AWaDH
Agriculture and Water
Technology Development Hub

EXPERIMENT -14

INTERFACING TOF(VL53L0X) SENSOR WITH DEVELOPMENT BOARD

What will you learn from this module:

Interfacing Time of flight (VL53L0X) SENSOR with Development Board & get the distance data on terminal.

Requirements:

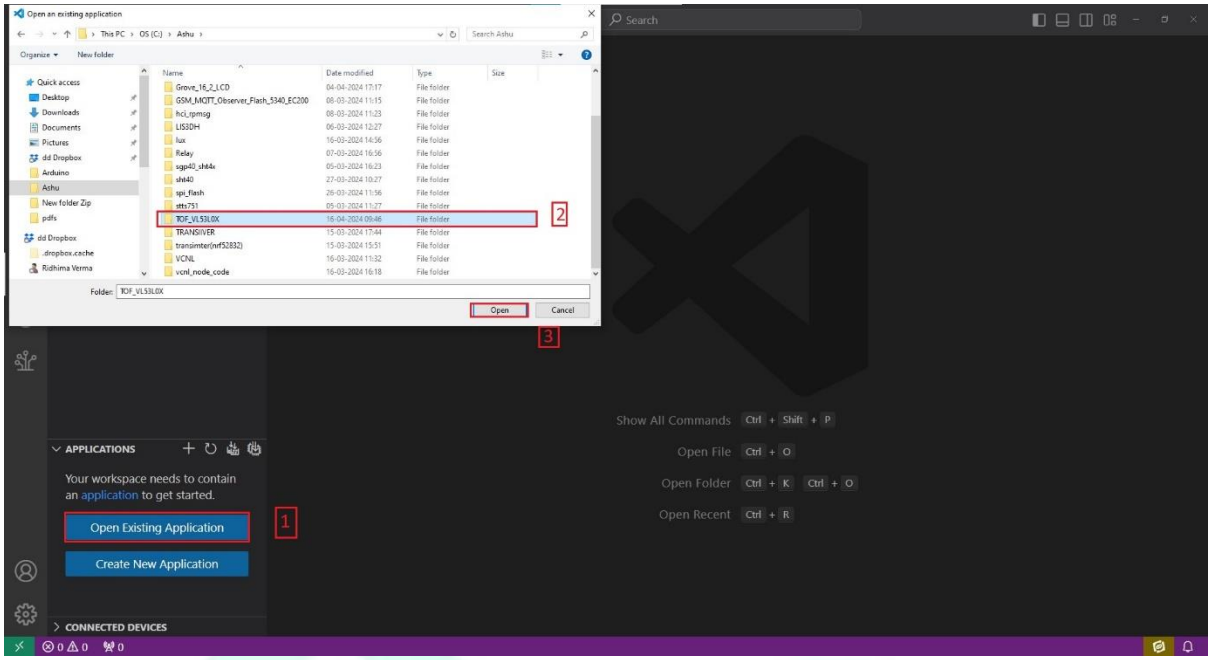
- nRF connect desktop software.
- nRF Command line tools.
- Visual studio code.
- USB cable.
- nRF52832 Development Board.
- VL53L0X SENSOR

Prerequisites:

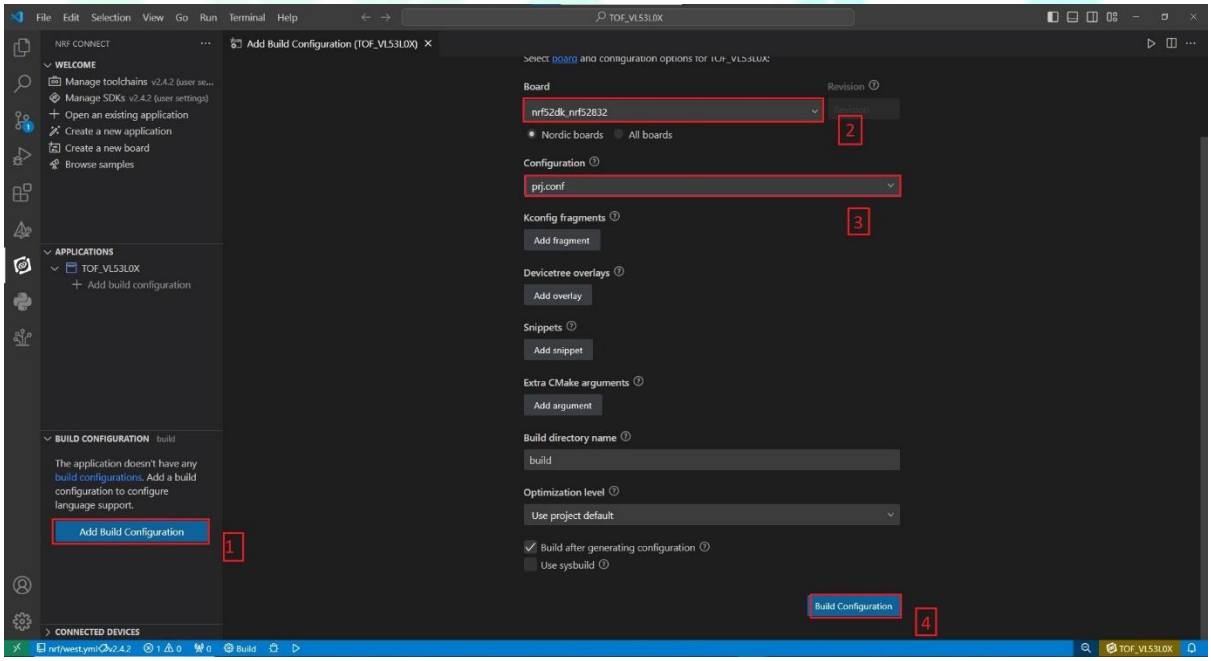
- Basic knowledge of C/C++
- Basic knowledge of communication protocol.
- Basic project setup.

Setup and Configuration:

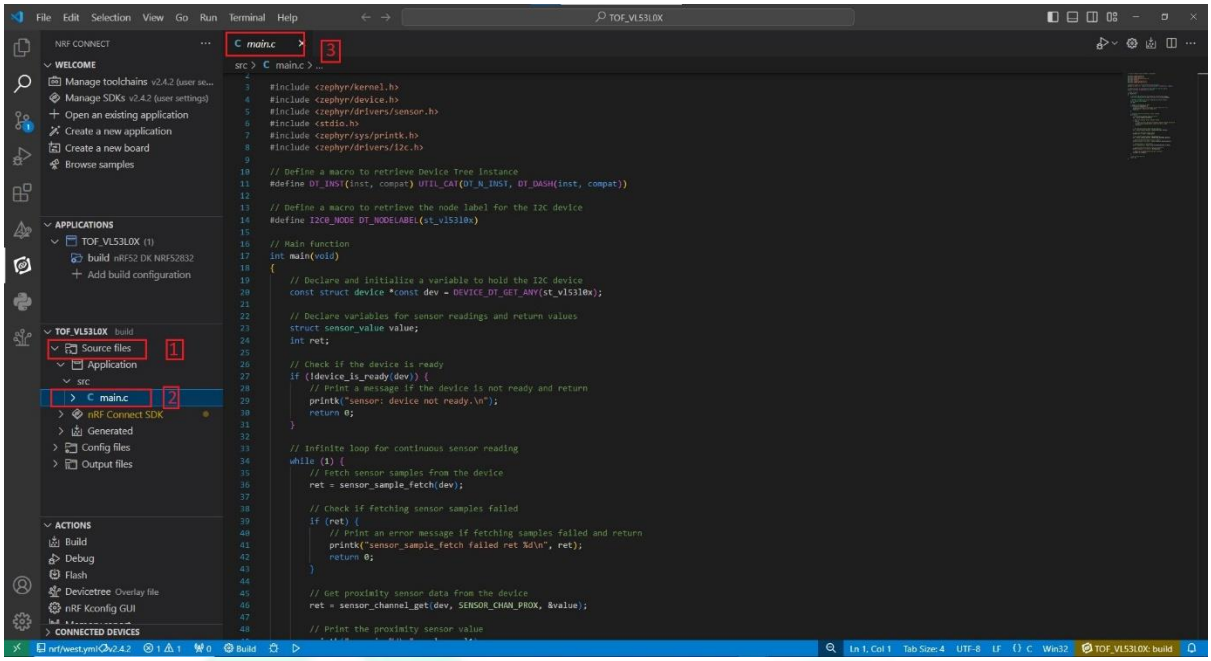
- Open VS Code and click on **Open Existing Application [1]** > click on **TOF_VL53L0X [2]** > **Open [3]** as shown in the picture below.



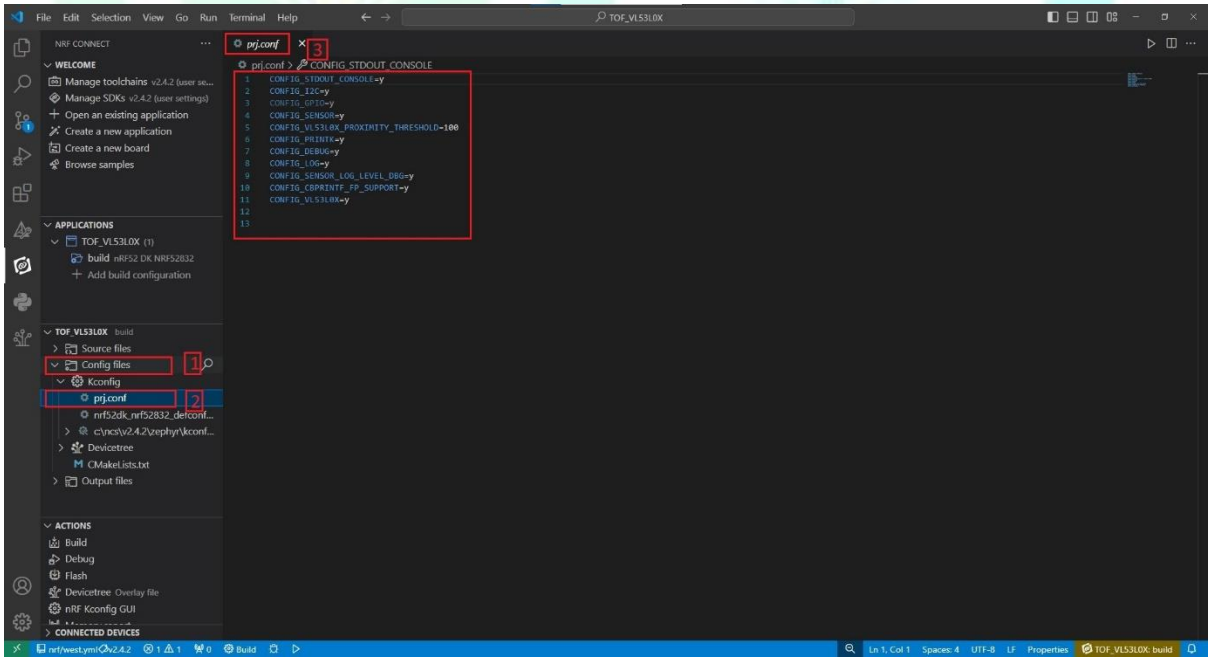
- Click on **Create new build configuration [1]**. Here you can change the board version, if you are using nRF52832, then select **nrf52dk_nrf52832 [2]** or you can change from dropdown menu for another version like nRF52833 etc.
- Click on the Configuration and select **prj.conf [3]** from dropdown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



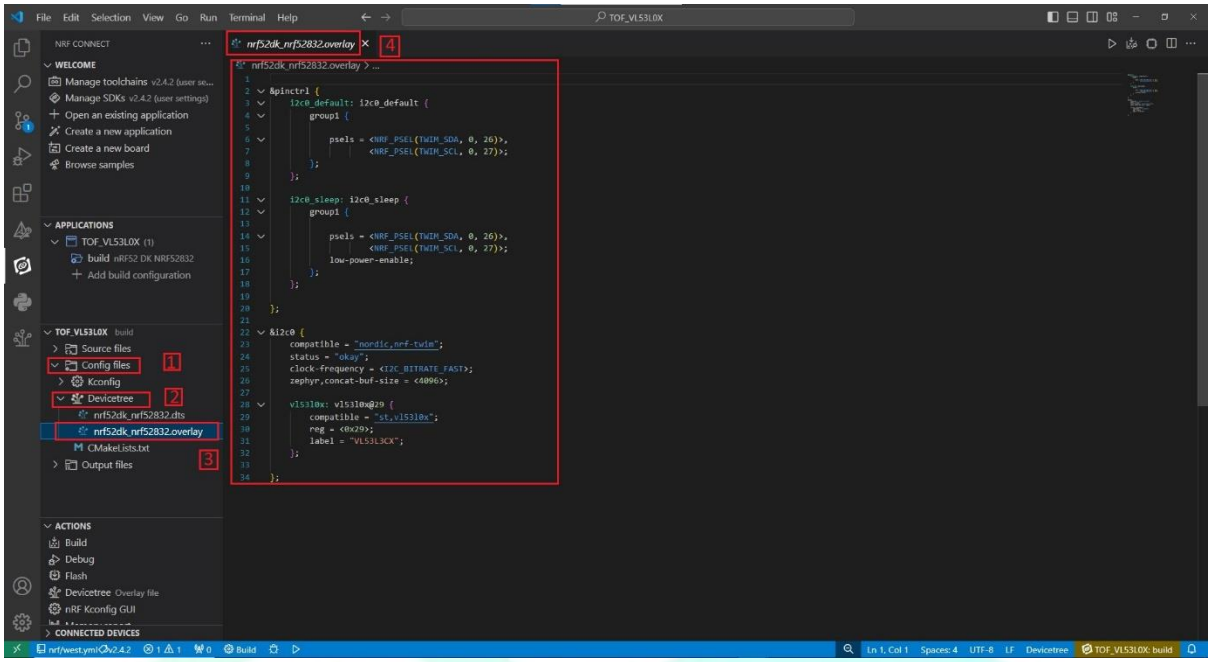
- Go to source file, click **source file [1]** > click on **Application** > click on **src** > click on **main.c [2]**.
- By clicking on **main.c** file and you will see the code on your screen **[3]**.



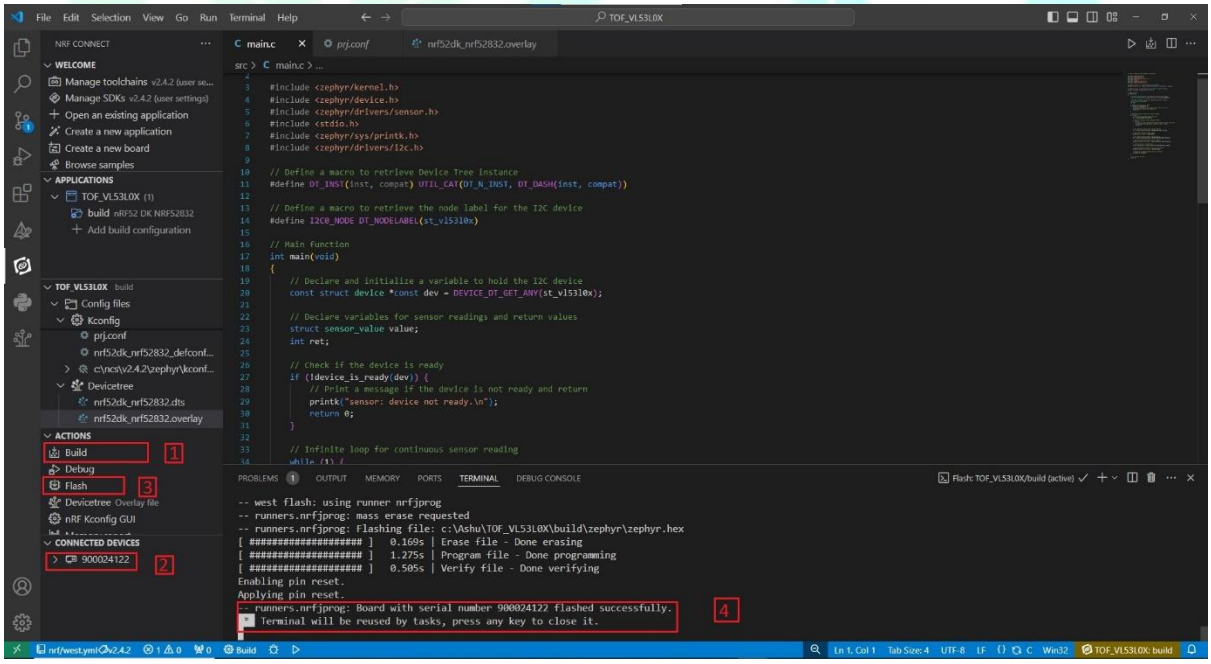
- To configure the prj configuration, click on **Config files [1]** > click on **Kconfig** > click on **prj.cong [2]**.
- The prj configuration will appear on your screen **[3]** as shown in the picture below.



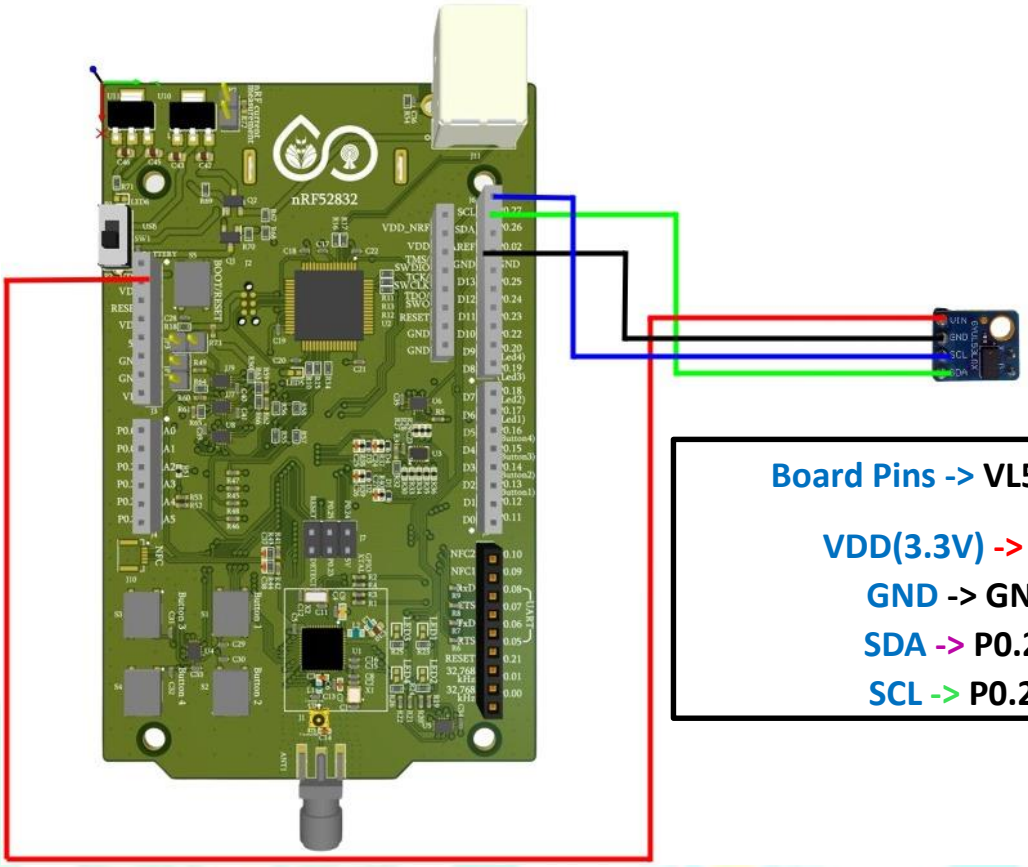
- To configure the i2c protocol, you have to enable it in the **.overlay file**.
- Click on the **Config files [1]** > click on **Kconfig** > click on **Devicetree [2]** > click on **nrf52dk_nrf52832.overlay [3]**.
- The .overlay file will appear on your screen and add the given code to the .overlay file as shown in the picture given below **[4]**.



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



❖ PIN CONFIGURATION



Board Pins -> VL53L0X

VDD(3.3V) -> VDD
GND -> GND
SDA -> P0.26
SCL -> P0.27

❖ OUTPUT

```
PROBLEMS 1  OUTPUT  MEMORY  PORTS  TERMINAL  DEBUG CONSOLE

prox is 1
distance is 0.011m
distance is 1.100cm
prox is 1
distance is 0.014m
distance is 1.400cm
prox is 1
distance is 0.013m
distance is 1.300cm
prox is 1
distance is 0.013m
distance is 1.300cm
prox is 1
distance is 0.013m
distance is 1.300cm
```