;;============================================================================

;; File: software.psm

;; This is the PicoBlaze program for EE178 Lab #7.

;;============================================================================

;;============================================================================

;; Port address declarations.

;;============================================================================

CONSTANT switches\_lo , 00 ; port for 8-bit switch input

CONSTANT switches\_hi , 01 ; port for 8-bit switch input

CONSTANT leds\_lo , 02 ; port for 8-bit led data out

CONSTANT leds\_hi , 03 ; port for 8-bit led data out

CONSTANT my\_sid\_lo , 17 ; lo byte of student id (put yours here)

CONSTANT my\_sid\_hi , 03 ; hi byte of student id (put yours here)

CONSTANT zero , 00 ; zero

CONSTANT one , 01 ; one

CONSTANT eight , 08 ; eight

;;============================================================================

;; Infinite loop.

;;============================================================================

loop: INPUT s0, switches\_lo ; get lo switch values

INPUT s1, switches\_hi ; get hi switch values

COMPARE s0,my\_sid\_lo

JUMP NZ, countones

COMPARE s1,my\_sid\_hi

JUMP NZ, countones

OUTPUT s0, leds\_lo ; put lo led values

OUTPUT s1, leds\_hi ; put hi led values

JUMP loop ; go back and repeat

countones: LOAD s2, 00

LOAD s3, 08

checkbits: SR0 s0

ADDCY s2,00

SR0 s1

ADDCY s2,00

SUB s3,01

COMPARE s3,00

JUMP NZ, checkbits

OUTPUT s2, leds\_lo

LOAD s2, 00

OUTPUT s2, leds\_hi

JUMP loop ; go back and repeat