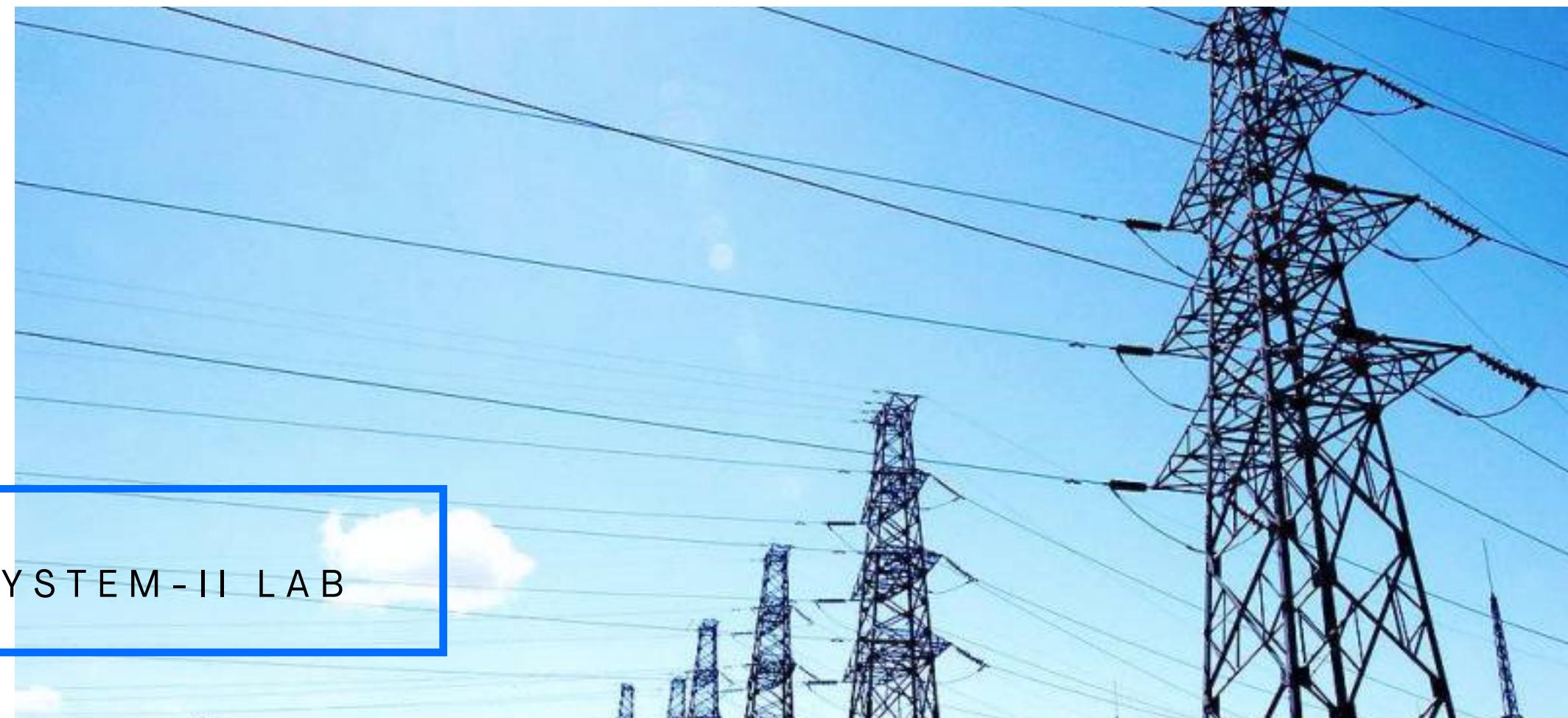


# OVERHEAD TRANSMISSION LINE FAULTS

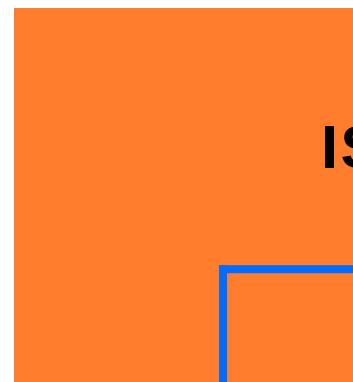
## Project Manual

GROUP NO: 1  
YEAR: 4TH  
SEMESTER: 1ST  
DEPARTMENT: EEE

COURSE NO: EEE 4154  
COURSE NAME: POWER SYSTEM-II LAB



# THE TEAM



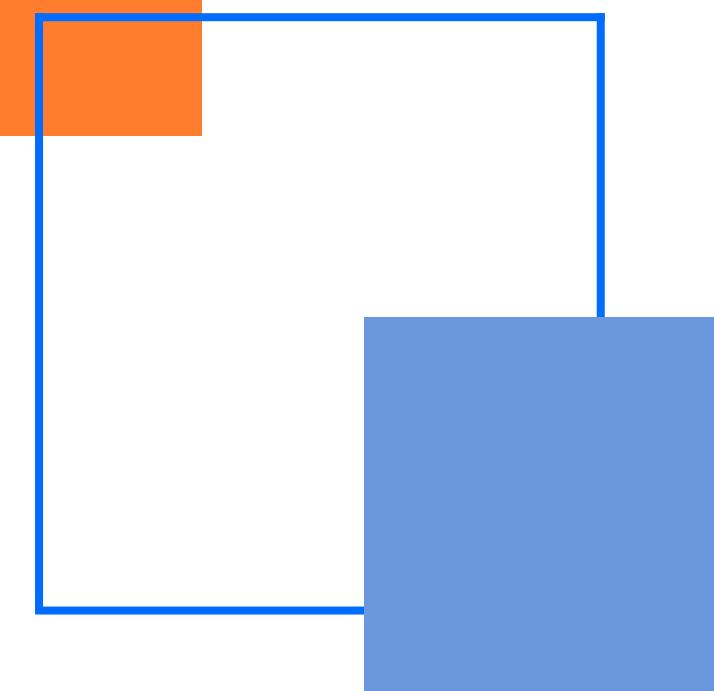
**ISRAT JAHAN TASMIA**  
190105003



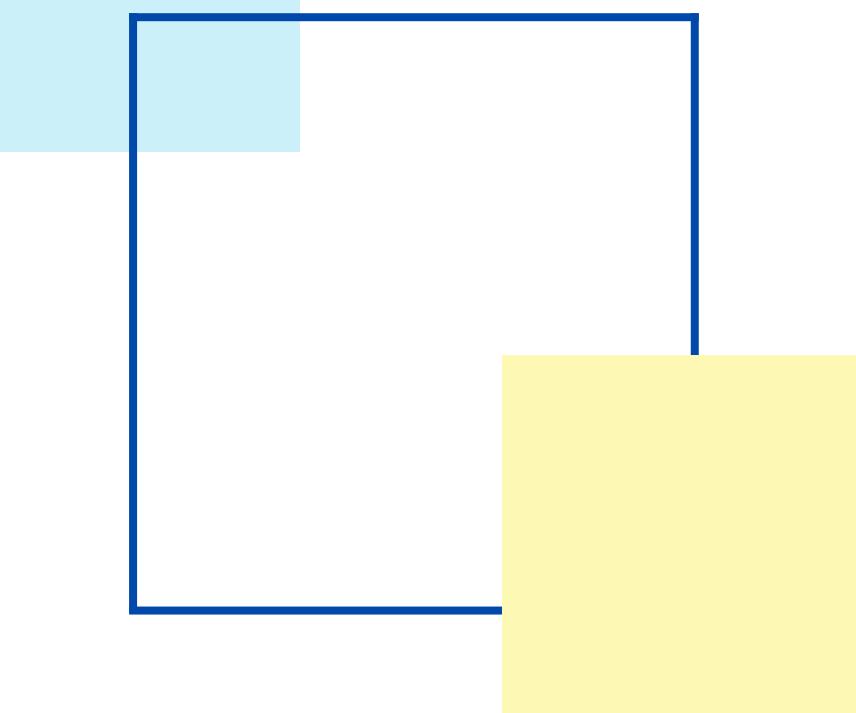
**FAYZAN KOWSHIK KHAN**  
190105007



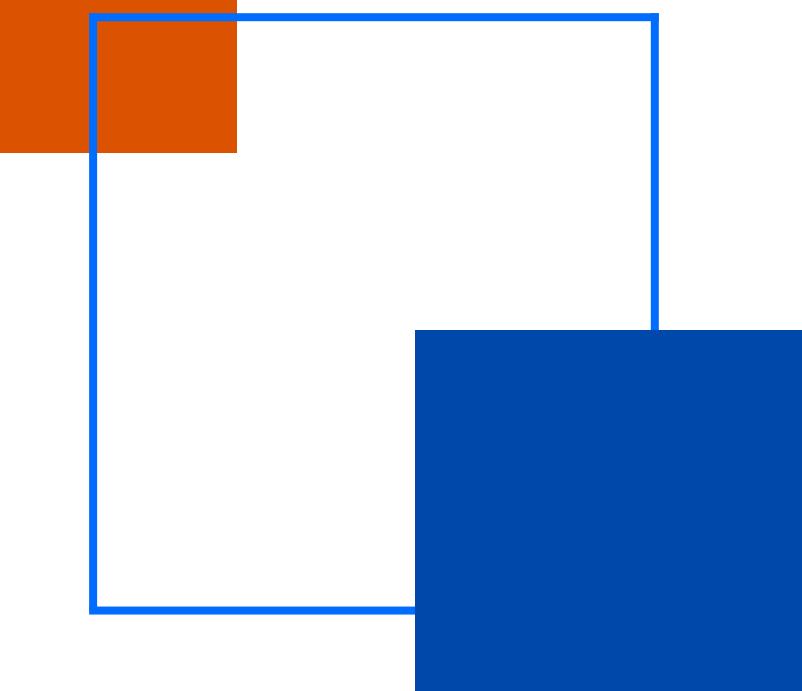
**NAFISA ANJUM MAHI**  
190105010



**MD. MAHMUDUL ISLAM RIFAT**  
190105011



**MD.TAMZID-UL-ISLAM-FOUAD**  
190105012



**AHMED MOHSIN RIZVI**  
190105015

# INTRODUCTION

## WHAT IS FAULT?

A fault in a circuit is any failure that interferes with the normal flow of current to the load. In most faults, a current path forms between two or more phases, or between one or more phases and the neutral (ground).

Since the impedance of a new path is usually low, an excessive current may flow.

Faults occur in Power System due to

- insulation failure of equipment
- flashover of lines initiated by lightning stroke
- permanent damage to conductors and towers
- accidental faulty operation



# THEORY

## Types of Faults

Unsymmetrical

Single line to ground

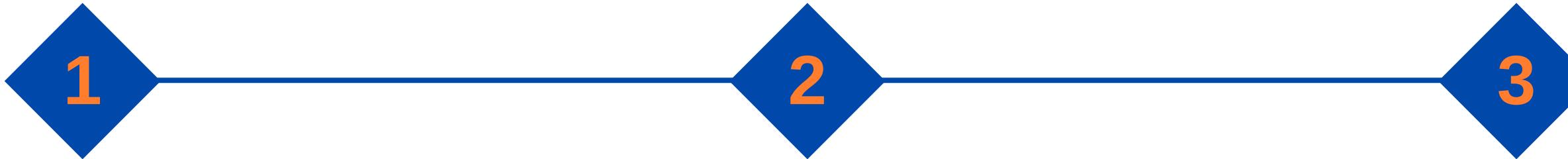
Double line to ground

Line to line

Symmetrical

It occurs when all three phase of a transmission line are shorted together. It is most severe and impose more heavy duty on the circuit breaker

# THEORY



## Single line to ground

It occurs when one phase of the line breaks and comes in to contact with the ground or if insulators break.

## Line to Line

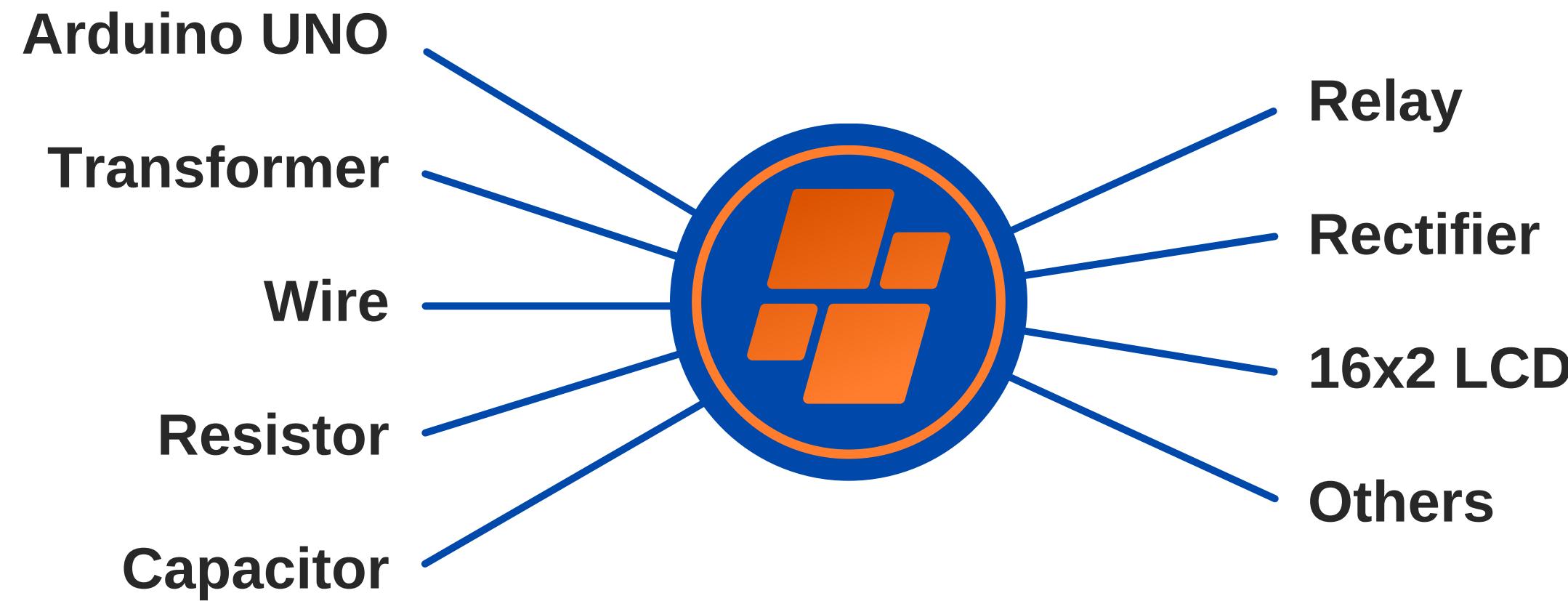
Two phases of line may touch a flashover may occur between two phases.

## Double line to ground

It occurs when two lines touch each other and also touch the ground .

Type of fault	Abbreviation	Type	Percentage of occurrence (approx.)	Severity
Single line to ground fault	L-G	Unsymmetrical	70%	Least Severe
Double Line Fault	L-L	Unsymmetrical	15%	Severe
Double to Line to Ground fault	L-L-G	Unsymmetrical	10%	Severe
Three phase faults	3P/ L-L-L	Symmetrical	5%	Most severe

# EQUIPMENT USED



# EQUIPMENT

## Arduino UNO



The Arduino Pro Mini is a microcontroller board based on the ATmega328P. We have used Arduino here to control our transmission system.

## Transformer



A transformer is a device that transfers electric energy from one alternating-current circuit to one or more other circuits, either increasing (stepping up) or reducing (stepping down) the voltage.

In this project, we have used a 220V on the primary side and 9V on the secondary side. s."

## 16x2 LCD Display



We've used lcd to let us know where and what type of fault has occurred.

# EQUIPMENT

## Rectifier



We've used 4 diodes 7004n and one capacitor to make bridge rectifier. This converts the voltage from AC to DC.

## Relay



The relay module we are using input voltage is usually DC. We have used relay in our project to control the load.

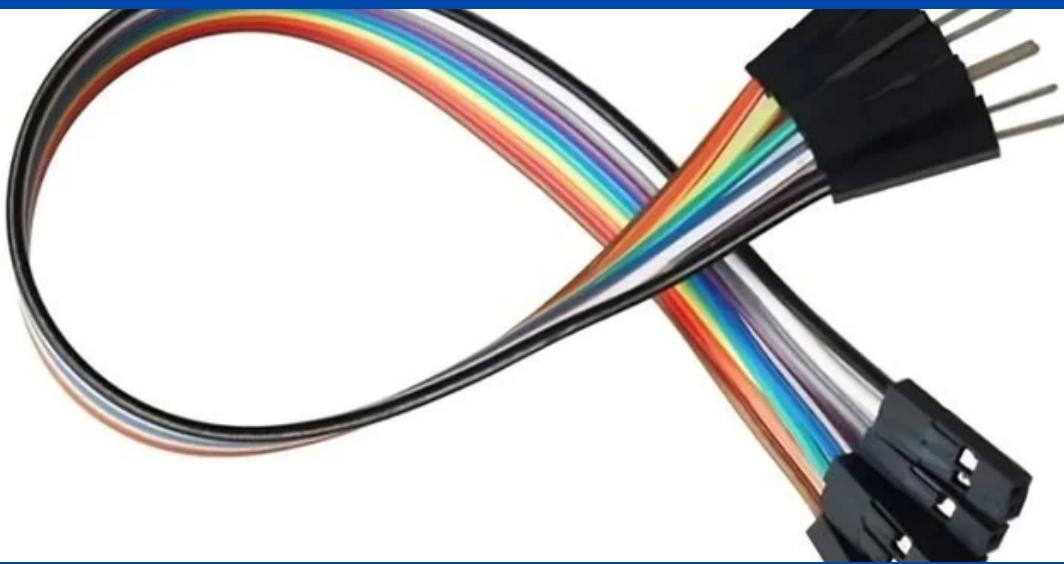
## Bulb



Bulbs are used as load here in our project.

# EQUIPMENT

## Connecting Wires



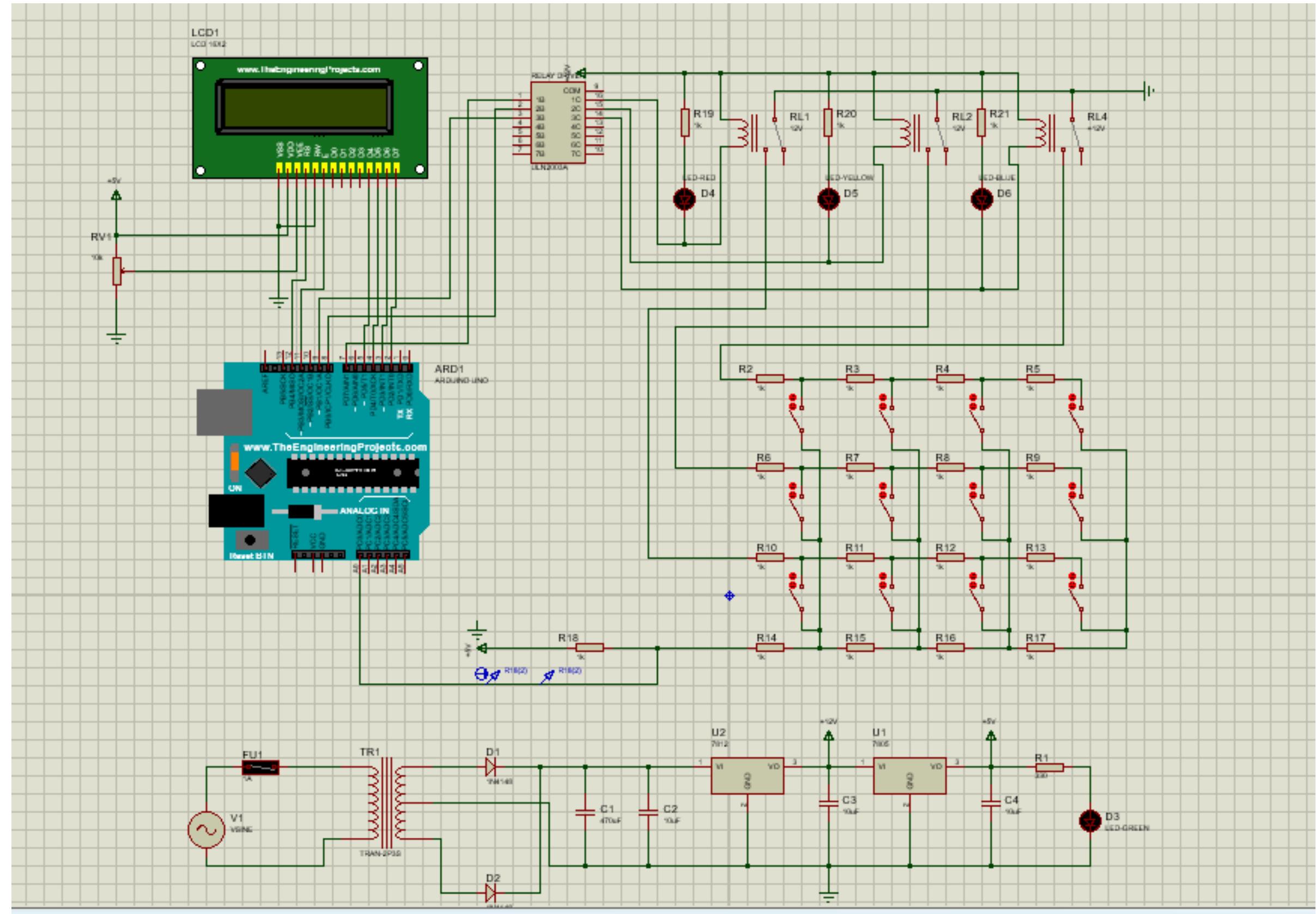
wires used to create connections between one terminal to another

## Pin Connectors



additional equipments

# SIMULATION



# WORKING PRINCIPLE

- ◆ Keithston and Partners
- ◆ Aldenaire & Partners
- ◆ Salford & Co.
- ◆ Fradel and Spies
- ◆ Giggling Platypus Co.
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- ◆ Giggling Platypus Co.
- ◆ Ginyard International Co.

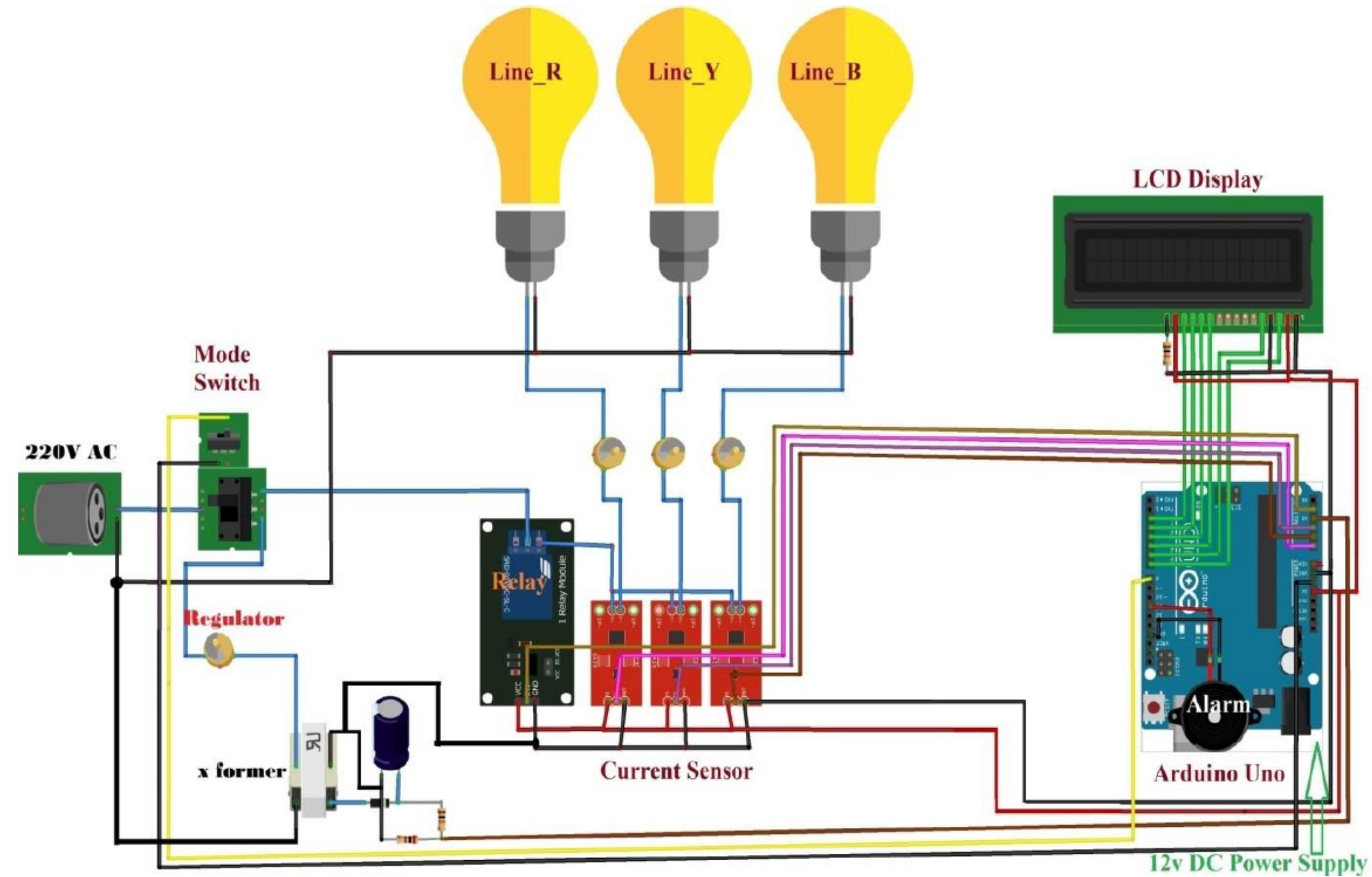
# WORKING PRINCIPLE

- ◆ Aldenaire & Partners
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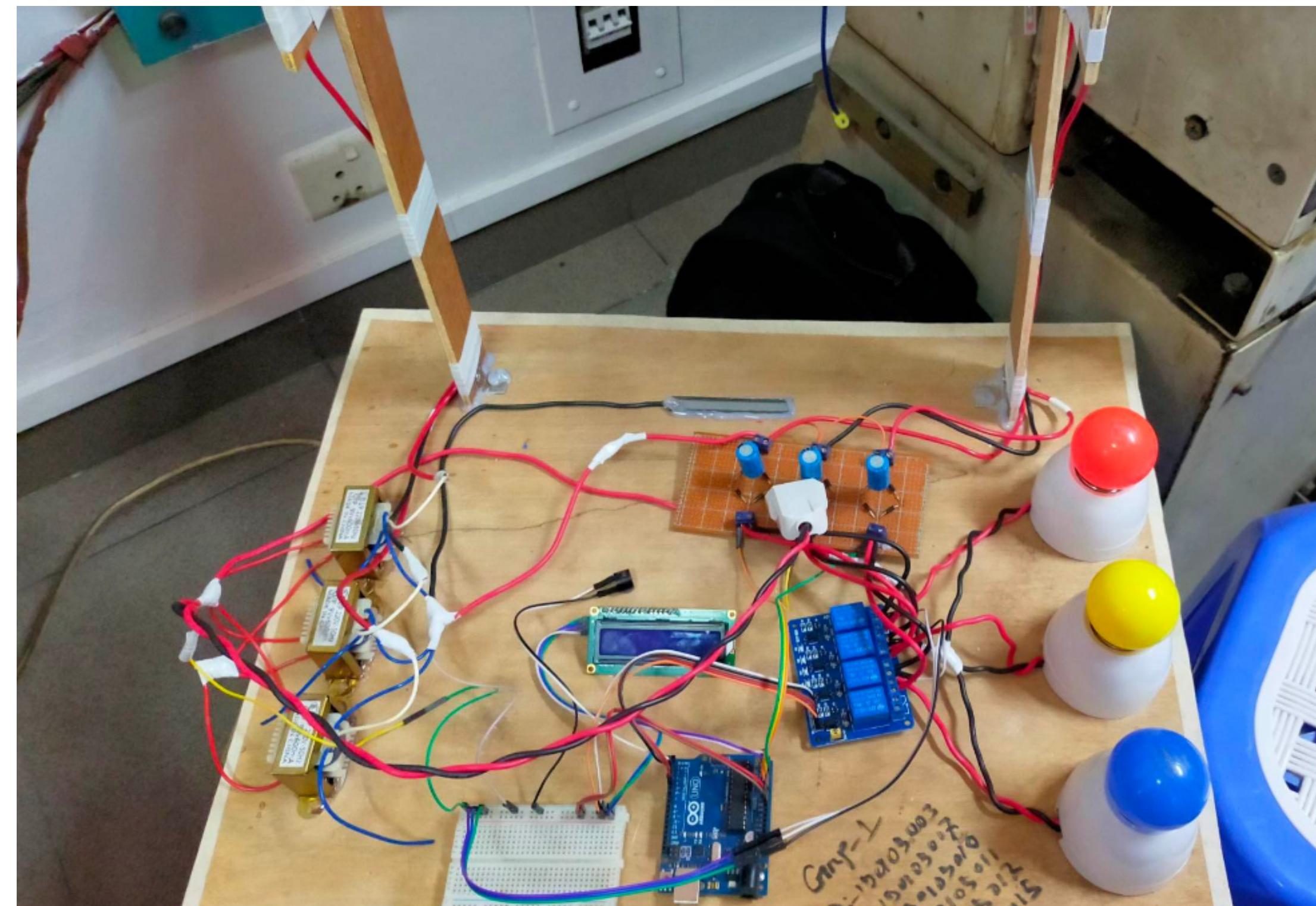
# VIRTUAL SET UP



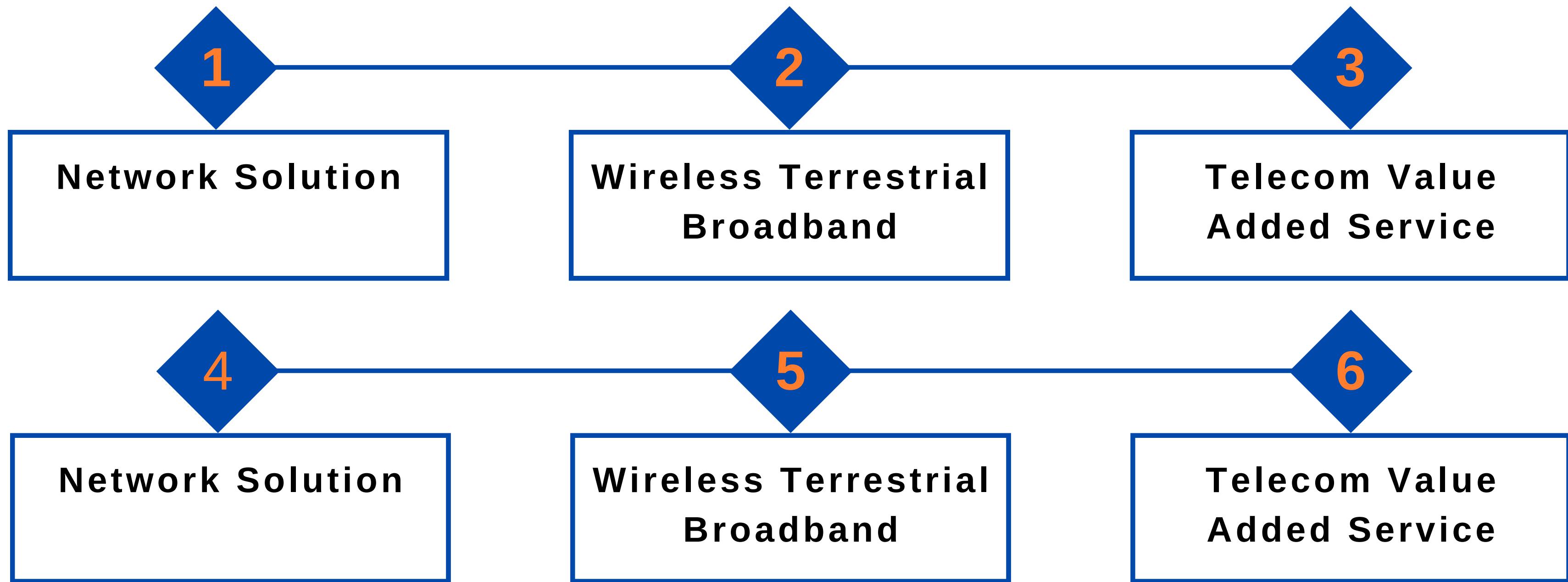
# PROCEDURE

- 123-456-7890
- hello@reallygreatsite.com
- www.reallygreatsite.com
- @reallygreatsite
- 123-456-7890
- hello@reallygreatsite.com
- www.reallygreatsite.com
- @reallygreatsite

# HARDWARE SET UP



# LIMITATIONS



# LEARNING OUTCOME

- ◆ Salford & Co.
- ◆ Fradel and Spies
- ◆ Giggling Platypus Co.
- ◆ Ginyard International Co.
- ◆ Keithston and Partners
- ◆ Aldenaire & Partners

# CONCLUSION



A fault in a circuit is any failure that interferes with the normal flow of current to the load. In most faults, a current path forms between two or more phases, or between one or more phases and the neutral (ground). Since the impedance of a new path is usually low, an excessive current may flow.

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**THANK YOU**