Team name:	*B01*		
Homework number:	*HOMEWORK 1*		
Due date:	03/10/2023		
Contribution	NO	Partial	Full
Francesco Scroccarello			*x*
Paolo Galfano			*x*
William Stucchi			*x*
Giada Silvestrini			*x*
Francesco Tranquillo			*x*
Notes:			

Project name	Prepare the basics for the project "Play a song"		
Not done	Partially done (major problems)	Partially done (minor problems)	Completed
			x

Explanation:
We successfully completed the homework.

Part 1a:

We searched in the files the correct PINs of the microphone and the LED, respectively PA8 and PA5. We set PA8 to GPIO_EXTI8 and under System Core -> NVIC we enabled the EXTI line[9:5] interrupts. In the code, we overwrote the weak function HAL_GPIO_EXTI_Callback in order to toggle the led, calling the function HAL_GPIO_TogglePin and passing as parameters GPIOA and GPIO_PIN_5. Then we built the code and we ran the code on the board.

Alternative solution:

In the interrupt function (HAL_GPIO_EXTI_Callback) we just set a volatile flag, then in the main we checked the value of the flag, toggled the pin, delayed of 50ms and reset the flag to 0. We noticed that this solution, thanks to the delay, removed the flickering of the led due to multiple concatenated interrupts.

Part 1b:

From the GUI, we set the PA5 to TIM2_CH1. In the Timers section we configured TIM2 as:

Clock source: Internal Clock

Channel1: PWM Generation CH1

Prescaler: 999

Counter period: 84000

Pulse: 42000

In the main function we called the function HAL_TIM_PWM_Start passing as parameters the pointer to the htim2 structure and the TIM_CHANNEL_1. Then we built the code and we ran the code on the board.

Professor comments: