Arduino Programming Environment and Library

If you have not already, please refer to EVShield User Guide for download instructions of Arduino Programming Environment and Library, at following url:
http://www.mindsensors.com/index.php? controller=attachment&id_attachment=134

Structure of Arduino Program for EVShield

In the example program below, a NXT Touch sensor and Light sensor is attached to the EVShield. Each time the touch sensor is pressed, the active/passive mode of light sensor is toggled.

The program also takes readings from light sensor continuously. You can find this program in the library distribution for EVShield. Refer to comments below for explanations of parts of the program.

```
// Add all required libraries
#include <EVShield.h>
#include <EVLib.h>
#include <Wire.h>

// Create variables to use in this program
EVShield    evshield(0x34,0x36);
NXTTouch    Touch;
NXTLight    Light;

void setup() {
  // Start Serial for output
  Serial.begin(115200);

  // Initialize the shield i2c interface
  // And initialize the sensor(s) and indicate where it is connected
  evshield.init(HardwareI2C);
  Touch.init(&evshield, BAS1);
  Light.init(&evshield, BAS2);

  Serial.println("Setup done");
  Serial.println("Press the touch sensor to see changes in the values");

  // Wait until the Go button has been pressed
  Serial.println("Press Go button");
  evshield.waitForButtonPress(BTN_GO);
}
```

```
void loop() {
  // Create variable(s)
  int touchPressed;
  int lightval;

  // Get the values
  touchPressed = Touch.isPressed();
  lightval = Light.readRaw();

  // Check if touchsensor is pressed
  if (touchPressed == true){
      Serial.println("Changing light sensor to reflected light mode");
      Light.setReflected();
  }
  else{
      Serial.println("Changing light sensor to ambient light mode");
      Light.setAmbient();
  }

  // Print the value of the light sensor
  Serial.print("Light value:"); Serial.println(lightval);
  delay(1000);
}
```

UART Example of Arduino Program for EVShield

In this example program, an EV3 Ultrasonic sensor is attached to the EVShield. The program reads the sensor information and displays it in Serial window.

```
// Add all required libraries
#include <EVShield.h>
#include <EVLib.h>
#include <Wire.h>

// Create variables to use in this program
EVShield    evshield(0x34,0x36);
EV3Ultrasonic US;

void setup() {
  // Start Serial for output
  Serial.begin(115200);

  // Initialize the shield i2c interface
  // And initialize the sensor(s) and indicate where it is connected
  evshield.init(HardwareI2C);
  US.init(&evshield, BAS1);
  US.setMode(MODE_Sonar_CM);

  Serial.println("Setup done");
  Serial.println("Move object back and forth in front of ultrasonic sensor");

  // Wait until the Go button has been pressed
  Serial.println("Press Go button");
  evshield.waitForButtonPress(BTN_GO);
}

void loop() {
  // Create variable(s)
  int val;

  // Get the values
  val = US.getDist();

  // Print the sensor values
  Serial.print("Distance in cm: "); Serial.println(val);
  delay(1000);
}
```