Activity 4: Using the Photoresistor and LED

Using the Photoresistor and LED:

Description:
This circuit includes LED and a photoresistor that turns on the LED when the photoresistor receives equal or more than the specific temperature.

Materials:
1 Arduino Uno R3
1 Breadboard
1 Photoresistor
1 LED
1 4.7 kΩ Resistor
1 100 Ω Resistor
Wires

Codes:
```
int led = 9;
int sensorValue;
int sensor = A0;
void setup()
{
pinMode(sensor, INPUT);
Serial.begin(9600);
pinMode(led, OUTPUT);
}

void loop()
{
sensorValue = analogRead(sensor);
Serial.println(sensorValue);
if (sensorValue > 100) {
analogWrite(led, HIGH);
delay(100);
}
}
```

Explanation on codes:

```
int led = 9;
int sensorValue;
int sensor = A0;
```

- First, we declare our variables with names.

```
void setup()
{
pinMode(sensor, INPUT);
Serial.begin(9600);
pinMode(led, OUTPUT);
}
```

- In this section, we started in pin "sensor" or pin A0 to be declared as an input.

```
Serial.begin(9600);
```
9600: This sets the data rate in bits per second (baud) for serial data transmission.

- Next is Serial.Begin, This allows serial data transmission. The number 9600 inside the parenthesis is the speed of the transmission. This is useful especially in analog inputs.
- Next is the declaration of the pin led as an output.

```
void loop()
{
sensorValue = analogRead(sensor);
Serial.println(sensorValue);
if (sensorValue > 100) {
analogWrite(led, HIGH);
delay(100);
}
```

- Next is the declaration of the name "sensorValue" as the analog reading on pin "A0."

- And the code "Serial.printIn" will send the value of "sensorValue."
- The next block of code is the if statement with the condition of "if the light sensor will read the digital value of 100 and above, it will turn on the led with a delay of 100 millisecond or 0.1 second."