AWaDH
Agriculture and Water
Technology Development Hub

EXPERIMENT – 7

RELAY INTERFACING WITH DEV BOARD/NODE

What will you learn from this module:

In this Experiment you will learn to interface relay module with nRF Development board/Node.

Requirements:

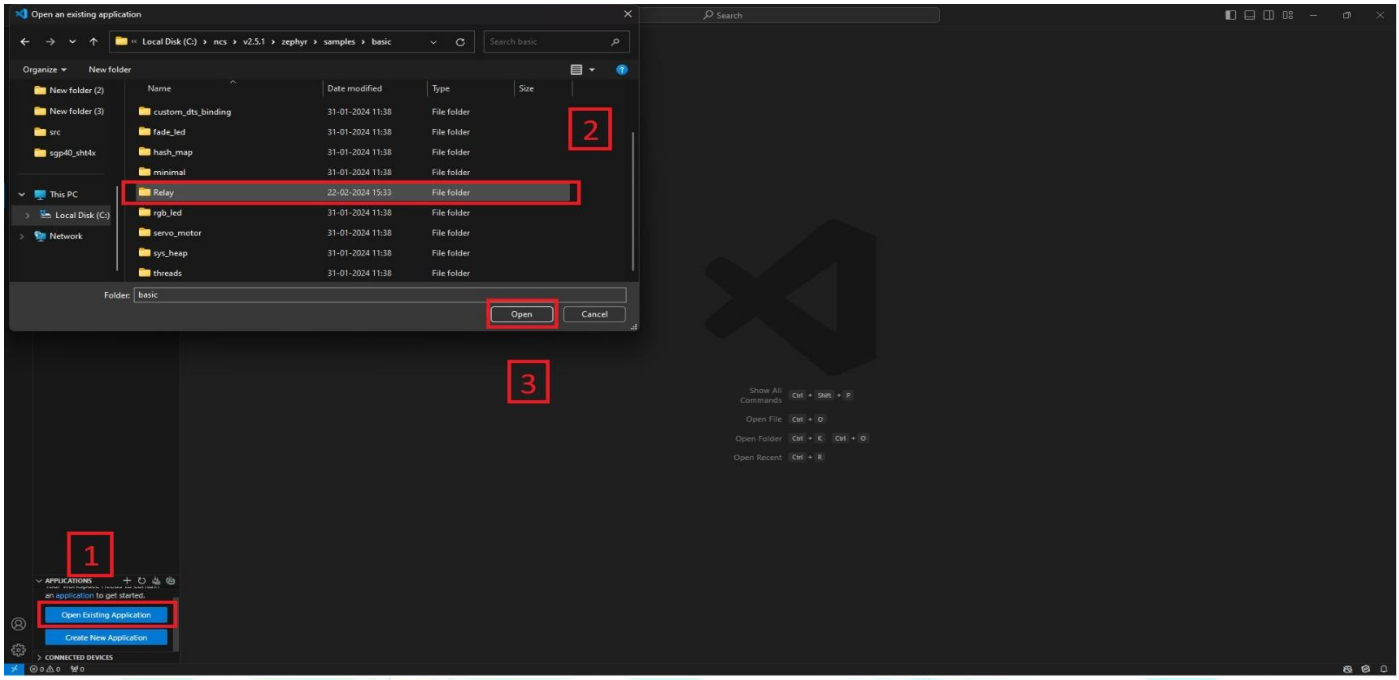
- nRF connect desktop software
- nRF Command line tools
- Visual studio code
- USB cable
- nRF 52832 board
- Relay module

Prerequisites:

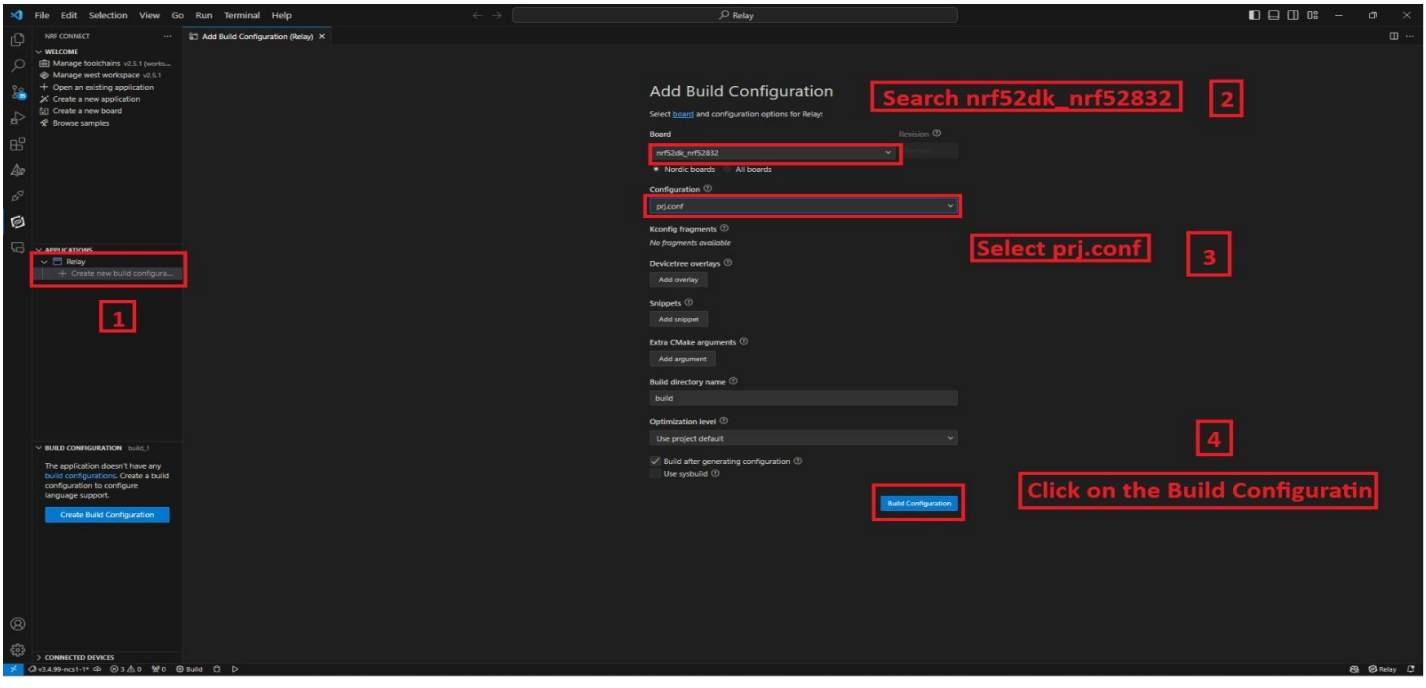
- Basic knowledge of C/C++
- Basic knowledge of communication protocol
- Basic project setup

Setup and Configuration:

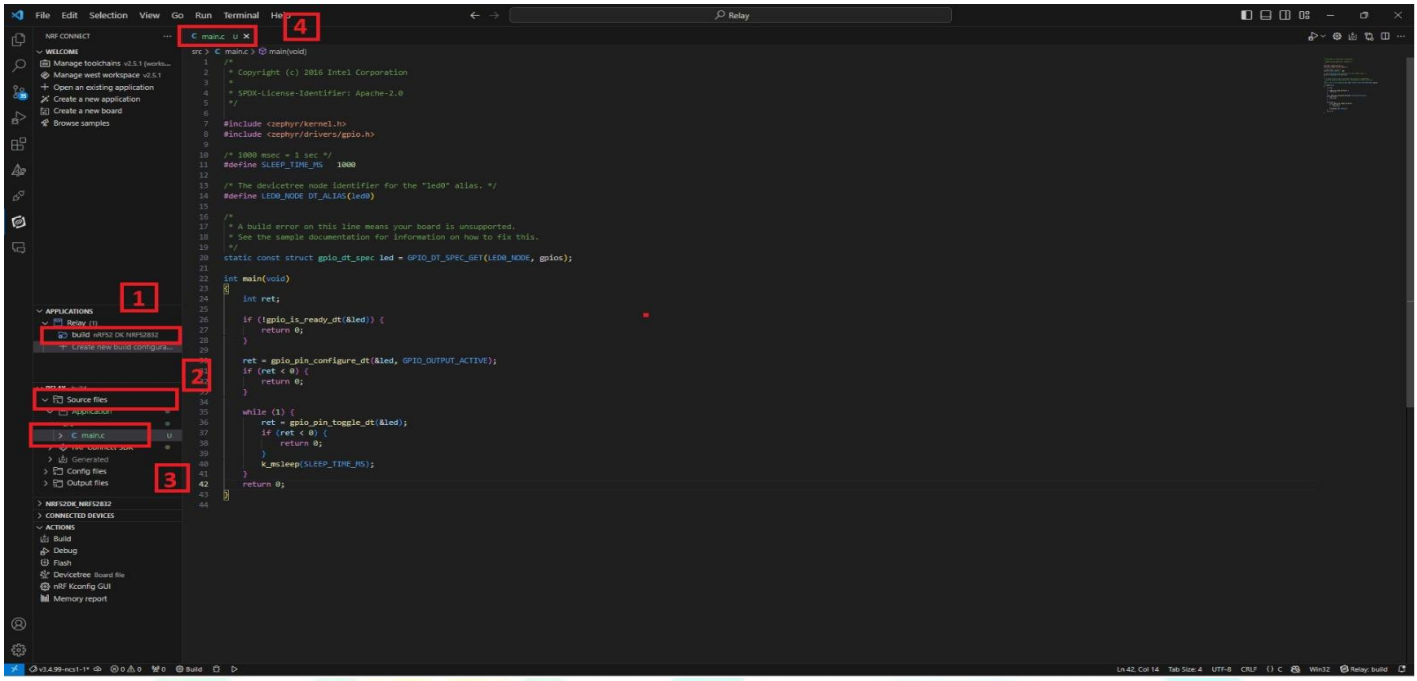
- Open VS Code and click on **Open Existing Application [1]** > click on **Relay [2]** > **Open [3]** as shown in the picture below.



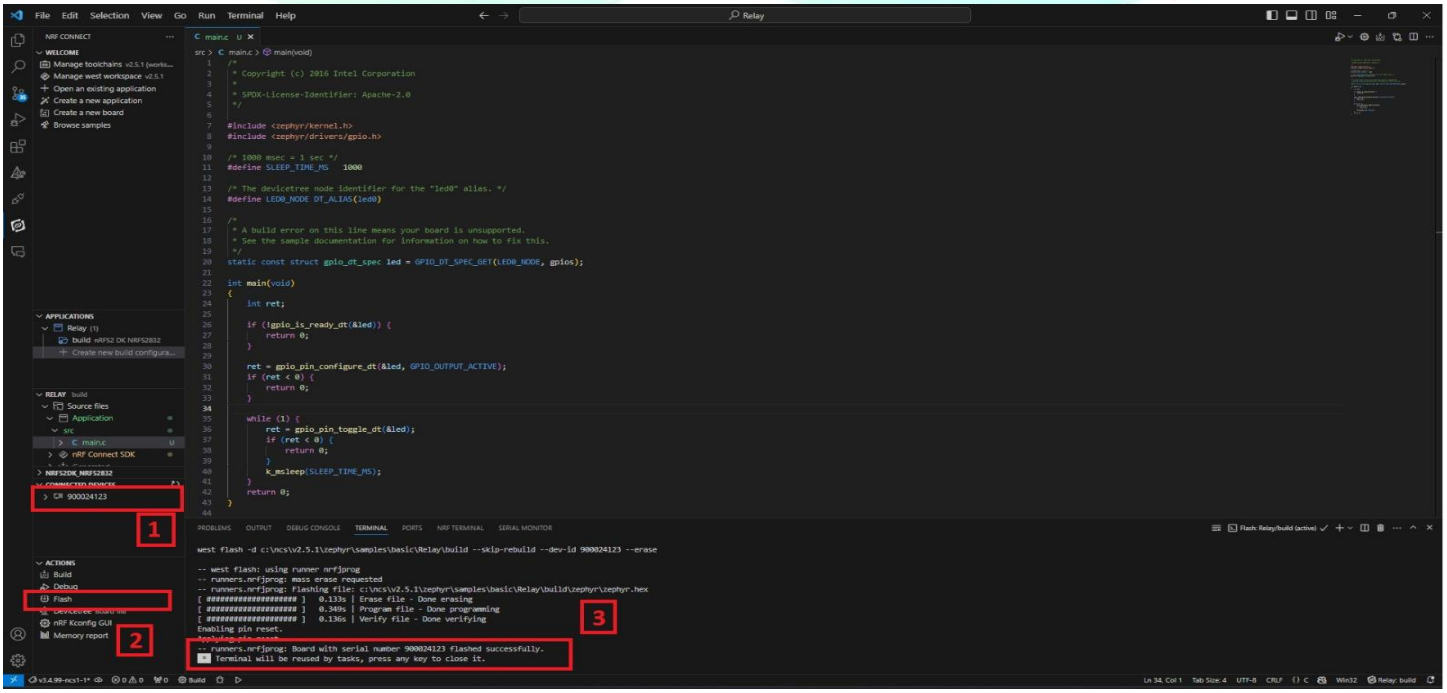
- Click on create new **build configuration [1]** Here you can change the board version, if you are using nRF52832, then select **nrf52dk_nrf52832 [2] or** you can change from there for another version like nRF52833 etc.



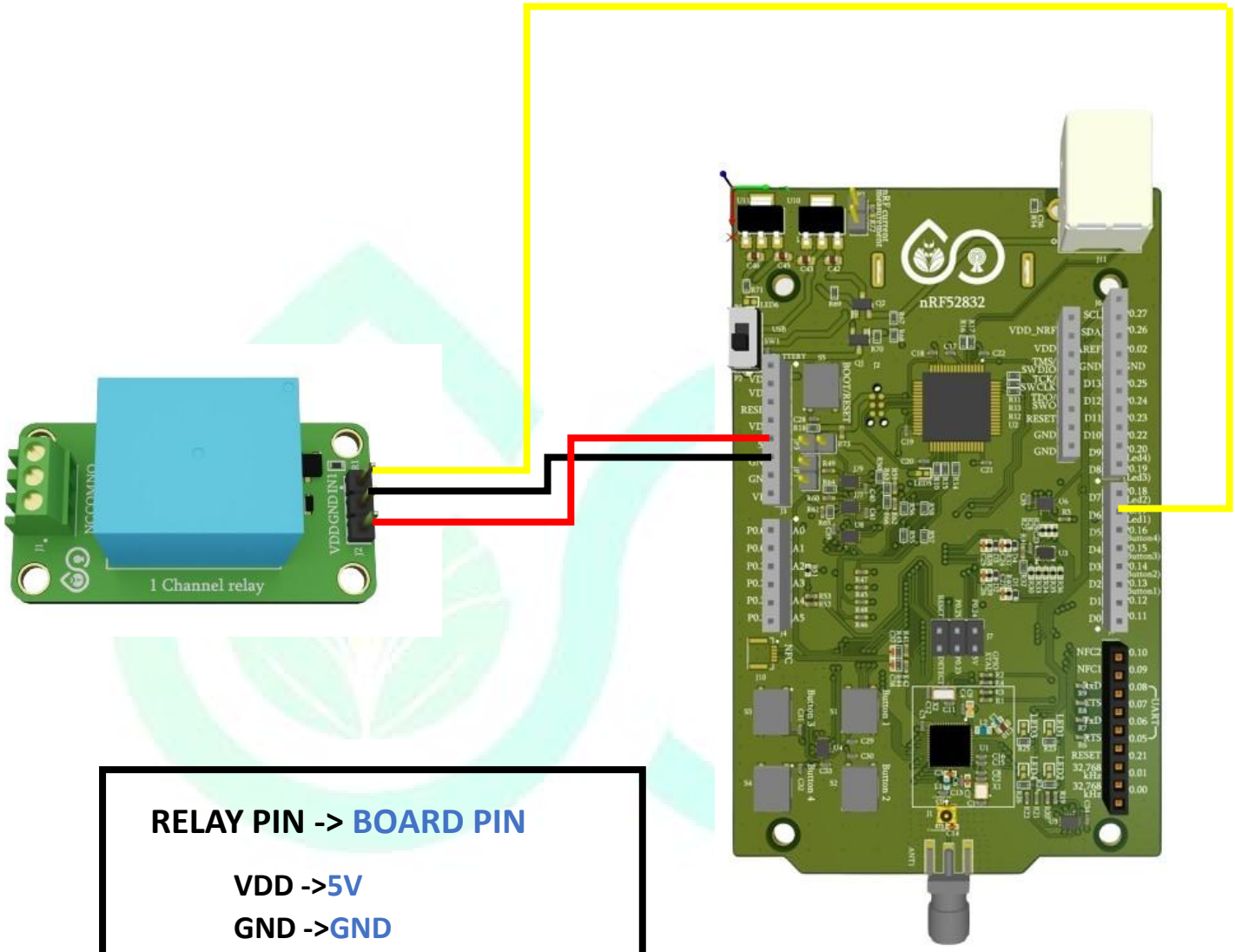
- Go to source file, click **source file [2]** > click on **Application** > click on **src** > click on **main.c [3]**.
- By clicking on **main.c** file and you will see the code on your screen **[4]**.



- Run the build configuration again and check the **connected device [1]**.
- Then **flash [2]** the code in nRF dev kit.
- If **flashed successfully [3]** message is displayed on serial terminal, then flash process is complete.



❖ PIN CONFIGURATION :-



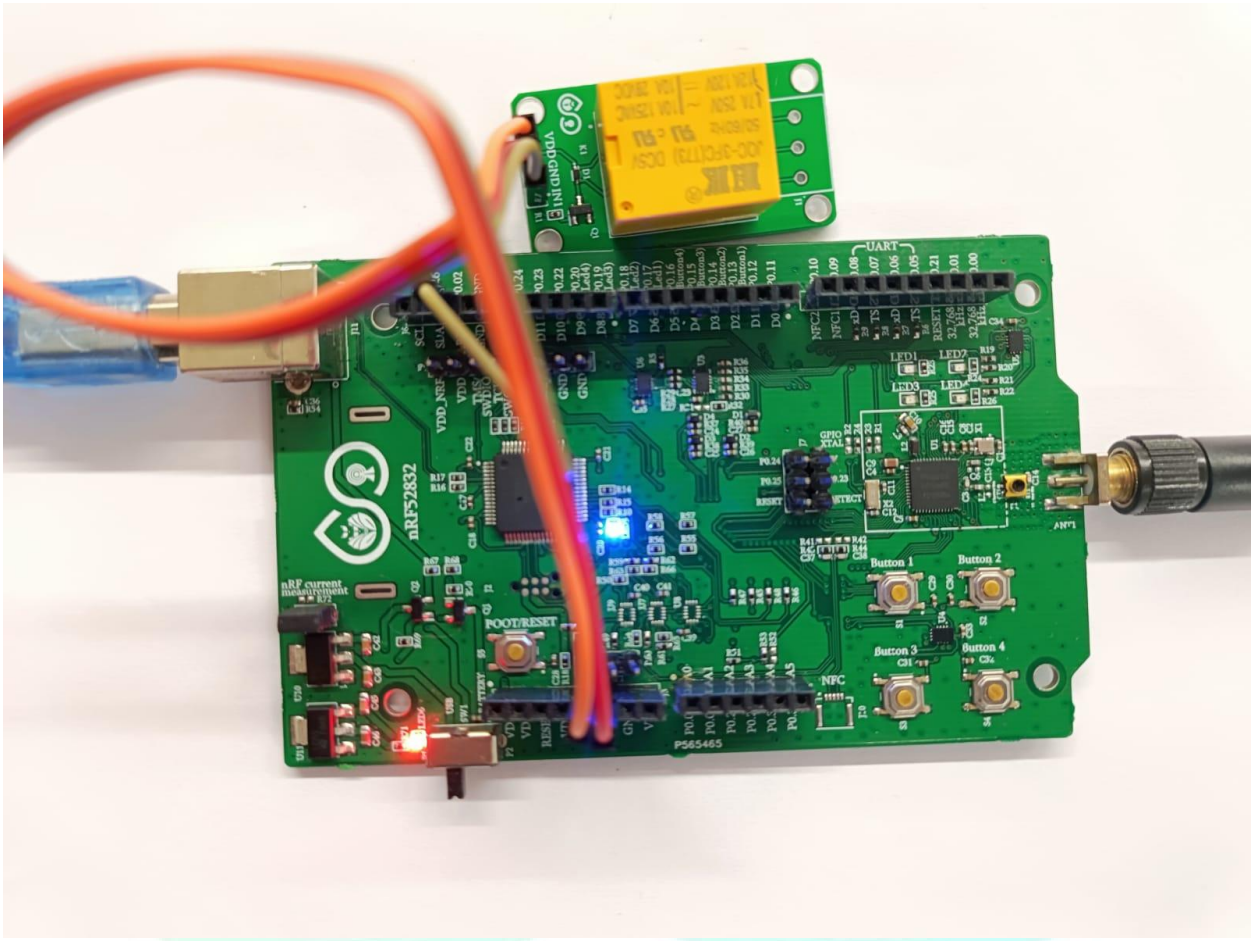
RELAY PIN -> BOARD PIN

VDD ->5V

GND ->GND

INT -> P0.17(FOR RELAY)

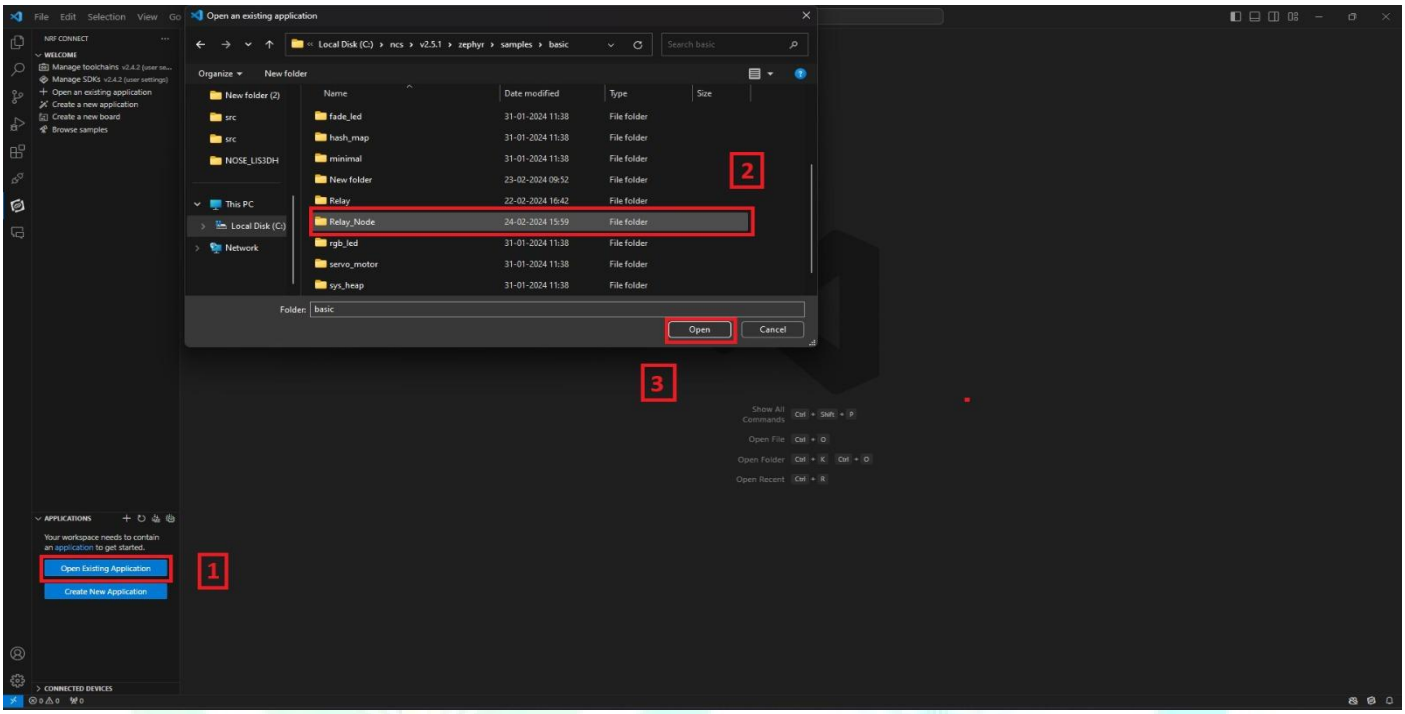
❖ OUTPUT :-



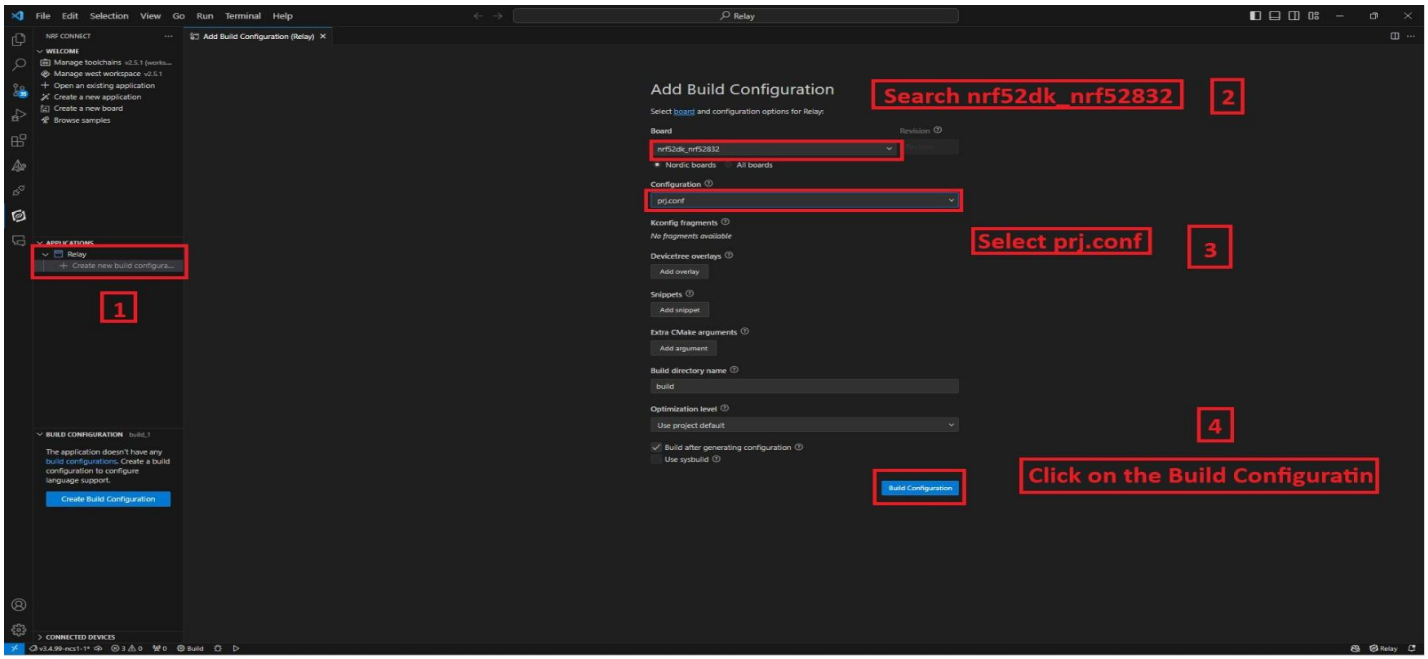
You will hear the sound of **click** on the interval of 1 sec (because we used delay of 1sec) that's mean relay is working and when you will connect any load with relay then you will able to control the load.

❖ WITH THE HELP OF NODE

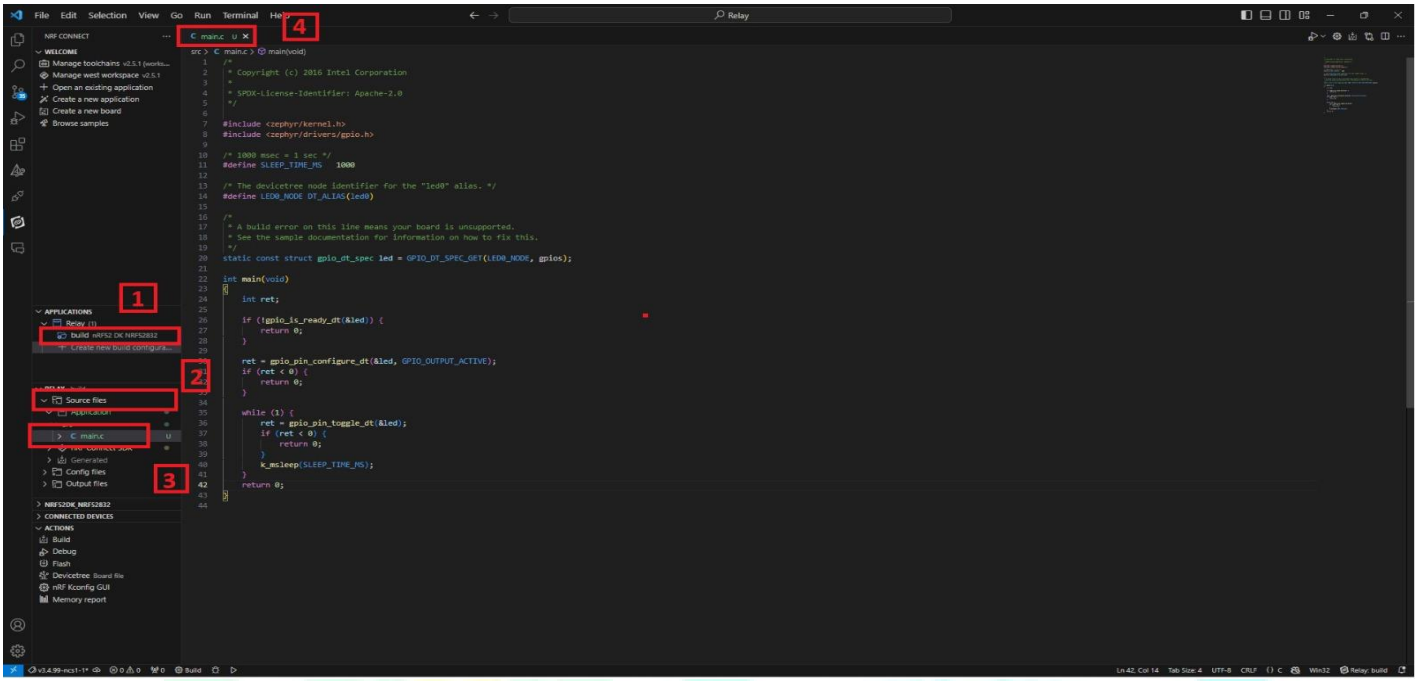
➢ Open VS Code and click on **Open Existing Application [1]** > click on **Relay_Node [2]** > **Open [3]** as shown in the picture below.



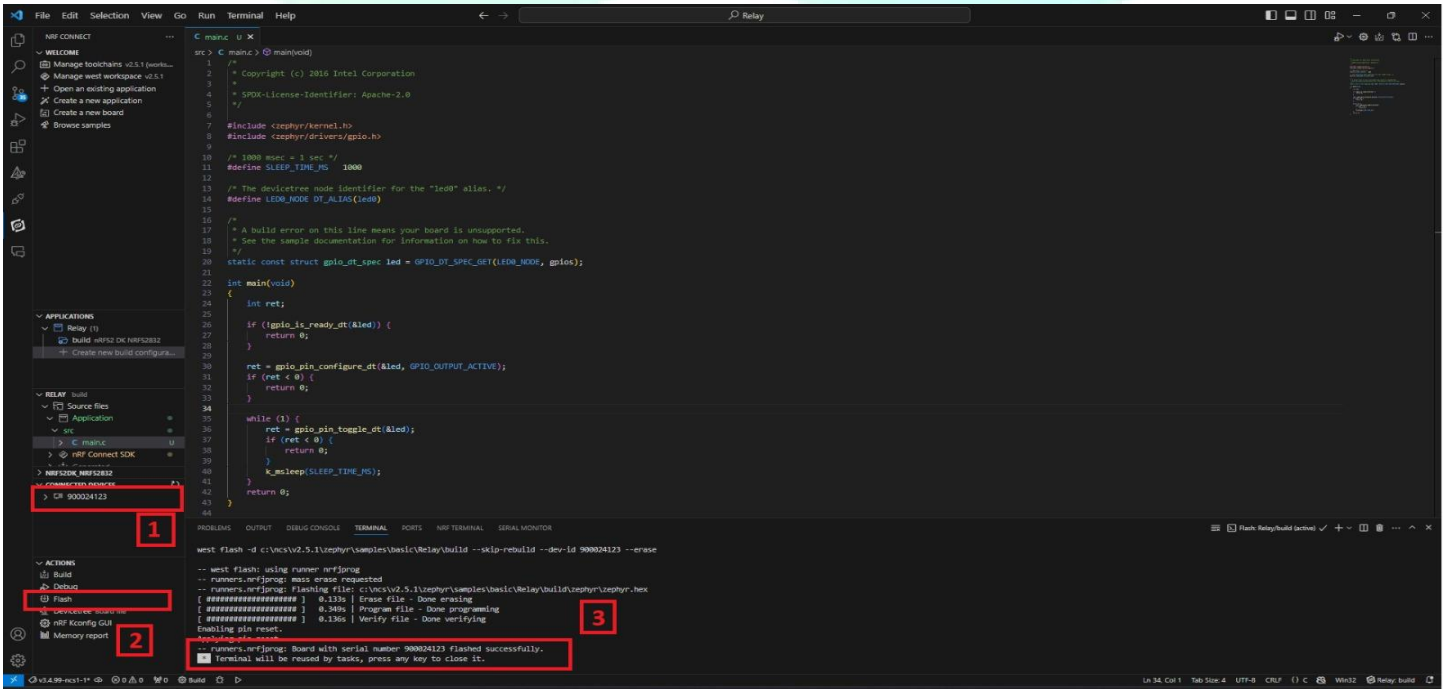
➢ Click on create new **build configuration [1]** Here you can change the board version, if you are using nRF52832, then select **nrf52dk_nrf52832 [2] or** you can change from there for another version like nRF52833 etc.



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

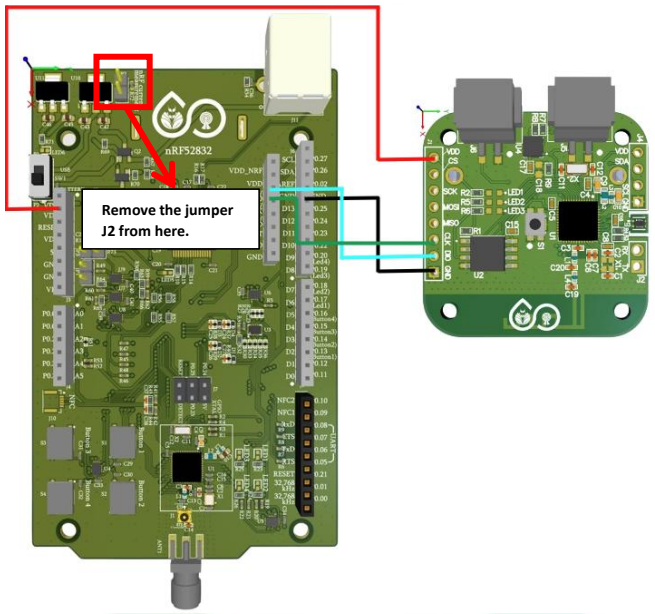


- Run the **build configuration** again and check the connected device **[1].**
- Then **flash [2]** the code in nRF dev kit.



❖ PIN CONFIGURATION & OUTPUT:-

- For Node programing remove the jumper **J2** from the development board.
- Now flash the code with the help of nRF52832 development board as shown below in the figure.



Board Pins -> NODE Pins

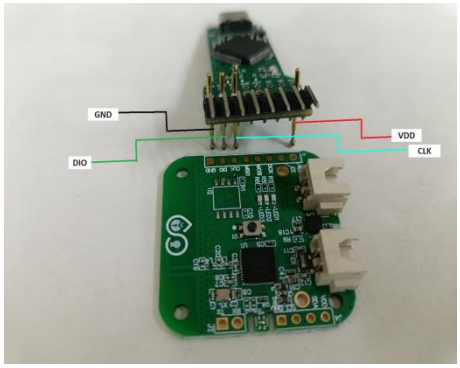
VDD (3.3V) -> VDD

GND -> GND

CLK -> CLK

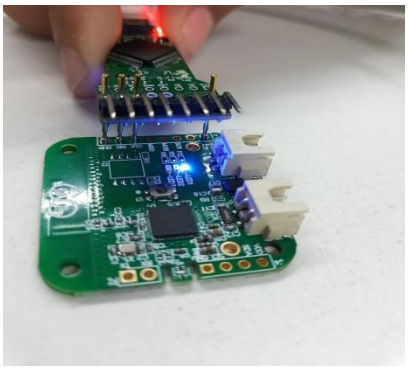
DIO -> DIO

- There is another way of flashing the code with the help of Node Programmer as shown in the picture below.



- NODE without connection.

- NODE with connection.



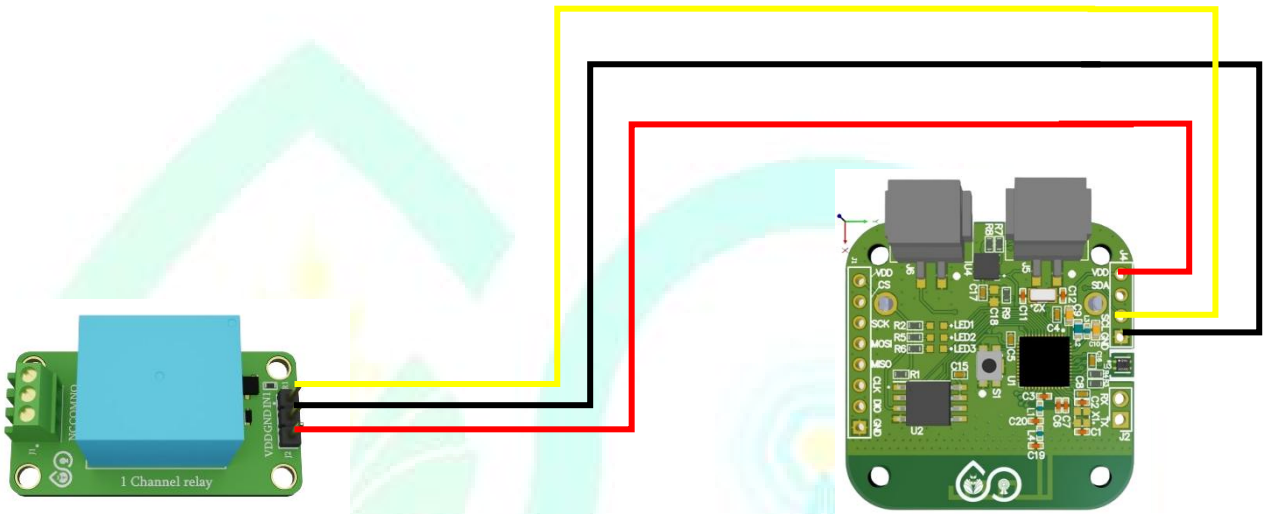
- NODE after program.

Relay Pins -> NODE Pins

VDD -> VDD(3.3V)

GND -> GND

IN1 -> SCL



You will hear the sound of **click** on the interval of 1 sec (because we used delay of 1sec) that's mean relay is working and when you will connect any load with relay then you will able to control the load.