#### **EXPERIMENT - 1.2**

# Interfacing an external led with nRF dev Board

#### What will you learn from this module:

Blink external led using nRF development kit.

## **Requirements:**

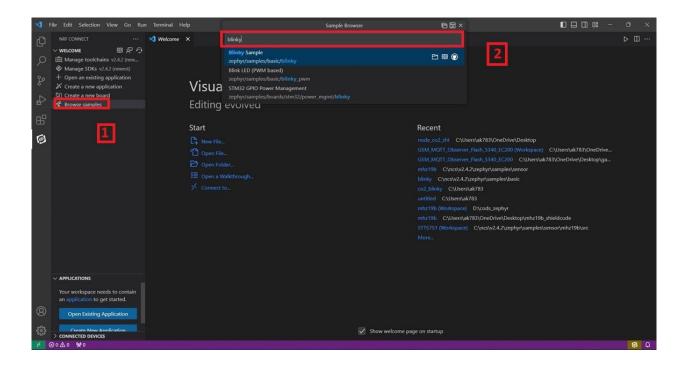
- > nRF connect desktop software.
- > nRF Command line tools.
- Visual studio code.
- > USB cable.
- > nRF 52832 board.
- LED's.

## **Prerequisites:**

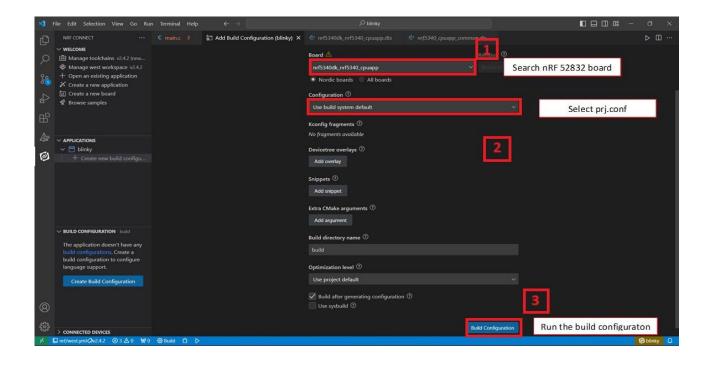
- ➤ Basic knowledge of C/C++
- > Basic knowledge of communication protocol.
- Basic project setup.

## **Setup and Configuration:**

Open VS Code and go to browse sample and search BLINKY.



➤ Click on create new build configuration here you can change the board version, if you are using nRF 52832 then you can change from there for another version like nRF52833 etc.



- ➤ Go to source file, inside source file > Application > src > main.c.
- > click on main.c file and you will see the code will appear on your vs code.

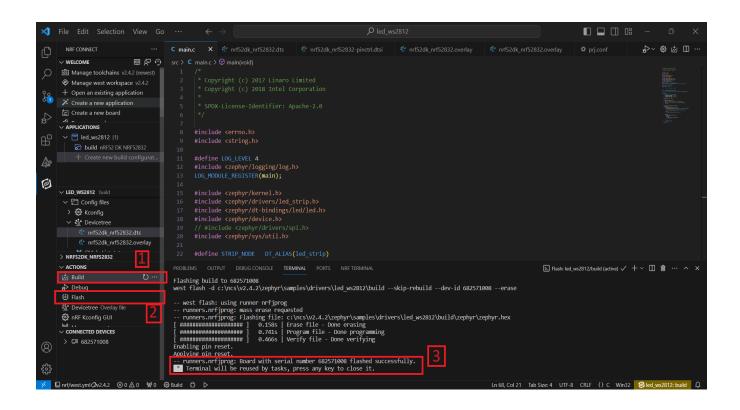
- Go to Config > Devicetree > .dts file.
- After that change the gpio pin no. with the pin that is used by the external led on the nRF board. (for example, led +ve is connected to P025 & -ve to GND, then change the gpio pin no. to 25 in the dts as shown in the figure.

```
ズ File Edit Selection View Go ⋯
                                                                                                                                                                                                                  ... C main.c • & nrf52dk_nrf52832.dts 1 •
                                                                                                                                                                                                                                            ∨ WELCOME
Manage toolchains v2.42 (newest)
                                                                    zephyr,console = &uart0;
zephyr,shell-uart = &uart0;
       Manage west workspace v2.42
                                                                    zephyr,uart-mcumgr = &uart0;
zephyr,bt-mon-uart = &uart0;
zephyr,bt-c2h-uart = &uart0;
      ি Create a new board
                                                                    zephyr, sram = &sram0;
zephyr, flash = &flash0;
zephyr,code-partition = &slot0_partition;
        Browse samples
                                                                     s {
compatible = "gpio-leds";
led0: led_0 {
    gpios = <&gpio0 2 iPIO_ACTIVE_LOW>;
    label = "Green LED 0";
0
                                                                                                                             Change this pin no. to the pin that is used by the
          build nRF52 DK NRF52832
                                                                          gpios = <&gpio0 3 GPIO_ACTIVE_LOW>;
label = "Green LED 1";
      V BLINKY build
                                                                     };
led2: led2 {
    gpios = <&gpio0 4 GPIO_ACTIVE_LOW>;
    label = "Green LED 2";
       ∨ 🛱 Config files
         > ∰ Kconfig
                                                                     pwmleds {
    compatible = "pwm-leds";
    pwm_led0: pwm_led_0 {
        pwms = <&pwm0 0 PWM_MSEC(20) PWM_POLARITY_INVERTED);
    };</pre>

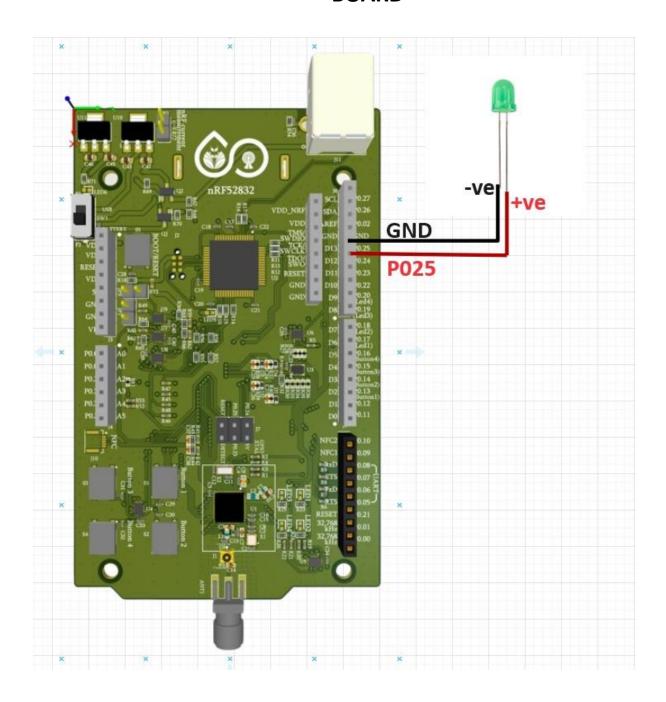
    Debug

      ឃ្លុំ Devicetree Board file
        CONNECTED DEVICES
```

- Run the build configuration again.
- Then flash the code in nRF dev kit.



# ❖ PIN CONFIGURATION OF WS2812 LED WITH THE BOARD



GND -> -ve P025 -> +ve

## **\* OUTPUT**