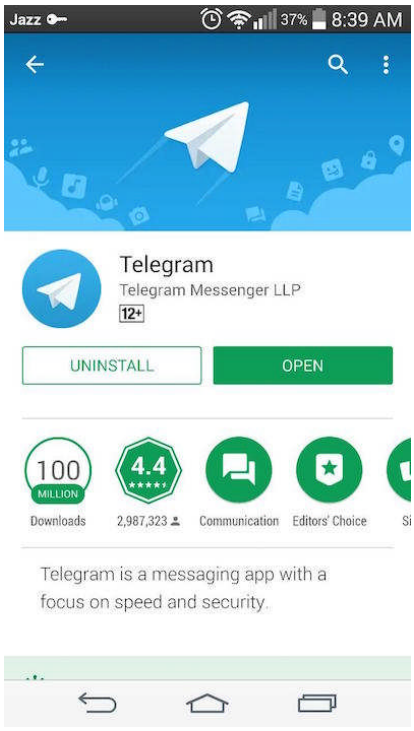
LAB MANUAL 5

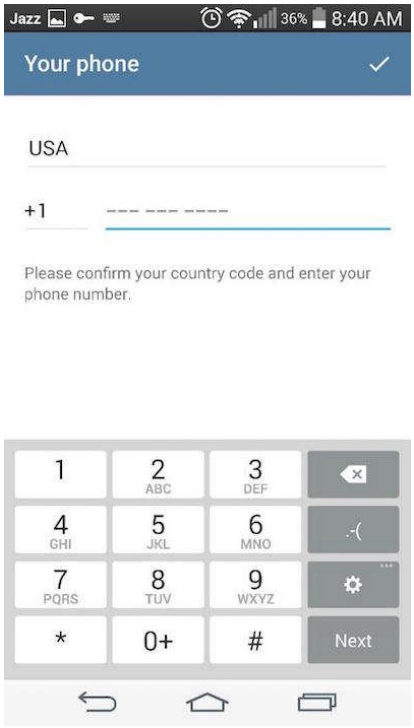
Remote Controlling of IoT Devices through Telegram

Steps-

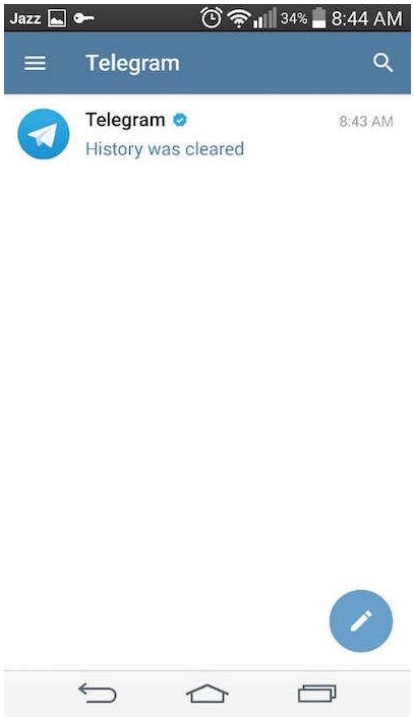
1. First, go to the Google Play store and download the Telegram app.



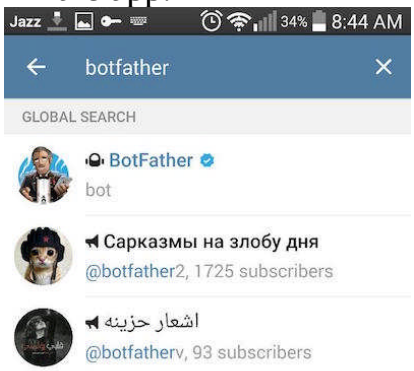
2. When you open the app, it will ask for your number. Enter the number, and Telegram will send a verification code. You will need to enter the code to confirm your account.



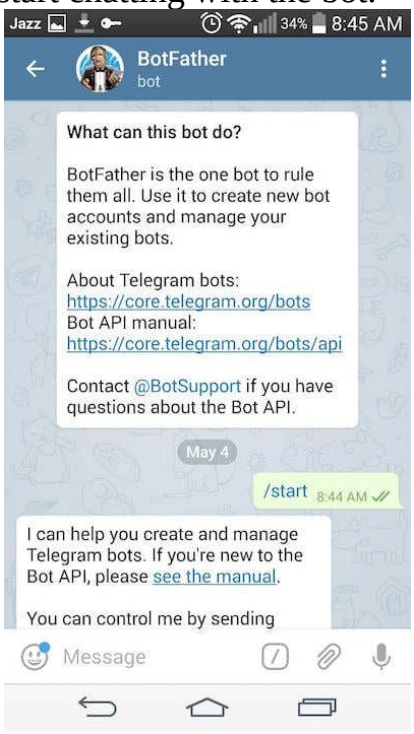
3. After adding the number, it will take you to the home screen, which will look like this:



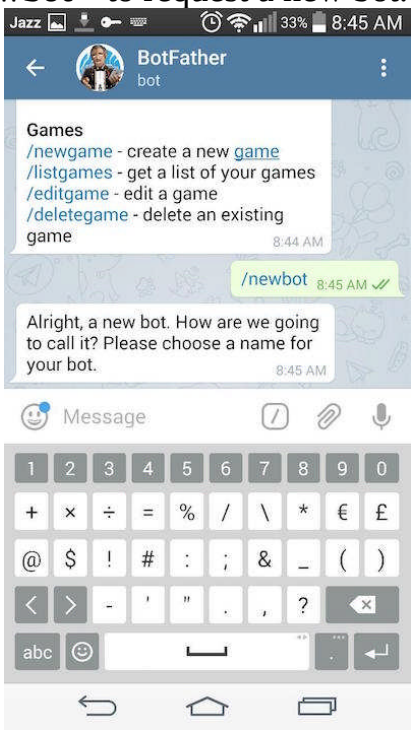
4. Now we need to create a new bot that will send and receive messages with the Raspberry Pi. Telegram has a **BotFather** that will help us create a bot. Search for “Botfather” in the app.



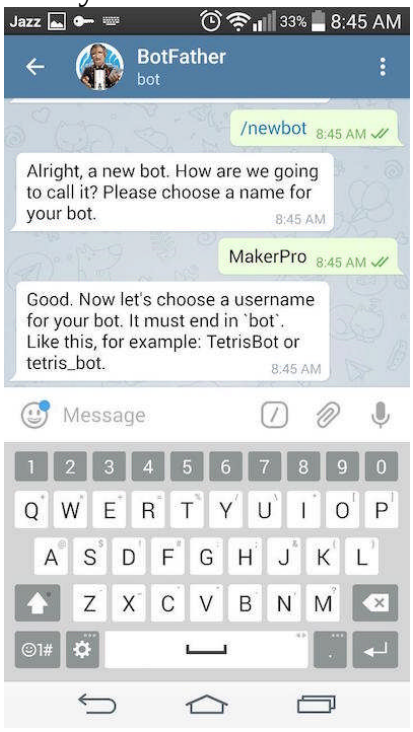
5. Next write “/start” to start chatting with the bot.



6. After that, write " **/newbot** " to request a new bot.

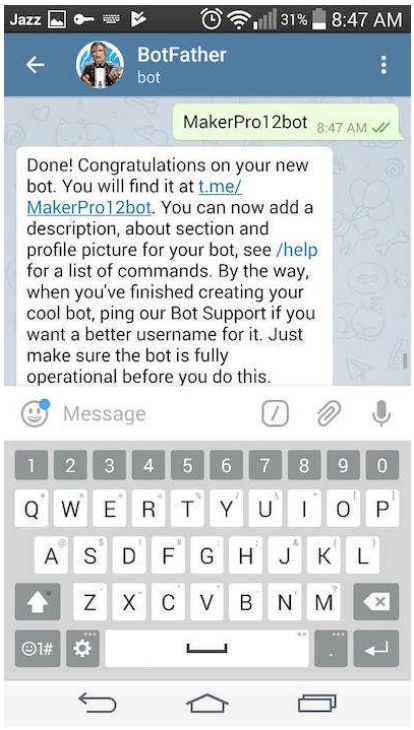


7. Now it will ask you to name your new bot.



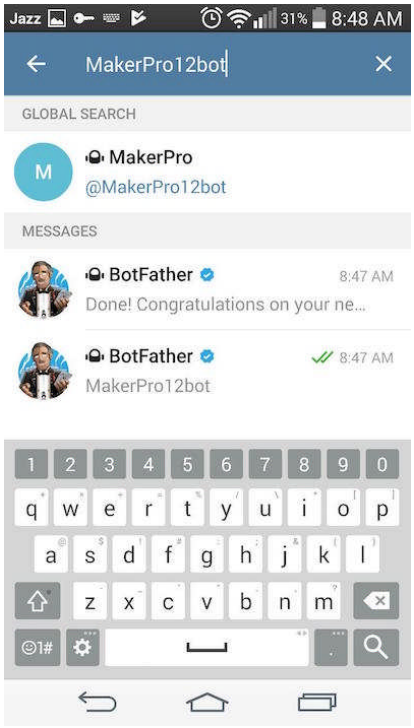
1.

8. Next, it will ask for a username for the bot. Enter a unique username to create your bot. In the message you receive, there will be a token. Save it, as you will need it in the code.



Save the API token key to use in raspberry-python terminal.

9. Next, search for the bot using its to confirm that the bot has been created.



For RaspberryPI & GrovePI - Connect led to port D2 of GrovePi hat and run below code to control the led. Make sure to replace your tokens

Install telepot library using **pip3 install telepot** command

Code

```
import time, datetime
import telepot
from telepot.loop import MessageLoop
from grovepi import *
led = 2 #connect led grovepi module on D2
now = datetime.datetime.now()
#LED White
pinMode(led,"OUTPUT")
time.sleep(1)
digitalWrite(led,0) #Off initially

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

```
    print ('Received: %s' % command)
    if 'on' in command:
        message = "Turned on "
        if 'led' in command:
            message = message + "led "
            digitalWrite(led,1)

        if 'all' in command:
            message = message + "all "
            digitalWrite(led,1)

        message = message + "light(s)"
        telegram_bot.sendMessage (chat_id, message)



    if 'off' in command:
        message = "Turned off "
        if 'led' in command:
            message = message + "led "
            digitalWrite(led,0)

        if 'all' in command:
            message = message + "all "
            digitalWrite(led,0)

        message = message + "light(s)"
        telegram_bot.sendMessage (chat_id, message)

telegram_bot =
telepot.Bot('6348232837:AAFdpKqwUkxmNnMi1ApBYwO54toVCPn0y6U')
#use telegram access key API from telegram app of mobile
print (telegram_bot.getMe())
MessageLoop(telegram_bot, action).run_as_thread()
print ('Up and Running....')

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

For RaspberryPI & DFRobot hat - Connect 3 leds to Digital port of 17, 22 & 27 respectively of GrovePi hat and run below code to control the leds. Install telepot library using pip3 install telepot command

Code-

```
import time, datetime
import RPi.GPIO as GPIO
import telepot
from telepot.loop import MessageLoop
led1 = 17
led2 = 27
led3 = 22
buzzer = 23
now = datetime.datetime.now()
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
#MYLED
GPIO.setup(led1, GPIO.OUT)
GPIO.output(led1, 0) #Off initially
GPIO.setup(led2, GPIO.OUT)
GPIO.output(led2, 0) #Off initially
GPIO.setup(led3, GPIO.OUT)
GPIO.output(led3, 0) #Off initially
GPIO.setup(buzzer, GPIO.OUT)
GPIO.output(buzzer, 0) #Off initially

def action(msg):
    chat_id = msg['chat']['id']
    command = msg['text']
    print ('Received: %s' % command)
    if 'on' in command:
        message = "Turned on "
        if 'led1' in command:
            message = message + "led1 "
            GPIO.output(led1, 1)
```

```
    if 'led2' in command:
        message = message + "led2 "
        GPIO.output(led2, 1)

    if 'led3' in command:
        message = message + "led3 "
        GPIO.output(led3, 1)
    if 'buzzer' in command:
        message = message + "buzzer "
        GPIO.output(buzzer, 1)

    if 'all' in command:
        message = message + "all "
        GPIO.output(led1, 1)
        GPIO.output(led2, 1)
        GPIO.output(led3, 1)
        GPIO.output(buzzer, 1)
    message = message + "light(s)"
    telegram_bot.sendMessage (chat_id, message)

if 'off' in command:
    message = "Turned off "
    if 'led1' in command:
        message = message + "led1 "
        GPIO.output(led1, 0)
    if 'led2' in command:
        message = message + "led2 "
        GPIO.output(led2, 0)
    if 'led3' in command:
        message = message + "led3 "
        GPIO.output(led3, 0)
    if 'buzzer' in command:
        message = message + "buzzer "

        GPIO.output(buzzer, 0)
    if 'all' in command:
        message = message + "all "
        GPIO.output(led1, 0)
        GPIO.output(led2, 0)
```

```
        GPIO.output(led3, 0)
        GPIO.output(buzzer, 0)
    message = message + "light(s)"
    telegram_bot.sendMessage (chat_id, message)

telegram_bot = telepot.Bot('6565701289:AAF-zmPrM5GYC3I-
4GtmshVMfVPizCyZ6vA')
print (telegram_bot.getMe())
MessageLoop(telegram_bot, action).run_as_thread()
print ('Code Unnati Home automation is Up and Running....')

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

Control the device from telegram bot with commands-

For Grovepi Setup-
Turn on led
Turn off led

For DfRobot Setup-
Turn on led1
Turn off led1
Turn on led2
Turn off led2