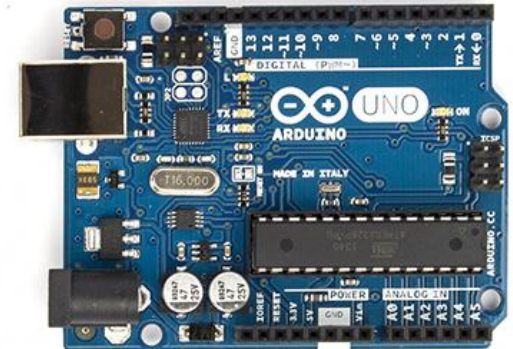


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Using Python to Do More With Your Arduino

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Demo !

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Pyserial

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PySerial



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Setup pyserial

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```
import serial
```

```
ser = serial.Serial('/dev/ttyACM2',9600)
```



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Setup serial

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```
void setup() {  
  Serial.begin(9600);  
}
```



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1. Receiving data from Arduino

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`ser.readline()`



```
void loop() {  
  ...  
  Serial.println(sensorValue);  
}
```





`ser.write(input())`



```
void loop() {  
  ...  
  if(Serial.available()) {  
    int c = Serial.read();  
  }  
}
```



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matplotlib

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matplotlib



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Python sketch



```
void loop() {  
  ...  
  Serial.println(sensorValue);  
}
```



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pyfirmata

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pyfirmata



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- ✓ Firmata is a generic communication protocol for connecting microcontrollers to computers
- ✓ It is intended to work with any host computer software
- ✓ The aim is to enable people to completely control the Arduino from the computer itself
- ✓ There is standard code running on Arduino, and custom code on the computer
- ✓ Pyfirmata is a software package in Python for using Firmata



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```
from pyfirmata import Arduino,  
board = Arduino('/dev/ttyACM0')
```

File > Examples > Firmata
> StandardFirmata

```
board.digital[13].write(0)
```

```
it = util.Iterator(board)  
it.start()  
board.analog[0].enable_reporting()  
board.analog[0].read()
```



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Running Python on the Yun

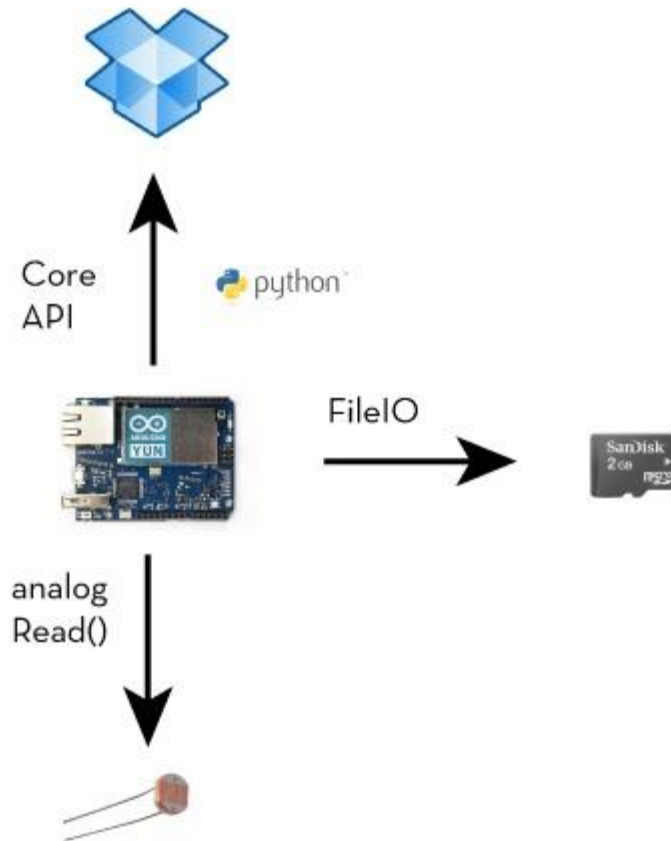
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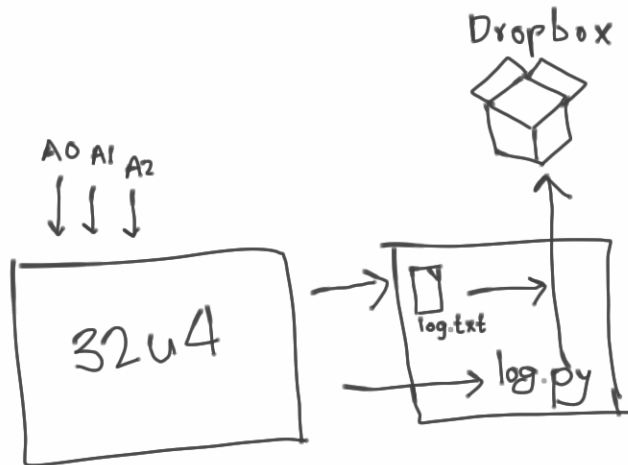
Yun + Python



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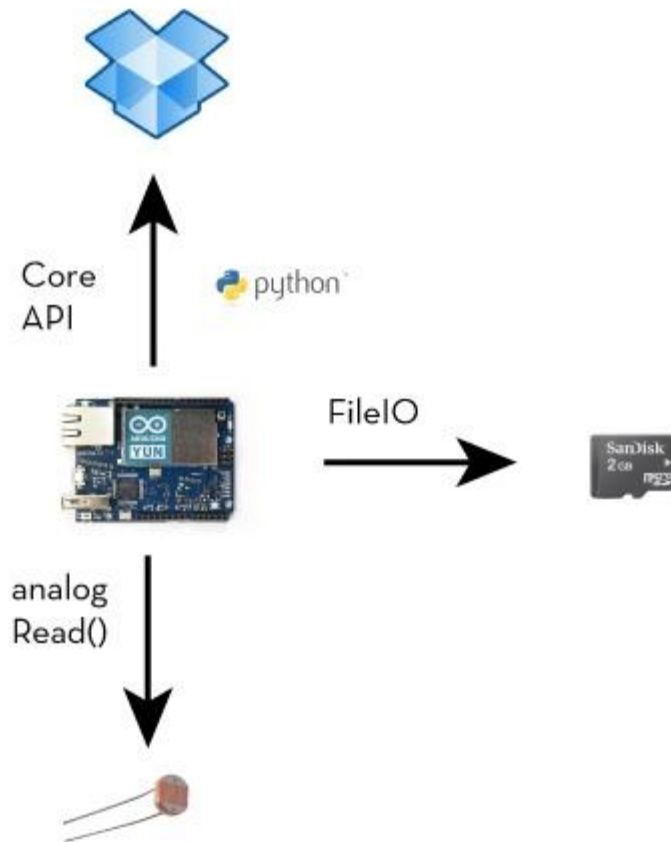




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- ✓ Setup Dropbox API in script configuration
- ✓ Plugin SD card, setup folders structure
- ✓ Copy script to SD Card
- ✓ Upload Arduino sketch



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Thank You !



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