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/*
 * DESIGNED BY ENG.AHMED MOHAMED ABD ELMAWGOUD
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 * USE THE IO NAMING ACOORDIG TO drawing
ANALOG_BUFFER_2AI_2AQ-LAYOUT.PDF
 * FOR ANALOG OUTPUT ,IT PRODUCE OUTPUT VOLTAGE FORM 0 TO 8 VOLT
BY PASSING VALUES FROM 0 TO 80
 * FOR ANALOG INPUT , IT READ THE INPUT VOLTAGE FROM 0 TO 8 VOLT ,
AND RETRURN VALUES FROM 0 TO 80
*/

#include <ESP32_BOARD.h>
#include <ANALOG_BUFFER_2AI_2AQ.h>

int ai_0_value ,ai_1_value;

void setup() {
  Serial.begin(115200);
}

void loop() {
  // AI0
  ai_0_value = read_ai0();          //return value from 0 to
80 [voltage from 0 to 8 v ,values from 0 to 80]
  Serial.print("AI_0 value = ");
  Serial.println( ai_0_value );
  // AI1
  ai_1_value = read_ai1();          //return value from 0 to
80 [voltage from 0 to 8 v ,values from 0 to 80]
  Serial.print("AI_1 value = ");
  Serial.println( ai_1_value );
  // AQ0
  write_aq0( 13 );    // produce 1.3 v on AQ_0_pin [voltage from 0
to 8 v ,values from 0 to 80]
  // AQ1
  write_aq0( 54 );    // produce 5.4 v on AQ_0_pin [voltage from 0

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to 8 v ,values from 0 to 80]
}

/*

// ANALOG_BUFFER_2AI_2AQ IS CONNECTED TO CONTROLLER J5 SOCKET
/* --
* DESIGNED BY ENG.AHMED MOHAMED ABD ELMAWGOUD
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* functions
* int read_ai0()          -- read from 0 to 100 [ 0v to 10v]
* int read_ai1()
* write_aq0(int value)    -- place from 0v to 10v [numbers from
0 to 100]
* write_aq1(int value)
*/

//////////////////////////////////// ONLY REPLACE J5 TO
THE CONNECTED SOCKET
#define AI_0_pin  j5_pin3
#define AI_1_pin  j5_pin4
#define AQ_1_pin  j5_pin5
#define AQ_0_pin  j5_pin6

//////////////////////////////////// int map_analog(int
adc_value)
int map_analog(int adc_value)
{
    int int_volt;
    if (adc_value < 140) int_volt =      ( adc_value * 10 ) / 140;
// int_volt <= 1 volt
    else if (adc_value < 425) int_volt =  ( adc_value * 20 ) / 425;
// int_volt <= 2 volt
    else if (adc_value < 720) int_volt =  ( adc_value * 30 ) / 720;
// int_volt <= 3 volt
    else if (adc_value < 990) int_volt =  ( adc_value * 40 ) / 990;

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```
int dac_val = (value*512)/200;
dacWrite(AQ_1_pin ,dac_val);
}
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////-----
void write_aol(int value)
void write_aql(int value) // value from 0 to 100 make output from
0 to 10 volts
{
int dac_val = (value*512)/200;
dacWrite(AQ_1_pin ,dac_val);
}

*/
```