

Mode: All

Left file: D:\Source\github\CSS422\_Hardware\Disassembler\UnitTests\Test\_002.X68

Right file: D:\Source\github\CSS422\_Hardware\Disassembler\Output.txt

```
*=====
» =====
» =====
* Title      : Test_002
* Written by : CSS 422 Best Group
*
*   The CSS 422 Best Group is:
*   - Howie Catlin
*   - Kyle Dukart
*   - Colton Sellers
*
*
* Date       : 10-Nov-2019
*
* Description:
*   Test input file used to perform software v
» erification
*   and validation (i.e.: validation that the
» disassembler
*   is capable of converting hexadecimal to En
» glish,
*   verification that the the strings being tr
» anslated are
*   in fact correct).
*
*   First parts of this file attempt to prove
» that each
*   operation code is capable of being transla
» ted. The
*   registers D0, D7, A0, & A7 and hex values
» '0', '1', '5',
*   'A', and 'F' as edge cases most likely to
» uncover early
*   programming errors. This method exercises
» all opcodes,
*   but performs less addressing.
*
*   Later in the file, a brute-force matrix of
» every-register
*   to-every-register is employed to verify th
» e Effective
*   Addressing code paths. This method uses fe
» wer op codes,
*   but performs more addressing.
*
*   Refer to the Test Plan and test matrix for
» more
*   information.
*=====
» =====
» =====
```

&lt;&gt;

0000000000000000111112 BCLR D0, D7

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(continued)

## TESTIO

\* -----

» -----

## \* BCLR

\* -----

» -----

## BCLR D0,D7

BCLR D7, (A7)

BCLR D0, (A0)+

BCLR D7, -(A7)

BCLR D0, \$FFFF

BCLR D7, \$55555

\* -----

» -----

## \* ORI

\* -----

» -----

ORI.W #\$1111,D0

ORI.W \$AAAA, (A0)+

ORI.W \$0000, -(A0)

ORI.L \$FFFFFF,D0

ORI.L \$55555, (A0)+

ORI.L \$AAAAA, -(A0)

\* -----

» -----

## \* CMPI

\* -----

» -----

CMPI.W #\$1111,D0

CMPI.W \$AAAA, (A0)+

CMPI.W \$0000, -(A0)

CMPI.L \$FFFFFF,D0

CMPI.L \$55555, (A0)+

CMPI.L \$AAAAA, -(A0)

\* -----

» -----

## \* MOVE.B

\* -----

» -----

MOVE.B #\$0F,D0

MOVE.B D7, (A7)

MOVE.B D7, (A0)+

MOVE.B D0, -(A7)

MOVE.B \$1000,D0

MOVE.B \$10000,D0

MOVE.W \$AA,D0

MOVE.W D7,A0

MOVE.W D7, (A7)

MOVE.W D0, (A0)+

111114 BCLR D7, (A7)

111116 BCLR D0, (A0)+

111118 BCLR D7, -(A7)

11111A BCLR D0, \$FFFF

111120 BCLR D7, \$55555

111126 ORI.W #\$1111, D0

11112A ORI.W \$AAAA, (A0)+

11112E ORI.W \$0000, -(A0)

111132 ORI.L \$FFFFFF, D0

111138 ORI.L \$55555, (A0)+

11113E ORI.L \$AAAAA, -(A0)

111144 CMPI.W #\$1111, D0

111148 CMPI.W \$AAAA, (A0)+

11114C CMPI.W \$0000, -(A0)

111150 CMPI.L \$FFFFFF, D0

111156 CMPI.L \$55555, (A0)+

11115C CMPI.L \$AAAAA, -(A0)

111162 MOVE.B #F, D0

111166 MOVE.B D7, (A7)

111168 MOVE.B D7, (A0)+

11116A MOVE.B D0, -(A7)

11116C MOVE.B \$1000, D0

111170 MOVE.B \$10000, D0

111176 MOVE.W \$AA, D0

11117A MOVE.W D7, A0

11117C MOVE.W D7, (A7)

11117E MOVE.W D0, (A0)+

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```

MOVE.W    D7, -(A7)
MOVE.W    $5555, D0
MOVE.W    $AAAA, D0
MOVE.L    #$AA, D0
MOVE.L    D0, A0
MOVE.L    D0, (A0)
MOVE.L    D0, (A0)+
MOVE.L    D0, -(A0)
MOVE.L    $1000, D0
MOVE.L    $10000, D0

```

```

* -----
» -----
* MOVEA.W
* -----
» -----

```

```

MOVEA.W    D7, A0
MOVEA.W    (A0), A7
MOVEA.W    (A0)+, A7
MOVEA.W    -(A7), A0
MOVEA.W    $AAAA, A0
MOVEA.W    $55555, A0
MOVEA.L    D0, A0
MOVEA.L    D7, A0
MOVEA.L    (A7), A0
MOVEA.L    (A0)+, A7
MOVEA.L    -(A7), A0
MOVEA.L    $FFAA, A7
MOVEA.L    $FFAA5, A0

```

```

* -----
» -----
* NOP, RTS, ILLEGAL
* -----
» -----
NOP

```

RTS

ILLEGAL

```

* -----
» -----
* LEA
* -----
» -----

```

```

LEA        (A7), A0
LEA        $FFAA, A0
LEA        $AA551, A7

```

```

* -----

```

```

111180 MOVE.W    D7, -(A7)
111182 MOVE.W    $5555, D0
111186 MOVE.W    $AAAA, D0
11118C MOVE.L    #$AA, D0
111192 MOVEA.L    D0, A0
111194 MOVE.L    D0, (A0)
111196 MOVE.L    D0, (A0)+
111198 MOVE.L    D0, -(A0)
11119A MOVE.L    $1000, D0
11119E MOVE.L    $10000, D0

```

```

1111A4 MOVEA.W    D7, A0
1111A6 MOVEA.W    (A0), A7
1111A8 MOVEA.W    (A0)+, A7
1111AA MOVEA.W    -(A7), A0
1111AC MOVEA.W    $AAAA, A0
1111B2 MOVEA.W    $55555, A0
1111B8 MOVEA.L    D0, A0
1111BA MOVEA.L    D7, A0
1111BC MOVEA.L    (A7), A0
1111BE MOVEA.L    (A0)+, A7
1111C0 MOVEA.L    -(A7), A0
1111C2 MOVEA.L    $FFAA, A7
1111C8 MOVEA.L    $FFAA5, A0
1111CE NOP
1111D0 RTS

```

1111D2 ILLEGAL

```

1111D4 LEA        (A7), A0
1111D6 LEA        $FFAA, A0
1111DC LEA        $AA551, A7
1111E2 NEG.W      D0

```

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» -----

\* NEG

\* -----

» -----

NEG	D0
NEG	(A6)
NEG	(A0)+
NEG	-(A1)
NEG	\$AAFF
NEG	\$55FAA

\* -----

» -----

\* JSR

\* -----

» -----

JSR	(A6)
JSR	\$AAFF
JSR	\$55FAA

\* -----

» -----

\* MOVEM

\* -----

» -----

\* -----

» -----

\* SUBQ.x

\* -----

» -----

SUBQ.B	#1,D0
SUBQ.B	#3,(A7)
SUBQ.B	#4,(A0)+
SUBQ.B	#5,-(A0)
SUBQ.B	#6,\$AAFF
SUBQ.B	#7,\$AFAF5

SUBQ.W	#1,D0
SUBQ.W	#3,(A7)
SUBQ.W	#4,(A0)+
SUBQ.W	#5,-(A0)
SUBQ.W	#6,\$AAFF
SUBQ.W	#7,\$AFAF5
SUBQ.L	#1,D0
SUBQ.L	#3,(A7)
SUBQ.L	#4,(A0)+
SUBQ.L	#5,-(A0)
SUBQ.L	#6,\$AAFF
SUBQ.L	#7,\$AFAF5

\* -----

» -----

\* DIVS

1111E4	NEG.W	(A6)
1111E6	NEG.W	(A0)+
1111E8	NEG.W	-(A1)
1111EA	NEG.W	\$AAFF
1111F0	NEG.W	\$55FAA

1111F6	JSR	(A6)
1111F8	JSR	\$AAFF
1111FE	JSR	\$55FAA

111204	SUBQ.B	#1, D0
111206	SUBQ.B	#3, (A7)
111208	SUBQ.B	#4, (A0)+
11120A	SUBQ.B	#5, -(A0)
11120C	SUBQ.B	#6, \$AAFF
111212	SUBQ.B	#7, \$AFAF5

111218	SUBQ.W	#1, D0
11121A	SUBQ.W	#3, (A7)
11121C	SUBQ.W	#4, (A0)+
11121E	SUBQ.W	#5, -(A0)
111220	SUBQ.W	#6, \$AAFF
111226	SUBQ.W	#7, \$AFAF5
11122C	SUBQ.L	#1, D0
11122E	SUBQ.L	#3, (A7)
111230	SUBQ.L	#4, (A0)+
111232	SUBQ.L	#5, -(A0)
111234	SUBQ.L	#6, \$AAFF
11123A	SUBQ.L	#7, \$AFAF5

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```

* -----
» -----
    DIVS      D0,D1
    DIVS      (A1)+,D1
    DIVS      -(A2),D2
    DIVS      #01,D1
    DIVS      $AAFF,D1
    DIVS      $FFAA5,D2

* -----
» -----
* OR
* -----
» -----
    OR        D0,D1
    OR        (A0),D0
    OR        (A0)+,D7
    OR        -(A7),D0
    OR        #02,D1

* -----
» -----
* SUB
* -----
» -----
    SUB       D0,D1
    SUB       A0,D0
    SUB       (A0),D0
    SUB       (A0)+,D0
    SUB       -(A7),D1
    SUB       #02,D1
    SUB       $AAFF,D0
    SUB       $AFAF5,D1

* -----
» -----
* CMP
* -----
» -----
    CMP       D0,D1
    CMP       A0,D0
    CMP       (A0),D0
    CMP       (A0)+,D0
    CMP       -(A7),D1
    CMP       #02,D1
    CMP       $AAFF,D0
    CMP       $AFAF5,D1

* -----
» -----
* EOR
* -----
» -----
    EOR       D0,D1
    EOR       D0,(A0)

```

```

111240 DIVS      D0, D1
111242 DIVS      (A1)+, D1
111244 DIVS      -(A2), D2
111246 DIVS      #1, D1
11124A DIVS      $AAFF, D1
111250 DIVS      $FFAA5, D2

```

```

111256 OR.W      D0, D1
111258 OR.W      (A0), D0
11125A OR.W      (A0)+, D7
11125C OR.W      -(A7), D0

```

```

11125E OR.W      #2, D1

```

```

111262 SUB.W     D0, D1
111264 SUB.W     A0, D0
111266 SUB.W     (A0), D0
111268 SUB.W     (A0)+, D0
11126A SUB.W     -(A7), D1
11126C SUBQ.W   #2, D1
11126E SUB.W     $AAFF, D0
111274 SUB.W     $AFAF5, D1

```

```

11127A CMP.W     D0, D1
11127C CMP.W     A0, D0
11127E CMP.W     (A0), D0
111280 CMP.W     (A0)+, D0
111282 CMP.W     -(A7), D1
111284 CMP.W     #2, D1
111288 CMP.W     $AAFF, D0
11128E CMP.W     $AFAF5, D1

```

```

111294 EOR.W     D0, D1
111296 EOR.W     D0, (A0)

```

(continued)

```
MULS      D0, D1
MULS      (A0), D0
MULS      (A0)+, D0
MULS      -(A7), D1
MULS      #02, D1
MULS      $AAFF, D0
MULS      $AFAF5, D1
```

1112A6	MULS	D0, D1
1112A8	MULS	(A0), D0
1112AA	MULS	(A0)+, D0
1112AC	MULS	-(A7), D1
1112AE	MULS	#2, D1
1112B2	MULS	\$AAFF, D0
1112B8	MULS	\$AFAF5, D1

[illegible]

(continued)

[illegible]

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(continued)

```
* -----
» -----
* ADD
* -----
» -----
    ADD      D0,D1
    ADD      D0,A0
    ADD      (A0),D0
    ADD      (A0)+,D0
    ADD      -(A7),D1
    ADD      #02,D1
    ADD      $AAFF,D0
    ADD      $AF5,D1

* -----
» -----
* ADDA
* -----
» -----
    ADDA     D0,A0
    ADDA     D0,A0
    ADDA     (A0),A0
    ADDA     (A0)+,A0
    ADDA     -(A7),A1
    ADDA     #02,A1
    ADDA     $AAFF,A0
    ADDA     $AF5,A7

* -----
» -----
* ASR
* -----
» -----
    ASR      (A0)
    ASR      (A7)+
    ASR      -(A0)
    ASR      $AF5
    ASR      $FAA550
```

```
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yy
```

```
yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy0ù
```

```
□MOVE.L D4,D5□ADD.B D0,D1□Output.txt□
```

```
1A001A00□□□Config.cfg□0011111200111670Z1112BEÿ
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
» yyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyyy
```







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(continued)

```
    LSR      (A7)+
    LSR      -(A0)
    LSR      $AF AF
    LSR      $FF AA 55 0
* -----
» -----
* LSL
* -----
» -----
    LSL      (A0)
    LSL      (A7)+
    LSL      -(A0)
    LSL      $AF AF
    LSL      $FF AA 55 0
* -----
» -----
* ROL
* -----
» -----
    ROL      (A0)
    ROL      (A7)+
    ROL      -(A0)
    ROL      $AF AF
    ROL      $FF AA 55 0
* -----
» -----
* ROR
* -----
» -----
    ROR      (A0)
    ROR      (A7)+
    ROR      -(A0)
    ROR      $AF AF
    ROR      $FF AA 55 0
* -----
» -----
* BRUTE-FORCE VERIFICATION
* -----
» -----
    ; D0 to all other data registers
    ADD      D0,D0
    ADD      D0,D1
    ADD      D0,D2
    ADD      D0,D3
    ADD      D0,D4
    ADD      D0,D5
    ADD      D0,D6
    ADD      D0,D7
    ; D1 to all other data registers
    ADD      D1,D0
    ADD      D1,D1
    ADD      D1,D2
```

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(continued)

```
ADD      D1,D3
ADD      D1,D4
ADD      D1,D5
ADD      D1,D6
ADD      D1,D7
      ; D2 to all other data registers
ADD      D2,D0
ADD      D2,D1
ADD      D2,D2
ADD      D2,D3
ADD      D2,D4
ADD      D2,D5
ADD      D2,D6
ADD      D2,D7
      ; D3 to all other data registers
ADD      D3,D0
ADD      D3,D1
ADD      D3,D2
ADD      D3,D3
ADD      D3,D4
ADD      D3,D5
ADD      D3,D6
ADD      D3,D7
      ; D4 to all other data registers
ADD      D4,D0
ADD      D4,D1
ADD      D4,D2
ADD      D4,D3
ADD      D4,D4
ADD      D4,D5
ADD      D4,D6
ADD      D4,D7
      ; D5 to all other data registers
ADD      D5,D0
ADD      D5,D1
ADD      D5,D2
ADD      D5,D3
ADD      D5,D4
ADD      D5,D5
ADD      D5,D6
ADD      D5,D7
      ; D6 to all other data registers
ADD      D6,D0
ADD      D6,D1
ADD      D6,D2
ADD      D6,D3
ADD      D6,D4
ADD      D6,D5
ADD      D6,D6
ADD      D6,D7
      ; D7 to all other data registers
ADD      D7,D0
```

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(continued)

```
ADD      D7,D1
ADD      D7,D2
ADD      D7,D3
ADD      D7,D4
ADD      D7,D5
ADD      D7,D6
ADD      D7,D7
      ; D0 to all other address registers
ADD      D0,A0
ADD      D0,A1
ADD      D0,A2
ADD      D0,A3
ADD      D0,A4
ADD      D0,A5
ADD      D0,A6
ADD      D0,A7

      ; D1 to all other address registers
ADD      D1,A0
ADD      D1,A1
ADD      D1,A2
ADD      D1,A3
ADD      D1,A4
ADD      D1,A5
ADD      D1,A6
ADD      D1,A7
      ; D2 to all other address registers
»
ADD      D2,A0
ADD      D2,A1
ADD      D2,A2
ADD      D2,A3
ADD      D2,A4
ADD      D2,A5
ADD      D2,A6
ADD      D2,A7
      ; D3 to all other address registers
ADD      D3,A0
ADD      D3,A1
ADD      D3,A2
ADD      D3,A3
ADD      D3,A4
ADD      D3,A5
ADD      D3,A6
ADD      D3,A7
      ; D4 to all other address registers
ADD      D4,A0
ADD      D4,A1
ADD      D4,A2
ADD      D4,A3
ADD      D4,A4
ADD      D4,A5
```

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(continued)

```
ADD      D4,A6
ADD      D4,A7
; D5 to all other address registers
ADD      D5,A0
ADD      D5,A1
ADD      D5,A2
ADD      D5,A3
ADD      D5,A4
ADD      D5,A5
ADD      D5,A6
ADD      D5,A7
; D6 to all other address registers
ADD      D6,A0
ADD      D6,A1
ADD      D6,A2
ADD      D6,A3
ADD      D6,A4
ADD      D6,A5
ADD      D6,A6
ADD      D6,A7
; D7 to all other address registers
ADD      D7,A0
ADD      D7,A1
ADD      D7,A2
ADD      D7,A3
ADD      D7,A4
ADD      D7,A5
ADD      D7,A6
ADD      D7,A7

; values from all address registers to
» A0
ADD      (A0),A0
ADD      (A1),A0
ADD      (A2),A0
ADD      (A3),A0
ADD      (A4),A0
ADD      (A5),A0
ADD      (A6),A0
ADD      (A7),A0
; values from all address registers to
» A1
ADD      (A0),A1
ADD      (A1),A1
ADD      (A2),A1
ADD      (A3),A1
ADD      (A4),A1
ADD      (A5),A1
ADD      (A6),A1
ADD      (A7),A1

; values from all address registers to
```

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(continued)

```
» A2
  ADD      (A0),A2
  ADD      (A1),A2
  ADD      (A2),A2
  ADD      (A3),A2
  ADD      (A4),A2
  ADD      (A5),A2
  ADD      (A6),A2
  ADD      (A7),A2
      ; values from all address registers to
» A3
  ADD      (A0),A3
  ADD      (A1),A3
  ADD      (A2),A3
  ADD      (A3),A3
  ADD      (A4),A3
  ADD      (A5),A3
  ADD      (A6),A3
  ADD      (A7),A3
      ; values from all address registers
» to A4
  ADD      (A0),A4
  ADD      (A1),A4
  ADD      (A2),A4
  ADD      (A3),A4
  ADD      (A4),A4
  ADD      (A5),A4
  ADD      (A6),A4
  ADD      (A7),A4
      ; values from all address registers to
» A5
  ADD      (A0),A5
  ADD      (A1),A5
  ADD      (A2),A5
  ADD      (A3),A5
  ADD      (A4),A5
  ADD      (A5),A5
  ADD      (A6),A5
  ADD      (A7),A5
      ; values from all address registers to
» A6
  ADD      (A0),A6
  ADD      (A1),A6
  ADD      (A2),A6
  ADD      (A3),A6
  ADD      (A4),A6
  ADD      (A5),A6
  ADD      (A6),A6
  ADD      (A7),A6
```

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```
        ; values from all address registers to
»  A7
    ADD    (A0),A7
    ADD    (A1),A7
    ADD    (A2),A7
    ADD    (A3),A7
    ADD    (A4),A7
    ADD    (A5),A7
    ADD    (A6),A7
    ADD    (A7),A7
```

```
        ; post-increment from all address regi
»  sters to A0
    ADD    (A0)+,A0
    ADD    (A1)+,A0
    ADD    (A2)+,A0
    ADD    (A3)+,A0
    ADD    (A4)+,A0
    ADD    (A5)+,A0
    ADD    (A6)+,A0
    ADD    (A7)+,A0
```

```
        ; post-increment from all address regi
»  sters to A1
    ADD    (A0)+,A1
    ADD    (A1)+,A1
    ADD    (A2)+,A1
    ADD    (A3)+,A1
    ADD    (A4)+,A1
    ADD    (A5)+,A1
    ADD    (A6)+,A1
    ADD    (A7)+,A1
```

```
        ; post-increment from all address regi
»  sters to A2
    ADD    (A0)+,A2
    ADD    (A1)+,A2
    ADD    (A2)+,A2
    ADD    (A3)+,A2
    ADD    (A4)+,A2
    ADD    (A5)+,A2
    ADD    (A6)+,A2
    ADD    (A7)+,A2
```

```
        ; post-increment from all address regi
»  sters to A3
    ADD    (A0)+,A3
    ADD    (A1)+,A3
    ADD    (A2)+,A3
    ADD    (A3)+,A3
    ADD    (A4)+,A3
```



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(continued)

```

    ADD      (A5)+,A3
    ADD      (A6)+,A3
    ADD      (A7)+,A3

; post-increment from all address regi
» sters to A4
    ADD      (A0)+,A4
    ADD      (A1)+,A4
    ADD      (A2)+,A4
    ADD      (A3)+,A4
    ADD      (A4)+,A4
    ADD      (A5)+,A4
    ADD      (A6)+,A4
    ADD      (A7)+,A4

; post-increment from all address regi
» sters to A5
    ADD      (A0)+,A5
    ADD      (A1)+,A5
    ADD      (A2)+,A5
    ADD      (A3)+,A5
    ADD      (A4)+,A5
    ADD      (A5)+,A5
    ADD      (A6)+,A5
    ADD      (A7)+,A5

; post-increment from all address regi
» sters to A6
    ADD      (A0)+,A6
    ADD      (A1)+,A6
    ADD      (A2)+,A6
    ADD      (A3)+,A6
    ADD      (A4)+,A6
    ADD      (A5)+,A6
    ADD      (A6)+,A6
    ADD      (A7)+,A6

; post-increment from all address regi
» isters to A7
    ADD      (A0)+,A7
    ADD      (A1)+,A7
    ADD      (A2)+,A7
    ADD      (A3)+,A7
    ADD      (A4)+,A7
    ADD      (A5)+,A7
    ADD      (A6)+,A7
    ADD      (A7)+,A7

; pre-decrement from all address regis
» ters to A0
    ADD      -(A0),A0
    ADD      -(A1),A0

```

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(continued)

```
ADD      -(A2),A0
ADD      -(A3),A0
ADD      -(A4),A0
ADD      -(A5),A0
ADD      -(A6),A0
ADD      -(A7),A0
```

```
      ; pre-decrement from all address regis
» ters to A1
```

```
ADD      -(A0),A1
ADD      -(A1),A1
ADD      -(A2),A1
ADD      -(A3),A1
ADD      -(A4),A1
ADD      -(A5),A1
ADD      -(A6),A1
ADD      -(A7),A1
```

```
      ; pre-decrement from all address regis
» ters to A2
```

```
ADD      -(A0),A2
ADD      -(A1),A2
ADD      -(A2),A2
ADD      -(A3),A2
ADD      -(A4),A2
ADD      -(A5),A2
ADD      -(A6),A2
ADD      -(A7),A2
```

```
      ; pre-decrement from all address regis
» ters to A3
```

```
ADD      -(A0),A3
ADD      -(A1),A3
ADD      -(A2),A3
ADD      -(A3),A3
ADD      -(A4),A3
ADD      -(A5),A3
ADD      -(A6),A3
ADD      -(A7),A3
```

```
      ; pre-decrement from all address regis
» ters to A4
```

```
ADD      -(A0),A4
ADD      -(A1),A4
ADD      -(A2),A4
ADD      -(A3),A4
ADD      -(A4),A4
ADD      -(A5),A4
ADD      -(A6),A4
ADD      -(A7),A4
```

```
      ; pre-decrement from all address regis
```

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(continued)

```
» ters to A5
  ADD      -(A0),A5
  ADD      -(A1),A5
  ADD      -(A2),A5
  ADD      -(A3),A5
  ADD      -(A4),A5
  ADD      -(A5),A5
  ADD      -(A6),A5
  ADD      -(A7),A5

      ; pre-decrement from all address regis
» ters to A6
  ADD      -(A0),A6
  ADD      -(A1),A6
  ADD      -(A2),A6
  ADD      -(A3),A6
  ADD      -(A4),A6
  ADD      -(A5),A6
  ADD      -(A6),A6
  ADD      -(A7),A6

      ; pre-decrement from all address regis
» ters to A7
  ADD      -(A0),A7
  ADD      -(A1),A7
  ADD      -(A2),A7
  ADD      -(A3),A7
  ADD      -(A4),A7
  ADD      -(A5),A7
  ADD      -(A6),A7
  ADD      -(A7),A7

      ; immediate to all data registers
  ADD      #01,D0
  ADD      #01,D1
  ADD      #01,D2
  ADD      #01,D3
  ADD      #01,D4
  ADD      #01,D5
  ADD      #01,D6
  ADD      #01,D7
      ; immediate to all address register
  ADD      #01,A0
  ADD      #01,A1
  ADD      #01,A2
  ADD      #01,A3
  ADD      #01,A4
  ADD      #01,A5
  ADD      #01,A6
  ADD      #01,A7
      ; immediate to all address register va
» lues
```

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(continued)

```
ADD      #01,(A0)
ADD      #01,(A1)
ADD      #01,(A2)
ADD      #01,(A3)
ADD      #01,(A4)
ADD      #01,(A5)
ADD      #01,(A6)
ADD      #01,(A7)
        ; immediate to all address register wi
» th post increment
ADD      #01,(A0)+
ADD      #01,(A1)+
ADD      #01,(A2)+
ADD      #01,(A3)+
ADD      #01,(A4)+
ADD      #01,(A5)+
ADD      #01,(A6)+
ADD      #01,(A7)+
        ; immediate to all address register wi
» th pre-decrement
ADD      #01,-(A0)
ADD      #01,-(A1)
ADD      #01,-(A2)
ADD      #01,-(A3)
ADD      #01,-(A4)
ADD      #01,-(A5)
ADD      #01,-(A6)
ADD      #01,-(A7)
        ; absolute short to all data registers
ADD      $01,D0
ADD      $01,D1
ADD      $01,D2
ADD      $01,D3
ADD      $01,D4
ADD      $01,D5
ADD      $01,D6
ADD      $01,D7
        ; absolute long to all data registers
ADD      $0A05,A0
ADD      $0A05,A1
ADD      $0A05,A2
ADD      $0A05,A3
ADD      $0A05,A4
ADD      $0A05,A5
ADD      $0A05,A6
ADD      $0A05,A7
*~Font name~Courier New~
*~Font size~10~
*~Tab type~1~
*~Tab size~4~
```