

```
1  #include "mbed.h"
2  #include "adc.h"
3  #include "SDFileSystem.h"
4
5  #define SAMPLE_RATE    18000 //Sampling Rate in Hertz
6  #define LENGTH_RESULT  3600 //Number of Samples
7
8  FILE *fp;
9  SDFileSystem sd(p5, p6, p7, p8, "sd");
10 ADC adc(SAMPLE_RATE, 1); //Initialise ADC to maximum SAMPLE_RATE
11 DigitalIn switchStatus(p15); //Trigger Pin
12 Serial uart(USBTX, USBRX);
13
14 volatile int result[LENGTH_RESULT];
15 volatile int result2[LENGTH_RESULT];
16 int count;
17 //-----
18 FILE *nextLogFile(void)
19 {
20     static unsigned int fileNbr = 0;
21     char fileName[32];
22     FILE *filePtr = NULL;
23     do {
24         if (filePtr != NULL)
25             fclose(filePtr);
26         sprintf(fileName, "/sd/Log%04u.txt", fileNbr++);
27         filePtr = fopen(fileName, "r");
28     } while (filePtr != NULL);
29     return fopen(fileName, "w");
30 }
31 //-----
32 int main()
33 {
34     while(1)
35     {
36         if(switchStatus == 1)
37         {
38             uart.printf("Command Received! \n");
39             adc.setup(p20, 1);
40             adc.setup(p19, 1);
41             for(count = 0; count < LENGTH_RESULT; count++){
42                 {
43                     adc.select(p20);
44                     adc.start();
45                     while(!adc.done(p20));
46                     result[count] = adc.read(p20);
47                     adc.select(p19);
48                     adc.start();
49                     while(!adc.done(p19));
50                     result2[count] = adc.read(p19);
51                 }
52                 printf("SD Card File Handling!\n");
53                 fp = nextLogFile();
54                 if (!fp)
55                 {
56                     error("Could not open file for write\n");
57                 }
58                 for(count = 0; count < LENGTH_RESULT; count++){
59                     fprintf(fp, "%04u \t", result[count]);
60                     fprintf(fp, "%04u \n", result2[count]);
61                 }
62                 fclose(fp);
63                 printf("Task Complete!\n");
64             }
65         }
66     }
67 }
68
```