# K map for Boolean Expression

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## Contents



**Abstract**

This manual shows how to use Arduino uno and LED to represent the boolean expression.

## 1 Components

| Components | Value | Quantity |
|---|---|---|
| Arduino | UNO | 1 |
| LED | - | 1 |
| Jumper wires | M-M | 3 |
| Breadboard | | 1 |

| U | V | W | Z | G |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Truth Table

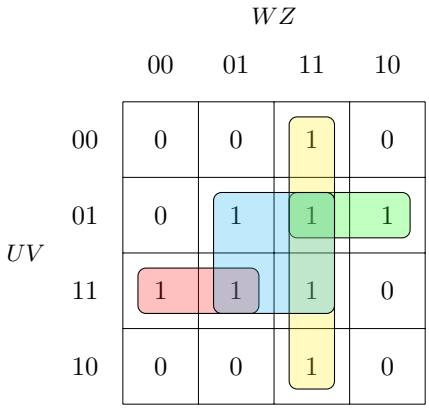
## 2 Hardware

**Problem 2.1** Make connections between the Arduino and LED using Breadboard.

## 3 Software

**Problem 3.1.** execute the following program after downloading.

https://github.com/ballepu1994




**K-Map**

U, V, W, Z are the inputs and LED is the output.Using boolean logic.

$$A = WZ + VZ + UVW' + U'VW \qquad (1)$$