can also be used to compute the number of vehicles in a lane of a road. Infrared sensor also called as IR sensor is a electronic device used to sense the objects either by emitting or detecting infrared radiation. The range of a ideal IR sensor is up to 150 cm with supply voltage of 4.5-5.5 D.C volts. Here, 4 IR sensors are used for 4-way traffic signal system and hence 4 microcontrollers are used in the circuit. The microcontrollers used are Arduino Nano (ATmega 328). Arduino Nano works with a Mini-B USB cable, rather than the standard one. This system is therefore based on microcontroller and it contains IR transmitters and receivers which are mounted on both sides of single road. Here, the IR sensor gets activated when a vehicle passes or stops in between the sensors. Now the data formed by the IR sensors is transferred to the microcontroller for further processing. The density of vehicles in each lane of a 4-way traffic signal is obtained and based on it; the microcontroller decides the output of the LEDs on each signal. The IR sensors come with certain disadvantages that can be crucial at many situations in real life. The IR sensor works only for short distances and it may also absorb normal light as obstacle. For more accuracy, more number of IR sensors will be required and thus the efficiency of the system will be reduced. Hence, we can replace the IR sensors by a more cost effective and efficient system like image processing.