

File "/ADC_Events_Final/main.cpp" printed from mbed.org on 4/9/2017

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1  #define SAMPLE_RATE      18000
2  #define LENGTH_RESULT    3600
3  #include "mbed.h"
4  #include "adc.h"
5  #include "SDFFileSystem.h"
6
7  FILE *fp;
8  SDFFileSystem sd(p5, p6, p7, p8, "sd"); // the pinout on the mbed Cool Components workshop board
9  ADC adc(SAMPLE_RATE, 1); //Initialise ADC to maximum SAMPLE_RATE and cclk divide set to 1
10 DigitalIn switchStatus(p15); //Trigger Pin
11 Serial uart(USBTX, USBRX);
12 volatile int result[LENGTH_RESULT];
13 volatile int result2[LENGTH_RESULT];
14 int count;
15 //uint32_t Us1[LENGTH_RESULT];
16 //uint32_t Us2[LENGTH_RESULT];
17 //Timer t;
18
19 //-----
20 FILE *nextLogFile(void)
21 {
22     static unsigned int fileNbr = 0;
23     char fileName[32];
24     FILE *filePtr = NULL;
25     do {
26         if (filePtr != NULL)
27             fclose(filePtr);
28         sprintf(fileName, "/sd/Log%04u.txt", fileNbr++);
29         filePtr = fopen(fileName, "r");
30     } while (filePtr != NULL);
31     return fopen(fileName, "w");
32 }
33
34 int main() {
35
36     while(1)
37     {
38         if(switchStatus == 1) //Turn ON/OFF LEDs depending on switch status
39         {
40             uart.printf("Command Received! \n");
41             //t.start();
42             //Init UART
43             //uart.baud(256000);
44             //uart.printf("Requested max sample rate is %u, actual max sample rate is %u.\n", SAMPLE_RATE, adc.actual_sample_rate());
45
46             //-----
47             //Set up ADC on pin 20 & 19
48             adc.setup(p20, 1);
49             adc.setup(p19, 1);
50             //-----
51             // AD conversion
52             for(count = 0; count < LENGTH_RESULT; count++){
53                 //Start ADC conversion
54                 adc.select(p20);
55                 adc.start();
56                 while(!adc.done(p20));
57                 result[count] = adc.read(p20);
58                 //Us1[count]=t.read_us();
59                 adc.select(p19);
60                 adc.start();
61                 while(!adc.done(p19));
62                 result2[count] = adc.read(p19);
63                 //Us2[count]=t.read_us();
64             }
65
66             //-----
67             //Sending to SD Card
68             printf("SD Card File Handling!\n");
69             fp = nextLogFile();
70             if (!fp) {
71                 error("Could not open file for write\n");
72             }
73             for(count = 0; count < LENGTH_RESULT; count++){
74                 fprintf(fp, "%04u \t", result[count]);
75                 fprintf(fp, "%04u \n", result2[count]);
76             }
77             //fprintf(fp, "Hello fun SD Card World!");
78             fclose(fp);

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```
79 //fp = nextLogFile();
80 printf("Task Complete!\n");
81 //-----
82 // Sending over UART
83 //for(count = 0; count < LENGTH_RESULT; count++){
84 //uart.printf("%04u \t", Us1[count]);
85 //uart.printf("%04u \t", result[count]);
86 //uart.printf("%04u \t", Us2[count]);
87 //uart.printf("%04u \n", result[count]);
88 //uart.printf("%04u \n", result2[count]);
89 //}
90 }
91
92 // else {
93 // uart.printf("Status Low \n"); }
94 }}
95
```

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