

idea.ino

```
1  #include<Arduino.h>
2  #include <SoftwareSerial.h>
3  #include<NewPing.h>
4
5  SoftwareSerial BTserial(7, 6);  // RX | TX
6
7  NewPing ultra(9,10); //t && e
8
9  String MODE = "AUTOMATIC";
10 String MOTOR_STATUS = "OFF";
11 int timmer = 0;
12 int val;
13
14
15 int sending_timmer =0;
16 bool error_status = false ;
17
18 bool start = true;
19
20 void setup()
21 {
22
23
24   BTserial.begin(9600);
25   BTserial.setTimeout (200);
26   Serial.begin(9600);
27
28   pinMode( 13 , OUTPUT); //MOTOR
29
30   pinMode( 2 , OUTPUT ); // ERROR
31   pinMode( 3 , OUTPUT ); //MOTOR GOOD STATUS
32
33   pinMode( 4 , INPUT ); // ERROR REST BUTTON
34
35   pinMode( 11 , INPUT ); // MANUAL MOTOR ON
36   pinMode( 12 , INPUT ); // MANUAL MOTOR OFF
37
38
39   // OUTPUT DISPLAY
40   pinMode( A0 , OUTPUT );
41   pinMode( A1 , OUTPUT );
42   pinMode( A2 , OUTPUT );
43   pinMode (A3 , OUTPUT );
44
45
46
47
48   // MANUAL AND AUTOMATIC INDICATOR
49   pinMode(A4 , OUTPUT);
50   pinMode(A5 , OUTPUT);
51
52   // MANUAL AND AUTOMATIC ALTER
53   // pinMode( 5 , INPUT );
54
55   pinMode(8 , OUTPUT); // MOTOR
56
57
```

```
58
59
60
61
62 }
63
64 void loop()
65 {
66
67
68     if(start)
69     {
70         digitalWrite(3 , HIGH);
71         digitalWrite(2 , LOW);
72         start = false;
73
74         digitalWrite(A0 , LOW);
75         digitalWrite(A1 , LOW);
76         digitalWrite(A2 , LOW);
77         digitalWrite(A3 , LOW);
78
79         digitalWrite(8 , HIGH);
80
81         digitalWrite( 13 , LOW);
82
83     }
84
85
86
87 // DATA FROM ULTRASONIC
88 int dur = ultra.ping_median();
89 int distance = ultra.convert_in(dur);
90 Serial.print(distance);
91
92 Serial.print(" ");
93 Serial.print(timmer);
94 Serial.print(" ");
95 Serial.print(MODE);
96 Serial.print(" ");
97 Serial.println(sending_timmer);
98
99
100
101 // GETTING DATA FROM BLUETOOTH
102 if (BTserial.available(>2)
103 {
104     String str = BTserial.readString();
105     Serial.print(str);
106
107     if( str == "SETMANUAL\r\n" )
108     {
109         MODE = "MANUAL";
110     }
111
112     if( str == "SETAUTOMATIC\r\n" )
113     {
114         MODE = "AUTOMATIC";
115     }
116
117     if( str == "RESETPUSH\r\n" )
```

```
118     {
119         error_status = false;
120         digitalWrite( 2 , LOW); // ERROR OFF
121         digitalWrite( 3 , HIGH); // MOTOR GOOD ON
122     }
123
124     // MANUAL CONTROL IN MOBILE
125     if( str == "SETMOTORON\r\n" && !error_status && MODE == "MANUAL" )
126     {
127         digitalWrite(13 , HIGH); //MOTOR ON
128         digitalWrite(8 , LOW); // MOTOR
129         MOTOR_STATUS = "ON";
130     }
131
132     if( str == "SETMOTOROFF\r\n" && !error_status && MODE == "MANUAL" )
133     {
134         digitalWrite( 13 , LOW); // MOTOR OFF
135         digitalWrite(8 , HIGH); //MOTOR
136         MOTOR_STATUS = "OFF";
137     }
138
139     }
140     // CONDITIONS IF AUTOMATIC
141     if(MODE == "AUTOMATIC" && !error_status )
142     {
143         if( distance >= 5 )
144         {
145             digitalWrite(13 , HIGH); //MOTOR ON
146             digitalWrite(8 , LOW); // MOTOR
147             MOTOR_STATUS = "ON";
148         }
149
150         if( distance <=1 )
151         {
152             digitalWrite( 13 , LOW); // MOTOR OFF
153             digitalWrite(8 , HIGH); // MOTOR
154             MOTOR_STATUS = "OFF";
155         }
156     }
157 }
158
159 //MANUAL PHYSICAL BUTTONS
160
161
162 if( MODE== "MANUAL" && !error_status)
163 {
164     int temp_manual_on = digitalRead(11);
165     if(temp_manual_on == 1)
166     {
167         digitalWrite(13 , HIGH); //MOTOR ON
168         digitalWrite(8 , LOW); // MOTOR
169         MOTOR_STATUS = "ON";
170     }
171     int temp_manual_off = digitalRead(12);
172     if(temp_manual_off ==1)
173     {
174         digitalWrite( 13 , LOW); // MOTOR OFF
175         digitalWrite(8 , HIGH); // MOTOR
176         MOTOR_STATUS = "OFF";
177     }
178 }
```

```
178     }
179
180
181
182 // MOTOR WORKING CHECKER
183
184 if( MOTOR_STATUS == "ON" && !error_status )
185 {
186     if(timmer ==0)
187     {
188         val = distance;
189     }
190     timmer++;
191
192     if(timmer > 50)
193     {
194         if(val == distance)
195         {
196
197             digitalWrite( 13 , LOW); // MOTOR OFF
198             digitalWrite(8 , HIGH); //MOTOR
199             MOTOR_STATUS = "OFF";
200             digitalWrite( 2 , HIGH); // ERROR LIGHT ON
201             digitalWrite( 3 , LOW); // MOTOR GOOD OFF
202             error_status = true;
203
204             Serial.println("bgfxcvbn");
205
206         }
207         timmer =0;
208     }
209 }
210
211
212 }
213
214
215 int temp_button_status = digitalRead(4);
216 if( temp_button_status == 1 )
217 {
218     error_status = false;
219     digitalWrite( 2 , LOW); // ERROR OFF
220     digitalWrite( 3 , HIGH); // MOTOR GOOD ON
221 }
222
223
224 if(distance == 1)
225 {
226     digitalWrite(A0 , HIGH);
227     digitalWrite(A1 , HIGH);
228     digitalWrite(A2 , HIGH);
229     digitalWrite(A3 , HIGH);
230 }
231
232 if(distance == 2)
233 {
234     digitalWrite(A0 , HIGH);
235     digitalWrite(A1 , HIGH);
236     digitalWrite(A2 , HIGH);
237     digitalWrite(A3 , LOW);
```

```
238 }
239 if(distance == 2)
240 {
241     digitalWrite(A0 , HIGH);
242     digitalWrite(A1 , HIGH);
243     digitalWrite(A2 , LOW);
244     digitalWrite(A3 , LOW);
245 }
246
247 if(distance == 4)
248 {
249     digitalWrite(A0 , HIGH);
250     digitalWrite(A1 , LOW);
251     digitalWrite(A2 , LOW);
252     digitalWrite(A3 , LOW);
253 }
254
255 if(distance == 5)
256 {
257     digitalWrite(A0 , LOW);
258     digitalWrite(A1 , LOW);
259     digitalWrite(A2 , LOW);
260     digitalWrite(A3 , LOW);
261 }
262
263 sending_timmer++;
264
265 if( sending_timmer >= 40 )
266 {
267     if( distance >=5 || distance <= 0)
268     {
269         BTserial.println("FAULT DATA");
270     }
271     float temp_water_per = ((5-distance))*25;
272     BTserial.println(String(temp_water_per));
273
274     Serial.print("SENT ");
275     Serial.println(temp_water_per);
276
277     sending_timmer =0;
278 }
279 if( MODE == "MANUAL" )
280 {
281     digitalWrite(A4 , HIGH);
282     digitalWrite(A5 , LOW);
283 }
284 if( MODE == "AUTOMATIC" )
285 {
286     digitalWrite(A4 , LOW);
287     digitalWrite(A5 , HIGH);
288 }
289
290 }
291
```