

```

1 //=====
2 //
3 // Step 21
4 // SD Card access
5 //
6 //=====
7
8 #include "mbed.h"
9 #include "TextLCD.h"
10 #include "SDFFileSystem.h"
11
12 TextLCD lcd(p17, p12, p27, p28, p29, p30); // rs, e, d4-d7
13 SDFFileSystem sd(p5, p6, p7, p8, "sd"); // mosi, miso, sclk, cs, name
14 DigitalOut led1(LED1);
15
16 Ticker tik; // recurring interrupt
17
18 int tikFlg = 0;
19 int tCnt = 0;
20
21 //-----
22 // Ticker
23 //-----
24 void attime(void)
25 {
26     tikFlg = 1;
27     tCnt++;
28 }
29
30 //-----
31 // Main
32 //-----
33 int main(void)
34 {
35     char sdt[100];
36
37     //-----
38     // RTC check
39     //-----
40     time_t now_time = time(NULL); // today
41     struct tm *s_tm = localtime(&now_time);
42     if(s_tm->tm_year < 115 ) // since 1900
43     { // RTC set
44         struct tm t;
45         t.tm_sec = 0; // 0-59
46         t.tm_min = 0; // 0-59
47         t.tm_hour = 10; // 0-23
48         t.tm_mday = 1; // 1-31
49         t.tm_mon = 7-1; // 0-11
50         t.tm_year = 115; // year since 1900
51
52         set_time(mktime(&t)); // Write RTC
53     }
54
55     tik.attach(&attime, 1); // 1s -> call attime
56
57     while(1)
58     {
59         if( tikFlg == 1 )
60         {
61             tikFlg = 0;
62             now_time = time(NULL); // today
63             s_tm = localtime(&now_time);
64             lcd.locate(0, 0);
65             sprintf(sdt, "%02d/%02d %02d:%02d:%02d", s_tm->tm_mon+1, s_tm->tm_mday, s_tm->tm_hour, s_tm->tm_min, s_tm->tm_sec);

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```

66         lcd.printf(sdt);
67     }
68     if( tCnt > 4 )
69     {
70         tCnt = 0;
71         //-----
72         // data -> SD Card
73         //-----
74         FILE *fp_sd = fopen("/sd/data.txt", "a");
75         if(NULL != fp_sd)
76         {
77             led1 = 1;
78             fprintf(fp_sd, "%04d/%s¥r¥n", s_tm->tm_year+1900, sdt);    // yyyy/mm/dd, h
79             h:mm:ss
80             fclose(fp_sd);
81             led1 = 0;
82         }
83         else
84         {
85             lcd.locate(0,1);
86             lcd.printf("SDCard Open fail¥n");
87         }
88     }
89 }
90 }

```