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#include <stdlib.h>
#include <stdio.h>
#include "xutil.h"
#include "xparameters.h"
#include "xuartlite_1.h"

#define SG_SMWodemo_BASEADDR 0xFF000000
#define SG_SMWodemo_HIGHADDR 0xFF01FFFF
#define SG_SMWodemo_SIZE 0x1FFFF

//Gateways In
#define SG_SMWodemo_Gateway_In (SG_SMWodemo_BASEADDR+0x0)
//tag name: in_0
//arith_type = Unsigned
//num_bits = 14
//bin_pt = 0

//Gateways Out
#define SG_SMWodemo_Gateway_Out (SG_SMWodemo_BASEADDR+0x4)
//tag name: out_1

//Shared Memory Address
#define SG_SMWodemo_SMWO_dpram (SG_SMWodemo_BASEADDR+0x10000)

// Additional Memory Addresses
#define SG_SMWodemo_SMWO_dpram1 (SG_SMWodemo_SMWO_dpram+0x04)
#define SG_SMWodemo_SMWO_dpram2 (SG_SMWodemo_SMWO_dpram+0x08)
#define SG_SMWodemo_SMWO_dpram3 (SG_SMWodemo_SMWO_dpram+0x0C)
#define SG_SMWodemo_SMWO_dpram4 (SG_SMWodemo_SMWO_dpram+0x10)

int main()
{
    Xuint8 stop = ' ';
    while(stop != 'x')
    {
        *((volatile unsigned int*) SG_SMWodemo_Gateway_In) = 0;
        xil_printf("\n\rSM0: %d", *((volatile unsigned int*) SG_SMWodemo_Gateway_Out));
        *((volatile unsigned int*) SG_SMWodemo_Gateway_In) = 1;
        xil_printf("\n\rSM1: %d", *((volatile unsigned int*) SG_SMWodemo_Gateway_Out));
        *((volatile unsigned int*) SG_SMWodemo_Gateway_In) = 2;
        xil_printf("\n\rSM2: %d", *((volatile unsigned int*) SG_SMWodemo_Gateway_Out));
        *((volatile unsigned int*) SG_SMWodemo_Gateway_In) = 3;
        xil_printf("\n\rSM3: %d", *((volatile unsigned int*) SG_SMWodemo_Gateway_Out));
        *((volatile unsigned int*) SG_SMWodemo_Gateway_In) = 4;
        xil_printf("\n\rSM4: %d", *((volatile unsigned int*) SG_SMWodemo_Gateway_Out));

        xil_printf("\n\rPlease enter a one digit whole number input to SM0: ");
        *((volatile unsigned int*) SG_SMWodemo_SMWO_dpram) = XUartLite_RecvByte(STDIN_BASEADDRESS) - 48;
        xil_printf("\n\rPlease enter a one digit whole number input to SM1: ");
        *((volatile unsigned int*) SG_SMWodemo_SMWO_dpram1) = XUartLite_RecvByte(STDIN_BASEADDRESS) - 48;
        xil_printf("\n\rPlease enter a one digit whole number input to SM2: ");
        *((volatile unsigned int*) SG_SMWodemo_SMWO_dpram2) = XUartLite_RecvByte(STDIN_BASEADDRESS) - 48;
        xil_printf("\n\rPlease enter a one digit whole number input to SM3: ");
        *((volatile unsigned int*) SG_SMWodemo_SMWO_dpram3) = XUartLite_RecvByte(STDIN_BASEADDRESS) - 48;
        xil_printf("\n\rPlease enter a one digit whole number input to SM4: ");
        *((volatile unsigned int*) SG_SMWodemo_SMWO_dpram4) = XUartLite_RecvByte(STDIN_BASEADDRESS) - 48;

        usleep(100);
        xil_printf("\n\rPlease press a key to continue. Press x to exit... ");
        stop = XUartLite_RecvByte(STDIN_BASEADDRESS);
    }
    return 0;
}

```