Problem Statement

Simulating a McDonalds drive:

• There is an ultrasonic sensor that senses if there is a vehicle coming. If

there is a vehicle detected, it sends signal to a servo motor in order to

open a barricade so that the vehicle may pass. After a particular delay, it

should close again. (1 ultrasonic sensor, 1 servo motor)

• Then the vehicle goes at window-1 where order can be placed. There are

four icons for four menu items and there is an IR sensor placed beneath

each icon. The customer waves in front of the sensor respective to the

menu item and thus the order for that item is placed. Here wave refers

to moving the hand in front of the sensor. (4 IR sensors)

• On the output side, (window-2) we will have four LEDs corresponding to

the same menu items. If a particular item is delivered, its LED will glow.

(4 LEDs)

• When a vehicle is detected at the final window, another ultrasonic

sensor sends signal to another servo to open the barricade so that the

vehicle may leave. After a particular delay, it should close again. (1

ultrasonic sensor, 1 servo)

DETAILS:

• Menu items are: A (Red LED), B (Blue LED), C (Green LED) and D (Yellow

LED)

• Assume that payment is taken care of.

• Servos should rotate 90 degrees to open/close barricades.

• Sensors should be named with appropriate variables as mentioned here:

us\_1, us\_2, ir\_1, ir\_2, ir\_3, ir\_4, led\_r, led\_b, led\_g, led\_y, servo\_1,

servo\_2.

• Assume appropriate distance of vehicle from ultrasonic sensor for its

detection.

• Take similar assumptions for IR sensors as well.