

IoT Security and Privacy

Assignment 2 – Lab Environment (10 points)

Partner: Ishan Patel

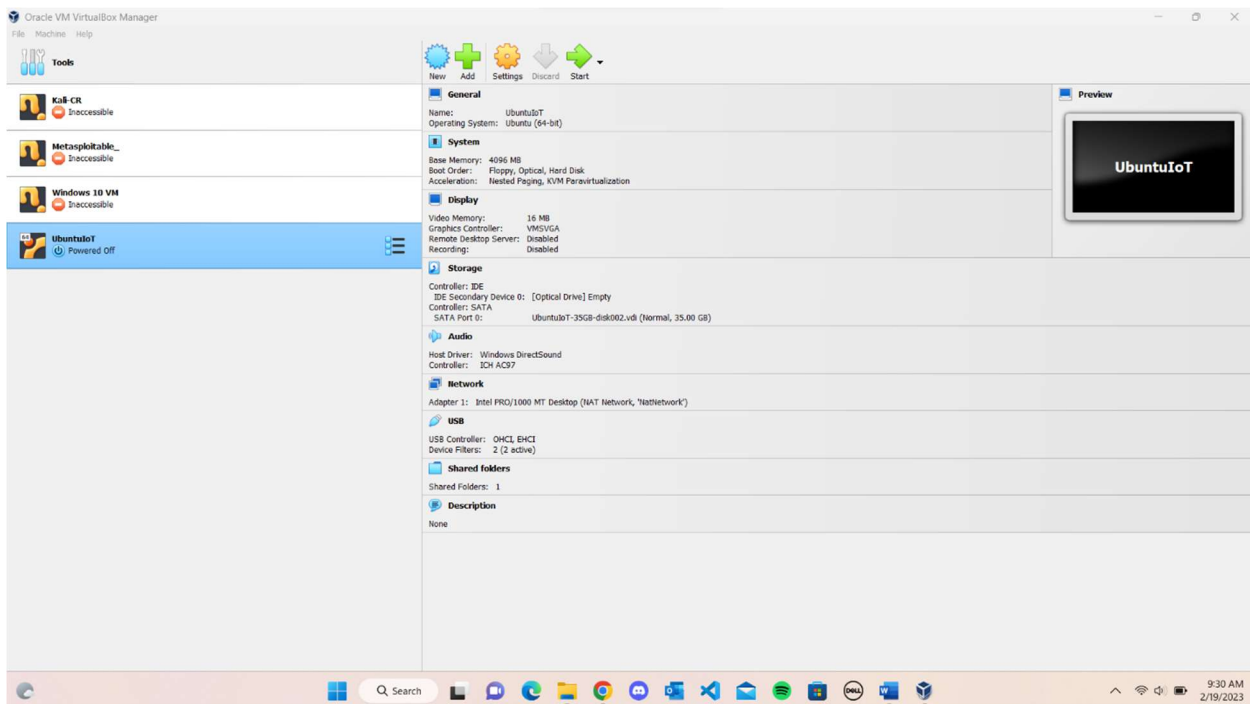
Questions

Please refer to [Get started with ESP32 via VS Code and PlatformIO](#)

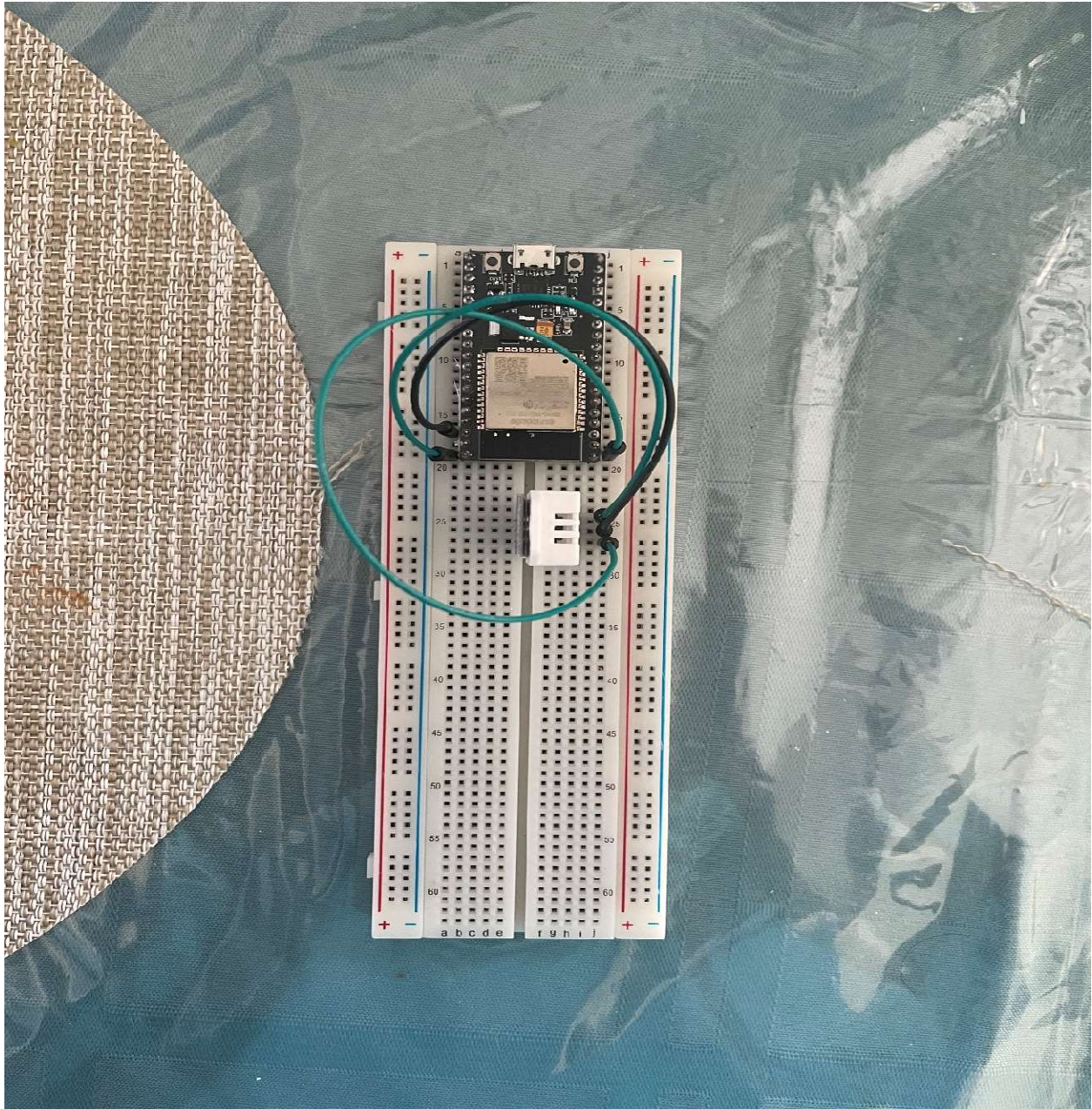
1. Please finish the optional and very short survey (2 minutes). Copy and paste the following link to a browser to fill out the Google form: <https://forms.gle/WkpGtXRPMWxnc3nJ8>. Just say *Done* below to claim the 1 bonus point. (1 bonus point)

Done

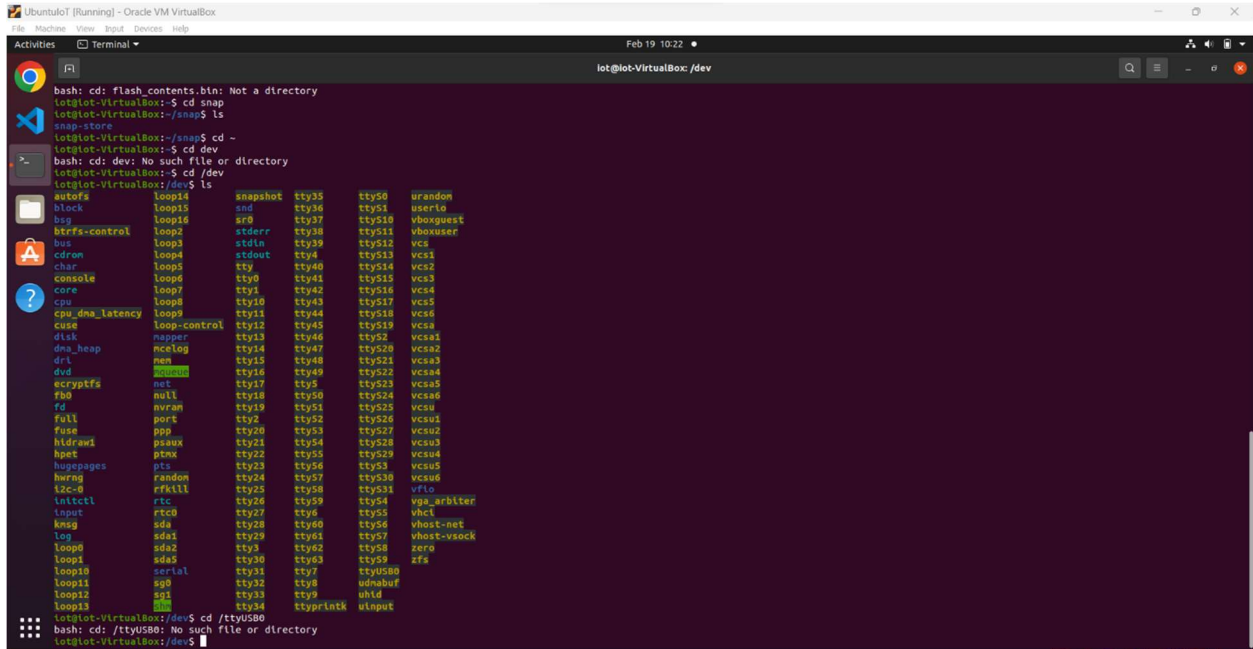
2. Read [Install VirtualBox and Import Ubuntu VM Appliance](#). Please include a screenshot below showing the Ubuntu VM within VirtualBox. (2 points)



3. Read [Set up the IoT kit](#). Please include a photo of the assembled IoT kit. (2 points)



4. Read [Install the CP210x USB to UART Bridge VCP Driver](#). Please include a screenshot below proving the IoT kit can be accessed within the Ubuntu VM. (2 points)



```
bash: cd: flash_contents.bin: Not a directory
iot@iot-VirtualBox:~$ cd snap
iot@iot-VirtualBox:~/snap$ ls
snap-store
iot@iot-VirtualBox:~/snap$ cd ~
iot@iot-VirtualBox:~$ cd /dev
iot@iot-VirtualBox:~$ ls
autofs      loop14      snapshot    tty35       tty50       urandom
block       loop15      snd         tty36       tty51       userio
brp         loop16      #0         tty37       tty510      vboxguest
btrfs:control loop17      stderr      tty38       tty511      vboxuser2
bus         loop18      stdin       tty39       tty512      vcs
cdrom       loop19      stdout      tty40       tty513      vcs1
char        loop20      tty         tty41       tty514      vcs2
console     loop21      tty0        tty42       tty515      vcs3
core        loop22      tty1        tty43       tty516      vcs4
cpu         loop23      tty10       tty44       tty517      vcs5
cpu_dma_latency loop24      tty11       tty45       tty518      vcs6
cuse        loop25      tty12       tty46       tty519      vcsa
disk        mapper      tty13       tty47       tty520      vcsa1
dma_heap    ncllog     tty14       tty48       tty521      vcsa2
dri         nls        tty15       tty49       tty522      vcsa3
dvd         nls        tty16       tty50       tty523      vcsa4
ecryptfs    net        tty17       tty51       tty524      vcsa5
fb          null       tty18       tty52       tty525      vcsa6
fd          nvram     tty19       tty53       tty526      vcsa7
full        port       tty20       tty54       tty527      vcsa8
fuse        praux     tty21       tty55       tty528      vcsa9
hidraw      ptmx      tty22       tty56       tty529      vcsa10
hpet        pts        tty23       tty57       tty530      vcsa11
hugepages  random    tty24       tty58       tty531      vcsa12
hwmon       rtc        tty25       tty59       tty532      vcsa13
i2c-dev     rtc0       tty26       tty60       tty533      vcsa14
input       rng        tty27       tty61       tty534      vcsa15
kmsg        rng        tty28       tty62       tty535      vcsa16
log         sda        tty29       tty63       tty536      vcsa17
loop0       sda1       tty30       tty64       tty537      vcsa18
loop1       sda2       tty31       tty65       tty538      vcsa19
loop10      sda3       tty32       tty66       tty539      vcsa20
loop11      sg         tty33       tty67       tty540      vcsa21
loop12      sg         tty34       tty68       tty541      vcsa22
loop13      sg         tty35       tty69       tty542      vcsa23
iot@iot-VirtualBox:~$ cd /dev/tty50
bash: cd: /dev/tty50: No such file or directory
iot@iot-VirtualBox:~$
```

5. Read [Clone the project](#). Please include a screenshot below showing the project folder on the Ubuntu VM. (2 points)

```

lot@lot-VirtualBox: ~/esp/esp-idf/lib/examples/tst-dht-lab
lot@lot-VirtualBox:~/dev$ cd /ttyUSB0
bash: cd: /ttyUSB0: No such file or directory
lot@lot-VirtualBox:~/dev$ cd -
lot@lot-VirtualBox:~/dev$ cd /home/lot
lot@lot-VirtualBox:~/dev$ cd /esp/esp-idf/lib/examples
bash: cd: /esp/esp-idf/lib/examples: No such file or directory
lot@lot-VirtualBox:~/dev$ cd /esp
bash: cd: /esp: No such file or directory
lot@lot-VirtualBox:~/dev$ ls
Arduino  cakey.pem  Documents  esp             https  openssl.conf  Public  Templates
ca.csr  desktop  Downloads  flash_contents.bin  Music  Pictures      snap   Videos
lot@lot-VirtualBox:~/dev$ cd esp
lot@lot-VirtualBox:~/esp$ ls
esp-idf  esp-idf-lib  esp-idf-lib-2022
lot@lot-VirtualBox:~/esp$ cd esp-idf-lib
lot@lot-VirtualBox:~/esp/esp-idf-lib$ ls
CHANGELOG.md  CONTRIBUTING.md  docs  FAQ.md  Genfile  Genfile.lock  README.md
components  examples  Genfile  Genfile.lock  README.md
lot@lot-VirtualBox:~/esp/esp-idf-lib$ cd examples/tst-dht-lab
bash: cd: examples/tst-dht-lab: No such file or directory
lot@lot-VirtualBox:~/esp/esp-idf-lib$ cd examples/tst-dht-lab
lot@lot-VirtualBox:~/esp/esp-idf-lib/examples/tst-dht-lab$ ls
CMakeLists.txt  imgs  include  lib  platformio.ini  README.md  sdkconfig.esp32dev  src  test
lot@lot-VirtualBox:~/esp/esp-idf-lib/examples/tst-dht-lab$ ls
CMakeLists.txt  imgs  include  lib  platformio.ini  README.md  sdkconfig.esp32dev  src  test
lot@lot-VirtualBox:~/esp/esp-idf-lib/examples/tst-dht-lab$

```

- Read [Build, Upload and Test](#). Please include a screenshot below showing the temperature and humidity outputs through the serial monitor of PlatformIO. (2 points)

```

platformio.ini
0 ; Advanced options: extra scripting
1 ;
2 ; Please visit documentation for the other options and examples
3 ; https://docs.platformio.org/page/projectconf.html
4
5 [env:esp32dev]
6
7 platform = espressif32
8 board = esp32dev
9 framework = esp-idf
10
11 monitor_speed = 115200

```

```

... Terminal on /dev/ttyUSB0 | 115200 8-N-1
... Available filters and text transformations: colorize, debug, default, direct, esp32_exception_decoder, hexlify, logfilter, nocontrol, printable, send_on_enter, time
... More details at https://bit.ly/pio-monitor-filters
... Quit: Ctrl+C | Menu: Ctrl+T | Help: Ctrl+T followed by Ctrl+H
Humidity: 44% Temp: 22C
Humidity: 44% Temp: 22C
Humidity: 44% Temp: 22C
Humidity: 44% Temp: 22C
Humidity: 45% Temp: 22C
Humidity: 45% Temp: 22C
Humidity: 45% Temp: 22C
Humidity: 46% Temp: 22C
Humidity: 46% Temp: 22C
Humidity: 46% Temp: 22C
Terminal will be reused by tasks, press any key to close it.

```