

ME-GY:6933 ADVANCED MECHATRONICS – FINAL PROJECT

INTELLIGENT STREET LIGHTING

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STREET LIGHT ENERGY WASTE

- In today's world, 60% of the electricity produced is used for the street lighting due to its continuous operation during nighttime.
- Significant amount of electricity is consumed due to streetlights because of continuous operation of lighting during the nighttime.
- In order to reduce the electricity consumption and wastage of energy, the system that must combine the existing network with intelligence to think itself.

UAE PAPER REPORT

Gulf News | Tuesday, October 30, 2012 | gulfnews.com

YOUR TURN | D5

Lights left on during the day waste energy

Street lights are not switched off on time

Twitter comments

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Matter of fact

Gulf News wrongly reported/quoted the following:

It The name of the President of the Arabic CSO Network as **Fatima Al-Masoudi** instead of **Mahda Al-Husseini**. It was part of the page A5 report, "Arabic communities how-mixed", Action section, October 26.

We apologise for the error and any inconvenience it might have caused. Gulf News is committed to being fair.

If there is an error in the newspaper, we will correct it promptly and fully.

If you come across any factual errors, mistakes or misquotations, please let us know at readers@gulfnews.com.

Community report

By **UNHMER DAYTA**
Gulf News reader

Regardless of energy saving being the concept that is being promoted by the authorities and environmental organisations, I noticed this some recently.

All the street lights on the Jumeirah Corniche in Sharjah were switched on in the morning, at a time when the sun-light was enough to help motorists and pedestrians find their way.

It is upsetting when we see that electricity is being wasted in this manner. I visited several other places in Sharjah and found the same scenario in most of the places.

We all are trying our best to reduce consumption of electricity. However, this type of misuse of energy demotivates us.

I request the authorities concerned to install automatic light-detecting devices at public places, so that when enough sunlight is available, the street lights will turn off automatically and when it is dark outside, the street lights will turn on.

» The reader is based in Sharjah. As a community reporter, tell us what is happening in your community. Send us your videos and pictures at readers@gulfnews.com.



Need for conservation

» Street lights are left on during the day at a residential area (left) and near the Gold Souq (right) in Sharjah.

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EFFECTS ON WILDLIFE AND ECOSYSTEMS

- Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including amphibians, birds, mammals, insects and plants.
- Artificial streetlights disrupt this nocturnal activity, interfering with reproduction and reducing populations.
- Many insects are drawn to light, but artificial lights can create a fatal attraction.

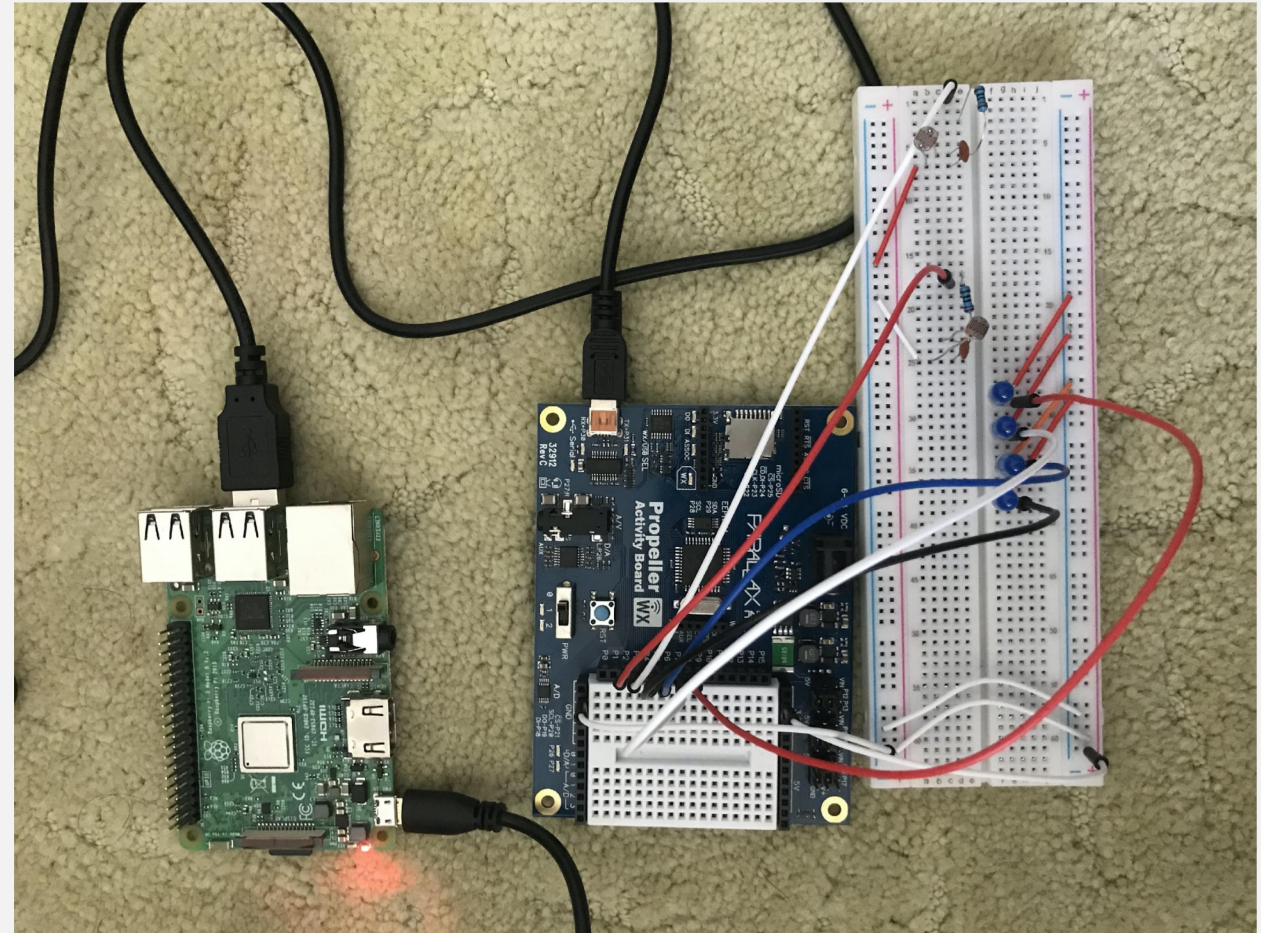
WHAT WE USED?

Items	Quantity	Price
Propeller Activity Board WX	1	\$79.99
Raspberry Pi (Kit)	1	\$79.99
LEDs	4	N/A
Photo Resistors	2	N/A
Capacitor	2	N/A
Total		\$159.98

HARDWARE AND CIRCUIT

Hardware Used for the Project

1. Raspberry Pi
2. Parallax Propeller Activity Board
3. Photoresistors
4. LEDs



CODE

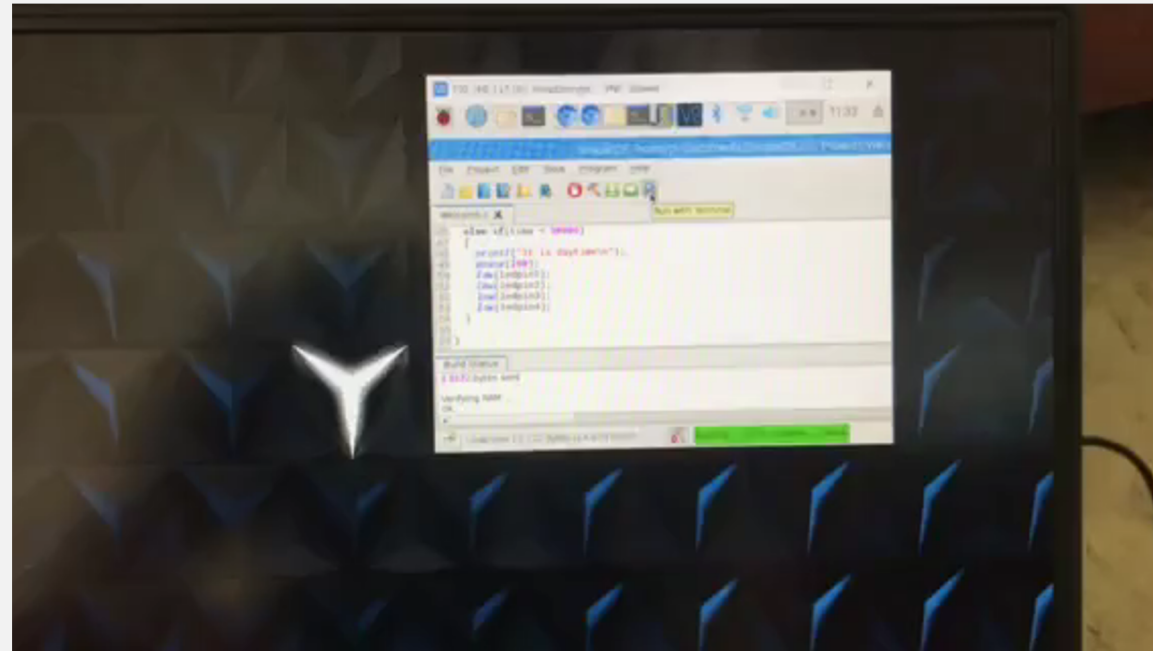
```
#include "simpletools.h"           // Include simple tools
#define ledpin1 5
#define ledpin2 6
#define ledpin3 7
#define ledpin4 8
int main()                        // Main function
{
    pause(500);
    printf("Smart Street Lightining System\n");
    while(1)
    {
        high(3);
        pause(100);
        long time = rc_time(3,1);
```

CODE

```
if (time > 50000)
{
    printf("It is Night Time\n");
    high(2);
    pause(100);
    long time1 = rc_time(2,1);
    printf("The RC_Tlme is %6d\n",time1);
    if(time1 < 5000)
    {
        printf("Car is Present\n");
        low(ledpin4);
        high(ledpin1);
        pause(500);
    }
    high(ledpin2);
    pause(500);
    high(ledpin3);
    pause(500);
}
```

```
else if(time1 > 15000)
{
    printf("Car checked into another lighting pole\n");
    low(ledpin1);
    high(ledpin2);
    pause(500);
    high(ledpin3);
    pause(500);
    high(ledpin4);
    pause(500);
}
else if(time < 50000)
{
    printf("It is daytime\n");
    pause(100);
    low(ledpin1);
    low(ledpin2);
    low(ledpin3);
    low(ledpin4)
}
}
```

DEMO



ANY QUESTIONS???

THANK YOU!