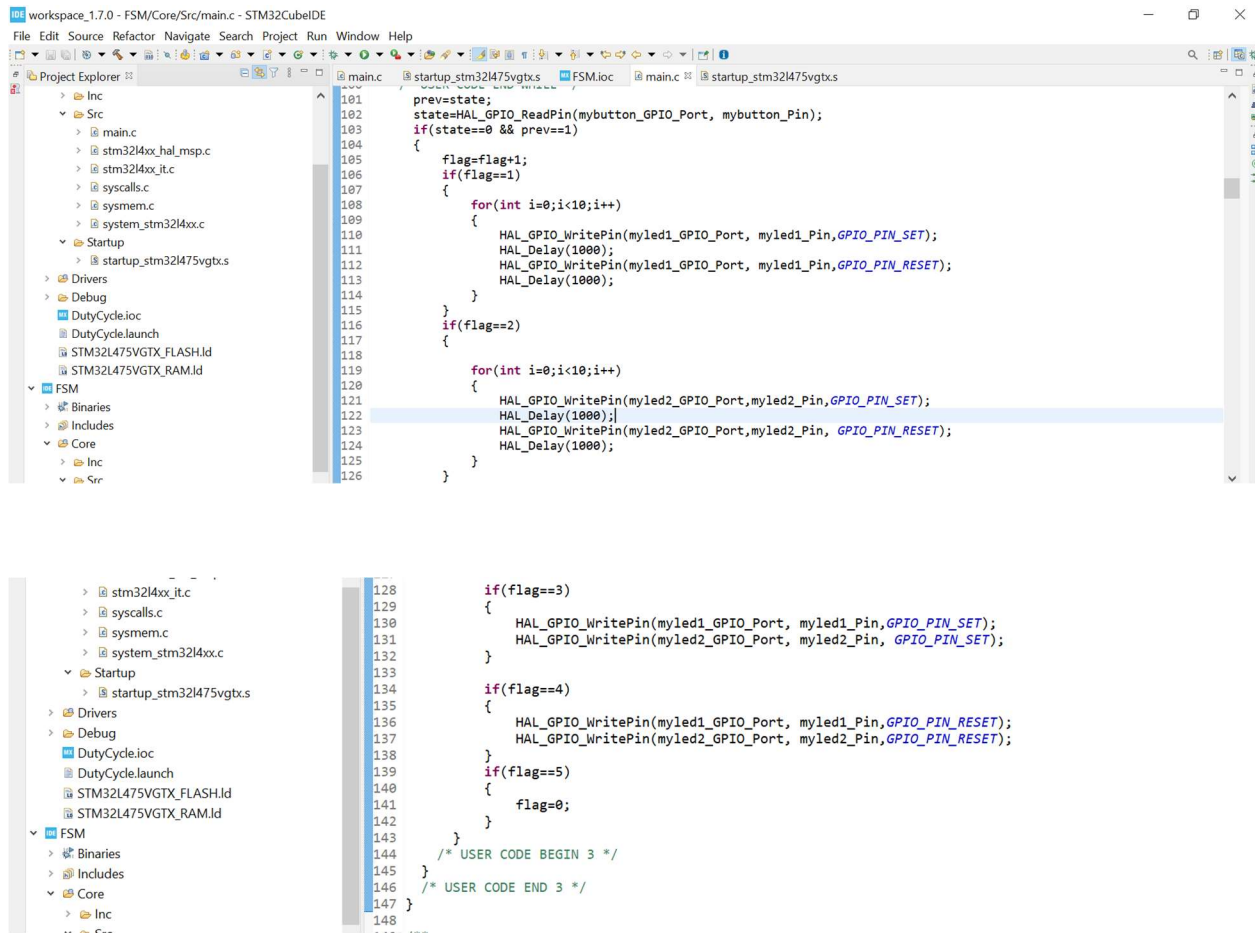


MCU Assignment-2

FSM using button and LED.

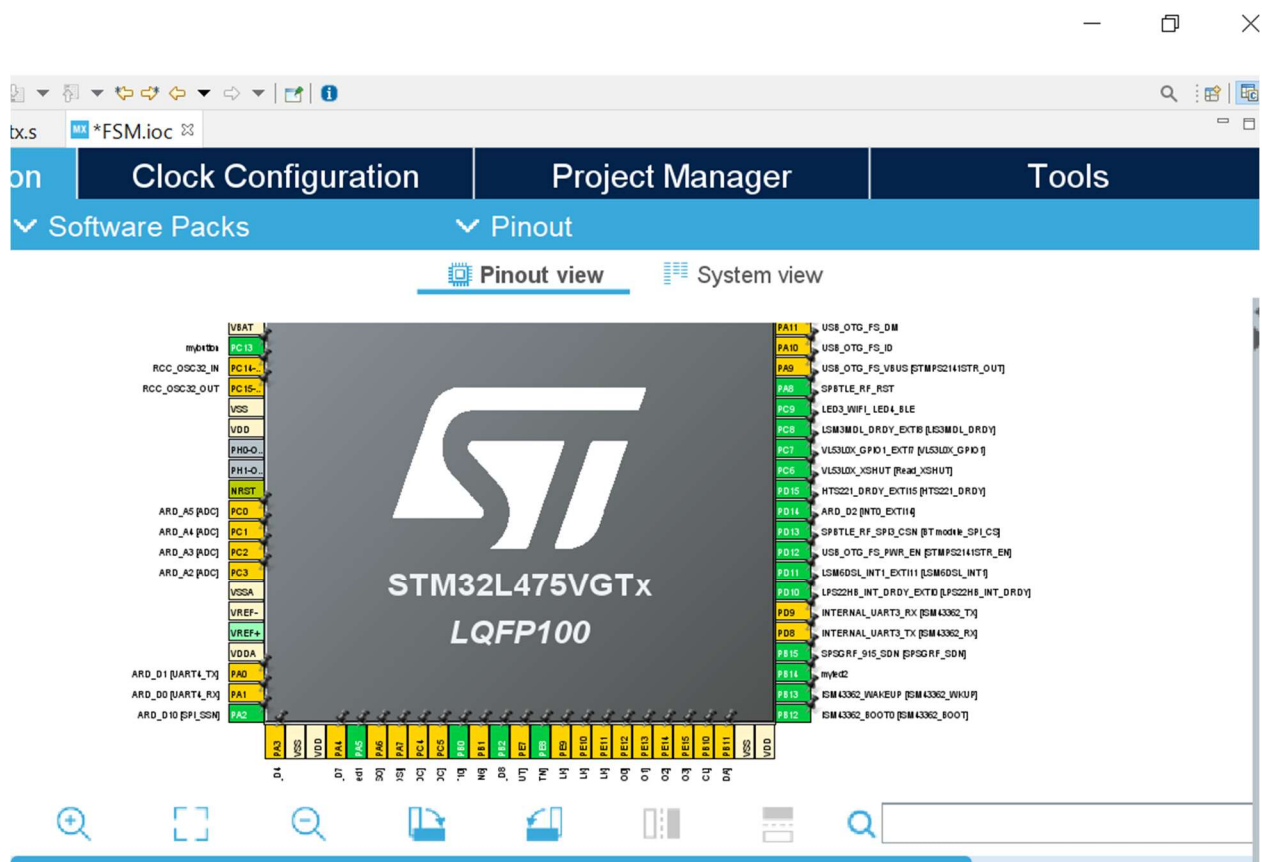
Code:



The screenshot displays the STM32CubeIDE environment. The Project Explorer on the left shows the project structure for 'workspace_1.7.0 - FSM/Core/Src/main.c - STM32CubeIDE'. The main.c file is open in the editor, showing the implementation of a Finite State Machine (FSM) using a button and two LEDs. The code is as follows:

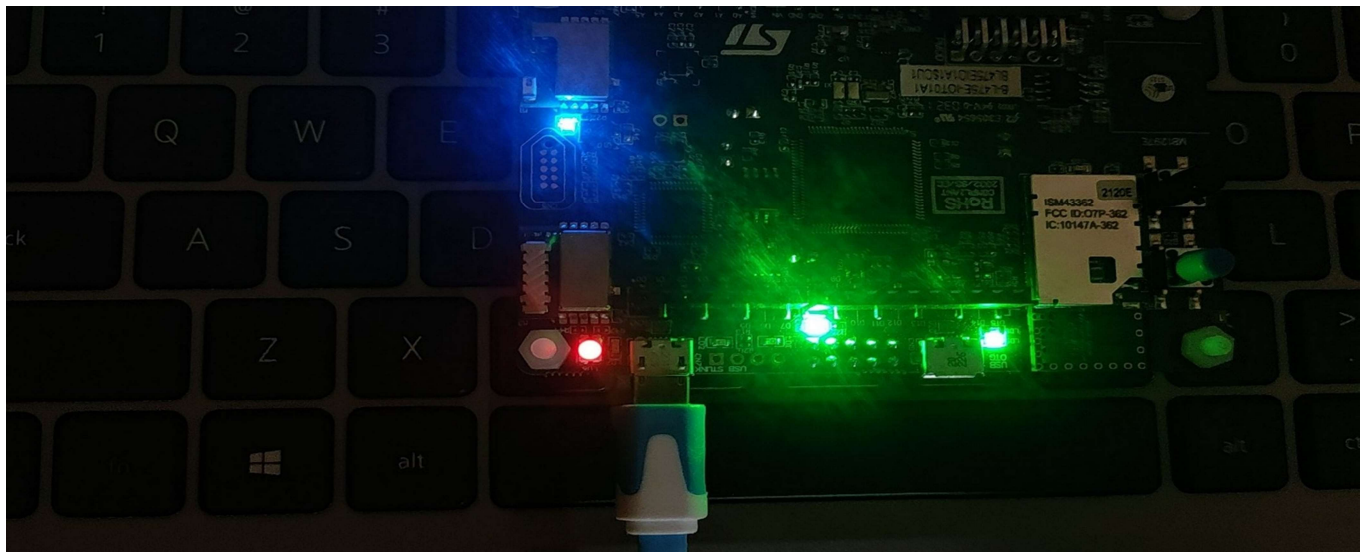
```
101 prev=state;
102 state=HAL_GPIO_ReadPin(mybutton_GPIO_Port, mybutton_Pin);
103 if(state==0 && prev==1)
104 {
105     flag=flag+1;
106     if(flag==1)
107     {
108         for(int i=0;i<10;i++)
109         {
110             HAL_GPIO_WritePin(myled1_GPIO_Port, myled1_Pin,GPIO_PIN_SET);
111             HAL_Delay(1000);
112             HAL_GPIO_WritePin(myled1_GPIO_Port, myled1_Pin,GPIO_PIN_RESET);
113             HAL_Delay(1000);
114         }
115     }
116     if(flag==2)
117     {
118         for(int i=0;i<10;i++)
119         {
120             HAL_GPIO_WritePin(myled2_GPIO_Port,myled2_Pin,GPIO_PIN_SET);
121             HAL_Delay(1000);
122             HAL_GPIO_WritePin(myled2_GPIO_Port,myled2_Pin, GPIO_PIN_RESET);
123             HAL_Delay(1000);
124         }
125     }
126 }
```

The code implements a state machine where the state is determined by the button pin. When the button is pressed (state == 0 and prev == 1), the flag is incremented. If the flag is 1, the first LED (myled1_Pin) is turned on for 1000ms and then off for 1000ms, repeating this for 10 iterations. If the flag is 2, the second LED (myled2_Pin) is turned on for 1000ms and then off for 1000ms, repeating this for 10 iterations. The flag is reset to 0 when it reaches 5.

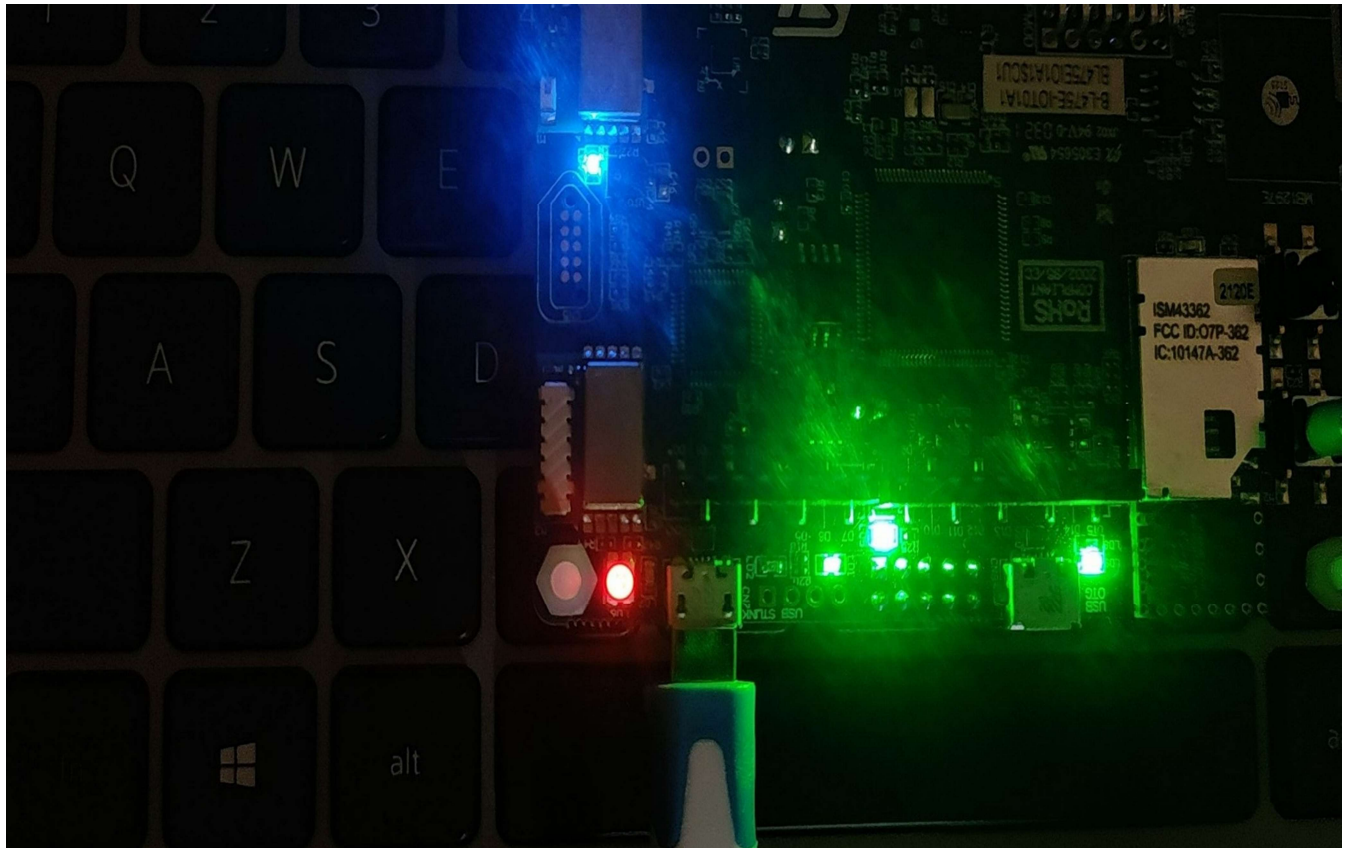


OUTPUT:

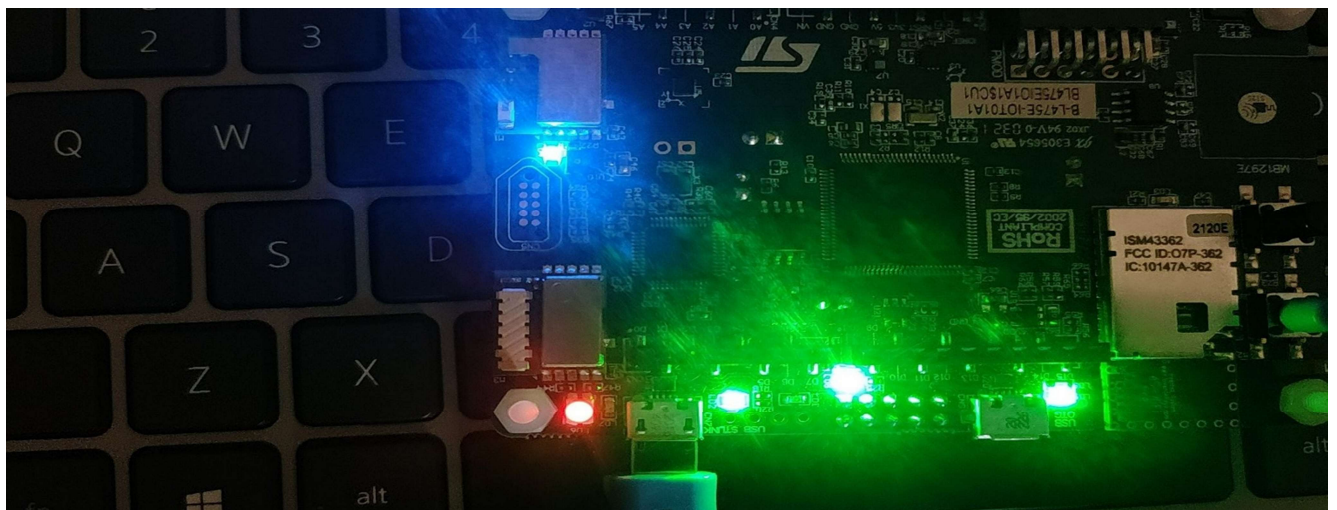
State1 : Both led off



State 2 : Led1 blinking



State3: led2 blinking



State4: Both led on

