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// MicroProg.cpp - WRITE THE MICROCONTROLLER PROGRAM
//
// MAINTENANCE HISTORY
// DATE          PROGRAMMER AND DETAILS
// 21-09-06      JS          Original
// 31-10-06      YHD          Added a return, 0x42
// 31-10-06      YHD          Changed no9 instruction from 0x10 to 0x11
//
//-----

#include <cstring>
#include <iostream>
using namespace std;

//-----

char PROG_ARR[] = {
    0x12, 0xf0,          //          LD          SP,#0xf0
    0x11, 0xf0,          // L0:    LD          A,0xf0
    0x13, 0xf0,          //          ST          0xf0,A
    0x10, 0x01,          //          LD          A,#0x01
    0x13, 0x10,          //          ST          0x10,A
    0x11, 0xf1,          //          LD          A,0xf1
    0x20, 0x10,          //          ADD         A,0x10
    0x13, 0xf1,          //          ST          0xf1,A
    0x30, 0x11,          //          BRA         L4
    0x10, 0x40,          // L3:    LD          A,#0x40
    0x20, 0x11,          //          ADD         A,0x11
    0x13, 0x11,          //          ST          0x11,A
    0x31, 0x04,          //          BCS         L1
    0x10, 0x00,          //          LD          A,#0x00
    0x30, 0x02,          //          BRA         L2
    0x10, 0x01,          // L1:    LD          A,#0x01
    0x13, 0xf2,          // L2:    ST          0xf2,A
    0x42,                //          RET
    0x10, 0xff,          // L4:    LD          A,#0xff
    0x13, 0x12,          //          ST          0x12,A
    0x11, 0xf2,          //          LD          A,0xf2
    0x20, 0x12,          //          ADD         A,0x12
    0x31, 0x06,          //          BCS         L6
    0x10, 0x00,          //          LD          A,#0x00
    0x13, 0x13,          //          ST          0x13,A
    0x30, 0x0d,          //          BRA         L5
    0x11, 0x13,          // L6:    LD          A,0x13
    0x20, 0x12,          //          ADD         A,0x12
    0x31, 0x07,          //          BCS         L5
    0x10, 0x01,          //          LD          A,0x01
    0x13, 0x13,          //          ST          0x13,A
    0x41, 0x00, 0x12,    //          CALL        L3
    0x40, 0x00, 0x02,    //          JMP         L0
};
static const size_t PROG_CNT = sizeof(PROG_ARR) / sizeof(PROG_ARR[0]);

//-----

int
main ()
{
    cout.write (PROG_ARR, PROG_CNT);
    return 0;
}

```