## **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>
4. #define buzzer 8
5. #define trigPin 9
6. #define echoPin 10
8. long duration;
9. int distance, initialDistance, currentDistance, i;
10. int screenOffMsg =0;
11. String password="1234";
12. String tempPassword;
13. boolean activated = false; // State of the alarm
14. boolean is Activated:
15. boolean activateAlarm = false;
16. boolean alarmActivated = false:
17. boolean enteredPassword; // State of the entered password to stop the alarm
18. boolean passChangeMode = false;
19. boolean passChanged = false;
21. const byte ROWS = 4; //four rows
22. const byte COLS = 4; //four columns
23. char keypressed;
24. //define the cymbols on the buttons of the keypads
25. char keyMap[ROWS][COLS] = {
26. {'1','2','3','A'},
27. {'4','5','6','B'},
28. {'7','8','9','C'},
29. {'*','0','#','D'}
30. };
31. byte rowPins[ROWS] = \{14, 15, 16, 17\}; //Row pinouts of the keypad
32. byte colPins[COLS] = {18, 19, 20, 21}; //Column pinouts of the keypad
34. Keypad myKeypad = Keypad( makeKeymap(keyMap), rowPins, colPins, ROWS, COLS);
35. LiquidCrystal lcd(1, 2, 4, 5, 6, 7); // Creates an LC object. Parameters: (rs, enable, d4, d5, d6, d7)
37. void setup() {
38. lcd.begin(16,2);
39. 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.}