Arduino Alarm System Source Code

Next let's see the Arduino code. As the code is a bit longer, for better understanding, I will post the source code of the program in sections with description for each section. And at the end of this article I will post the complete source code.

So we need to include the standard LiquidCrystal library for the LCD and the Keypad library which needs to be additionally installed. Then we need to define the buzzer and the ultrasonic sensor's pins, define some variables needed for the program, define the keys of the keypad, as well as create the two objects for the keypad and the LCD.

```
#include <LiquidCrystal.h> // includes the LiquidCrystal Library
#include <Keypad.h>

#define buzzer 8
#define trigPin 9
#define echoPin 10

long duration;
int distance, initialDistance, currentDistance, i;
int screenOffMsg =0;
String password="1234";
String tempPassword;
boolean activated = false; // State of the alarm
boolean isActivated;
boolean activateAlarm = false;
boolean alarmActivated = false;
boolean enteredPassword; // State of the entered password to stop the alarm
boolean passChangeMode = false;
boolean passChanged = false;

const byte ROWS = 4; //four rows
const byte COLS = 4; //four columns
char keypressed;
//define the cymbols on the buttons of the keypads
char keyMap[ROWS][COLS] = {
{'1','2','3','A'},
{'4','5','6','B'},
{'7','8','9','C'},
{'*','0','#','D'}
};
byte rowPins[ROWS] = {14, 15, 16, 17}; //Row pinouts of the keypad
byte colPins[COLS] = {18, 19, 20, 21}; //Column pinouts of the keypad

Keypad myKeypad = Keypad( makeKeymap(keyMap), rowPins, colPins, ROWS, COLS);
LiquidCrystal lcd(1, 2, 4, 5, 6, 7); // Creates an LC object. Parameters: (rs, enable, d4, d5, d6, d7)

void setup() {
lcd.begin(16,2);
pinMode(buzzer, OUTPUT); // Set buzzer as an output
```

```
40. pinMode(trigPin, OUTPUT); // Sets the trigPin as an Output
41. pinMode(echoPin, INPUT); // Sets the echoPin as an Input
42. }
```