

Download and install MicroPython

Download the latest version of micropython for the esp32 from <https://micropython.org/download/esp32/>

Look for Firmware built with ESP-IDF v3.x, with support for BLE, LAN and PPP and SPIRam At the time of writing we use: "esp32spiram-idf3-20191220-v1.12.bin"

Windows specific installation

I use com port com7 in this document

```
esptool.py --chip esp32 --port com7 erase_flash
```

```
esptool.py --chip esp32 --port com7 --baud 460800 write_flash -z 0x1000 esp32spiram-idf3-20191220-v1.12.bin
```

Linux specific installation

tbd.

Mac specific installation

tbd.

Download the workshop files to your computer

For this tutorials, I used modified files from the github page ... Download all files from this repository to your computer. According to your needs, upload the images folder to the esp32's images folder and the fonts to the fonts folder.

- Upload the python files to the root of the ttgo board
- Upload the 'images' folder to the 'images' folder of the ttgo
- Upload the 'fonts' folder to the 'fonts' folder of the ttgo note that not all files can be stored to the ttgo at the same time, just copy the files needed for a specific project.

Download and install the base files and folders

In the rest of this workshop, we assume that you are using rshell as the user interface to your ttg0 board and that you have a connection open.

To start rshell with the correct comport (in my case com4) and apply the following command:

```
rshell -p com4
```

```
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython>rshell -p com4
Using buffer-size of 32
Connecting to com4 (buffer-size 32)...
Trying to connect to REPL connected
Testing if ubinascii.unhexlify exists ... Y
Retrieving root directories ... /boot.py/ /bouncing_sprite.py/ /connect.py/ /demo.bmp280.py/
splay.py/ /displaytest.py/ /fontsx/ /fonts/ /ftp.py/ /ftp_thread.py/ /i2cscanner.py/ /ili934x
.py/ /sensors/ /start_webrepl.py/ /testgraphics.py/ /uftpd.py/ /webrepl_cfg.py/
Setting time ... Aug 13, 2020 20:16:43
Evaluating board_name ... pyboard
Retrieving time epoch ... Jan 01, 2000
Welcome to rshell. Use the exit command to exit rshell.
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython>
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython>
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython> |
```

You see the rshell prompt in green after starting rshell.

using the rshell prompt create 3 directories

```
mkdir /pyboard/fonts mkdir /pyboard/images mkdir /pyboard/sensors
```

... and copy the display files to the ttgo

```
cp ili934xnew.py /pyboard cp display.py /pyboard
```

Start the fun

To test if everything is working, install the following fonts to the fonts folder on your ttgo board:

in rshell, you can do this with the following command:

```
cp fonts/glcdfont.py /pyboard/fonts/ cp fonts/tt14.py /pyboard/fonts/ cp fonts/tt24.py
/pyboard/fonts/ cp fonts/tt32.py /pyboard/fonts/
```

and finally, copy displaytest.py to the ttgo

```
cp displaytest.py /pyboard/
```

start the micropython prompt

```
repl
```

and import displaytest.py

```
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython>
C:\Users\Karij\Documents\Arduino\SenseMakerBoard\sensemakers-micropython> repl
Entering REPL. Use Control-X to exit.
>
MicroPython v1.12-663-g9883d8e81 on 2020-08-10; ESP32 module (spiram) with ESP32
Type "help()" for more information.
>>>
>>> import displaytest
```

now the ttgo's display should show "Now is the time for all Sensemakers to come to the aid of the party." in different fonts and colors.

