Experiment No. : 05

Statement : Make a street light controller.

Date of Exp. : xx/xx/xxxx

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const int streetLightPins[] = {2, 3, 4}; // Pins connected to the street lights

const int pedestrianLightPins[] = {5, 6}; // Pins connected to the pedestrian lights

const int dayNightSwitchPin = 7; // Pin connected to the day/night mode switch button

bool isDayMode = true; // Flag to track day/night mode

void setup() {

// Set the street light pins as outputs

for (int i = 0; i < sizeof(streetLightPins) / sizeof(streetLightPins[0]); i++) {

pinMode(streetLightPins[i], OUTPUT);

digitalWrite(streetLightPins[i], LOW); // Initially turn off street lights

}

// Set the pedestrian light pins as outputs

for (int i = 0; i < sizeof(pedestrianLightPins) / sizeof(pedestrianLightPins[0]); i++) {

pinMode(pedestrianLightPins[i], OUTPUT);

digitalWrite(pedestrianLightPins[i], LOW); // Initially turn off pedestrian lights

}

// Set the day/night switch pin as input with internal pull-up resistor

pinMode(dayNightSwitchPin, INPUT\_PULLUP);

}

void loop() {

// Check if the day/night mode switch button is pressed

if (digitalRead(dayNightSwitchPin) == LOW) {

isDayMode = !isDayMode; // Toggle day/night mode

delay(200); // Delay for debounce

}

// Control street lights and pedestrian lights based on day/night mode

if (isDayMode) {

// Day mode: Turn on street lights, turn off pedestrian lights

for (int i = 0; i < sizeof(streetLightPins) / sizeof(streetLightPins[0]); i++) {

digitalWrite(streetLightPins[i], HIGH);

}

for (int i = 0; i < sizeof(pedestrianLightPins) / sizeof(pedestrianLightPins[0]); i++) {

digitalWrite(pedestrianLightPins[i], LOW);

}

} else {

// Night mode: Turn off street lights, turn on pedestrian lights

for (int i = 0; i < sizeof(streetLightPins) / sizeof(streetLightPins[0]); i++) {

digitalWrite(streetLightPins[i], LOW);

}

for (int i = 0; i < sizeof(pedestrianLightPins) / sizeof(pedestrianLightPins[0]); i++) {

digitalWrite(pedestrianLightPins[i], HIGH);

}

}

}

