SCS2213 Electronics and Physical Computing Practical Assignment 01

Date: 22/02/2023 Start time: 02.40 pm Duration : 2 hours

Make sure to submit before 04.50 pm on the same day.

Index number:- Name:-

Registration number:- Group number:-

Task 01 (60 min)

Using the Arduino simulation platform, you need to construct a pedestrian crossing system related to the figure shown below.

You need to detect humans by using a proper sensor and also should override the process using manual push button.

Q1. Explain why did you use that sensor?

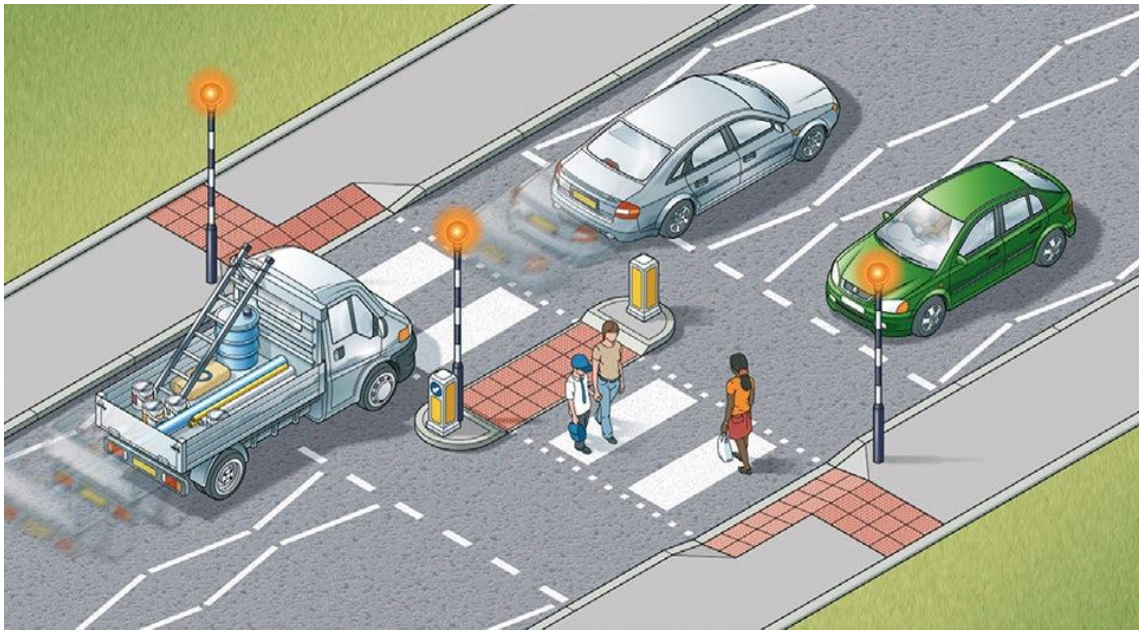
Q2. Construct the circuit and attach a screenshot.

On the vehicle side, you need Red, Yellow, and Green LEDs

On the pedestrian side Red, Green LED, Sensor, and beeping speaker

Q3. In the code attach a screenshot with comments.

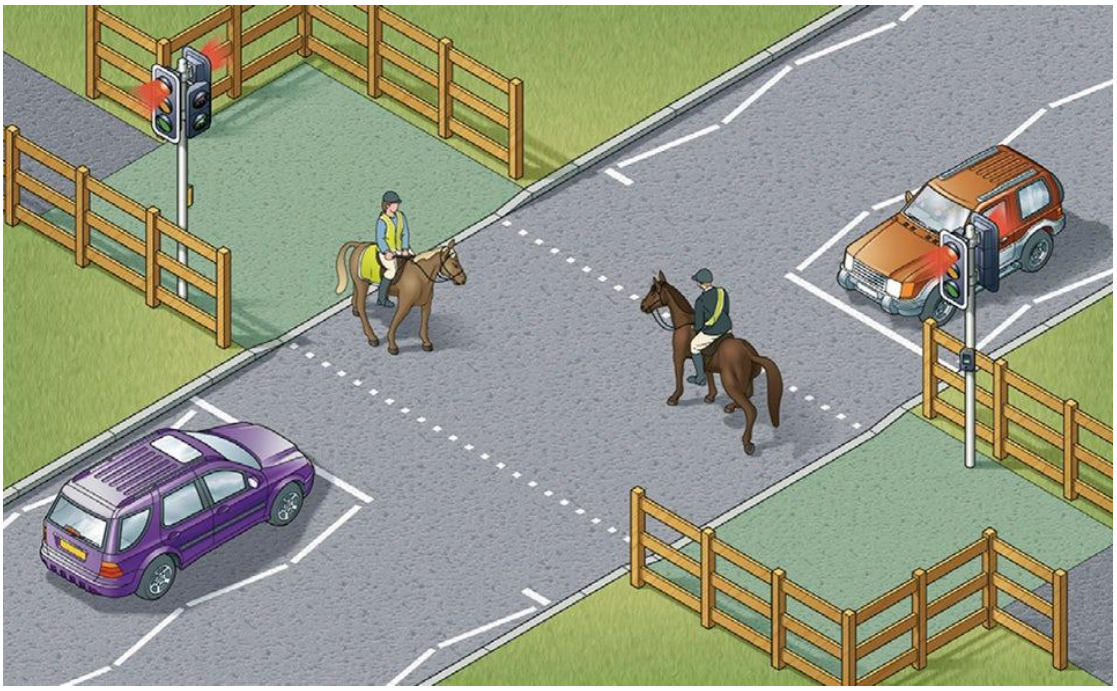
In default mode Red to pedestrian and Green to vehicles, when a pedestrian detects or manually presses the switch wait 2 s, then turn on the yellow LED 3, next turn on the red and pedestrian green LED with a beep sound 5 s, finally red LED intensity increasing and frequency of beep is increasing 5 s, reset and rest next 10 s and start the function again.



Task 02 (30 min)

Repeat Task 1 by adding extra activity.

Now there are some horse rides. So add some solutions to detect separate horse riders from pedestrians and explain your solution briefly.



Task 03 (30 min)

This is the code of serial printing using this code you can print anything on serial monitor. Bolt word will print.

```
void setup() {
        Serial.begin(9600);
}
void loop() {
        Serial.println("Hello Mars!");
}
```

Q1. Modify the code to count the number of horse riders and pedestrians separately and serial print in a single line **”Pedestrian = XXX”**

Q2. Explain your code modification

Q3. Run the system minimum of 10 min and randomly trigger each sensor and attach a Screenshot of your code and serial monitor.

Submit Your report in pdf format and rename it with your Group number and index number.
“05_A_20xxxxx” submit your report to the given link on VLE.