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/* Homework 2 Problem 6
*
* Decompress the values in the data section.
* The COMPRESSED section contains pairs of words, COUNT and VALUE.
* The DECOMPRESSED section should have COUNT copies of VALUE.
* This repeats with each pair until a COUNT of 0 is discovered.
*/

.global _start

.text
_start: movia    r2, COMPRESSED
        movia    r3, DECOMPRESSED

newpair:    ldw     r10, 0(r2)        /* COUNT */
            beq     r10, r0, STOP

/* write the word VALUE to DECOMPRESSED exactly COUNT times */
            ldw     r11, 4(r2)        /* VALUE */
nextword:   stw     r11, 0(r3)
            addi    r3, r3, 4
            subi    r10, r10, 1
            bne     r10, r0, nextword

/* advance to the next COUNT,VALUE pair in COMPRESSED stream */
            addi    r2, r2, 8
            br      newpair

STOP:       br      STOP

.data

COMPRESSED:
.word 3, 0xEECE, 2, 0x0259, 4, 0xF00D, 5, 0xCAFE, 0

DECOMPRESSED:
.skip 4*(3+2+4+5)

.end
```