



भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad

# ASSIGNMENT-1



A.CHINNAPA REDDY  
alavalachinnapareddy491@gmail.com  
IITH - Future Wireless Communication (FWC22033)

## Contents

<b>1 Components</b>	<b>1</b>
1.1 Arduino . . . . .	1
<b>2 Implementation</b>	<b>1</b>
2.1 Karunugh Map . . . . .	1
<b>3 HARDWARE</b>	<b>1</b>

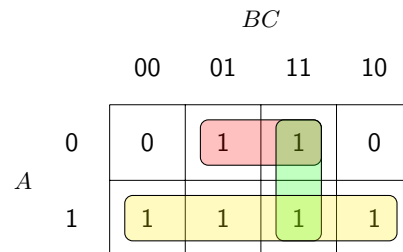


FIGURE 2.2

## Abstract

The objective of this manual is to show how to Verify the Boolean Expression  $A+C=A+A'.C+B.C$

Above K-maps are verify using Table-0  
Assume that  $F=X=Y$

## 1 Components

Component	Value	Quantity
Arduino	UNO	1

TABLE 1.0

### 1.1 Arduino

The Arduino UNO has some ground pins, analog input pins A0-A3 and digital pins D1-D13 that can be used for both input as well as output. It also has two power pins that can generate 3.3V and 5V. In the following exercises, only the GND, 5V and digital pins will be used.

X	Y	Z	F
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	1

TABLE 2

## 2 Implementation

### 2.1 Karunugh Map

Assign  $X=A+C$

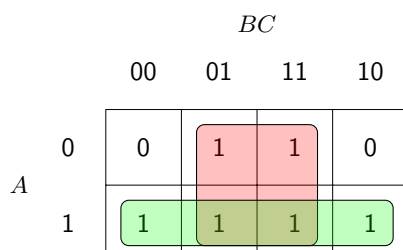


FIGURE 2.1

Assign  $Y=A+A'.C+BC$

## 3 HARDWARE

1. Connect the Arduino to the computer.
2. Download the following directory

<https://github.com/chinnapa5264/FWC-Module1/blob/main/Assignment-1%20using%20LED/codes/src/main.cpp.cpp>

3. The LED beside pin 13 light up.