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                                xl320-helloServoRead0_1b.nxc
// FILE: xl320-helloServoRead0_1b.nxc - Works!
// DATE: 12/10/19 08:41
// AUTH: P.0h
// DESC: Command servo to rotate back-and-forth by fixed amount
// VERS: 0.1a: based on P.0h's xl320-defines1_0b.h and xl320-funtions1_0b.h
//          xl320-helloServo1_0a.nxc
//          0.1b: troubleshooting 0.1a
// REFS: xl320-functions1_0b.h; xl320-defines1_0a.h, xl320-helloLed1_0a.nxc
//          09/10/19 ppt-paul0hDynamixelXL320HeaderFile-1.0a.pptx
// NOTE: If factory default XL-320 used, then ID is 0x01
//          ID of 0xFE commands any and all XL-320 motors

#include "xl320-defines1_0a.h" // XL-320 defines from Control Table
#include "xl320-functions1_0c.h" // P.0h functions written for XL-320
                                // 1.0b.h contains XL320_servoRead
                                // 1.0c.h updated the XL320_servoRead

#define ID_ALL_MOTORS 0xFE // 0xFE commands all XL-320 motors
#define ID_MOTOR01 0X01 // Assumes Motor 1 configured with ID = 1

task main() {

    bool orangeButtonPushed; // Detect Brick Center button state
    bool rightArrowButtonPushed; // Detect Brick right arrow button state
    bool leftArrowButtonPushed; // Detect Brick left arrow button state
    bool greyButtonPushed; // Detect Brick Grey/Abort button state
    unsigned char data[13]; // 13-byte status packet from RS485
    int Position;

    UseRS485();
    RS485Enable();
    // Note: First, use Dynamixel Wizard to set XL-320 to desired baud rate
    // Then, use RS485Uart to match this baud rate e.g. 57600
    RS485Uart(HS_BAUD_57600, HS_MODE_8N1); // 57600 baud, 8bit, 1stop, no parity
    Wait(100);

    // Turn off Torque enable so that one can freely turn XL320 axle by hand
    XL320_setTorqueEnable(ID_MOTOR01, 0); // 0 = turn OFF torque enable
    Wait(100);

    ClearScreen();
    // Prompt user to begin
    TextOut(0, LCD_LINE1, "Stop: Press GRAY" );

    while(true) {
        XL320_servoRead(ID_MOTOR01);
        Wait(20);
        until(RS485DataAvailable());
        RS485Read(data);
        // data[9] = LO and data[10] HI byte contain XL-320 position
        // Thus formulate the position and display as integer
        Position = data[9] + (data[10] << 8);
        ClearScreen();
        TextOut(10, LCD_LINE3, FormatNum("Pos = %5.5d" , Position));

        if(ButtonPressed(BTNRIGHT, FALSE)) {
            while(ButtonPressed(BTNRIGHT, FALSE)) {
                // Do nothing, but this check flushes any key presses
            };
            XL320_servo(ID_MOTOR01, 700, 200); // rotate to motor position 900, speed
200
        }
        Wait(200);
    }
}

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xl320-helloServoRead0_1b.nxc
else if(ButtonPressed(BTNLEFT, FALSE)) {
  while(ButtonPressed(BTNLEFT, FALSE)) {
    // Do nothing, but this check flushes any key presses
  };
  XL320_servo(ID_MOTOR01, 200, 200); // counter-rotate to 0 at speed 200;
  Wait(200);
}; // end if
}; // end while;
} // end main
```