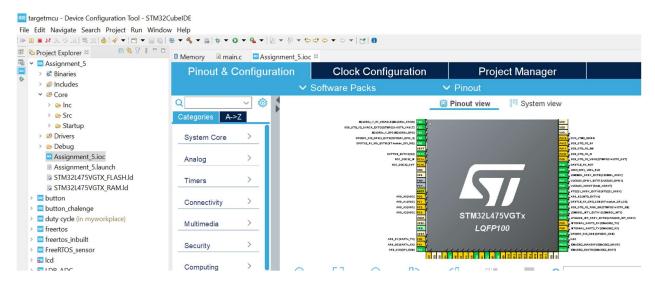
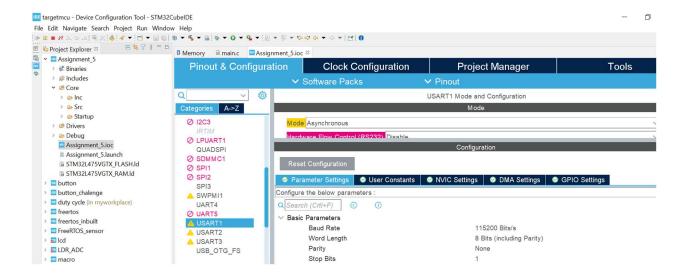
MCU Assignment-5

Write a program to user inputs from UART1.

Configuration:





CODE:

```
targetmcu - Assignment_5/Core/Src/main.c - STM32CubeIDE
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Assignment_5
                                       40 /* USER CODE END PM */

⇒ button

                                       41
                                       42 /* Private variables -----
   > <u>us</u> button_chalenge
                                       43 UART_HandleTypeDef huart1;
   > Let duty cycle
                                       45 /* USER CODE BEGIN PV */
   > IDE freertos
                                       47 uint8_t msg[] = "Hi, Welcome to UART !!\r\n";
   > m freertos_inbuilt
                                       48 uint8_t msg1[] = "LED1 ON\r\n";
49 uint8_t msg2[] = "LED2 ON\r\n";
   > FreeRTOS_sensor
                                       50 uint8_t msg3[] = "BOTH LED OFF\r\n";
51 uint8_t msg4[] = "INVALID INPUT\r\n";
   > IDE Icd
   > III LDR_ADC
                                       52 uint8_t rcv [10] = {0};
   > macro
                                       54 /* USER CODE END PV */
   > multipeinterupts
                                       56 /* Private function prototypes -
   > printf_button
                                       57 void SystemClock_Config(void);
   > project2
                                       58 static void MX GPIO Init(void):
                                       59 static void MX_USART1_UART_Init(void);
   > IDE spi
                                       60 /* USER CODE BEGIN PFP */
   > IDE structure_test
                                       62 /* USER CODE END PFP */
   > temp_sensor
   > DE USART
                                       64⊖/* Private user code ----
                                       65 /* USER CODE BEGIN 0 */
                                       66
                                       67 /* USER CODE END 0 */
```

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Assignment_5
                                                                                                                          108
                                                                                                                                            while (1)
🎋 > 🚾 button
                                                                                                                          110
                                                                                                                                                  /* USER CODE END WHILE */
          > <u>me</u> button_chalenge
                                                                                                                         111
                                                                                                                                                  /* USER CODE BEGIN 3 */
                                                                                                                          112
          > DE duty cycle
                                                                                                                                                       HAL_UART_Receive(&huart1, rcv, 10, 10000); if(*rcv=='1')
                                                                                                                          113
          > IDE freertos
                                                                                                                          114
                                                                                                                          115
                                                                                                                                                        {
          > m freertos_inbuilt
                                                                                                                          116
                                                                                                                                                                    HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
          > FreeRTOS_sensor
                                                                                                                          117
                                                                                                                                                                    HAL_UART_Transmit(&huart1, msg1, sizeof(msg1), 10000);
                                                                                                                          118
          > IDE Icd
                                                                                                                          119
                                                                                                                                                        }
          > DE LDR_ADC
                                                                                                                          120
                                                                                                                                                        if(*rcv=='2')
                                                                                                                          121
          > IDE macro
                                                                                                                          122
                                                                                                                                                                   {
          > multipeinterupts
                                                                                                                          123
                                                                                                                                                                               HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
                                                                                                                          124
                                                                                                                                                                               HAL_UART_Transmit(&huart1, msg1, sizeof(msg1), 10000);
          > printf_button
                                                                                                                          125
          > project2
                                                                                                                                                                            HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 1);
                                                                                                                          126
                                                                                                                                                                            HAL_UART_Transmit(&huart1, msg2, sizeof(msg2), 10000);
                                                                                                                          127
          > IDE spi
                                                                                                                          128
          > ms structure_test
                                                                                                                          129
                                                                                                                                                                    }
                                                                                                                          130
          > temp_sensor
                                                                                                                          131
                                                                                                                                                        if(*rcv=='3')
           > DE USART
                                                                                                                          132
                                                                                                                                                                                           HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);
HAL_UART_Transmit(&huart1, msg3, sizeof(msg3), 10000);
                                                                                                                         133
                                                                                                                          134
                                                                                                                         135
                                                                                                                          136
                                                                                                                          137
```

```
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Ec
                                                                                                                       133
                                                                                                                                                                                        HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
Assignment_5
                                                                                                                        134
                                                                                                                                                                                       HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);
HAL_UART_Transmit(&huart1, msg3, sizeof(msg3), 10000);
 ♦ button
                                                                                                                        135
         > 🚾 button_chalenge
                                                                                                                        137
                                                                                                                                                                           }
         > DE duty cycle
                                                                                                                        138
                                                                                                                        139
                                                                                                                                                     if(*rcv=='4')
         > to freertos
                                                                                                                        140
         > is freertos_inbuilt
                                                                                                                        141
                                                                                                                                                                                                     while(1)
                                                                                                                        142
         > FreeRTOS_sensor
                                                                                                                                                                                                              /*HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 1);
HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 1);
                                                                                                                        1439
         > Int Icd
                                                                                                                        144
                                                                                                                        145
                                                                                                                                                                                                               HAL_Delay(1000);
         > DE LDR_ADC
                                                                                                                                                                                                              HAL_GPIO_WritePin(led1_GPIO_Port, led1_Pin, 0);
HAL_GPIO_WritePin(led2_GPIO_Port, led2_Pin, 0);*/
                                                                                                                        146
          > IDE macro
                                                                                                                        147
                                                                                                                        148
                                                                                                                                                                                                               HAL_GPIO_TogglePin(led1_GPIO_Port, led1_Pin);
          > multipeinterupts
                                                                                                                                                                                                              HAL_GPIO_TogglePin(led2_GPIO_Port, led2_Pin);
HAL_Delay(1000);
                                                                                                                        149
          > printf_button
                                                                                                                        150
                                                                                                                        151
                                                                                                                                                                                                               HAL_UART_Transmit(&huart1, msg4, sizeof(msg4), 10000);
          > project2
                                                                                                                        152
          > DE spi
                                                                                                                        154
         > <a> structure_test</a>
                                                                                                                        155
                                                                                                                                          /* USER CODE END 3 */
         > temp_sensor
 > IDE LISART
```

OUTPUT:

```
File Edit Setup Control Window Help

Hi, Welcome to UART !!

Hi, Welcome to UART !!

LEDI ON

2

LEDI ON

3

BOTH LED OFF

4

INVALID INPUT

INVALID INPUT
```

HARDWARE OUTPUT:



