Programmes en Micropython SmartHome

Test Led pin 12

exemple001.py

```python
from machine import Pin
import time

led = Pin(12, Pin.OUT)# Build an LED object, connect the external LED
light to pin 0, and set pin 0 to output mode
while True:
    led.value(1)# turn on led
    time.sleep(1)# delay 1s
    led.value(0)# turn off led
    time.sleep(1)# delay 1s
```

Test Led PWM

exemple002.py

```python
import time
from machine import Pin,PWM

#The way that the ESP32 PWM pins output is different from traditionally
controllers.
#It can change frequency and duty cycle by configuring PWM's parameters
at the initialization stage.
#Define GPIO 0's output frequency as 10000Hz and its duty cycle as 0,
and assign them to PWM.
p0 = Pin(012, Pin.OUT)
pwm = PWM(p0, freq=10000, duty_u16=8192)


try:
    while True:
#The range of duty cycle is 0-1023, so we use the first for loop to
control PWM to change the duty
#cycle value,making PWM output 0% -100%; Use the second for loop to
make PWM output 100%-0%.
        for i in range(0,1023):
            pwm.duty(i)
            time.sleep_ms(1)

        for i in range(0,1023):
```

```
                pwm.duty(1023-i)
                time.sleep_ms(1)
except:
#Each time PWM is used, the hardware Timer will be turned ON to
cooperate it. Therefore, after each use of PWM,
#deinit() needs to be called to turned OFF the timer. Otherwise, the
PWM may fail to work next time.
    pwm.deinit()
```

Test des 2 Boutons

exemple003.py

```python
from machine import Pin
import time

button1 = Pin(16, Pin.IN, Pin.PULL_UP)
button2 = Pin(27, Pin.IN, Pin.PULL_UP)

while True:
    btnVal1 = button1.value()  # Reads the value of button 1
    btnVal2 = button2.value()
    print("button1 =",btnVal1)  #Print it out in the shell
    print("button2 =",btnVal2)
    time.sleep(0.1) #delay 0.1s
```

Test Bouton 1 M/A Led

exempl004.py

```python
from machine import Pin
import time

button1 = Pin(16, Pin.IN, Pin.PULL_UP)
led = Pin(12, Pin.OUT)
count = 0

while True:
    btnVal1 = button1.value()  # Reads the value of button 1
    #print("button1 =",btnVal1)  #Print it out in the shell
    if(btnVal1 == 0):
        time.sleep(0.01)
        while(btnVal1 == 0):
            btnVal1 = button1.value()
```

```python
            if(btnVal1 == 1):
                count = count + 1
                print(count)
    val = count % 2
    if(val == 1):
        led.value(1)
    else:
        led.value(0)
    time.sleep(0.1) #delay 0.1s
```

Test PIR : detection de personnes

exemple005.py

```python
from machine import Pin
import time

PIR = Pin(14, Pin.IN)
while True:
    value = PIR.value()
    print(value, end = " ")
    if value == 1:
        print("Des personnes sont dans la zone ...!")
    else:
        print("il n'y a personne ...!")
    time.sleep(0.1)
```