AWaDH
Agriculture and Water
Technology Development Hub

EXPERIMENT – 1.3

INTERFACING WS2812 RGB LED WITH DEV BOARD/NODE

What will you learn from this module:

Make different patterns using RGB(red, green, blue)ring led.

Requirements:

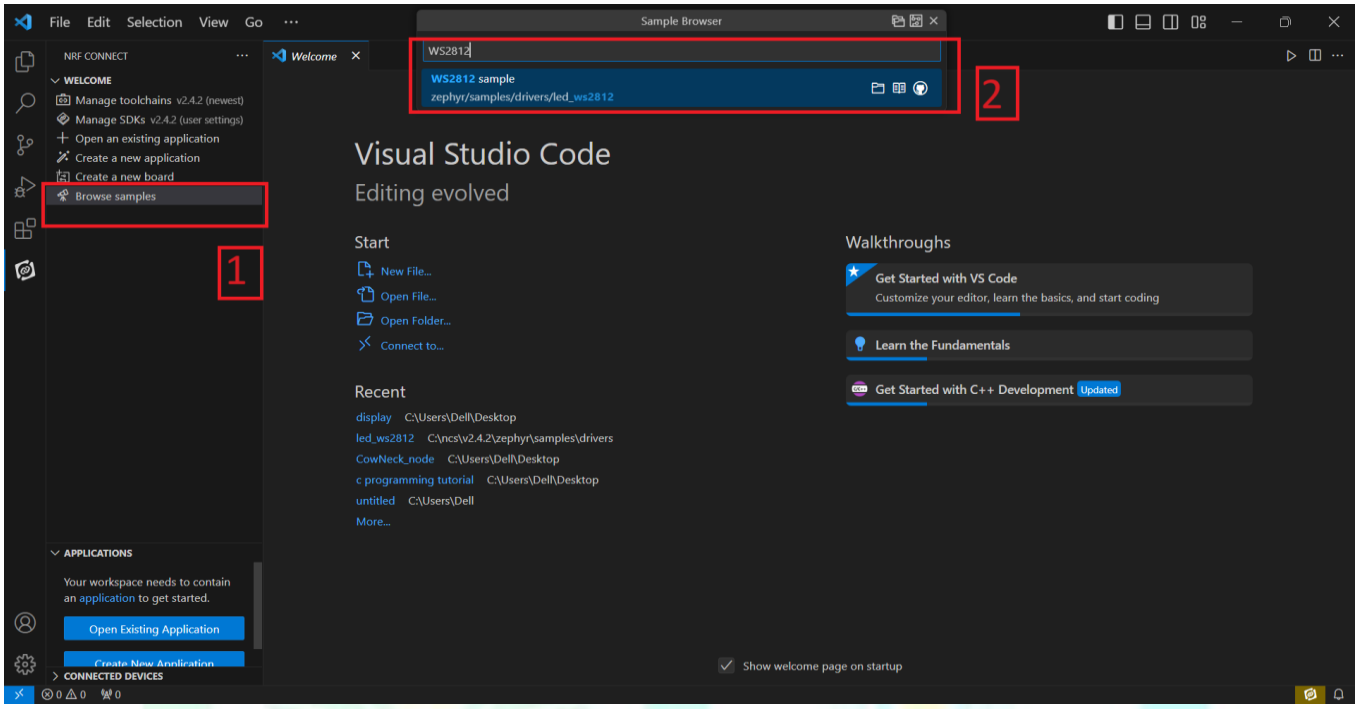
- nRF connect desktop software.
- nRF Command line tools.
- Visual studio code.
- USB cable.
- nRF52832 Development Board/Node.
- WS2812 RGB ring led.

Prerequisites:

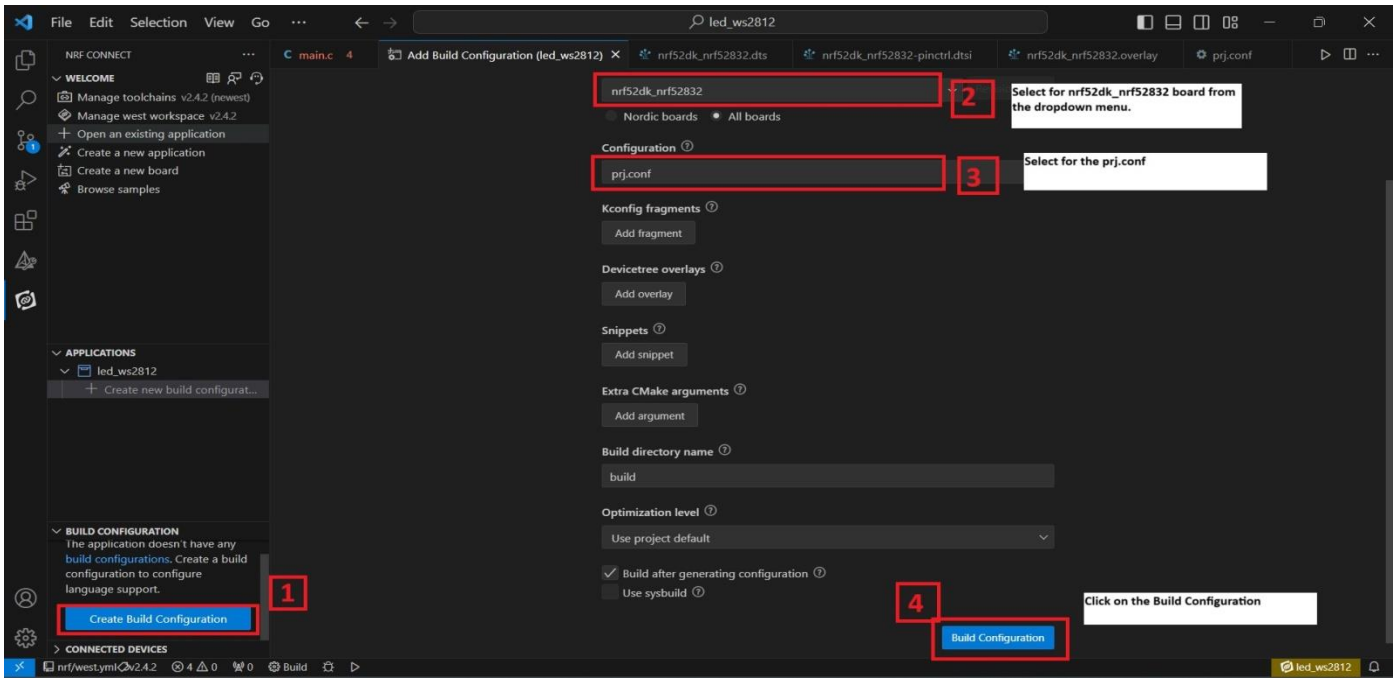
- Basic knowledge of C/C++
- Basic knowledge of communication protocol.
- Basic project setup.

Setup and Configuration:

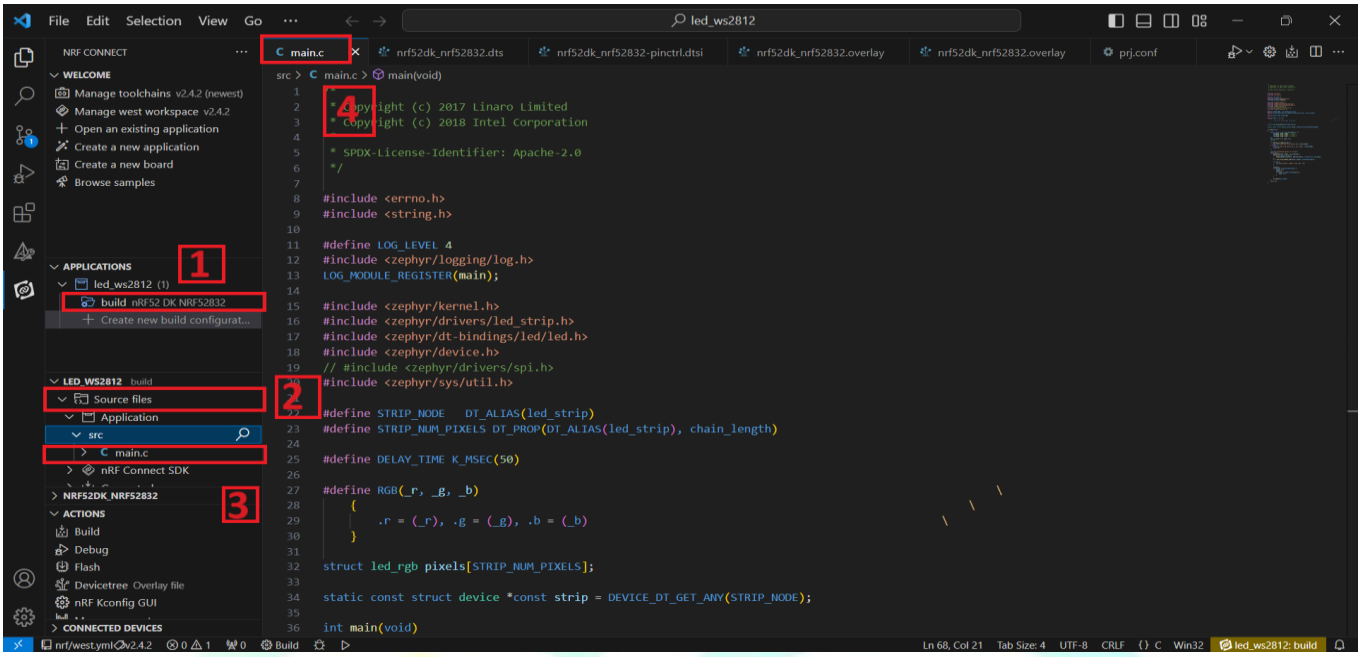
- Open VS Code and go to **Browse samples [1]** and search **WS2812 [2]**.



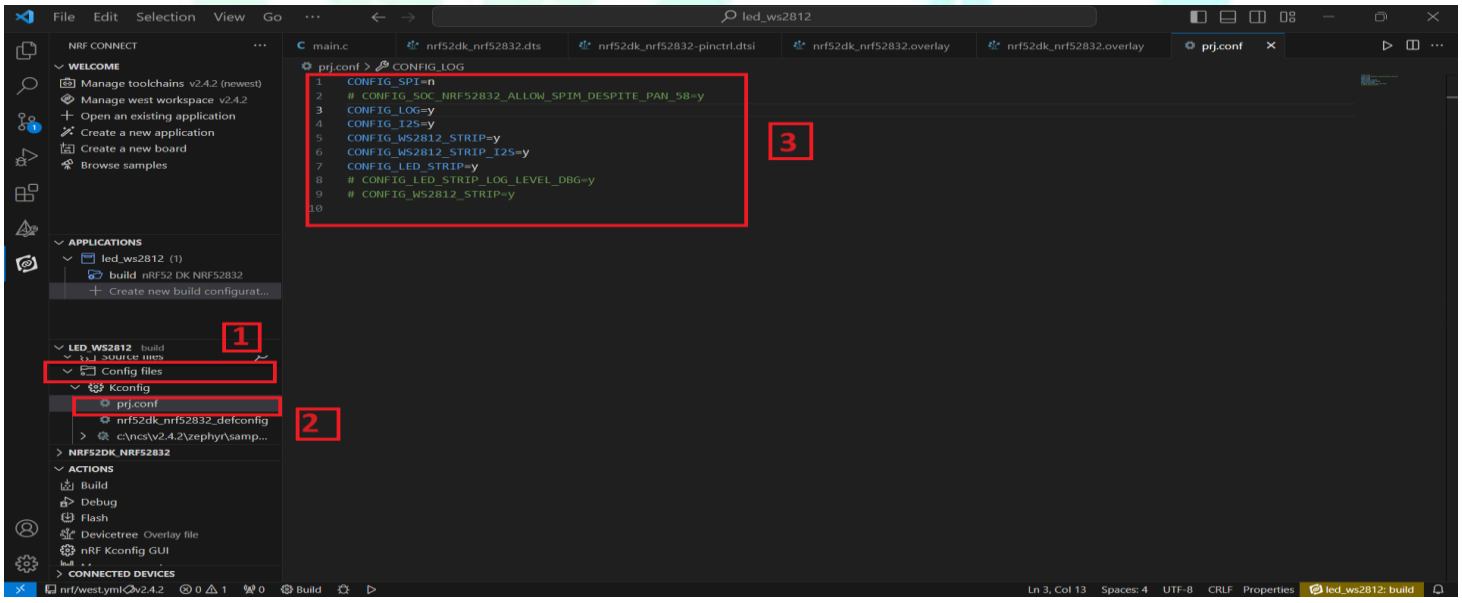
- Click on **Create new build configuration [1]**. Here you can change the board version, if you are using nRF52832, then select **nrf52dk_nrf52832 [2]** or you can change from dropdown menu for another version like nRF52833 etc.
- After that click on the Configuration and select **prj.config [3]** from dropdown menu and then **click on the Build Configuration [4]**.



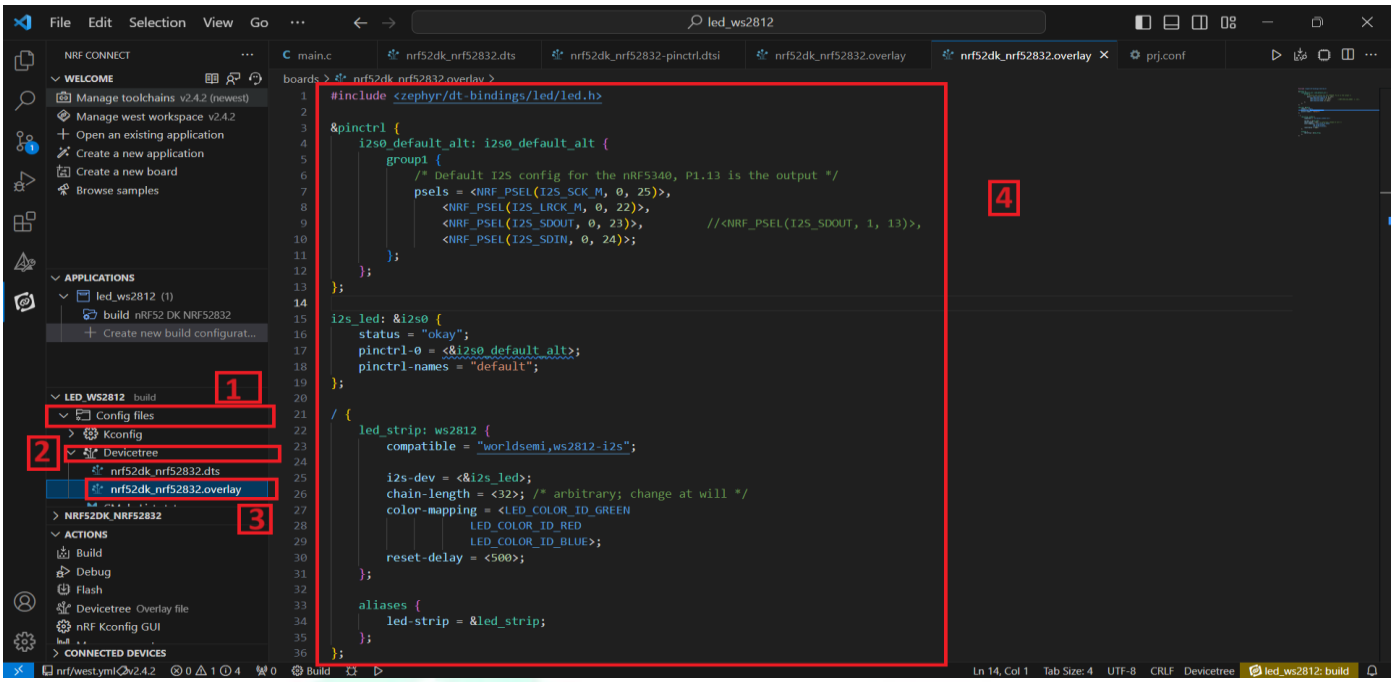
- Go to **source file [2]**,click **source file** > click on **Application** > click on **src** > click on **main.c [3]** .
- After Click on **main.c** file and you will see the code on your screen **[4]**.



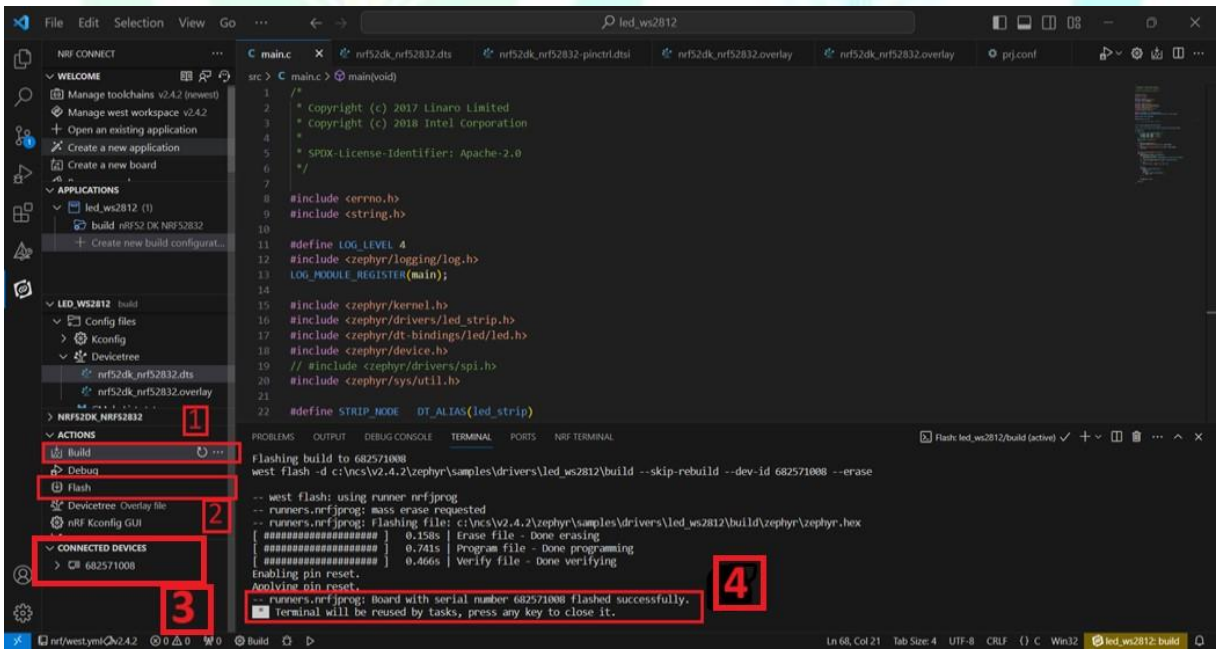
- To configure prj.conf click on the **Config files [1]** > click on the **Kconfig** > click on the **prj.conf [2]** and the prj configuration will appear on the screen **[3]** as shown in figure.



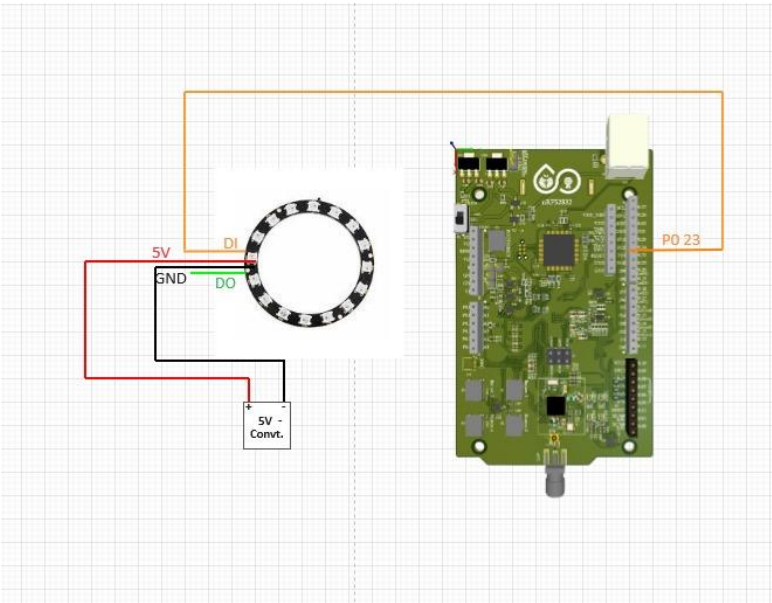
- For configure WS2812 led you need to enable i2s in overlay files, click on the **Config files [1]** > click on the **Devicetree [2]** > click on the **nrf52dk_nrf52832.overlay [3]**.
- The overlay file will appear on the screen **[4]** as shown in the picture given below.



- Click on **Build [1]** configuration again and check the **CONNECTED DEVICES [3].**
- If device id is visible, then **Flash [2]** the code in Development Kit.
- If **flashed successfully [4]** message is displayed on serial terminal, then flash process is complete.



❖ PIN CONFIGURATION OF WS2812 LED WITH THE BOARD



LED Pins -> Board Pins

DI -> PO.23

5V -> +ve(External 5V conv.)

GND -> -ve(External 5V conv.)

❖ OUTPUT