

```

1 //=====
2 //
3 // Step 22
4 // Clock -> LCD use Ticker
5 // USB Memory access
6 //
7 //=====
8 #include "mbed.h"
9 #include "TextLCD.h"
10 #include "MSCFileSystem.h"
11
12
13 TextLCD lcd(p17, p12, p27, p28, p29, p30); // rs, e, d4-d7
14 MSCFileSystem usb("usb");
15 DigitalOut led1(LED1);
16
17 Ticker tik; // recurring interrupt
18
19 int tikFlg = 0;
20 int tCnt = 0;
21
22 //-----
23 // Ticker
24 //-----
25 void attime(void)
26 {
27     tikFlg = 1;
28     tCnt++;
29 }
30
31 //-----
32 // Main
33 //-----
34 int main(void)
35 {
36     char sdt[100];
37
38     lcd.cls();
39     lcd.locate(0, 0); // x, y
40
41     //-----
42     // RTC check
43     //-----
44     time_t now_time = time(NULL); // today
45     struct tm *s_tm = localtime(&now_time);
46     if(s_tm->tm_year < 117) // since 1900
47     { // RTC set
48         struct tm t;
49         t.tm_sec = 0; // 0-59
50         t.tm_min = 0; // 0-59
51         t.tm_hour = 10; // 0-23
52         t.tm_mday = 1; // 1-31
53         t.tm_mon = 7-1; // 0-11
54         t.tm_year = 117; // year since 1900
55
56         set_time(mktime(&t)); // Write RTC
57     }
58
59     tik.attach(&attime, 1); // 1s -> call attime
60
61     while(1)
62     {
63         if( tikFlg == 1 )
64         {
65             tikFlg = 0;
66             now_time = time(NULL); // today

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67         s_tm = localtime(&now_time);
68         lcd.locate(0, 0);
69         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);
70         lcd.printf(sdt);
71     }
72     if( tCnt > 9 )
73     {
74         tCnt = 0;
75         //-----
76         // data -> USB Memory
77         //-----
78         FILE *fp_usb = fopen("/usb/test.txt", "a");
79         if(NULL != fp_usb)
80         {
81             led1 = 1;
82             fprintf(fp_usb, "%04d/%s¥r¥n", s_tm->tm_year+1900, sdt);    // yyyy/mm/dd,
hh:mm:ss
83             fclose(fp_usb);
84             led1 = 0;
85         }
86     }
87     else
88     {
89         lcd.locate(0, 1);
90         lcd.printf("File Open fail¥n");
91     }
92 }
93 }
94
95 return 0;
96 }

```