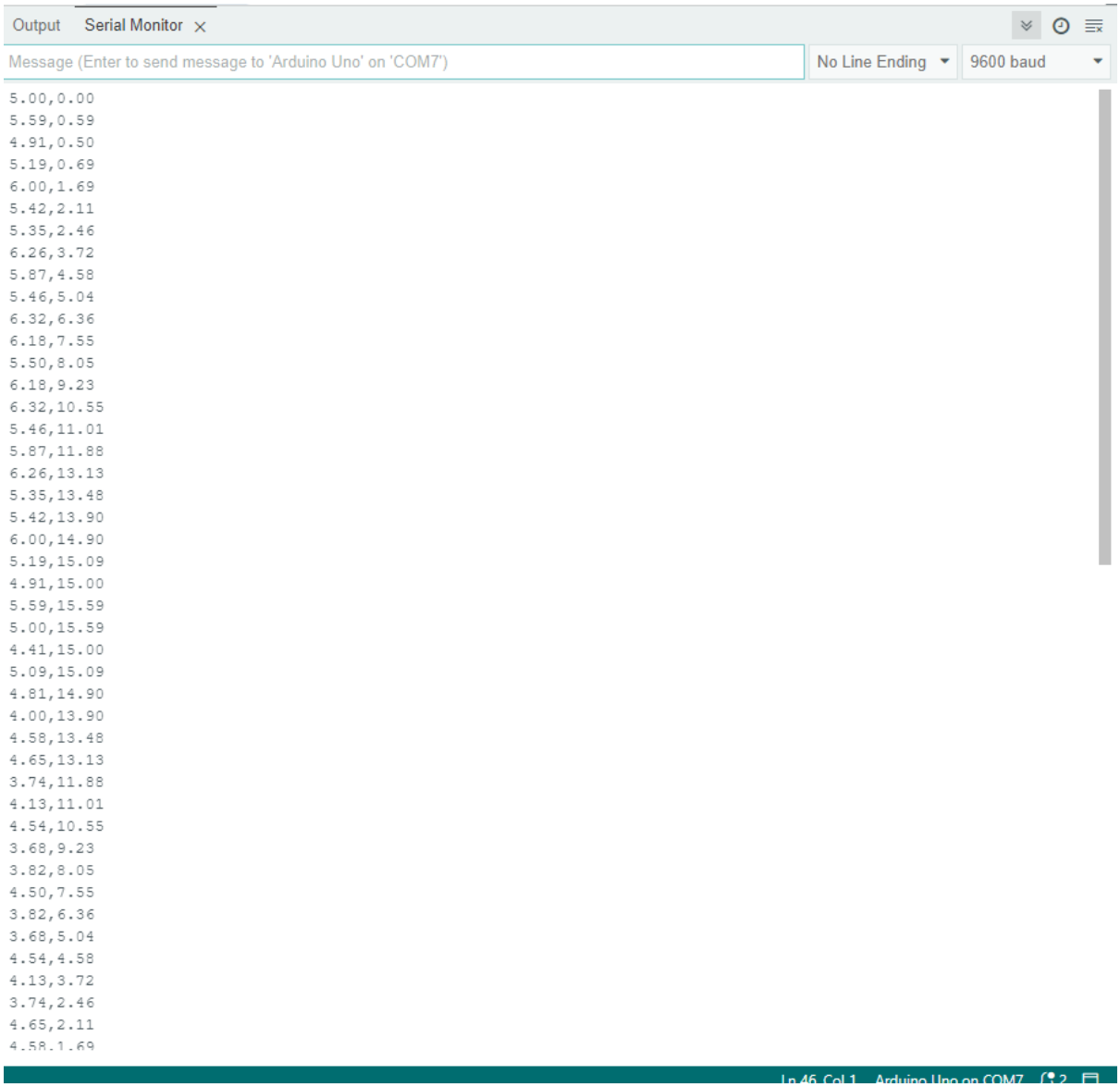
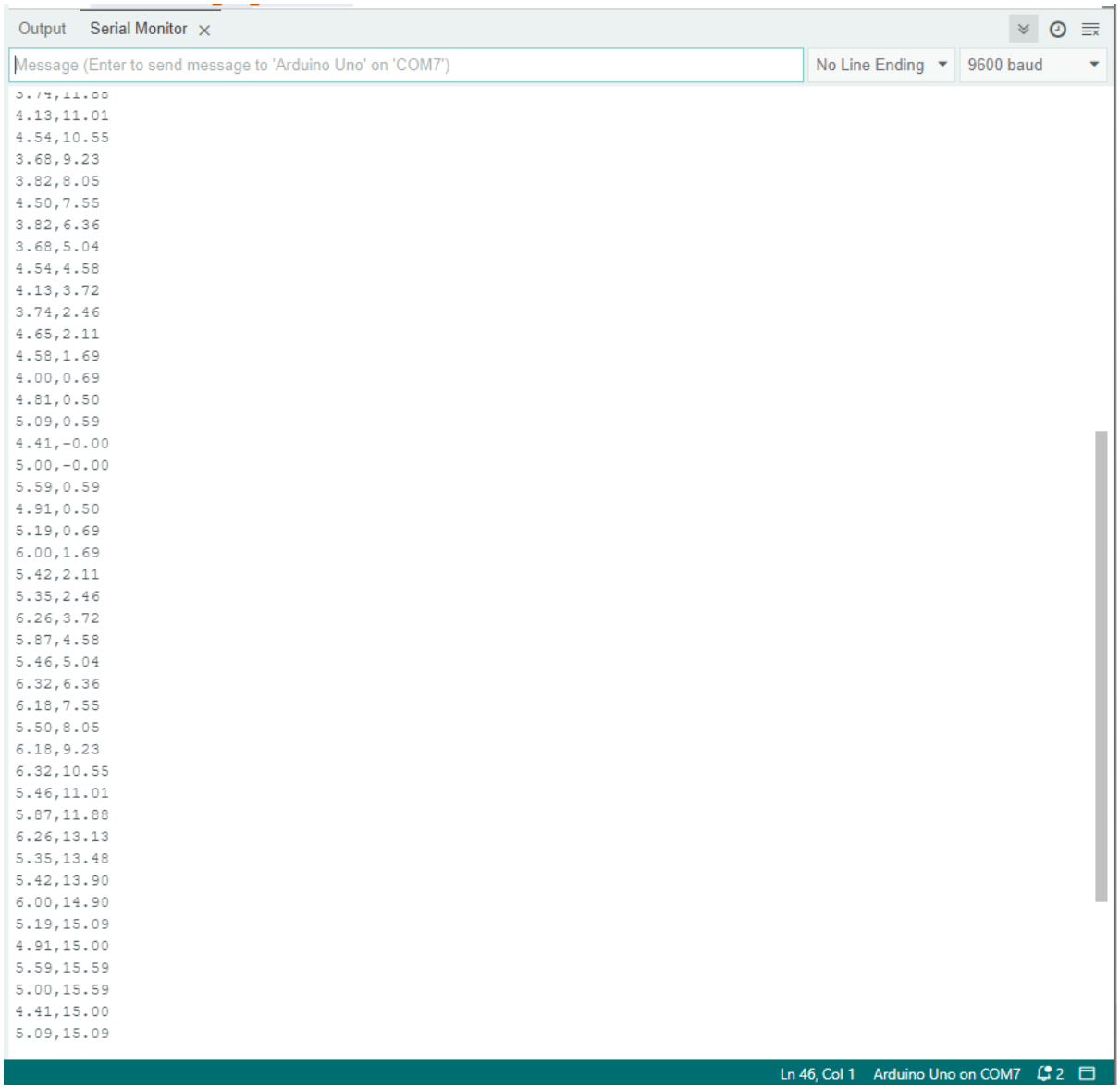
→CODES:=

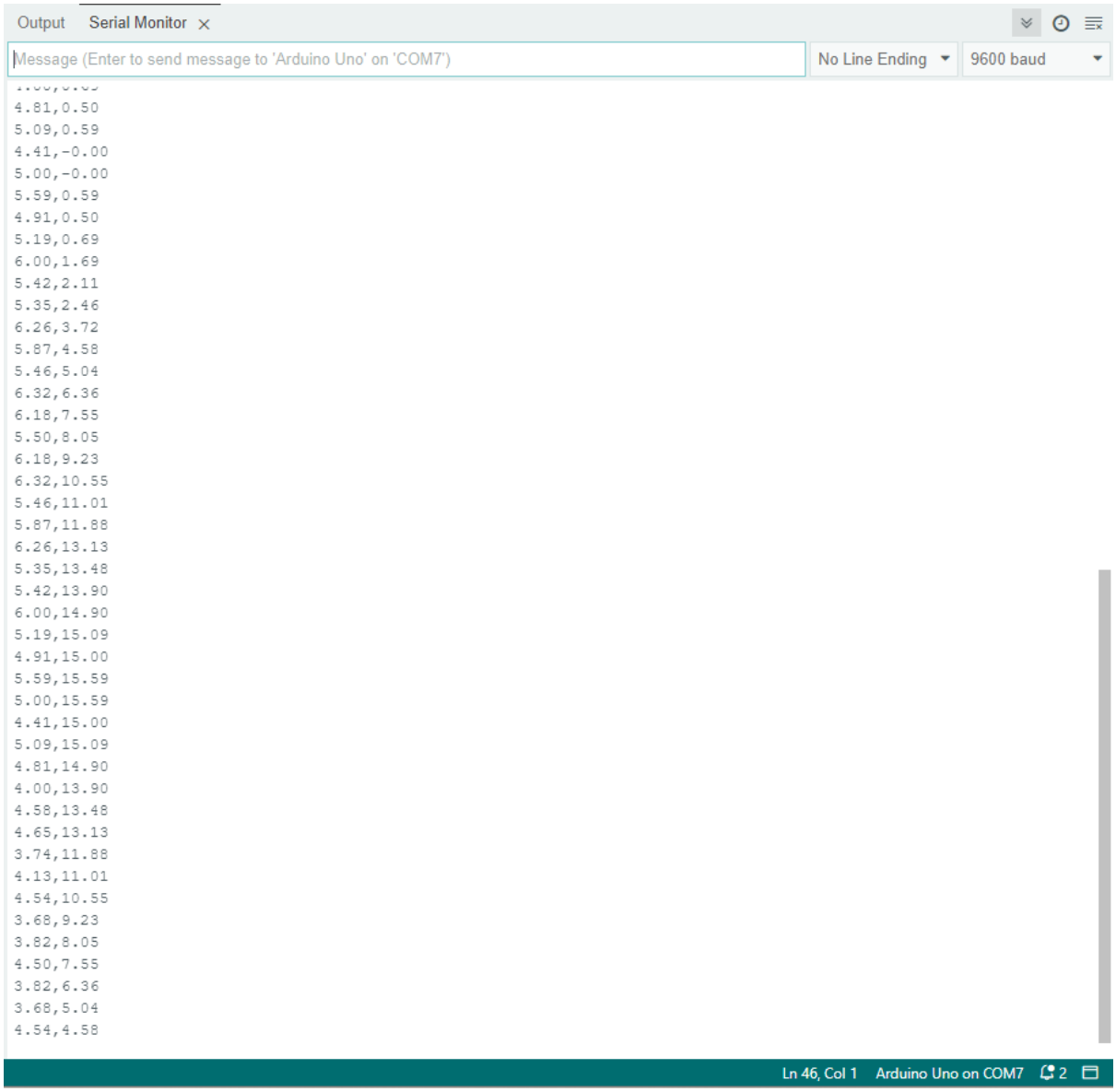
```
#define SHORT_SIG_LENGTH 88
#define OFFSET 5
double short_InputSignal_1kHz_15Hz[SHORT_SIG_LENGTH]=
{
  +0.0000000000f, +0.5924659585f, -0.0947343455f, +0.1913417162f,
+1.0000000000f, +0.4174197128f, +0.3535533906f, +1.2552931065f,
+0.8660254038f, +0.4619397663f, +1.3194792169f, +1.1827865776f,
+0.5000000000f, +1.1827865776f, +1.3194792169f, +0.4619397663f,
+0.8660254038f, +1.2552931065f, +0.3535533906f, +0.4174197128f,
+1.0000000000f, +0.1913417162f, -0.0947343455f, +0.5924659585f,
-0.0000000000f, -0.5924659585f, +0.0947343455f, -0.1913417162f, -
1.0000000000f, -0.4174197128f, -0.3535533906f, -1.2552931065f,
-0.8660254038f, -0.4619397663f, -1.3194792169f, -1.1827865776f, -
0.5000000000f, -1.1827865776f, -1.3194792169f, -0.4619397663f,
-0.8660254038f, -1.2552931065f, -0.3535533906f, -0.4174197128f, -
1.0000000000f, -0.1913417162f, +0.0947343455f, -0.5924659585f,
+0.0000000000f, +0.5924659585f, -0.0947343455f, +0.1913417162f,
+1.0000000000f, +0.4174197128f, +0.3535533906f, +1.2552931065f,
+0.8660254038f, +0.4619397663f, +1.3194792169f, +1.1827865776f,
+0.5000000000f, +1.1827865776f, +1.3194792169f, +0.4619397663f,
+0.8660254038f, +1.2552931065f, +0.3535533906f, +0.4174197128f,
+1.0000000000f, +0.1913417162f, -0.0947343455f, +0.5924659585f,
+0.0000000000f, -0.5924659585f, +0.0947343455f, -0.1913417162f, -
1.0000000000f, -0.4174197128f, -0.3535533906f, -1.2552931065f,
-0.8660254038f, -0.4619397663f, -1.3194792169f, -1.1827865776f, -
0.5000000000f, -1.1827865776f, -1.3194792169f, -0.4619397663f,
};
double output_signal_arr[SHORT_SIG_LENGTH];
void plot_both(void);
void calc_running_sum(double *sig_src_arr, double *sig_dest_arr,uint32_t
sig_length);
void setup() {
  Serial.begin(9600);
  calc_running_sum(&short_InputSignal_1kHz_15Hz[0],&output_signal_arr[0],SHORT
_SIG_LENGTH);
 plot_both();
}
void loop() {
}
void plot_both(void)
{
  uint32_t i;
  for(i=0;i<SHORT_SIG_LENGTH;i++){
  Serial.print(short_InputSignal_1kHz_15Hz[i]+OFFSET);
```

```
  Serial.print(",");
  Serial.println(output_signal_arr[i]);
  delay(10);
  }
}
void calc_running_sum(double *sig_src_arr, double *sig_dest_arr,uint32_t
sig_length)
{
   uint32_t i;
    for(i=0;i<sig_length;i++)
    {
      sig_dest_arr[i] = sig_dest_arr[i-1] + sig_src_arr[i];
    }
}
```

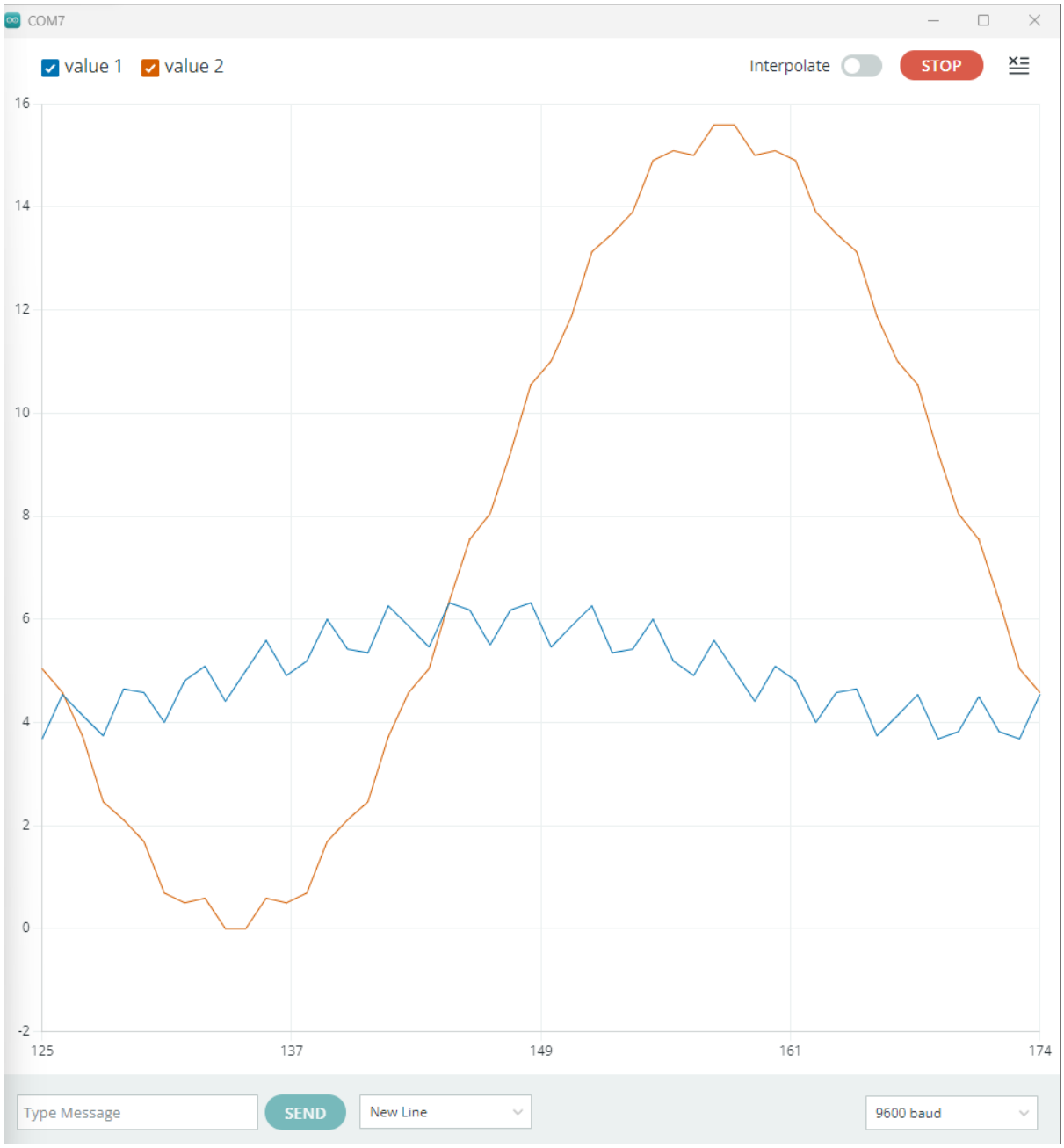
→SERIAL MONITOR OUTPUT:=


Output
Serial Monitor
Message (Enter to send message to 'Arduino Uno' on 'COM7')
No Line Ending
9600 baud
5.00,0.00
5.59,0.59
4.91,0.50
5.19,0.69
6.00,1.69
5.42,2.11
5.35,2.46
6.26,3.72
5.87,4.58
5.46,5.04
6.32,6.36
6.18,7.55
5.50,8.05
6.18,9.23
6.32,10.55
5.46,11.01
5.87,11.88
6.26,13.13
5.35,13.48
5.42,13.90
6.00,14.90
5.19,15.09
4.91,15.00
5.59,15.59
5.00,15.59
4.41,15.00
5.09,15.09
4.81,14.90
4.00,13.90
4.58,13.48
4.65,13.13
3.74,11.88
4.13,11.01
4.54,10.55
3.68,9.23
3.82,8.05
4.50,7.55
3.82,6.36
3.68,5.04
4.54,4.58
4.13,3.72
3.74,2.46
4.65,2.11
4.58,1.69
Ln 46, Col 1
Arduino Uno on COM7
2


Output
Serial Monitor
Message (Enter to send message to 'Arduino Uno' on 'COM7')
No Line Ending
9600 baud
4.13,11.01
4.54,10.55
3.68,9.23
3.82,8.05
4.50,7.55
3.82,6.36
3.68,5.04
4.54,4.58
4.13,3.72
3.74,2.46
4.65,2.11
4.58,1.69
4.00,0.69
4.81,0.50
5.09,0.59
4.41,-0.00
5.00,-0.00
5.59,0.59
4.91,0.50
5.19,0.69
6.00,1.69
5.42,2.11
5.35,2.46
6.26,3.72
5.87,4.58
5.46,5.04
6.32,6.36
6.18,7.55
5.50,8.05
6.18,9.23
6.32,10.55
5.46,11.01
5.87,11.88
6.26,13.13
5.35,13.48
5.42,13.90
6.00,14.90
5.19,15.09
4.91,15.00
5.59,15.59
5.00,15.59
4.41,15.00
5.09,15.09
Ln 46, Col 1
Arduino Uno on COM7
2



→SERIAL PLOTTER :=


COM7
value 1
value 2
Interpolate
STOP
16
14
12
10
8
6
4
2
0
-2
125
137
149
161
174
Type Message
SEND
New Line
9600 baud