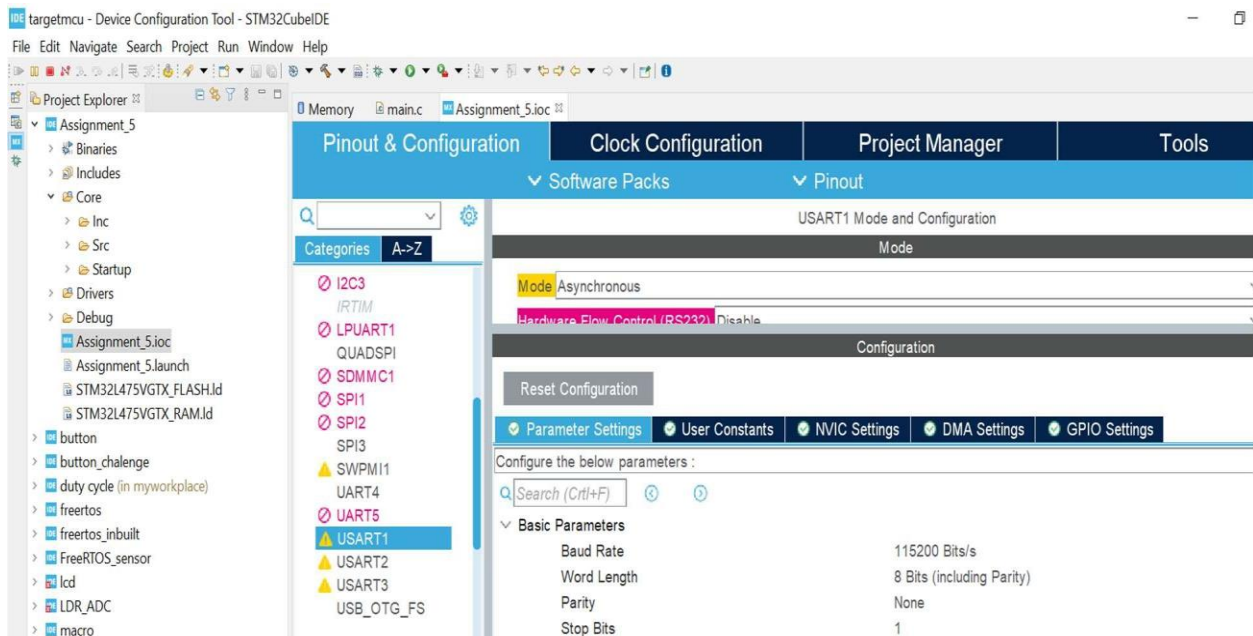
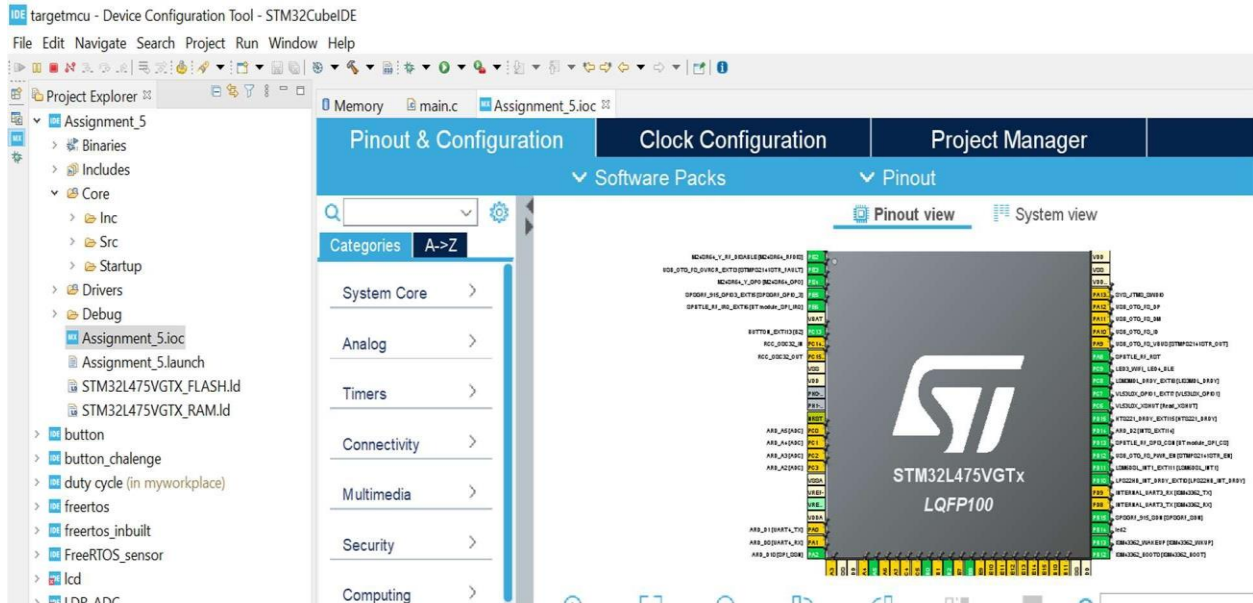


MCU Assignment-5

Write a program to user inputs from UART1.

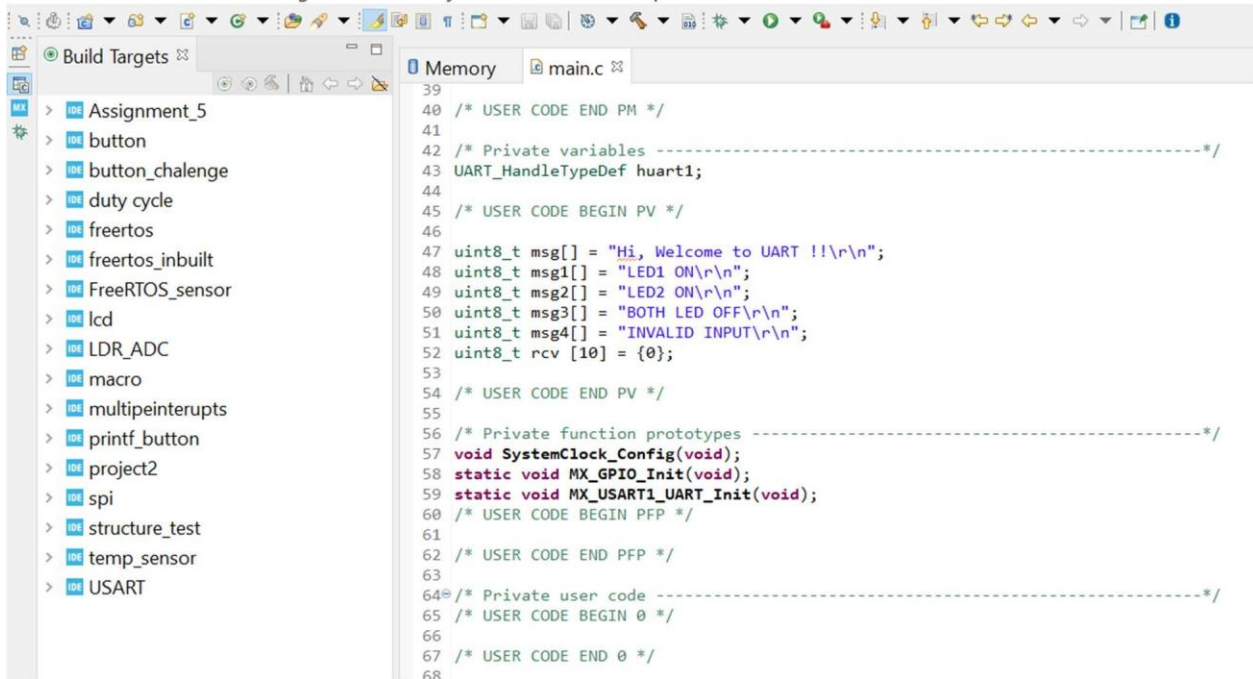
Configuration:



CODE:

IDE targetmcu - Assignment_5/Core/Src/main.c - STM32CubeIDE

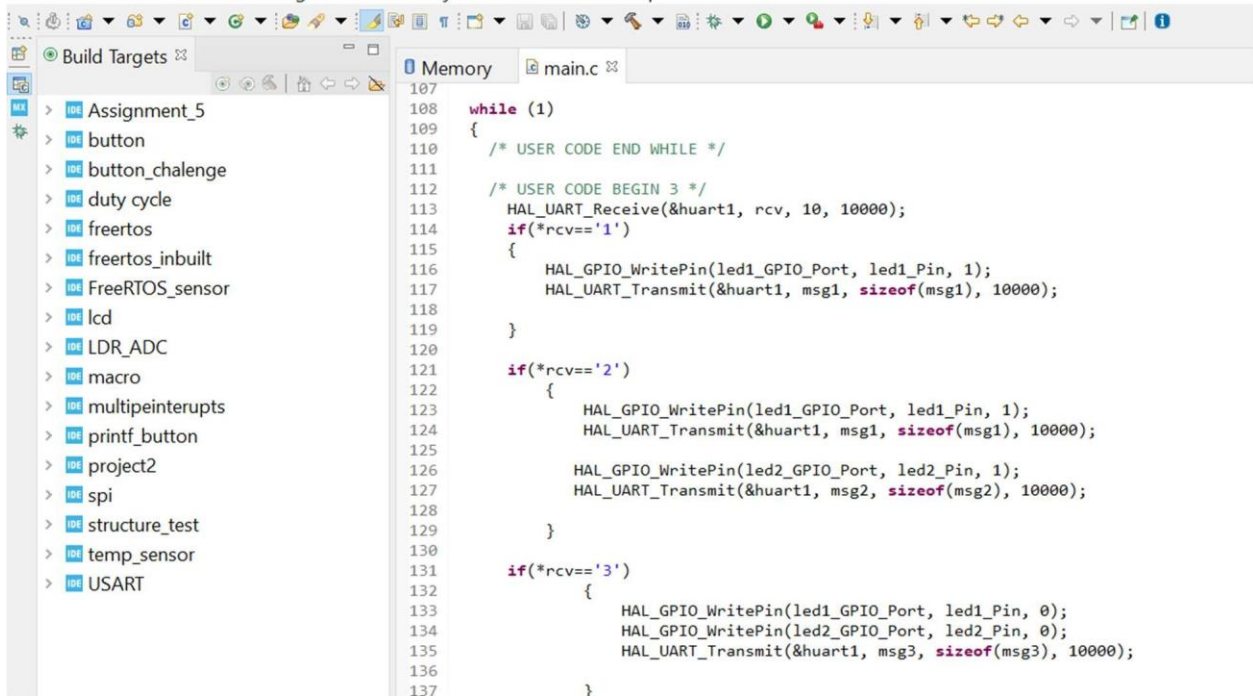
File Edit Source Refactor Navigate Search Project Run Window Help



```
39
40 /* USER CODE END PM */
41
42 /* Private variables -----*/
43 UART_HandleTypeDef huart1;
44
45 /* USER CODE BEGIN PV */
46
47 uint8_t msg[] = "Hi, Welcome to UART !!\r\n";
48 uint8_t msg1[] = "LED1 ON\r\n";
49 uint8_t msg2[] = "LED2 ON\r\n";
50 uint8_t msg3[] = "BOTH LED OFF\r\n";
51 uint8_t msg4[] = "INVALID INPUT\r\n";
52 uint8_t rcv [10] = {0};
53
54 /* USER CODE END PV */
55
56 /* Private function prototypes -----*/
57 void SystemClock_Config(void);
58 static void MX_GPIO_Init(void);
59 static void MX_USART1_UART_Init(void);
60 /* USER CODE BEGIN PFP */
61
62 /* USER CODE END PFP */
63
64 /* Private user code -----*/
65 /* USER CODE BEGIN 0 */
66
67 /* USER CODE END 0 */
68
```

IDE targetmcu - Assignment_5/Core/Src/main.c - STM32CubeIDE

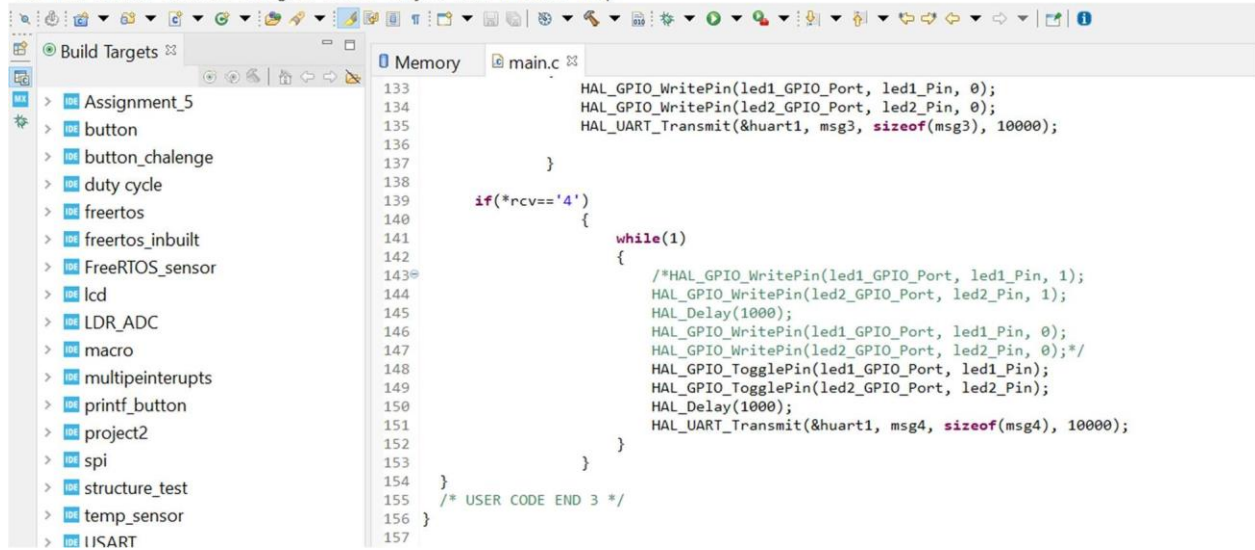
File Edit Source Refactor Navigate Search Project Run Window Help



```
107
108 while (1)
109 {
110     /* USER CODE END WHILE */
111
112     /* USER CODE BEGIN 3 */
113     HAL_UART_Receive(&huart1, rcv, 10, 10000);
114     if(*rcv=='1')
115     {
116         HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
117         HAL_UART_Transmit(&huart1, msg1, sizeof(msg1), 10000);
118     }
119
120
121     if(*rcv=='2')
122     {
123         HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
124         HAL_UART_Transmit(&huart1, msg1, sizeof(msg1), 10000);
125
126         HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 1);
127         HAL_UART_Transmit(&huart1, msg2, sizeof(msg2), 10000);
128     }
129
130
131     if(*rcv=='3')
132     {
133         HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
134         HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);
135         HAL_UART_Transmit(&huart1, msg3, sizeof(msg3), 10000);
136     }
137 }
```

IDE targetmcu - Assignment_5/Core/Src/main.c - STM32CubeIDE

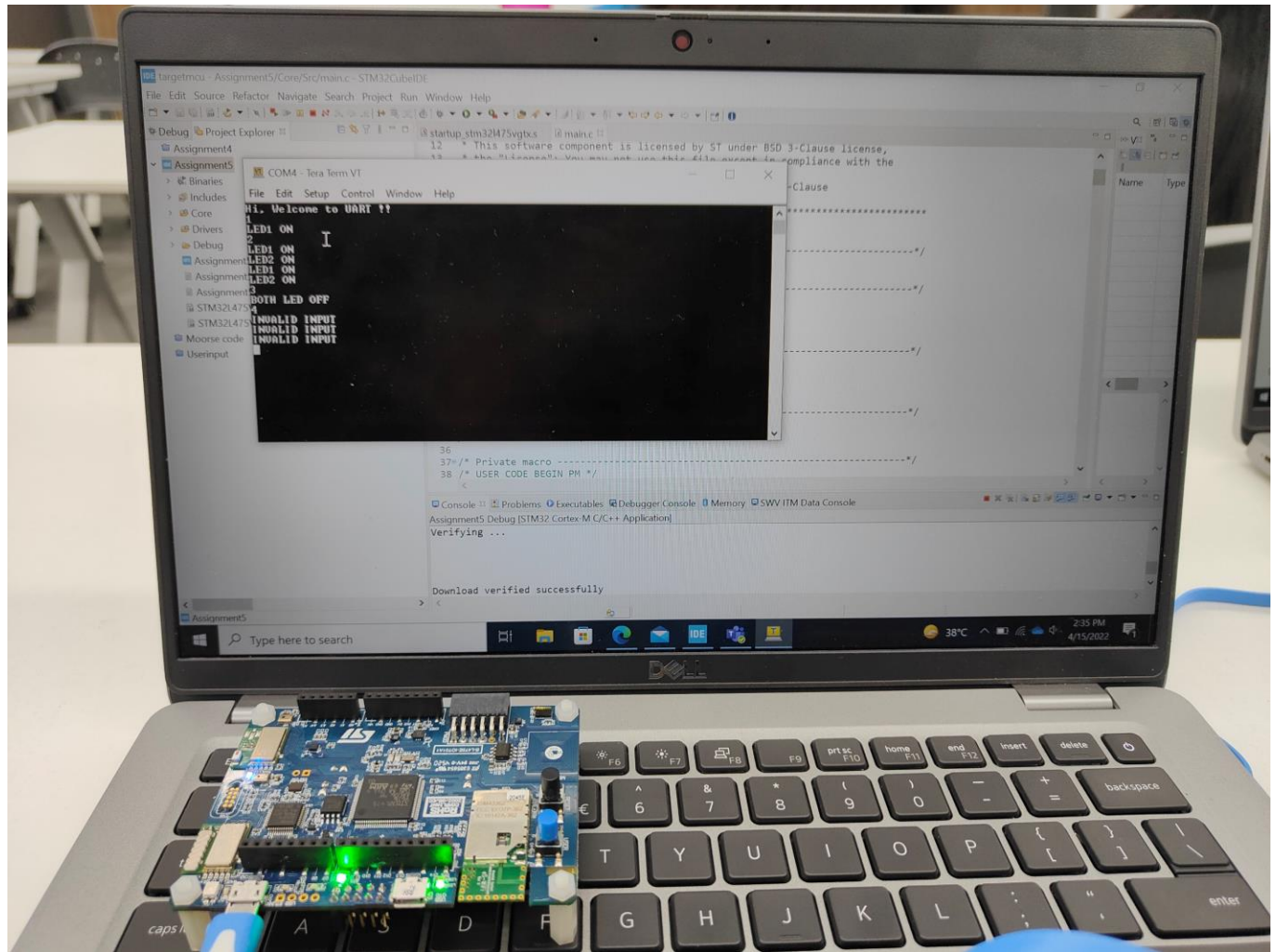
File Edit Source Refactor Navigate Search Project Run Window Help



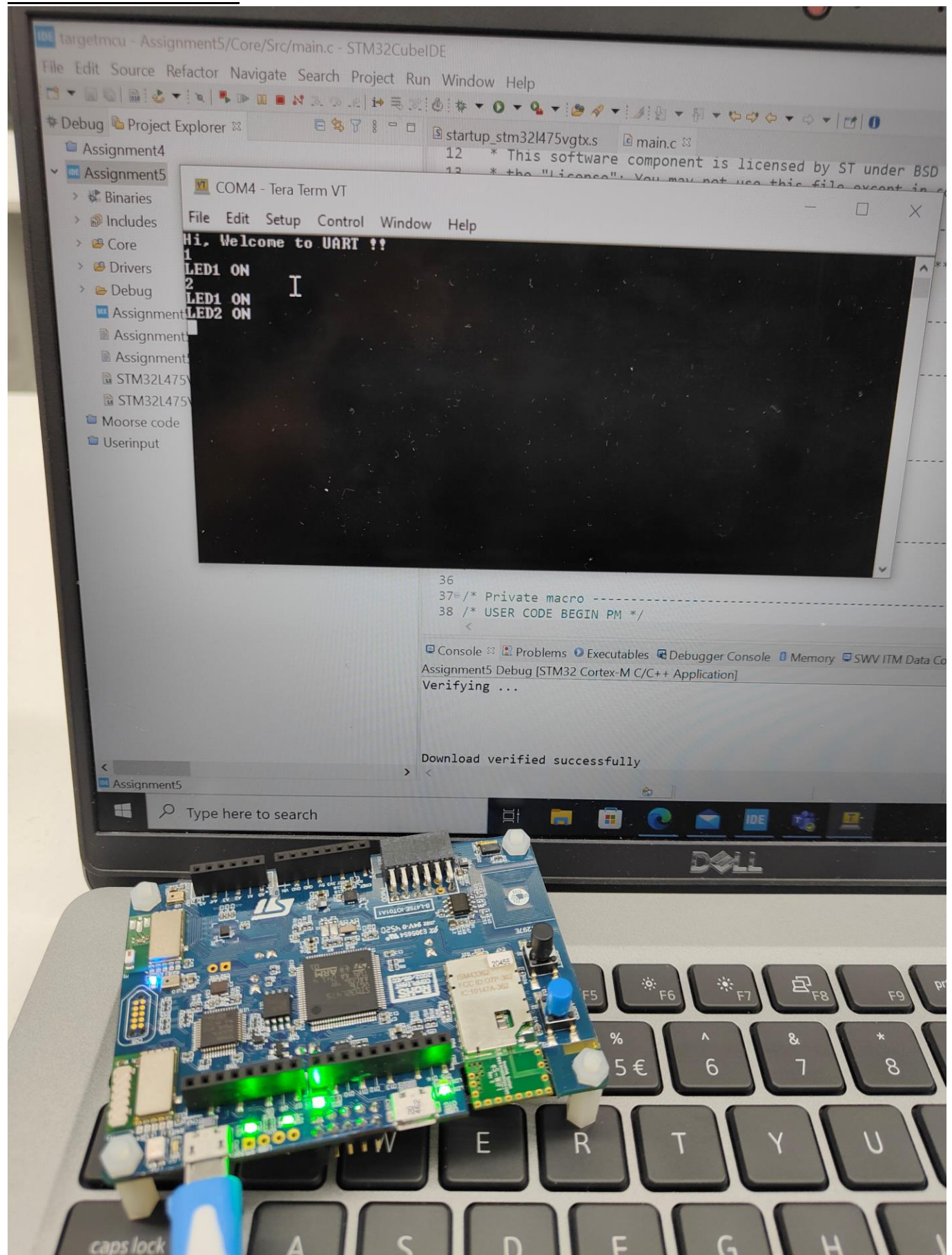
The screenshot displays the STM32CubeIDE interface. On the left, a project tree shows a folder named 'Assignment_5' containing various sub-files like 'button', 'button_chalenge', 'duty cycle', 'freertos', 'freertos_inbuilt', 'FreeRTOS_sensor', 'lcd', 'LDR_ADC', 'macro', 'multipeinterrupts', 'printf_button', 'project2', 'spi', 'structure_test', 'temp_sensor', and 'USART'. The main editor window shows the 'main.c' file with the following code:

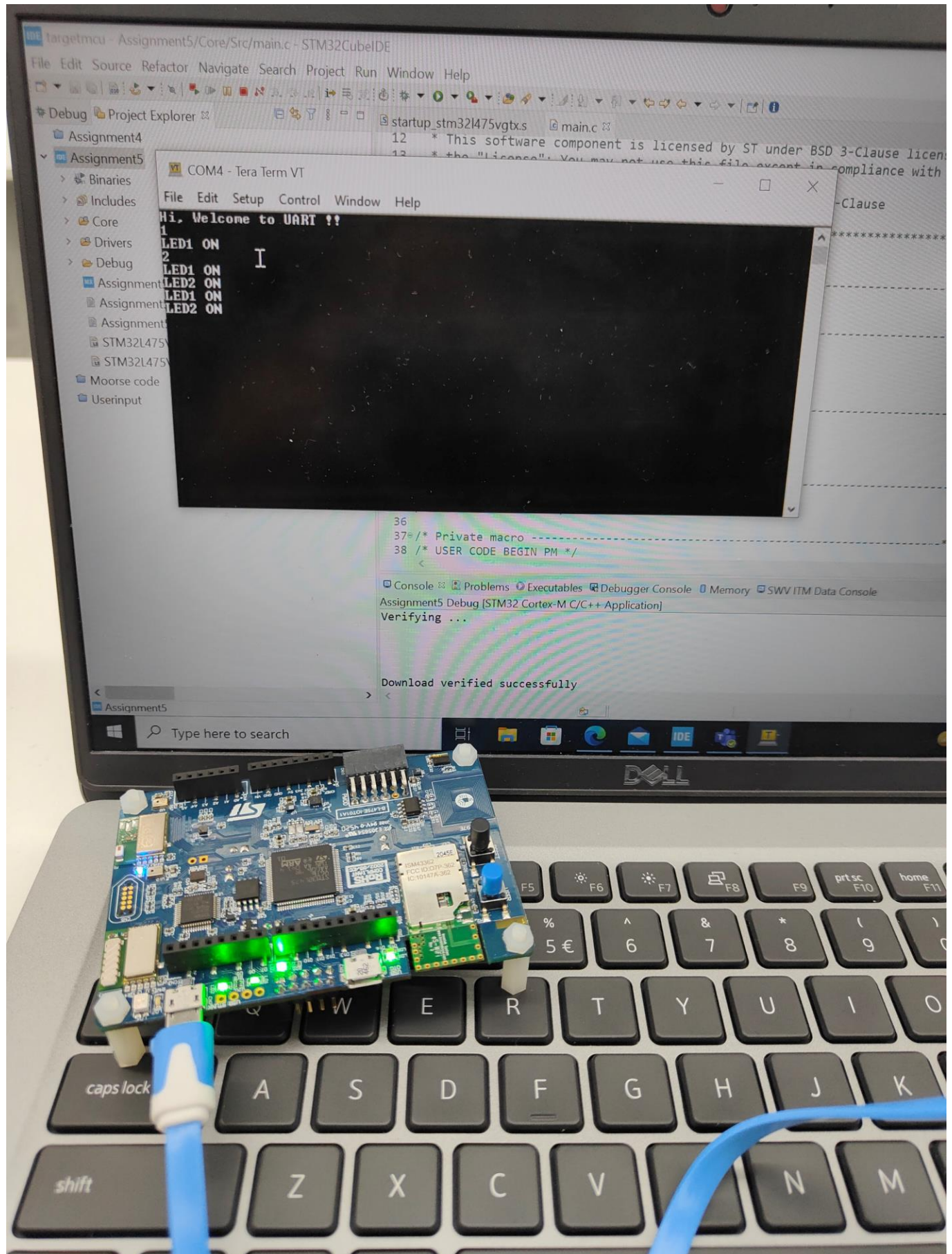
```
133 HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
134 HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);
135 HAL_UART_Transmit(&huart1, msg3, sizeof(msg3), 10000);
136
137 }
138
139 if(*rcv=='4')
140 {
141     while(1)
142     {
143         /*HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
144         HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 1);
145         HAL_Delay(1000);
146         HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
147         HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);*/
148         HAL_GPIO_TogglePin(led1_GPIO_Port, led1_Pin);
149         HAL_GPIO_TogglePin(led2_GPIO_Port, led2_Pin);
150         HAL_Delay(1000);
151         HAL_UART_Transmit(&huart1, msg4, sizeof(msg4), 10000);
152     }
153 }
154 }
155 /* USER CODE END 3 */
156 }
157
```

The image shows a laptop screen with the STM32CubeIDE software open. The main editor window displays the 'main.c' file, which contains a comment '1. Welcome to UART !!' and a code snippet for LED control. The 'Debug' console at the bottom shows the message 'Verifying ...' and 'Download verified successfully'. A physical STM32 development board is connected to the laptop via a USB cable, with its green LEDs illuminated.



HARDWARE OUTPUT:





targetmcu - Assignment5/Core/Src/main.c - STM32CubeIDE

File Edit Source Refactor Navigate Search Project Run Window Help

Debug Project Explorer

Assignment4

Assignment5

> Binaries

> Includes

> Core

> Drivers

> Debug

Assignment5

Assignment5

Assignment5

STM32L475

STM32L475

Moose code

Userinput

COM4 - Tera Term VT

File Edit Setup Control Window Help

Hi, Welcome to UART !!

1 LED1 ON

2 LED1 ON

LED2 ON

LED1 ON

LED2 ON

3 BOTH LED OFF

startup_stm32l475vgtx.s

main.c

12 * This software component is licensed by ST under
13 * the "License". You may not use this file except

36
37 /* Private macro -----
38 /* USER CODE BEGIN PM */

Console Problems Executables Debugger Console Memory SWV

Assignment5 Debug [STM32 Cortex-M C/C++ Application]

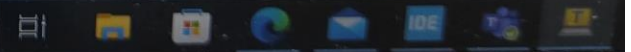
Verifying ...

Download verified successfully

Assignment5



Type here to search



DELL

Esc

F1

F2

F3

F4

F5

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F7

F8

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