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4x4 Keypad interfacing with PIC18F4550

Introduction

The keypad is used as an input device to read the key pressed by the user and to process it.

4x4 keypad consists of 4 rows and 4 columns. Switches are placed between the rows and columns. A keypress establishes a connection between the corresponding row and column between which the switch is placed.

In order to read the keypress, we need to configure the rows as outputs and columns as inputs.
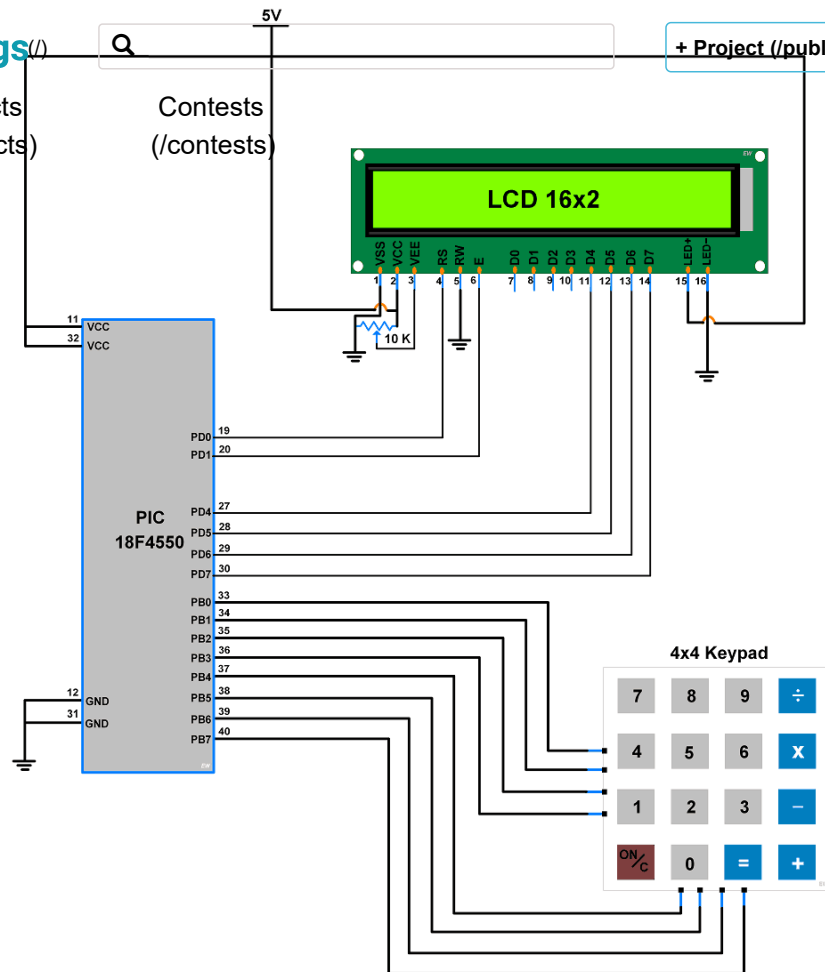
Columns are read after applying signals to the rows in order to determine whether or not a key is pressed and if pressed, which key is pressed.

For more information about the keypad and how to use it, refer to the topic 4x4 Keypad (http://electronicwings.com/sensors-modules/4x4-keypad-module) in the sensors and modules section.

4x4 Keypad

Interfacing Diagram

4x4 Keypad Interfacing with PIC18F4550

4x4 Matrix Keypad Example using PIC18F4550

Here, we are going to interface the 4x4 keypad with PIC18F4550 and will display the pressed a key on LCD16x2.

LCD16x2 used here in 4-bit mode.

4x4 Keypad Code for PIC18F4550

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```c
 * Keypad Interfacing with PIC18F4550
 * http://www.electronicwings.com
 *
 */

#include <pic18f4550.h>
#include "Configuration_Header_File.h"
#include "16x2_LCD_4bit_File.h"

unsigned char keyfind();    /* function to find pressed key */

#define write_port LATB  /* latch register to write data on port */
#define read_port PORTB  /* PORT register to read data of port */
#define Direction_Port TRISB
unsigned char col_loc,rowloc,temp_col;

unsigned char keypad[4][4]= {'7','8','9','/',
                             '4','5','6','*',
                             '1','2','3','-',
                             ' ','0','=','+'};
```

Components Used

Powered By

4x4 Keypad Module
Keypad is an input device which is generally us...

X 1

LCD16x2 Display
LCD16x2 Display

X 1

🛒 (https://www.mouser.c
om/ProductDetail/Ada
fruit/1447?
qs=XAKIUOoRPe6ACI
msjw7y7g%3D%3D&ut
m_source=electronics
wings&utm_medium=d
isplay&utm_campaign
=mouser-
componentslisting&ut
m_content=0x0)

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PICKit 4 MPLAB
PICKit 4 MPLAB

X 1

🛒 (https://www.mouser.in/ProductDetail/Microchip-Technology/PG164140?qs=r5DSvlrkXmLKDuYNJImLWw%3D%3D&utm_source=electronicswings&utm_medium=display&utm_campaign=mouser-componentslisting&utm_content=0x0)

📄Datasheet (/components/pickit-4-mplab/1/datasheet)

PIC18f4550
PIC18f4550

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🛒 (https://www.mouser.in/ProductDetail/Microchip-Technology/PIC18F4550-I-P?qs=oKK8NaWdAJs8nLDXBGwMXw%3D%3D&utm_source=electronicswings&utm_medium=display&utm_campaign=mouser-componentslisting&utm_content=0x0)

📄Datasheet (/components/pic18f4550/1/datasheet)

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Keypad interfacing with PIC18F4550 Project File

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nloa orm-attachment/179)
d

Comments

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keyuan1992
(/users/keyuan1992/profile)
2020-03-04 14:50:00

Pickit 3 PGD and PGC will be connected to pin 40 and 39. Will there be a problem?

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ashutoshkatkam
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2020-07-06 22:08:08

I think the arrays declaration is wrong in the above code.

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nnguyenvnhi
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2021-06-28 22:00:12

you mean: unsigned char keypad[4][4]= {"789/","456*","123-"," 0=+"};

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KelvinTheBoss
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2022-09-19 09:25:26

can you please explain about the code ? I am quite confusing about it :(

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igshid=1cip10jijttko)

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