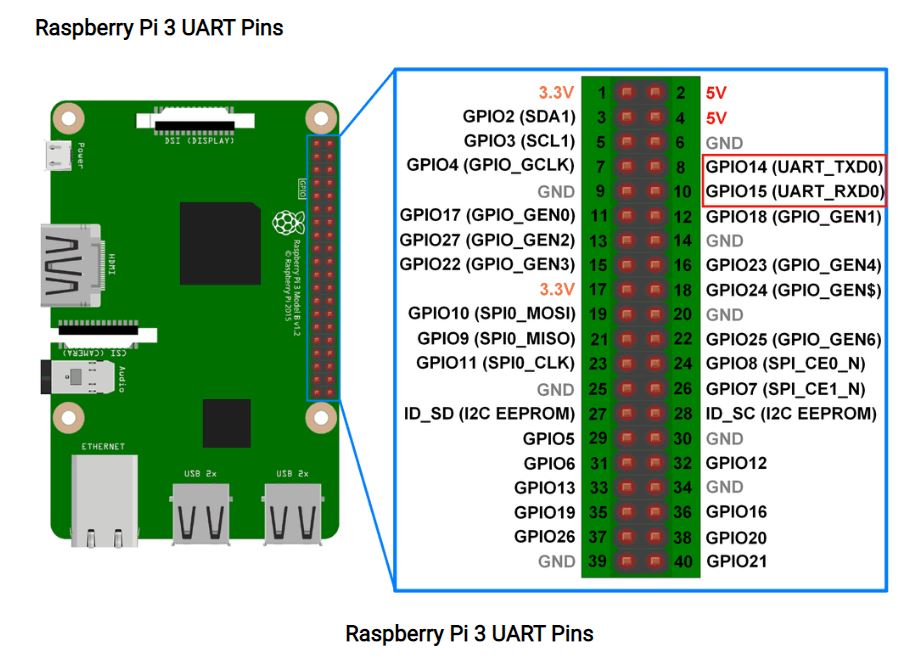
**UART of LPC 2148 to Rpi**

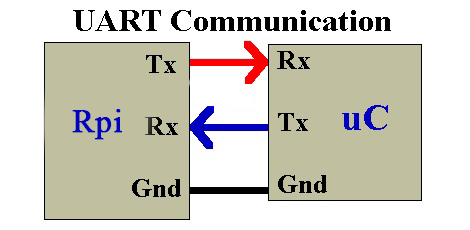
Raspberry Pi has two in-built UART which are as follows:

* **PL011 UART**
* **mini UART**



Rpi will have a User Interface (**written in Python**) and which will enable the user to send and receive data.

LPC 2148 (**codes in objective C**) will be connected to a bunch of sensors.  
 Also, receive commands from Rpi and send it to LPC 2148 and send signals from the sensors to RPI.



**Python Code:**

import serial //for serial communication between uC and rpi

import requests

import io //necessary input/output functions

from pprint import pprint

from serial import SerialException //handle exception during transmission

url = "https://api.thingspeak.com/update?api\_key="

apikey = "UDR1H67PVTIKSQ1S" //enter your channel’s API Key

while True:

geturl\_f1 = url + apikey + "&"

#print(geturl\_f1)

try:

with serial.Serial('COM3', 115200) as ser:

line = ser.readline() //read the serial line data coming from uart

#print(line.decode())

line = line.decode() //convert it to supported format

line = line[0:len(line)-1]

print(line)

geturl\_f1 += line

print(geturl\_f1)

try:

r=requests.get(geturl\_f1)

print(r.status\_code)

pprint(r.json()) // uses human-readable text to store and transmit data objects //consisting of attribute–value pairs and array data types.

if(r.status\_code == 200):

ser.write(b'ACK') //data received so send back ACKnowledgement

except requests.ConnectionError:

print("Internet is not connected")

break

except SerialException:

print("Port is already open")

break

**Steps to be followed:**

1. Create a ThingSpeak account first.

2. Get the API for your username

3. Also get the API key for the corresponding ID

4. Substitute everything into the respective fields, where we have our ID present

5. Connect the Rx of lpc to TX of Rpi and Tx of lpc to Rx of Rpi

6. Then load this program into rpi sd card and run.