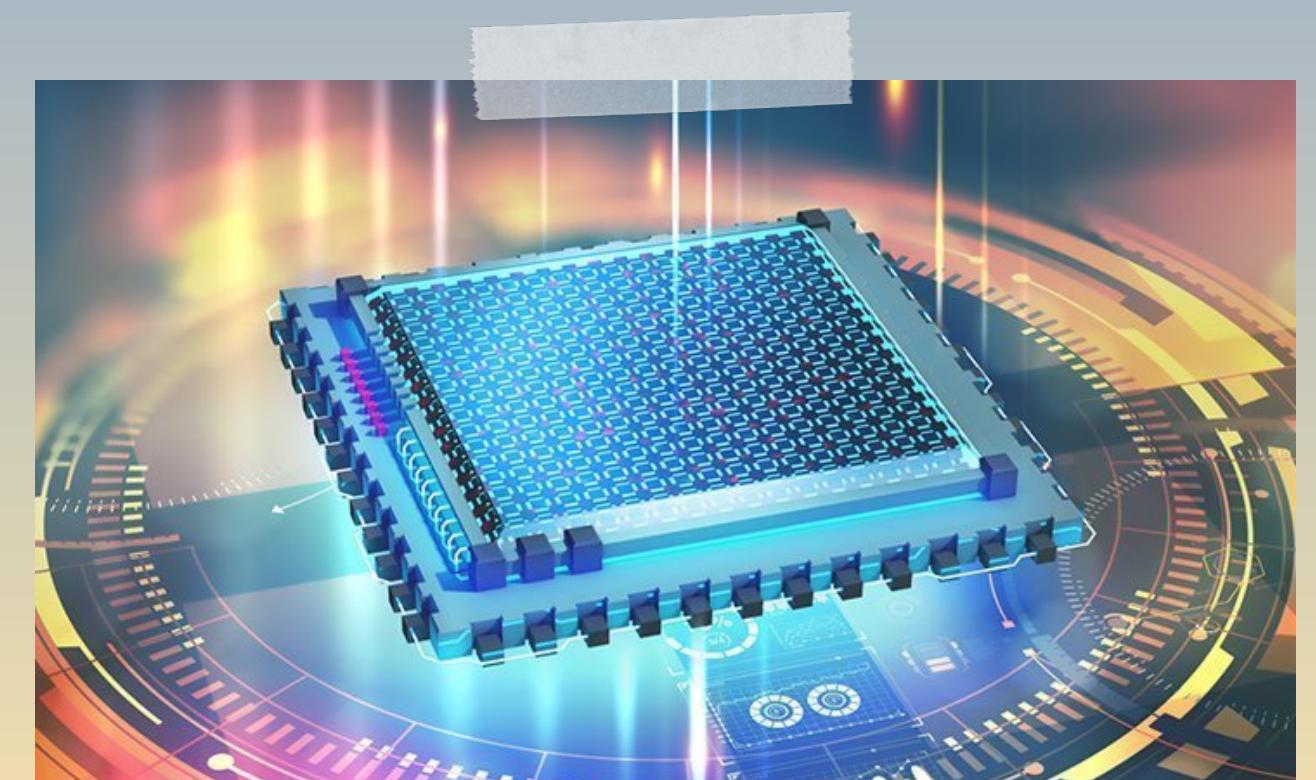




Microprocessor Project2

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What we want

Project Number 2

In C with **SPL**

1. Write program in c
2. Start your program by displaying '7777' on 7-segments
3. After 2 seconds, display last 4 digits of one of your group member ID
4. After 2 seconds, display first 4 digits of one of your group member ID
5. After 2 seconds, display last 4 digits of the summation of all students ID in your group
6. After 2 seconds, display '----' and loop back to 3. and so on.

```
RCC_APB2PeriphClockCmd(RCC_APB2Periph_AFIO, ENABLE);  
GPIO_PinRemapConfig(GPIO_Remap_SWJ_JTAGDisable, ENABLE);
```

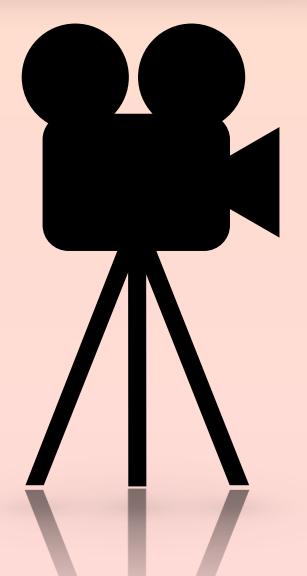
Due

2 Nov 2021



Start

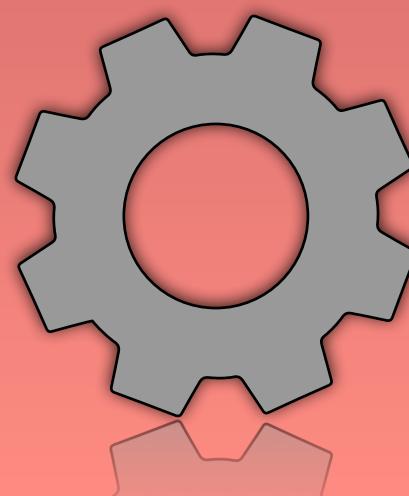
```
1 #include <stddef.h>
2 #include "stm32f10x.h"
3 #include "stm32f10x_conf.h"
4 void delay(unsigned int cat)
5 {
6     while(cat>0)
7     {cat--;}
8 }
9
10 int main(void)
11 {
12     RCC_DeInit(); //to reset the RCC clock configuration to the default reset state (from 72MHz to 50Mz)
13     int cat = 0;
14     RCC_APB2PeriphClockCmd(RCC_APB2Periph_AFIO, ENABLE); // to enable clock for AFIO
15     RCC_APB2PeriphClockCmd(RCC_APB2Periph_GPIOB, ENABLE); // to enable clock for GPIOB
16     GPIO_PinRemapConfig(GPIO_Remap_SWJ_JTAGDisable, ENABLE); // Change mapping of specified pin at JTAG-DP to disable and SW-DP to enable
17 }
```



```

18
19     GPIO_InitTypeDef GPIO_InitStruct;//to generate variable GPIO_InitStructure type GPIO_InitTypeDef
20     GPIO_InitStruct.GPIO_Pin= GPIO_Pin_0|GPIO_Pin_1|GPIO_Pin_3|GPIO_Pin_4|GPIO_Pin_8|GPIO_Pin_9|GPIO_Pin_10|GPIO_Pin_11|GPIO_Pin_12|GPIO_Pin_13|GPIO_Pin_14|GPIO_Pin_15;
21     GPIO_InitStruct.GPIO_Speed = GPIO_Speed_50MHz;//to set up the speed of output = 50MHz
22     GPIO_InitStruct.GPIO_Mode = GPIO_Mode_Out_PP;// to select Output pin to be push and pull
23     GPIO_Init(GPIOB, &GPIO_InitStruct);
24

```



Control pattern of number

GPIOB Pin	15	14	13	12	11	10	9	8
not use		g	f	e	d	c	b	a

ex 4 110|0 110
Q x 66 FD 6 : 6

7	0	0	0	0	1	1	1
0x07FE	0	1	1	1	0	1	1

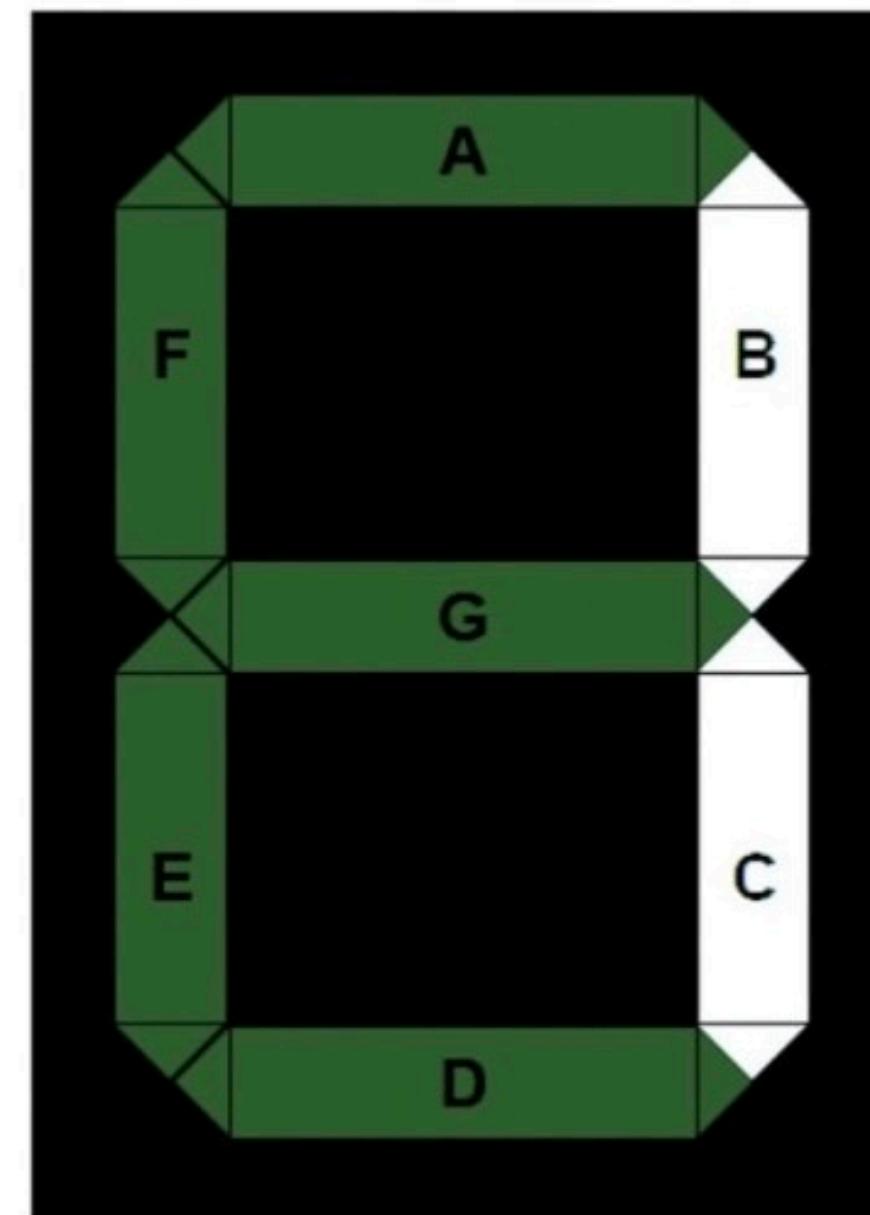
0 1 1;1 1 1 1
Qx3FF7 3 - F

0x6FEF

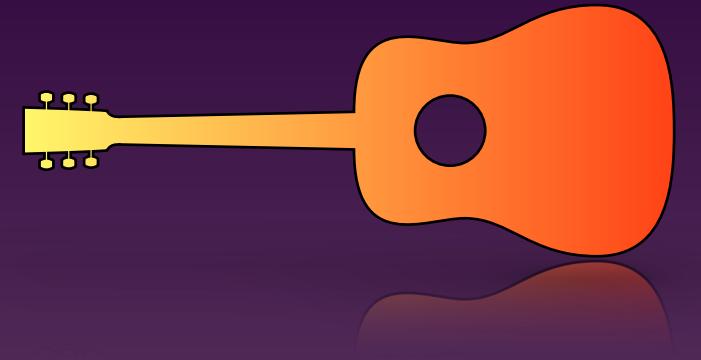
9	1	1	0	1	0	1	1	1
	6			F				
		0			0		0	
	H				0			Q
		1	1	1	0	1	1	1
		Q	Q	Q	1	1	1	1

central position of 7sey

Diagram illustrating a stack structure with 8 elements. Elements 4, 3, 2, 1, and 0 are highlighted in yellow, while 7 and 6 are in blue. A green arrow labeled "not use" points to the blue elements.

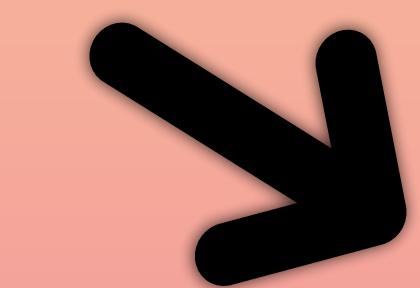
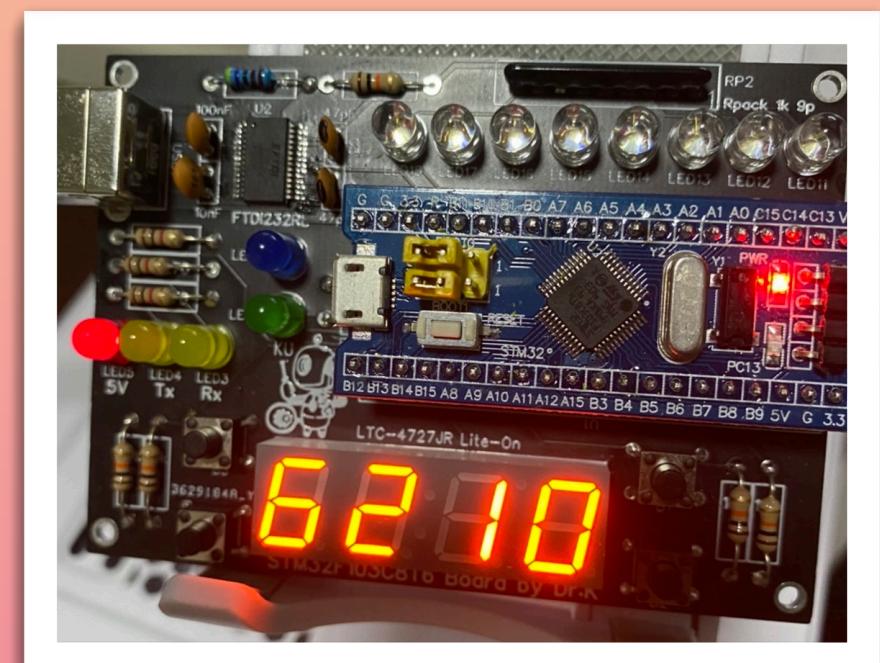
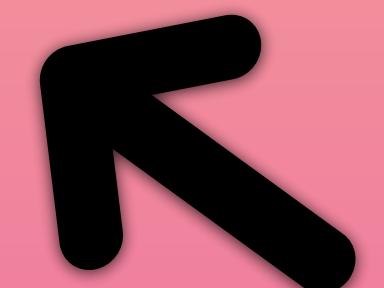
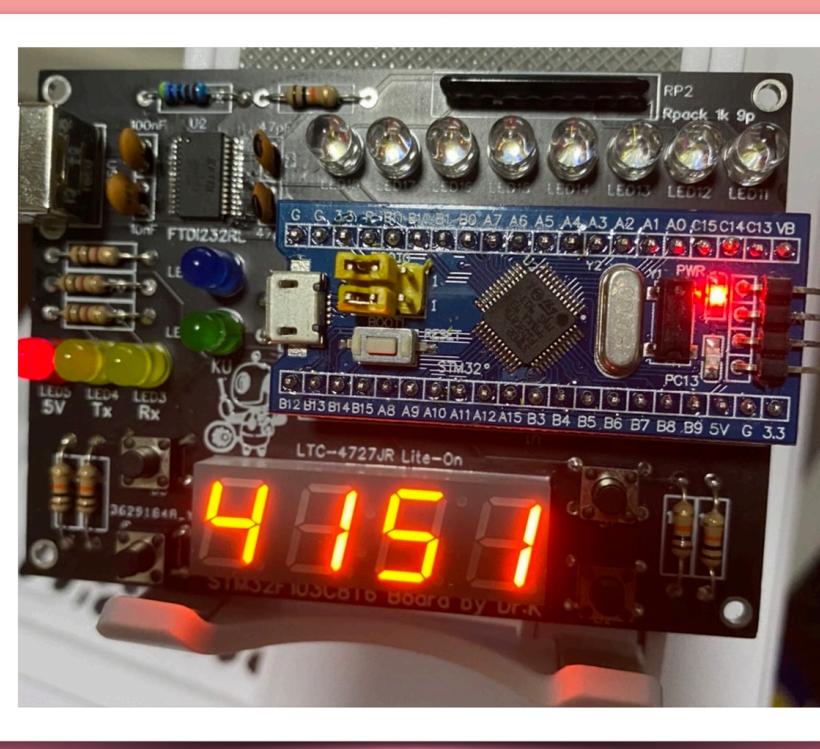
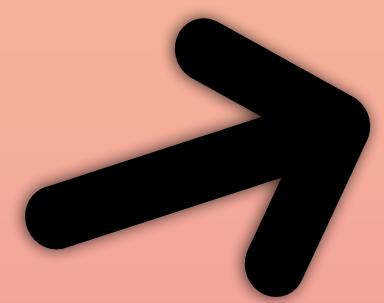
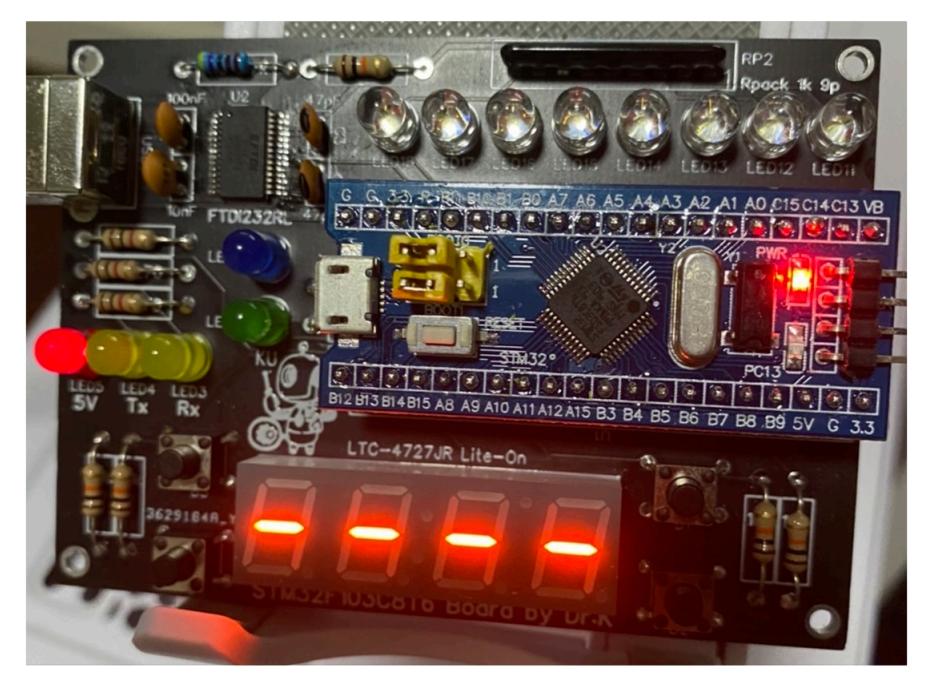
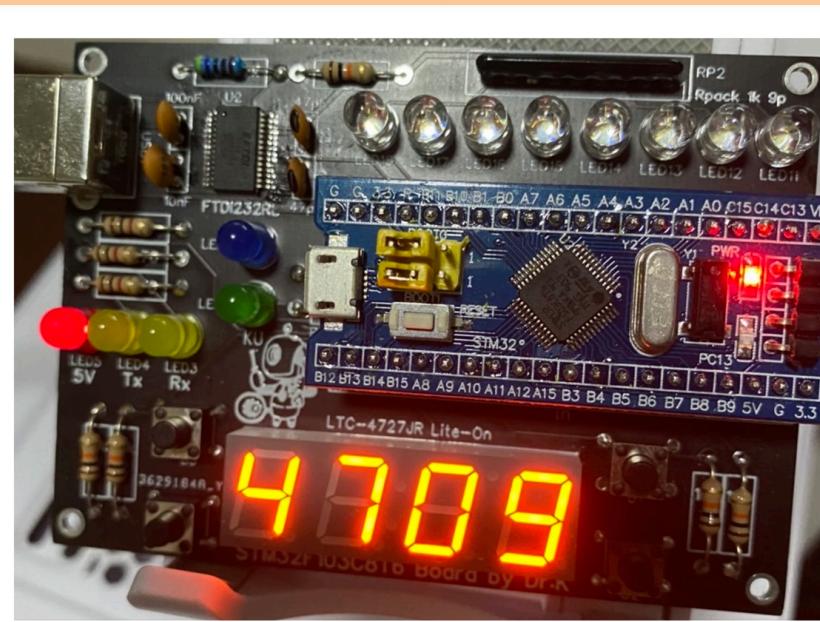
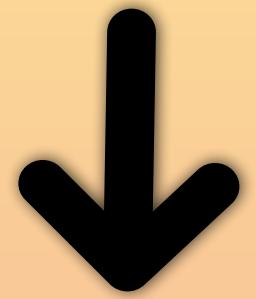
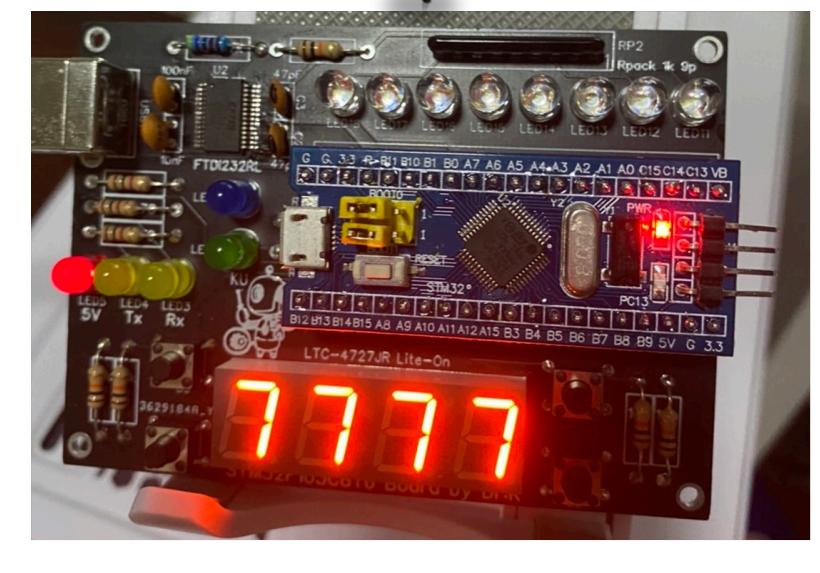


Process



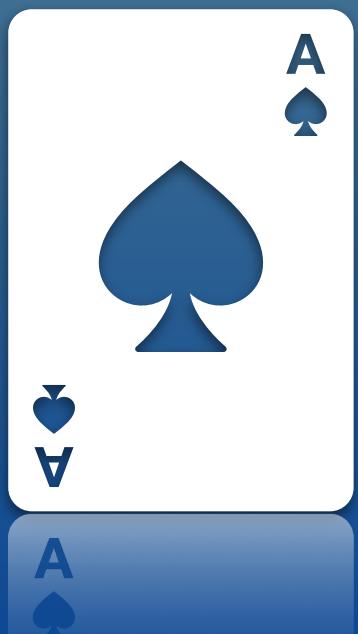
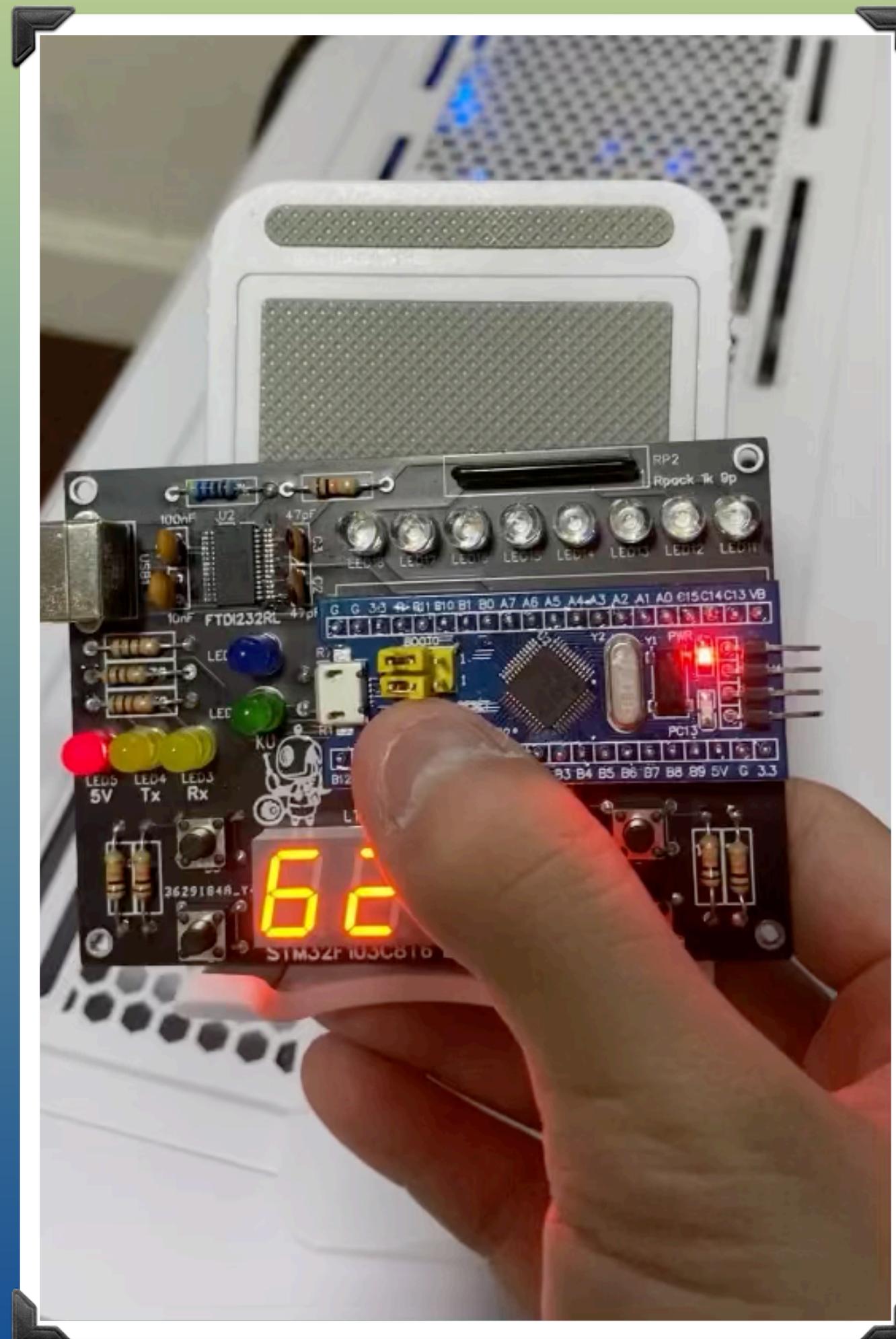
```
24
25     GPIO_Write(GPIOB,0x0700); //task2 , displaying '7777' on 7-segments
26     delay(1200000); //calling delay function when the led was shown
27
28     while(1){ //second part of task 6, loop back to task 3 and so on.
29         // task 3, display the last 4 digits of our member ID, in this case, we choose areeyya, 4709
30         cat = 120000; //restore the value of delay after the function have decrease it to 0
31         while(cat>0){ //if the condition " value of variable cat are more than 0" is true, the program will loop the code in the bracket until the condition is false
32             GPIO_Write(GPIOB,0x66FD); //4
33             GPIO_Write(GPIOB,0x07FE); //7
34             GPIO_Write(GPIOB,0x3FF7); //0
35             GPIO_Write(GPIOB,0x6FEF); //9
36             cat--; // decrease the value of variable cat by 1
37         }
38         cat = 120000;
39         while(cat>0){ // task 4, display the first 4 digits of one of our group member ID. In this case, all of our first 4 student ID is 6210
40             GPIO_Write(GPIOB,0x7DFD); //6
41             GPIO_Write(GPIOB,0x5BFE); //2
42             GPIO_Write(GPIOB,0x06F7); //1
43             GPIO_Write(GPIOB,0x3FEF); //0
44             cat--;
45         }
46         cat = 120000;
47         while(cat>0){ //task 5, display the last 4 digit of summation of all ID in our group, which is 4151
48             GPIO_Write(GPIOB,0x66FD); //4
49             GPIO_Write(GPIOB,0x06FE); //1
50             GPIO_Write(GPIOB,0x6DF7); //5
51             GPIO_Write(GPIOB,0x06EF); //1
52             cat--;
53         }
54         GPIO_Write(GPIOB,0x4000); //task 6, display '----' on seven segments , then loop back to task 3.
55         delay(1200000);
56     }
57
58
59 }
60 }
```

Result





Video



Thank you all for coming here today

Thank you all for coming here today

