4.1 Introduction

This chapter shows the Software implantation using proteus and the result of experimental test of Infrared light Emitting diode at the laboratory.

4.2 The Infrared test

The infrared test was tested at laboratory and the results was as follow:

Table 4.1:result of testing infrared sensor

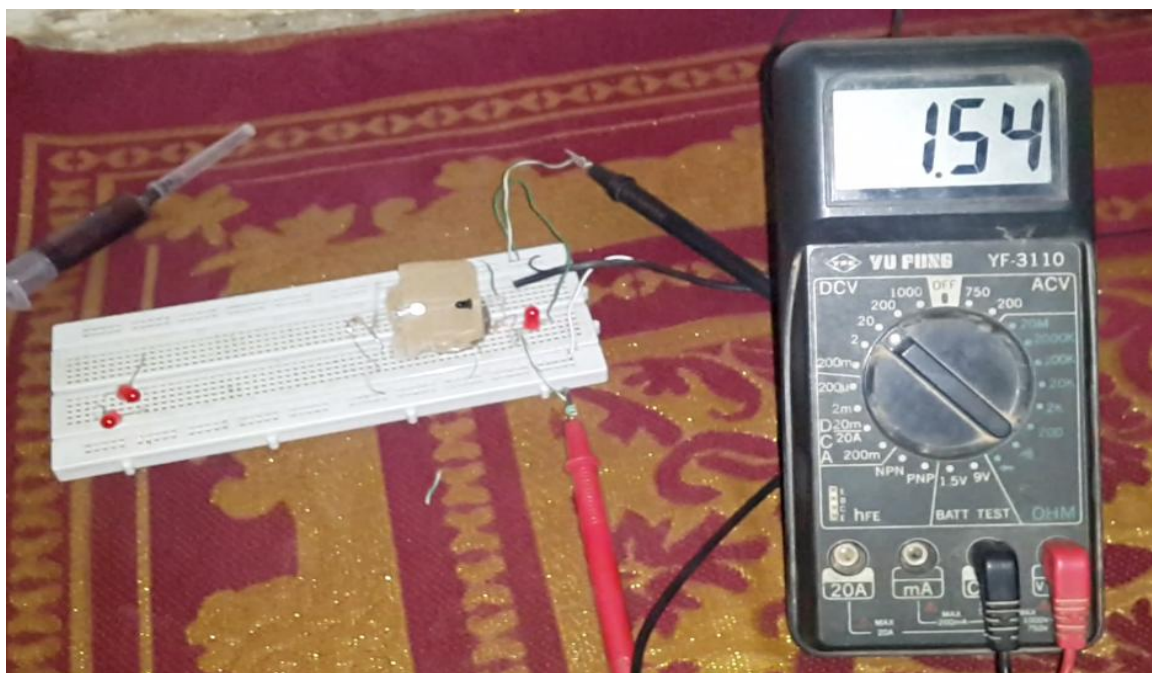| Test Number	The Status of sensor	Output Voltage (v)
1	The beam is blocked	2.00
2	Empty tube	1.90
3	Tube with blood	1.98
4	Tube with blood	1.98
5	Tube with no blood	1.85
6	There is no object	1.54

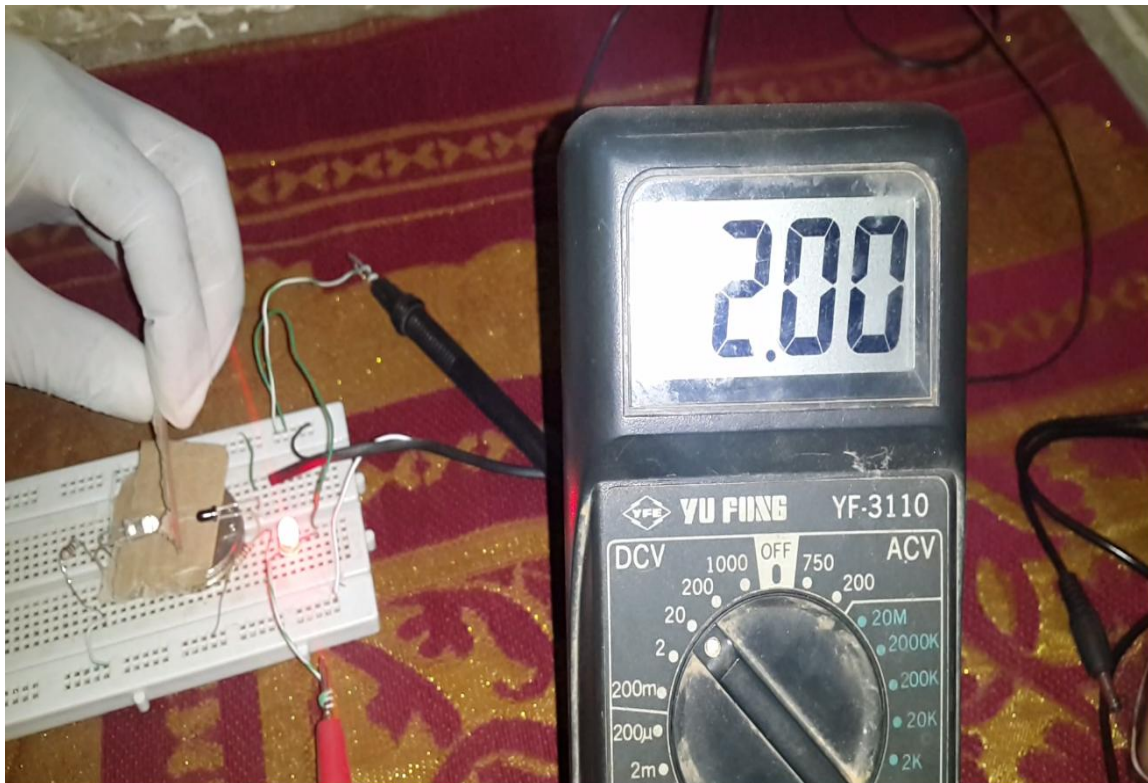Figure 4.1 : Sensor in case there is no object at all

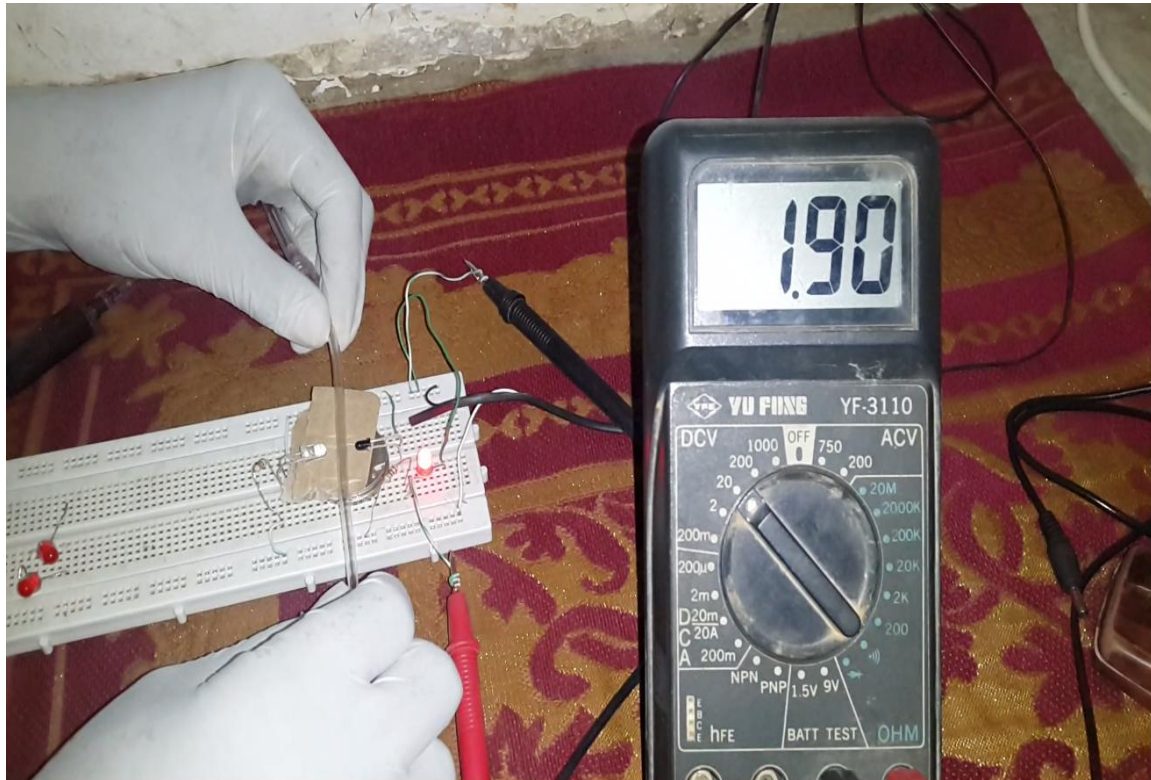Figure 4.2: Sensor In case there is object but not blood
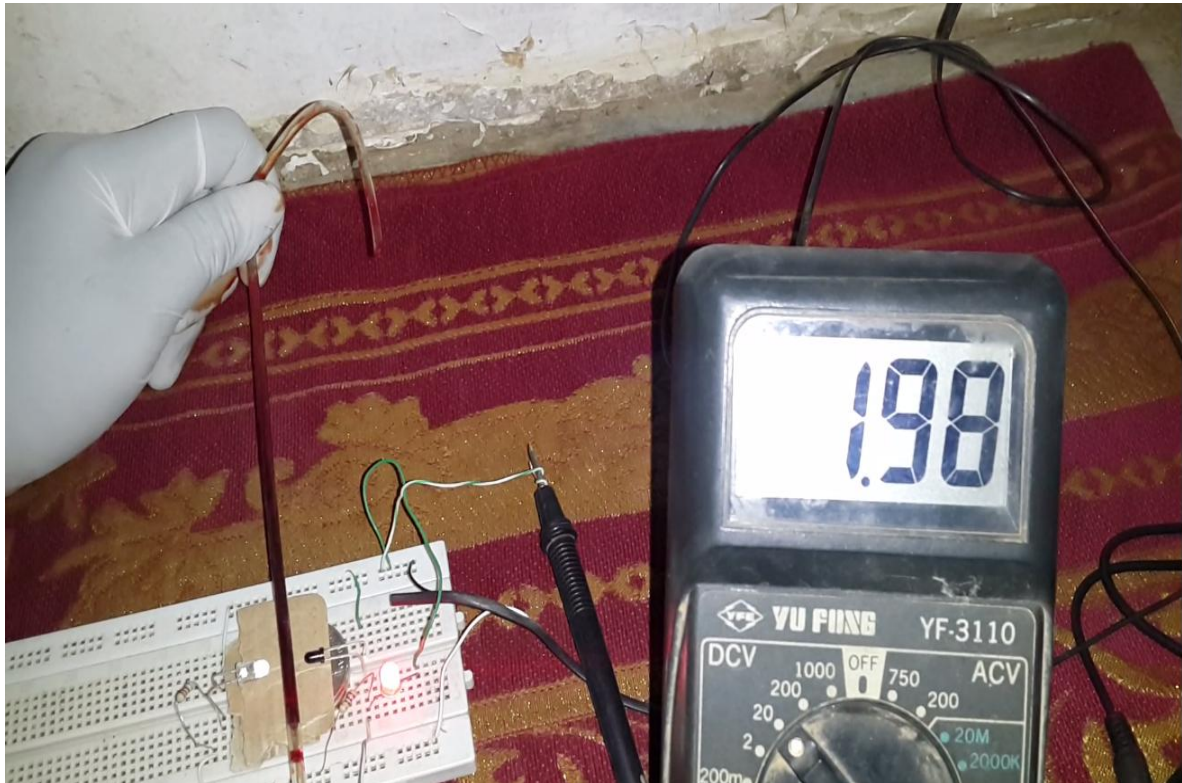

Figure 4.3: Sensor In case there is no blood

Figure 4.4: Sensor In case there is blood

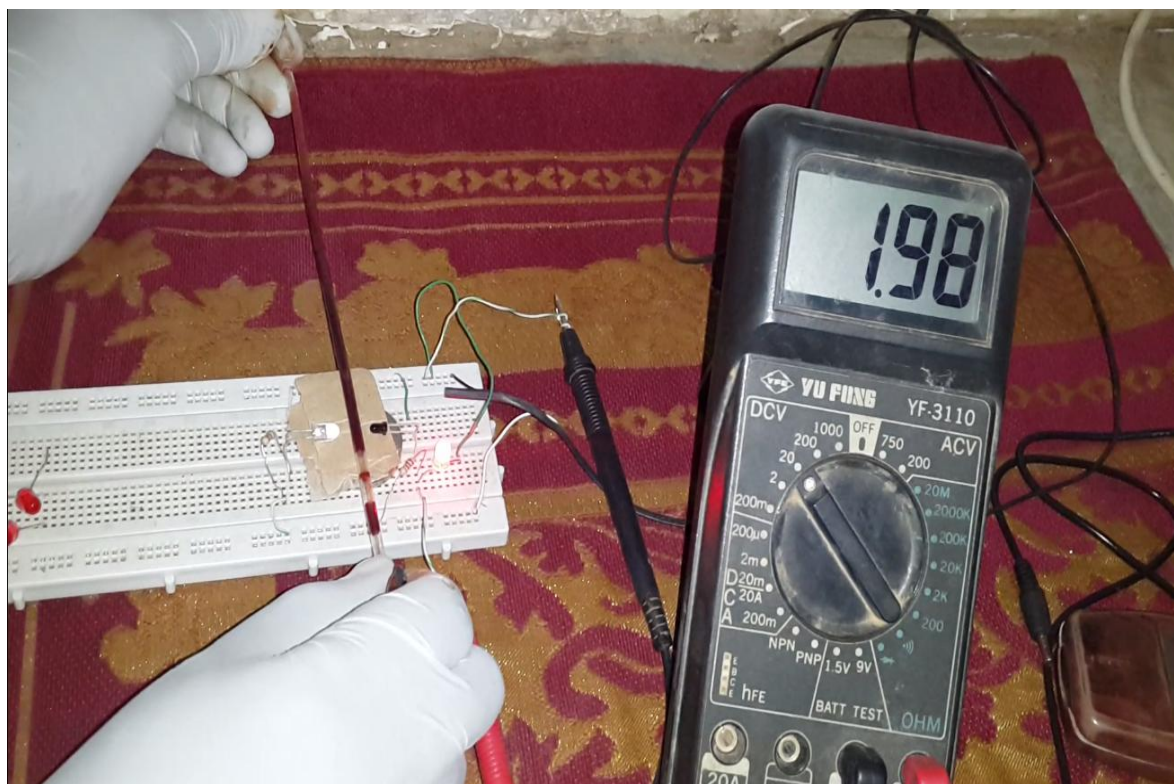Figure 4.5: Sensor In case there is no blood

Figure 4.6: Sensor In case there is blood test 2

4.3 Proteus results

The system has been implemented in Proteus simulation and the results have been obtained as follow:

Table 4.2 results of proteus simulation

Analog to Digital Convertor			
Sensor 1 (LDR) *(Volts)*	Sensor 2 *(Volts)*	Sensor 3 *(Volts)*	state of valve
2.50	2.03	2.04	OFF
1.67	1.91	2.04	ON
2.50	2.03	1.95	ON
1.67	2.03	2.01	ON
1.67	1.91	1.88	ON

The figures shows cases of sensors and the response of microcontroller was shown respectively on LCD as follow :
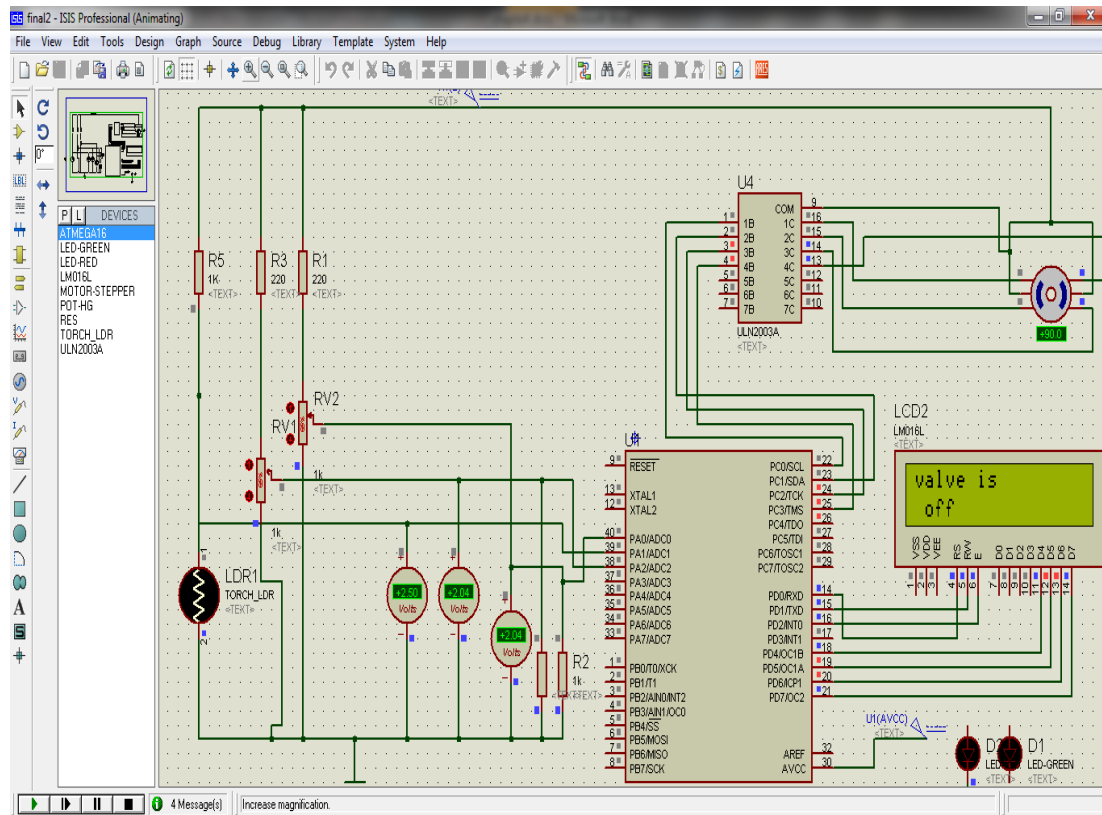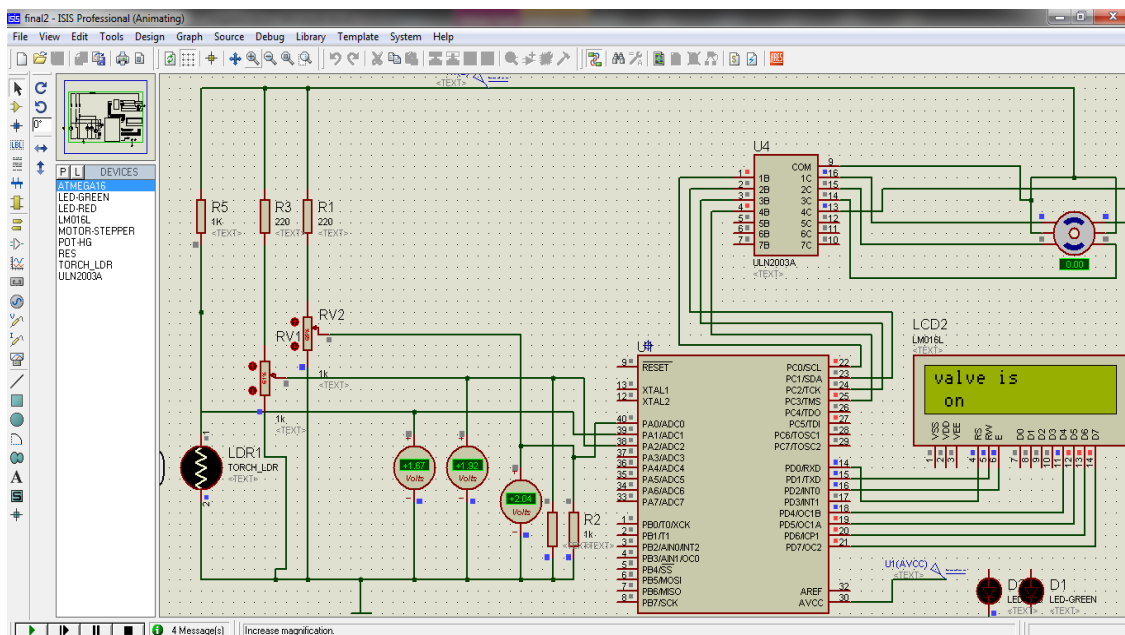

Figure 4.7: Snapshot Shows Case 1 in the table

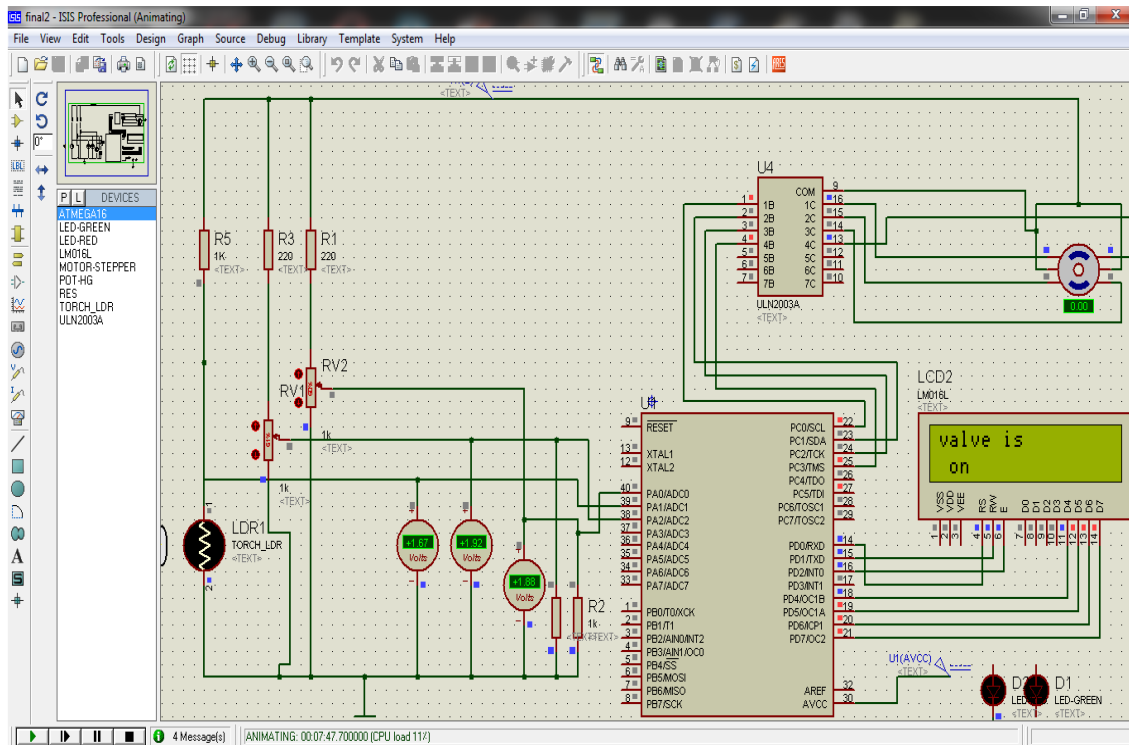Figure 4.8: snapshot shows case 2 in the table
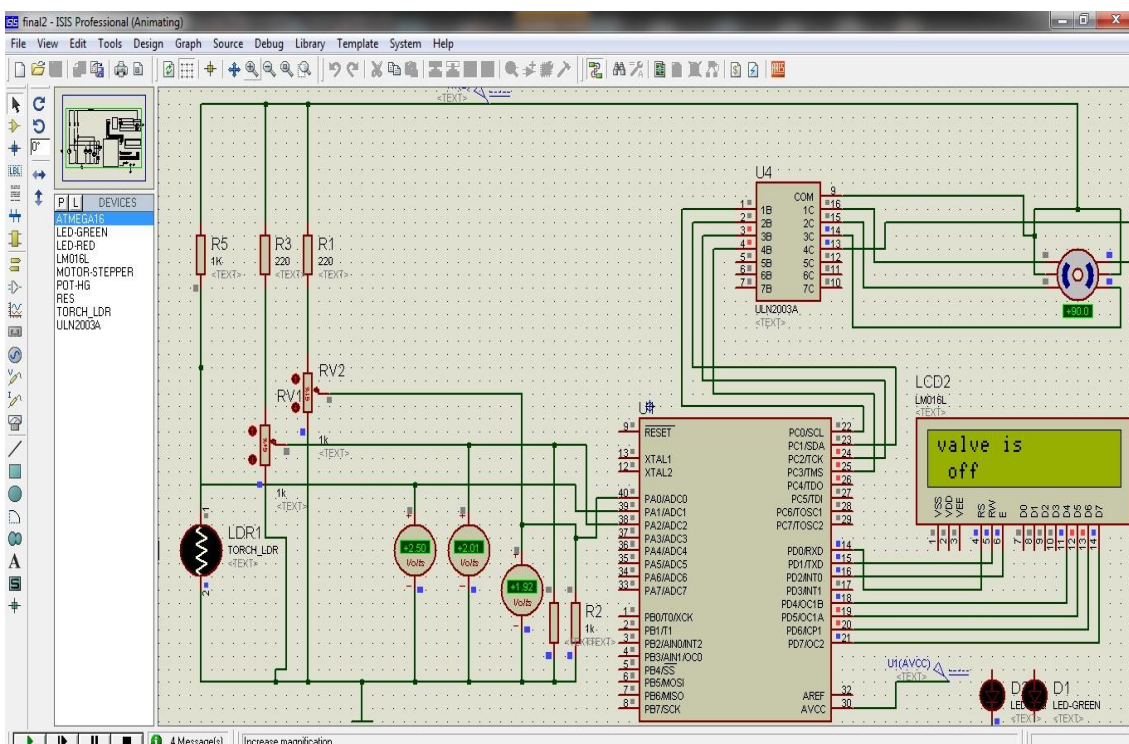
Figure 4.9:snapshot shows case 3 in the table
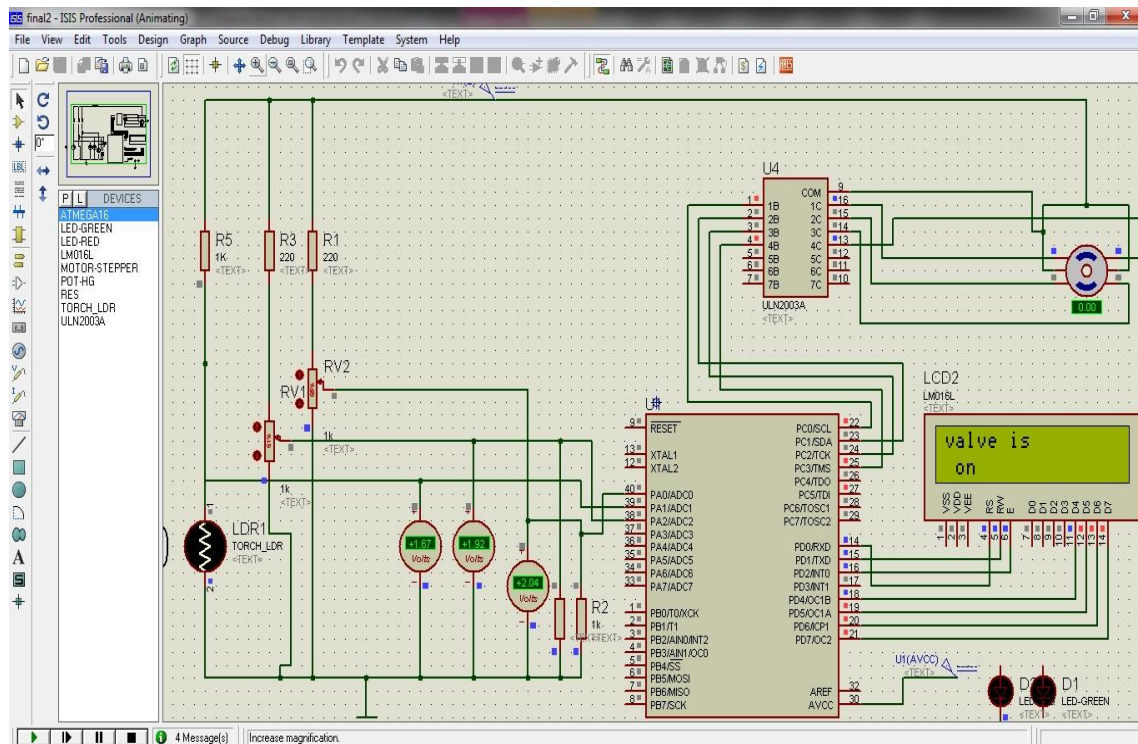

Figure 4.10 snapshot shows case 4 in the table

Figure 4.11 snapshot shows case 5 in the table

4.4 Discussion

The result that has been obtained was taken in several positions and in practical experimental of testing. These results were obtained due to experiment conditions such light reflection and through the beam the obtained result should be taken in more proper conditions in order to improve the result accuracy.

In simulation the responses of microcontroller to the sensed values were very acceptable and the results values were typically expected.