ASSIGNMENT-1

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Contents

Abstract

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

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.

2 Implementation

A+C=A+A'C+BC
using distributive law
A+C =(A+A')(A+C)+BC
A+C =(A+C)+BC
A+C =A+C(1+B)
A+C =A+C

2.1 Karunugh Map

Assign X=A+C

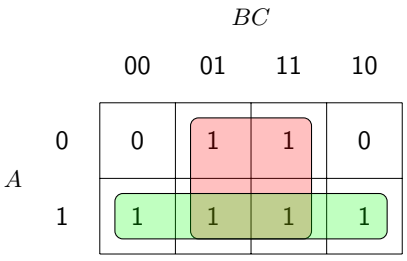

FIGURE 2.1

Assign Y=A+A'.C+BC

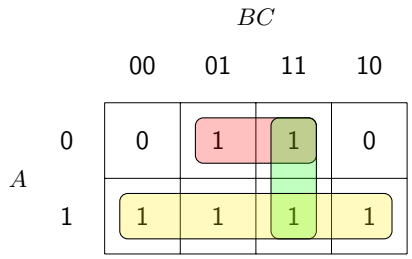

FIGURE 2.2

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

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

3 HARDWARE

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

   https://github.com/chinnapa5264/FWC-Module1/blob/main/asm_assignment/codes/main.asm

3. The LED beside pin 13 light up.