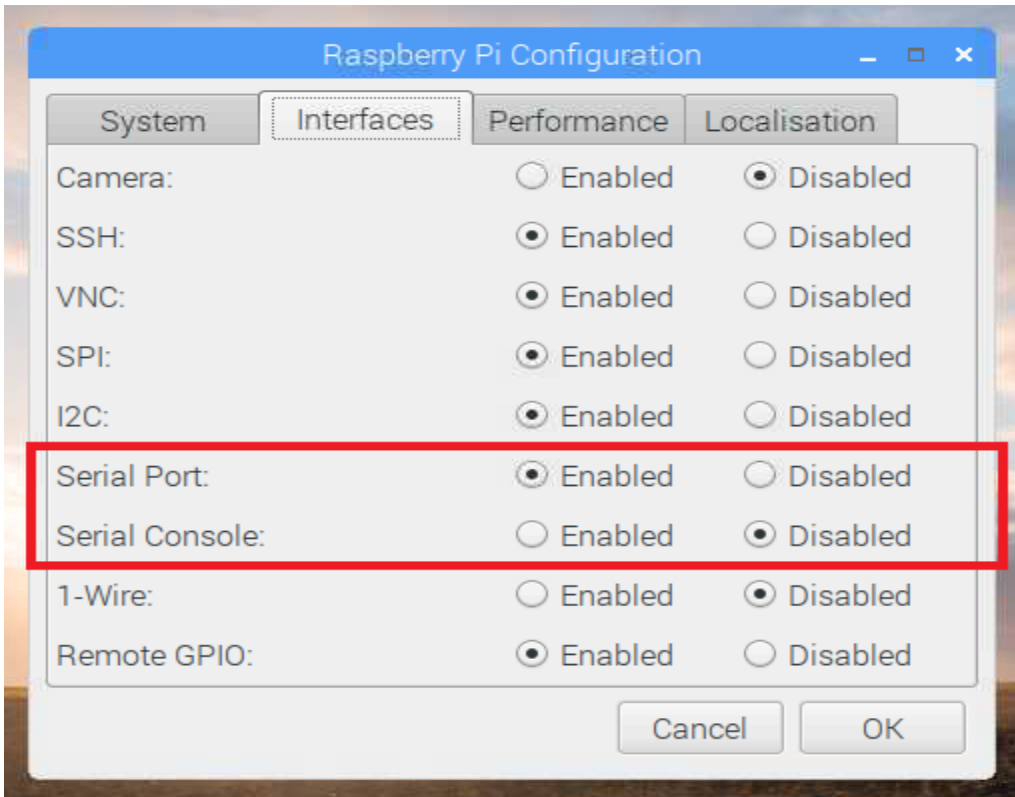# 1-1 UART serial port setting

If uart is set, Bluetooth is not available.

1. Raspberry Pi Config Setting
(1) Raspberry Pi Menu -> Preferences -> Raspberry Pi Configuration
(2) Serial Port Enabled
(3) Serial Console Disabled
(4) OK click

2. BLE Disable Setting
(1) Terminal Command: sudo nano /boot/config.txt
(2) Add to bottom last line dtoverlay=pi3-disable-bt
(3) Save : Ctrl + 0 (+ Enter), Close : Ctrl + X
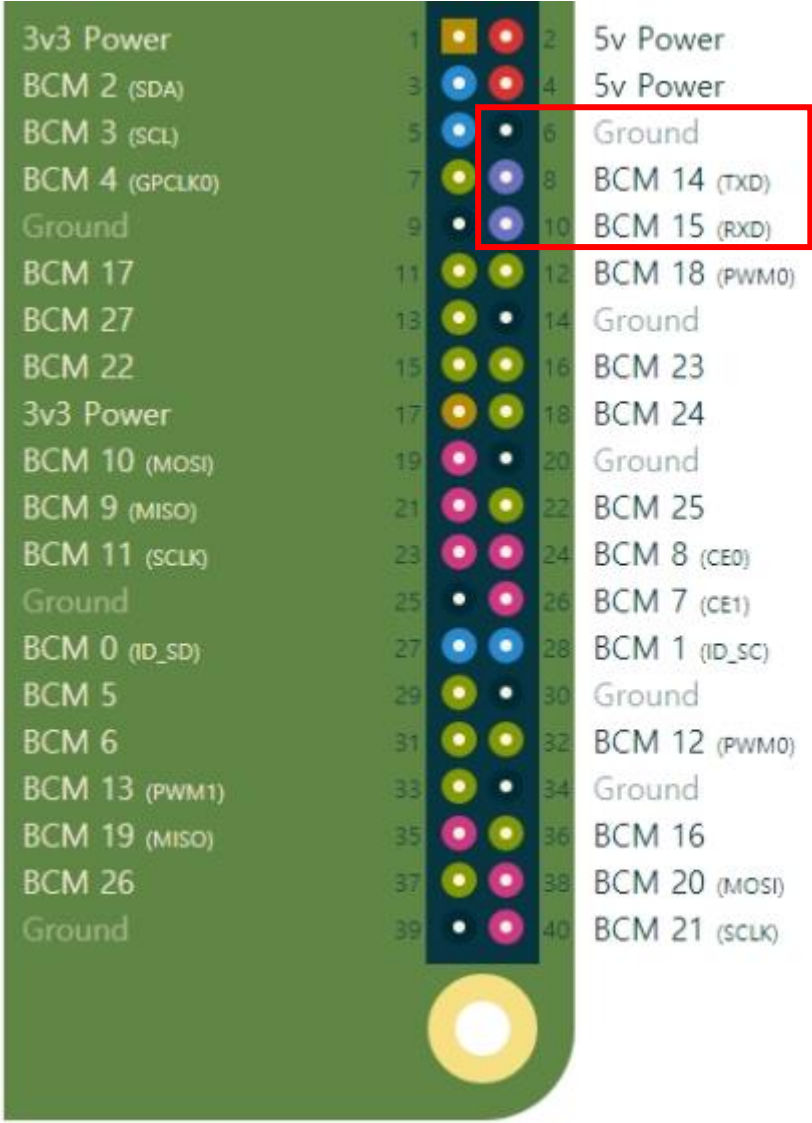(4) Terminal Command: sudo systemctl disable hciuart
(5) Terminal Command: sudo reboot

3. Check UART serial port
(1) The reboot is complete
(2) Termianl Command: dmesg | grep tty
(3) Check ttyAMA0 if there is, it`s a success

1-2 UART serial port setting

If uart is set, Bluetooth is not available.

3v3 Power	1	2	5v Power
BCM 2 (SDA)	3	4	5v Power
BCM 3 (SCL)	5	6	Ground
BCM 4 (GPCLK0)	7	8	BCM 14 (TXD)
Ground	9	10	BCM 15 (RXD)
BCM 17	11	12	BCM 18 (PWM0)
BCM 27	13	14	Ground
BCM 22	15	16	BCM 23
3v3 Power	17	18	BCM 24
BCM 10 (MOSI)	19	20	Ground
BCM 9 (MISO)	21	22	BCM 25
BCM 11 (SCLK)	23	24	BCM 8 (CE0)
Ground	25	26	BCM 7 (CE1)
BCM 0 (ID_SD)	27	28	BCM 1 (ID_SC)
BCM 5	29	30	Ground
BCM 6	31	32	BCM 12 (PWM0)
BCM 13 (PWM1)	33	34	Ground
BCM 19 (MISO)	35	36	BCM 16
BCM 26	37	38	BCM 20 (MOSI)
Ground	39	40	BCM 21 (SCLK)

Rpi ⟷ uart board
RxD ⟷ Tx
TxD ⟷ Rx

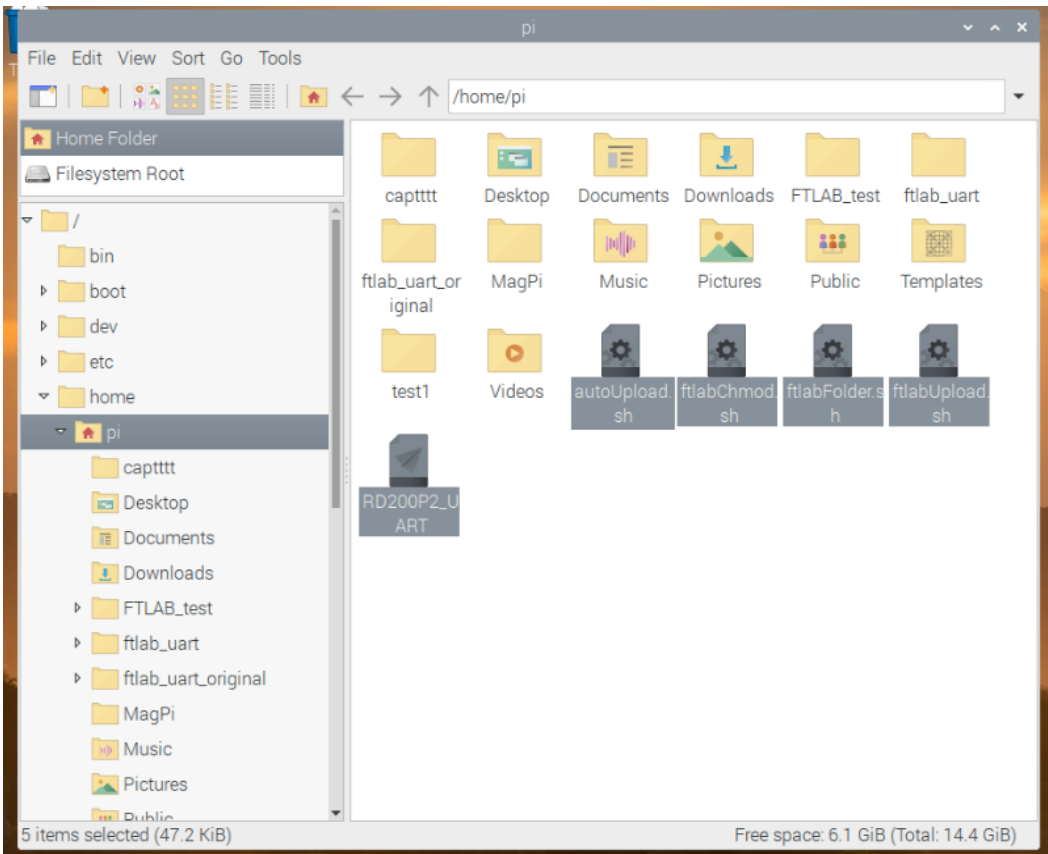6 ⟷ Black
8 ⟷ Yellow
10 ⟷ Blue

Connecting to the correct port

2-1 GitHub Upload Value File setting
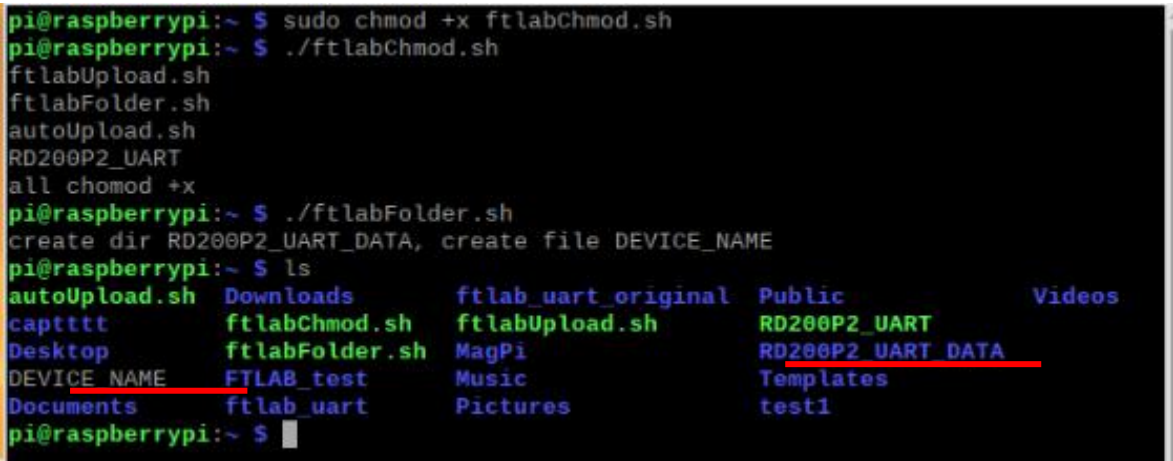
Please distinguish between case and case.

1.Shell Setting
(1) Please download (autoUpload.sh,ftlabChmod.sh ,ftlabFolder.sh,ftlabUpload.sh,RD200P2_UART)
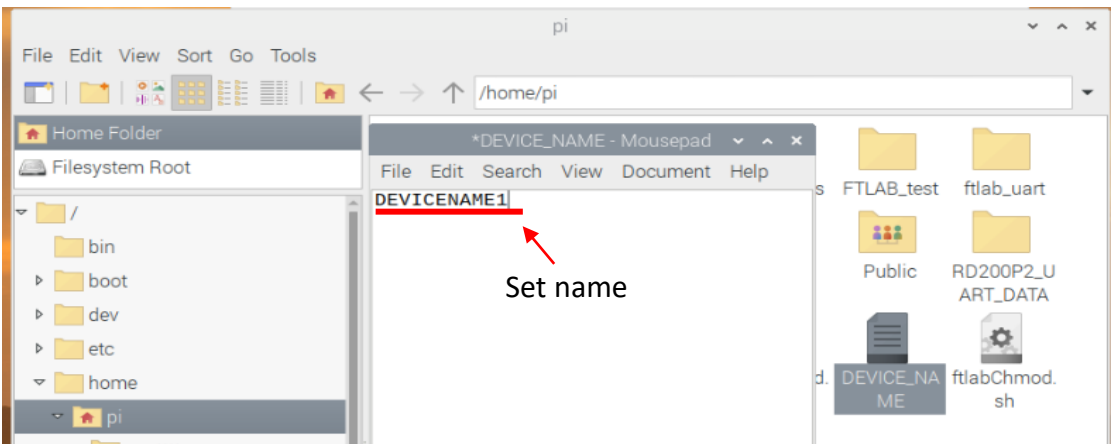(2) move the file /home/pi.

2. Permission Settings
(1) Terminal Comman: sudo chmod +x ftlabChmod.sh.
(2) Terminal Comman: ./ftlabChomod.sh
(3) Terminal Comman: ./ftlabFolder.sh
(4) Terminal Comman: ls (L lowercase)
(5) Check if RD200P2_UART_DATA , DEVICE_NAME is in the current path.

3. Please put Setting device name in the DEVICE_NAME file.

2-2 GitHub Upload Value File setting

Please distinguish between case and case.

4. AutoStart Setting Enter
   (1) After you set up the DEVICE_NAME file
   (2) Termianl Command : sudo nano /etc/xdg/lxsession/LXDE-pi/autostart

```
pi@raspberrypi:~ $ sudo nano /etc/xdg/lxsession/LXDE-pi/autostart
```

5. Auto-Run on Boot Setting
   (1) Please add it to the last line. Lxterminal –e /home/pi/RD200P2_UART
   (2) Save : Ctrl + 0 (+ Enter), Close : Ctrl + X
   (3) Terminal Command : sudo reboot

```
pi@raspberrypi: ~

File   Edit   Tabs   Help
  GNU nano 3.2              /etc/xdg/lxsession/LXDE-pi/autostart

@lxpanel --profile LXDE-pi
@pcmanfm --desktop --profile LXDE-pi
@xscreensaver -no-splash

lxterminal -e /home/pi/RD200P2_UART
```

6. It will run automatically after reboot. and Please wait 1 minute.
   A successful write to a file will result in a log.

```
RD200P2_UART

File   Edit   Tabs   Help
Port /dev/ttyAMA0 opened.

[2020-7-24 16:24]   Device name : DEVICENAME1   ← set name
[2020-7-24 16:24]   Program start

[2020-7-24 16:25]   Send data
[2020-7-24 16:26]   Send data
[2020-7-24 16:26]   CMD_MessageFromDevice 1
[2020-7-24 16:26]   Read Data : PROC_TIM(MIN) 7644, VALUE1 0.22, VALUE2 0.16
[2020-7-24 16:26]   File write. File name : DEVICENAME1   ← file save
```

7. Please check if the file is stored correctly in /home/pi/RD200P2_UART_DATA path.

```
RD200P2_UART_DATA

File  Edit  View  Sort  Go  Tools

/home/pi/RD200P2_UART_DATA

Home Folder
Filesystem Root
                    DEVICENAM
                    E1          DEVICENAME1 - Mousepad
                                File  Edit  Search  View  Document  Help
   Downloads
   FTLAB_test                   DEVICENAME1
   ftlab_uart                   2020-7-24 16:26 PROC_TIM(MIN) 7644, VALUE1 0.22, VALUE2 0.16
   ftlab_uart_original
   MagPi
```

Data storage format : 2020-7-24 16:26 PROC_TIM(MIN) 7777, VALUE1 0.22, VALUE2 0.22
This setting is complete, it will run automatically on each reboot.

3-1 Git Upload Setting

Please distinguish between case and case.

    1. Git init Setting
       (1) Git Install Terminal Command : sudo apt-get install git
       (2) Install Check Terminal Command : git --version
       (3) Terminal Command : cd /home/pi/RD200P2_UART_DATA
       (4) Git Terminal Command : git init
       (5) Git Terminal Command : git remote add origin (Github repositories url)
       Ex) git remote add origin https://github.com/rhdqngusanr/FTLAB_test.git
       (6) GitHub Automatic Authentication Settings
          Terminal Command : git config credential.helper 'cache --timeout=31536000'
          Terminal Command : git config --global credential.helper store

2. Git Branches Setting
  (1) Please re-run the terminal.
  (2) Terminal Command : sudo nano ftlabUpload.sh
  (3) Please set up a place to save on the last line. All Device must not have duplicate names.
  EX) Device 1 : git push –u origin master:ftlabTest1 ,
  Device 2 : git push –u origin master:ftlabTest2
  (4) Save : Ctrl + 0 (+ Enter), Close : Ctrl + X

3. GitHub Upload
  (1) Terminal Command : ./ftlabUpload.sh Upload successful if run without errors
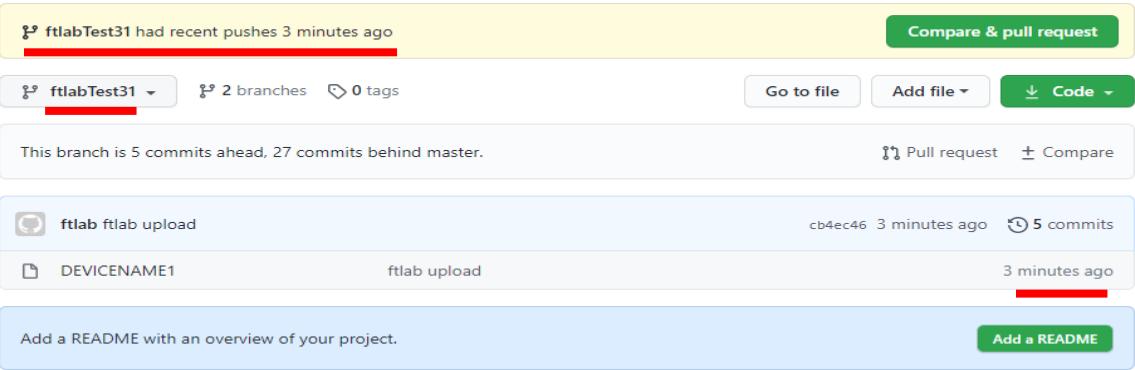
3-2 Git Upload Setting
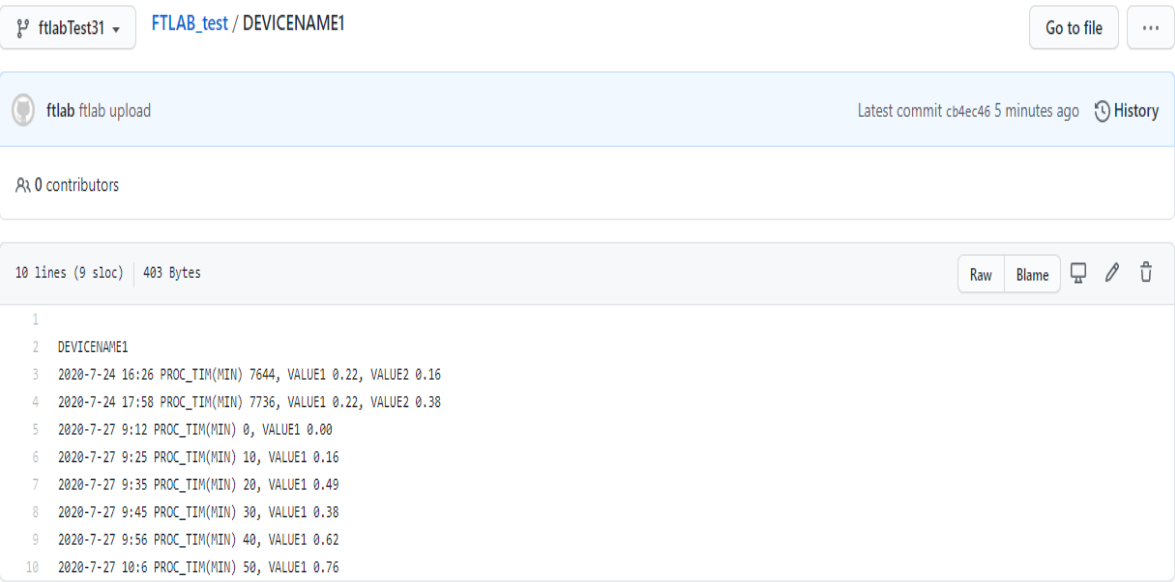
Please distinguish between case and case.

4. If the upload is successful, the branches are saved in the name you set.
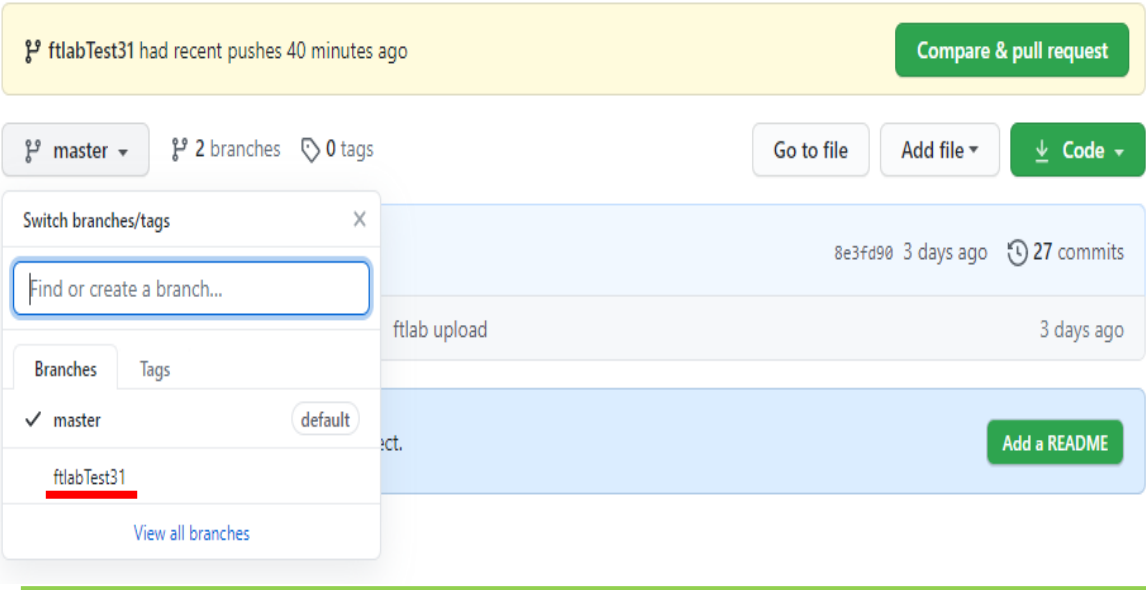
5. Make sure that the branch is properly stored.

6. See if the value in the file is OK.


```
1
2   DEVICENAME1
3   2020-7-24 16:26 PROC_TIM(MIN) 7644, VALUE1 0.22, VALUE2 0.16
4   2020-7-24 17:58 PROC_TIM(MIN) 7736, VALUE1 0.22, VALUE2 0.38
5   2020-7-27 9:12 PROC_TIM(MIN) 0, VALUE1 0.00
6   2020-7-27 9:25 PROC_TIM(MIN) 10, VALUE1 0.16
7   2020-7-27 9:35 PROC_TIM(MIN) 20, VALUE1 0.49
8   2020-7-27 9:45 PROC_TIM(MIN) 30, VALUE1 0.38
9   2020-7-27 9:56 PROC_TIM(MIN) 40, VALUE1 0.62
10  2020-7-27 10:6 PROC_TIM(MIN) 50, VALUE1 0.76
```

7. Auto Upload Setting
   (1) If everything is normal, please set the automatic upload every hour.
   (2) Terminal Command : ./autoUpload.sh
   (3) Auto Upload Check setup completion
       Terminal Command : crontab -l