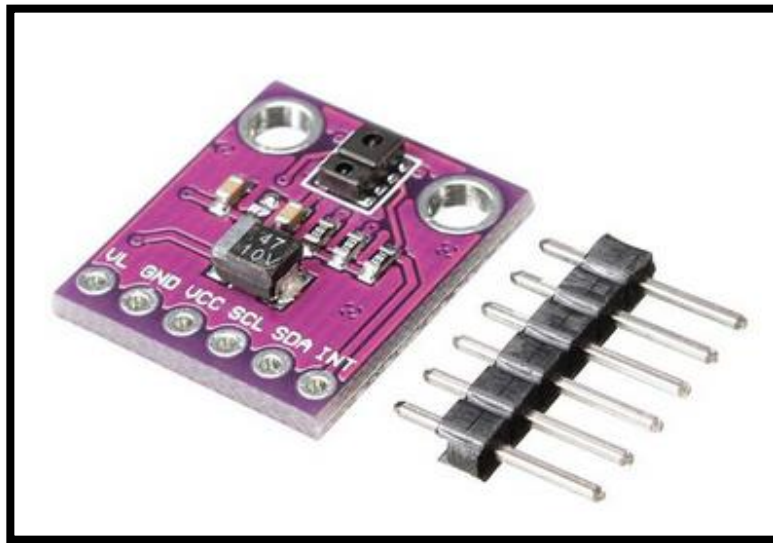


APDS-9930 RGB AND GESTURE SENSOR (ALS&Prox)

Introduction:

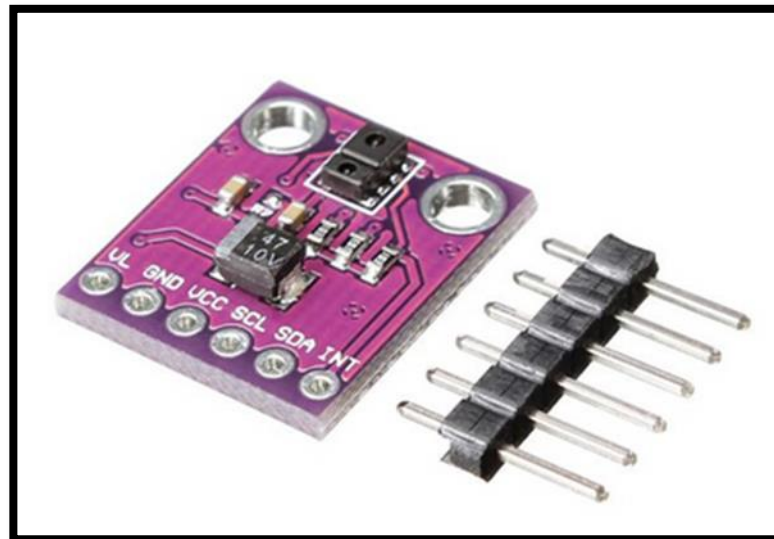


This is the RGB and Gesture Sensor, a small breakout board with a built in APDS-9930 sensor that offers ambient light and color measuring and proximity detection. With this RGB and Gesture Sensor you will be able to control a computer, microcontroller, robot, and more with a simple swipe of your hand! This is, in fact, the same sensor that the Samsung Galaxy S5 uses and is probably one of the best gesture sensors on the market for the price.

The APDS-9930 is a serious little piece of hardware with built in UV and IR blocking filters, four separate diodes sensitive to different directions, and an I2C compatible interface. For your convenience we have broken out the following pins: VL (optional power to IR LED), GND (Ground), VCC (power to APDS-9930 sensor), SDA (I2C data), SCL (I2C clock), and INT (interrupt). Each APDS-9960 also has a detection range of 4 to 8 inches (10 to 20 cm). Do check out the tutorial to get started

Features:

- Operational Voltage: 3.3V
- Ambient Light & RGB Color Sensing
- Proximity Sensing
- Gesture Detection
- Operating Range: 4-8in (10-20cm)
- I2C Interface (I2C Address: 0x39)



VL	3.3V to 0.5V
GND	GROUND
VCC	2.4V to 3.6V
SCL	Serial Clock Line
SDA	Serial Data Address
INT	Interrupt

Objectives:

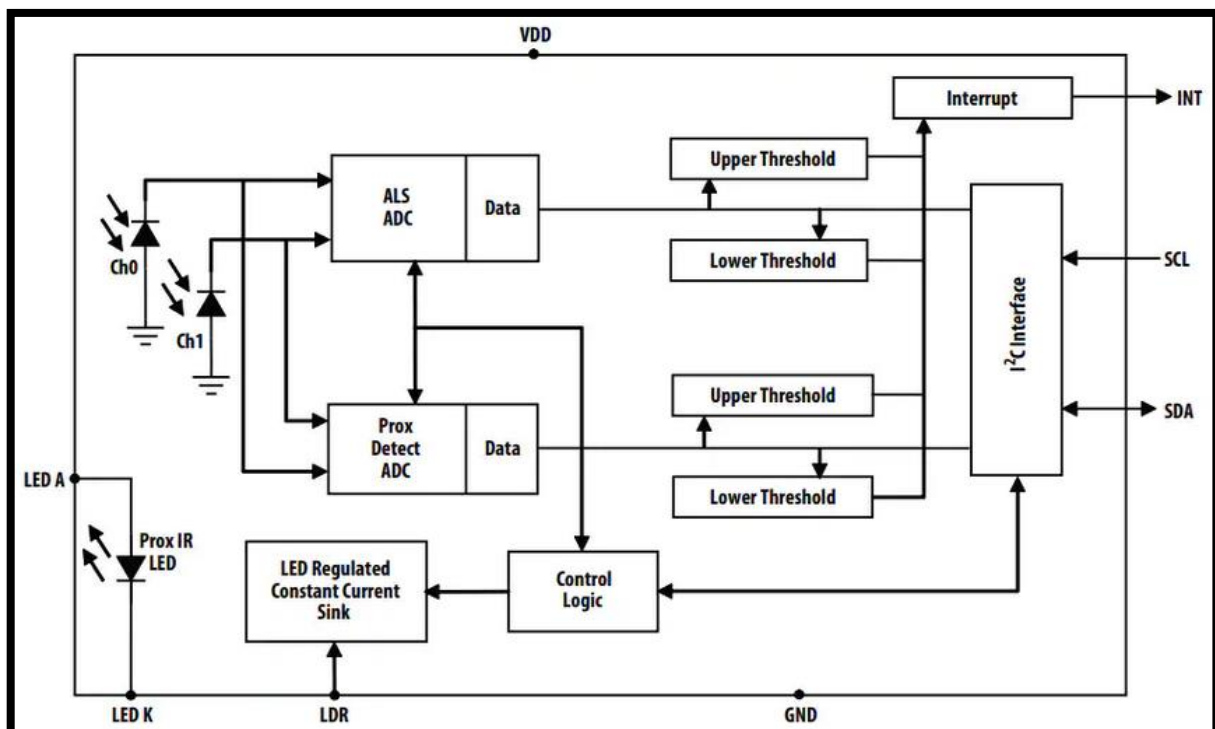
The APDS-9930 provides digital ambient light sensing (ALS), IR LED and a complete proximity detection system in a single 8 pin package. The proximity function offers plug and plays detection to 100 mm (without front glass) thus eliminating the need for factory calibration of the end equipment or sub-assembly.

Components needed:

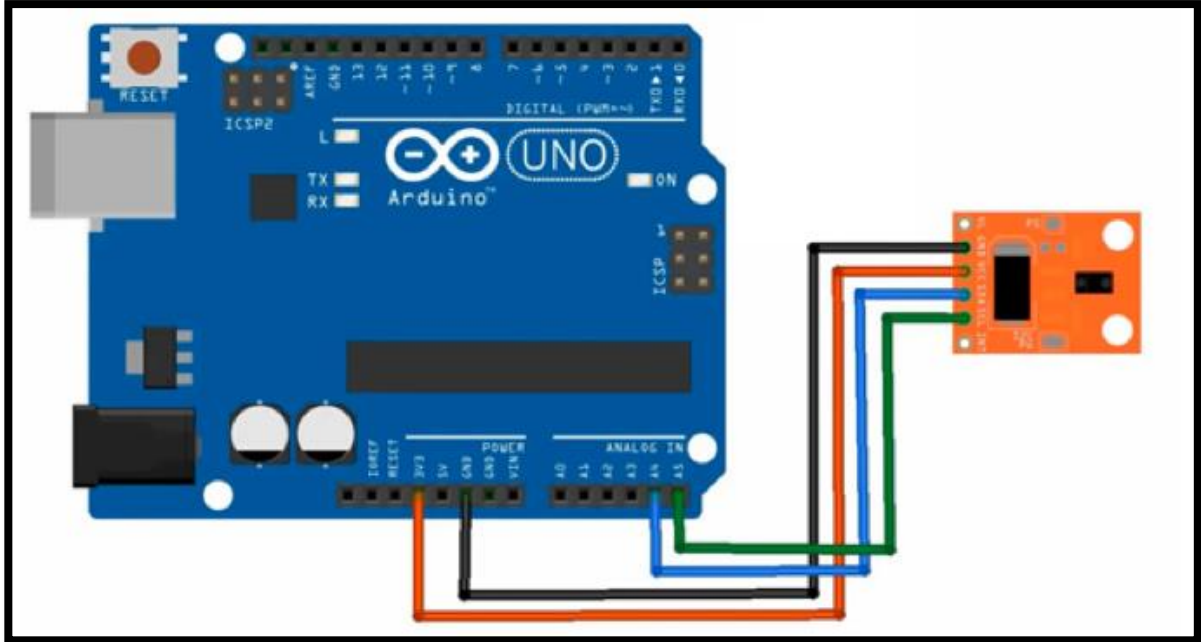
- Arduino Uno and USB Cable.
- Jumper wires.
- Gesture Sensor (APDS9930)

Procedures:

1. Preparation: Gesture Sensor (APDS9930), Arduino Uno or other tools, PC software.
2. APDS9930 block diagram.



2.1 Interfacing APDS9930 Sensor with Arduino



2.2 Connect Ground APDS to Ground Arduino.

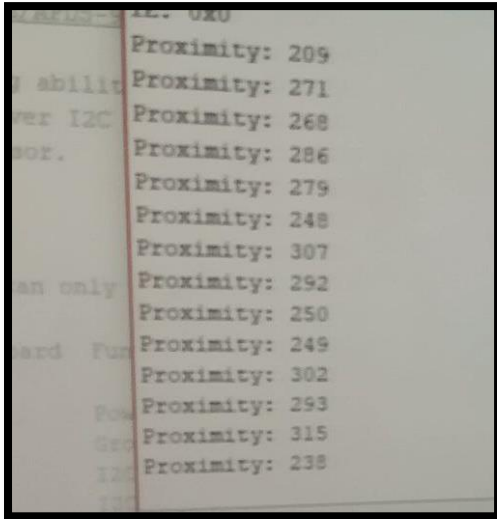
2.3 Connect VCC APDS to 3.3V Arduino.

2.4 Connect SCL to pin A5 at Arduino.

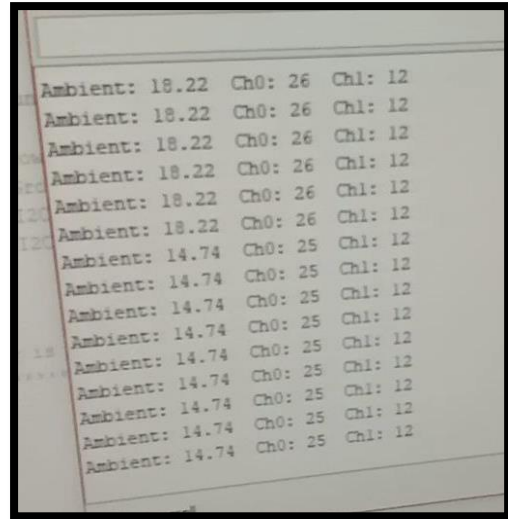
2.5 Connect SDA to pin A4 at Arduino

2.6 Finally connect Arduino to PC or Laptop, then activate the Arduino software and write coding to complete this project.

Step 4: When the code has been compiled and uploaded, the serial monitor should show the current condition sensor. You can easily trigger the sensor to detect proximity and ambient light.



Proximity sensor



Ambient light



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Conclusion:

Initially, there is no movement on the APDS 9930 sensor readings on the normal monitor series if an object close to the APDS 9930 proximity will increase the range 900-1023 and if the object moves away, the proximity will decrease in the range of 200-300. Then APDS 9930 can also detect ambient light around.