# Interfacing Raspberry Pi with Telegram App

On 24 June, 2015, Telegram published the Bot API, enabling machines to talk Telegram. From that day on, not only can human use Telegram, so can machines.

For those who don't know what Telegram is, it is a messaging app, very much like WhatsApp. This tutorial is going to teach how to send a Telegram message to your Raspberry Pi, and how to make your Pi telegram back. Make sure the Pi has internet access.

**Step 1: Install Telegram on Your Phone, Obviously**

Go to App Store (iPhone) or Play Store (Android), download and install Telegram on your phone.

Now, you can use Telegram. Not yet for the Raspberry Pi. Telegram reserves a special kind of accounts for machines, called bot accounts. As the owner of your own Pi, you have to obtain a bot account for it.

**Step 2: Text /newbot to BotFather**

Open Telegram on your phone, search for a user called BotFather. As the name implies, he is the Father of All Bots.

As you may have guessed, he is not of our own species, but is actually a machine. He accepts special commands, because he does not understand plain English very well.

To obtain a bot account, text him /newbot. (you need the slash '/' in front) He will then ask a couple of questions. I call my bot "Led". You will see why in a few moments. But you can give it any name you want.

At the end of process, you will be given a token, something like 123456789:ABCdefGhIJKlmNo-PQRsTUVwxyZ. This token represents the bot account. You are going to put this token on the Pi.

**Step 3: Install Telepot on Raspberry Pi**

Enter the Pi, via SSH or a USB-TTL serial cable. Install telepot, a Python package that enables the Pi to speak Telegram Bot API.

On the command line, run these two commands:

```
sudo apt-get install python-pip
sudo pip install telepot
```

**Step 4: Test Token**

On the command line, type python to enter the Python interpreter.

In the Python interpreter, enter these three lines;

```
import teleport
bot = telepot.Bot('*** copy bot token from botfather ***')
bot.getMe()
```

You should keep bot token secret too. Having the token means having access to the bot account.

If the last command, getMe(), returns a dictionary describing the bot account (as in the screenshot), all is good. Type exit() to leave the Python interpreter.

If not, you have copied the wrong token. Type exit() to leave the Python interpreter. Then type python to come in again, and repeat those three lines of code.

**Step 5: Python code?**

Create a python file name telegram.py in raspberry pi and copy the following code.

```
import sys
import time
import random
import datetime
import telepot
import RPi.GPIO as GPIO
from telepot.loop import MessageLoop

red=23                  # connect red led at pin 23 of raspberry pi

now=datetime.datetime.now()
GPIO.setmode(GPIO.BOARD)
GPIO.setwarnings(False)

GPIO.setup(red,GPIO.OUT)
GPIO.output(red,0)

def action(msg):
   chat_id = msg['chat']['id']
   command = msg['text']

   print ('Got command: %s' %command)
   if 'On' in command:
      message="Turn On"
      message=message+" red"
      GPIO.output(red,1)
      bot.sendMessage(chat_id,message)

   if 'Off' in command:
      message="Turn Off"
      message=message+" red"
      GPIO.output(red,0)
      bot.sendMessage(chat_id, message)

bot = telepot.Bot('626665131:AAHsNzQbqSj9GZ9-w2t4I')        #paste your bot tokan here.
print(bot.getMe())
MessageLoop(bot,action).run_as_thread()
print ('I am listening...')

while 1:
    time.sleep(10)
```

Step 6: Run It and Text It

Assuming you have named the file you have just saved "telegram.py", to run the bot, type

```
sudo python /home/pi/telegram.py
```

Open Telegram on your phone, search for your bot using its name or username. Text it On or Off, and see how it responds.