

Real Time Systems

Part 1

Fadi's HW 11 Solution

```
line level  source
1          #pragma CODE
2          #include <c8051f020.h>          // SFR declarations
3          extern unsigned char rd_buttons(void); // in uni.c
4          unsigned char mbtn() //16 or 17 bytes
5          {
6 1         static unsigned char last_button=1;
7 1         unsigned char prev_button;
8 1
9 1         prev_button = rd_buttons();
10 1
11 1        if(8%prev_button==0)
12 1        last_button = prev_button;
13 1
14 1
15 1        return(last_button);
16 1    }
17
18         //if(!last_button)
19         //last_button += 1; // if not static 23...
```

```

0000 120000    E    LCALL  rd_buttons
;---- Variable 'prev_button' assigned to Register 'R7' ----
; SOURCE LINE # 11
0003 7408      MOV    A,#08H
0005 8FF0      MOV    B,R7
0007 84        DIV    AB
0008 E5F0      MOV    A,B
000A 7002      JNZ    ?C0001
; SOURCE LINE # 12
000C 8F00      R    MOV    last_button,R7
000E    ?C0001:
; SOURCE LINE # 15
000E AF00      R    MOV    R7,last_button
; SOURCE LINE # 16
0010    ?C0002:
0010 22        RET

```