

# test\_32.asm

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1;*****
2; file = test_32.asm          Author: Dr. Eric M. Schwartz    Date: 13 Feb 2012
3;
4; Description:
5; This program will be used to test moving 32 bits at a time
6;   between pairs of memory, the accumulator, and the auxiliary registers
7   .global    _c_int00
8 WDT          .set      0x7029      ; watch dog timer
9 SCIB_VECTOR  .set      0x0DC4      ; will also work with 22-bit addresses
10;***** Program Constants *****
11; none
12;***** DATA ALLOCATION SECTION - Variables/Data *****
13   ;DATA section, starting at 0xA000.
14   .data
15 NUM1        .long      0x89ABCDEF      ; stores in A000 and A001
16 NUM2        .long      0x01234567      ; stores in A000 and A001
17
18   ;.BSS SECTION, starting address is 0xB000
19   .bss      Var1, 2          ; set up 32 bits in memory
20   .bss      Var2, 2          ; set up 32 bits in memory
21   ;.global directive lets you to see the assigned addresses in map file.
22   .global    NUM1, NUM2
23;*****Program Text*****
24   .text                      ;Program section, starting at 0x9000
25 _c_int00:
26   EALLOW                    ; allow protected instructions
27   SETC      OBJMODE          ; allow 32 bit instructions
28
29   MOV       AR0,#WDT          ;kill the watch dog timer
30   MOV       *AR0,#0x68
31
32   MOVL      XAR0,#SCIB_VECTOR
33   MOV       ACC, #SCIB_ISR
34   MOVL      *XAR0, ACC
35
36 MEMtoACC:
37   ; moves 32 bits from data to ACC
38   MOV       AR0, #NUM1        ; AR0- pointer to 32 bits to be copied
39   MOVL      ACC, *AR0          ; stuff at pointer location (32 bits) -> ACC
40 MEMtoAUX:
41   ; moves 32 bits from data to XAR1
42   MOV       AR0, #NUM2        ; AR0- pointer to 32 bits to be copied
43   MOVL      XAR1, *AR0        ; stuff at pointer location (32 bits) -> XAR1
44 ACCtoAUX:
45   ; moves 32 bits from ACC to XAR2
46   MOVL      XAR2, ACC          ; stuff in ACC (32 bits) -> XAR2
47 AUXtoACC:
48   ; moves 32 bits from XAR1 to ACC
49   MOVL      ACC, XAR1          ; stuff in AR3 (32 bits) -> ACC
50 AUXtoAUX:
51   ; moves 32 bits from XAR2 to XAR1
52   MOVL      XAR1, XAR2        ; stuff in XAR2 (32 bits) -> XAR1
53 ACCtoMEM:
54   ; moves 32 bits from ACC to memory
55   MOV       AR0, #Var1        ; AR0- pointer to memory (32 bits)
56   MOVL      *AR0, ACC          ; ACC -> loc in memory (Var1) (32 bits)
57 AUXtoMEM:

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58      ; moves 32 bits from XAR1 to memory
59      MOV     AR0, #Var2          ; AR0- pointer to memory (32 bits)
60      MOVL    *AR0, XAR1          ; XAR1 -> loc in memory (Var2) (32 bits)
61
62 HERE:  B      HERE, UNC          ; chase tail
63
64 SCIB_ISR:
65      NOP
66      B      SCIB_ISR, UNC
67
```