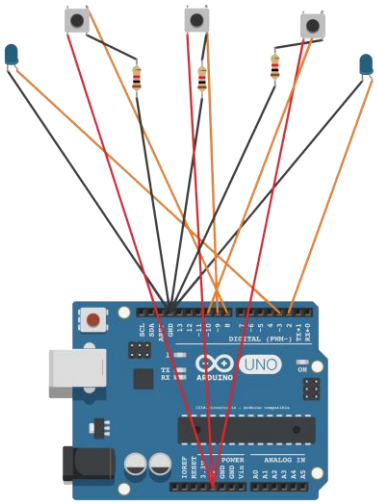
Internet Of Things Year 2 Assignment

Embedded Application Development

Name: Luke Halley
Course: Internet Of Things
Student Number: 20071820
Date: 29th November 2016
Submission Due Date: 2nd December 2016

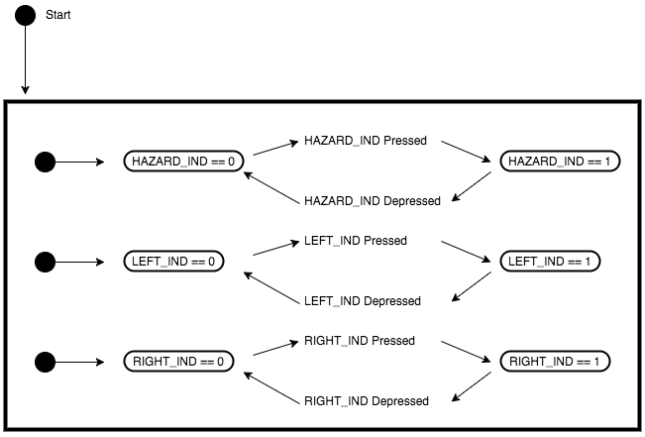
Design (Using circuits.io):



Components Used:

- Arduino Uno
- Three Buttons
- Two LEDS
- Connecting Wires
- Three Resistors

State Chart:



C Code:

```
int TIME_INTERVAL = 250; //0.5 Seconds

int HAZARD_IND = 0, LEFT_IND = 0, RIGHT_IND = 0, RIGHT_LED = 2, LEFT_LED = 3;

void setup()
{
  pinMode(2, OUTPUT); //RIGHT LED
  pinMode(3, OUTPUT); //LEFT LED

  pinMode(8, INPUT); //LEFT INDICATOR
  pinMode(9, INPUT); //HAZARD
  pinMode(10, INPUT); //RIGHT INDICATOR
}

void loop()
{

  HAZARD_IND = digitalRead(9);
  LEFT_IND = digitalRead(8);
  RIGHT_IND = digitalRead(10);

  //Hazard Code

  if (digitalRead(HAZARD_IND) == 0) {

    digitalWrite(LEFT_LED, HIGH);
    digitalWrite(RIGHT_LED, HIGH);  // turn on both the LEDs

    delay(TIME_INTERVAL);             // wait one a second

    digitalWrite(LEFT_LED, LOW);
    digitalWrite(RIGHT_LED, LOW);   // turn off both the LEDs

    delay(TIME_INTERVAL);             // wait for a second
  }

  //Left Indicator Code

  if (digitalRead(LEFT_IND) == 0 && digitalRead(HAZARD_IND) != 0) {

    digitalWrite(LEFT_LED, HIGH);   // turn the LED on (HIGH is the voltage level)

    delay(TIME_INTERVAL);             // wait for a second

    digitalWrite(LEFT_LED, LOW);    // turn the LED off by making the voltage LOW

    delay(TIME_INTERVAL);             // wait for a second
  }

  //Right Indicator Code

  if (digitalRead(RIGHT_IND) == 0 && digitalRead(HAZARD_IND) != 0) {

    digitalWrite(RIGHT_LED, HIGH);   // turn the LED on (HIGH is the voltage level)

    delay(TIME_INTERVAL);              // wait for a second

    digitalWrite(RIGHT_LED, LOW);    // turn the LED off by making the voltage LOW

    delay(TIME_INTERVAL);              // wait for a second
  }

}
```