Light-dependent Resistor use with Particle (Photon) IoT Board

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Objective:

      The aim of this project is to learn how to use ADC module of the Photon IoT board using a simple LDR circuit.

Project Description:

      Natural light intensity,from the sun,is a changing variable and automatic lighting is such a convenience.In this project a photon IoT board is used to detect the change in the light intensity using an LDR.The IoT board constantly checks the light intensity from A0 pin,using its ADC module, and if there is no enough light falling on the LDR then the IoT board turns on the LED that's connected to D0 pin of the board.

Schematic:
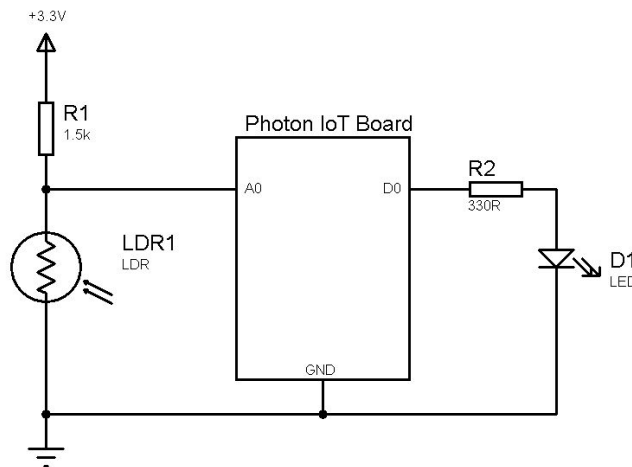
Figure 1 : Schematic of the project

      Other than a regular LDR,two resistors (with 1% tolerance) 1.5kΩ and 330Ω were used as well as an LED to indicate whether there is enough light falling on LDR or not.The source code for this project can be found in the next section.

Source Code:

```cpp
int photoresistor = A0;
int analogValue = 0;
int led = D0;

void setup() {
    Particle.variable("analogValue", &analogValue, INT);    // variable on the cloud
    pinMode(led,OUTPUT);
    pinMode(photoresistor,INPUT);
}


void loop() {
    analogValue = analogRead(photoresistor);
    delay(100);

    if (analogValue>3300)
    {
        digitalWrite(led,HIGH);
    }else
    {
        digitalWrite(led,LOW);
    }
}
```

References:

[1] *Particle IoT Guide*. [Online]. Available: https://docs.particle.io/guide/getting-started/intro/core/.