Project_2.0_ReadButton

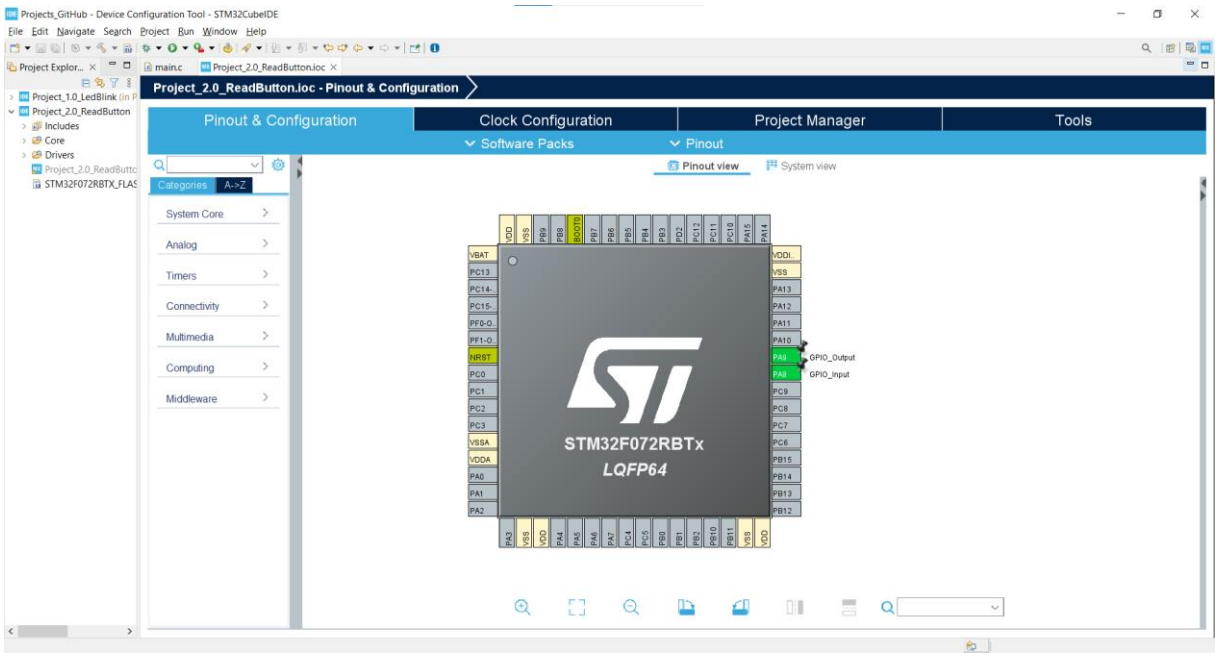
In our second project, we will control the led with a button. We will configure two pins, a GPIO_Output for output and GPIO_Input for input. We will connect a button to the input and write a code that turns on the led when we press the button.

STEP 1 : Open STM32CubeIDE and Create New Project.

STEP 2 : Select Target microcontroller and double Click. My MCU is STM32F072RBT6.

STEP3 : Enter the project name and finish .

STEP 4 : Click the pin you want to set as output/input and select GPIO_Output/ GPIO_Input. For example, in this project, I choose the A9 pin for output and A8 pin for input.



STEP 5 : Set the RCC External Clock Source and then CTRL + S to generate the project code. And we open our main.c file in the project files.

STEP 6 : We will use HAL libraries while writing our project. Two functions will help us to make LED Blink:

1- **HAL_GPIO_WritePin() :** This function helps us to Active and Passive the GPIO pin we entered as a parameter. In short, we will turn the led on and off with this function.

2- **HAL_GPIO_ReadPin() :** This function allows us to read the GPIO pin. It returns the status of the pin that we entered as a parameter. That is, we will control the status of the button with this function.

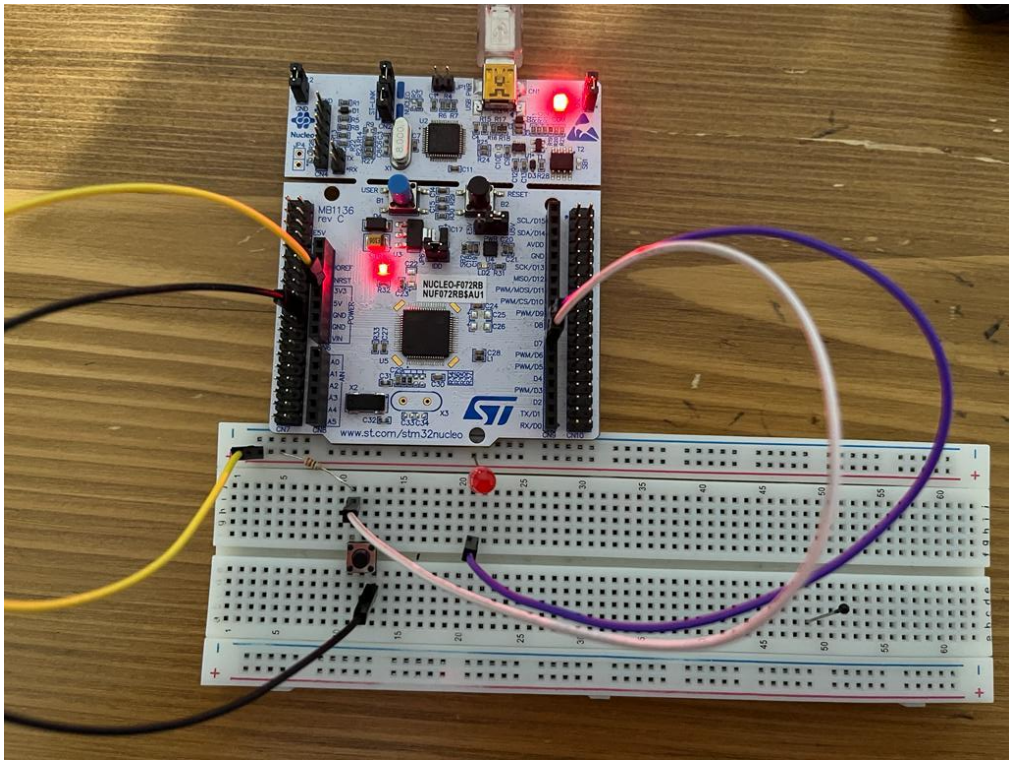
```
  /* Infinite loop */
  /* USER CODE BEGIN WHILE */
    while (1) {
    /* USER CODE END WHILE */

    /* USER CODE BEGIN 3 */
        if (HAL_GPIO_ReadPin(GPIOA, GPIO_PIN_8)) { //if checks the status of the button

            HAL_GPIO_WritePin(GPIOA, GPIO_PIN_9, GPIO_PIN_SET); // If the button is pressed,
                                                                // enter if and the led LED on.
        } else {
            HAL_GPIO_WritePin(GPIOA, GPIO_PIN_9, GPIO_PIN_RESET); // If the button is not pressed,
                                                                  // enter else and the LED off.
        }
    }
  /* USER CODE END 3 */
}
```

STEP 7 : We press RUN to compile the code and upload it to the board.

STEP 8 : Now it's time to connect the led to the board.



That’s it.

As long as we press the button, the led will turn on, when we release the button, it will turn off.