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Team name:	*B1*		
Homework number:	*HOMEWORK 2*		
Due date:	10/10/2023		
Contribution	NO	Partial	Full
Francesco Scroccarello			*x*
Paolo Salvatore Galfano			*x*
Francesco Tranquillo			*x*
William Stucchi			*x*
Giada Silvestrini			*x*
Notes:			

Project name	Play a song		
Not done	Partially done (major problems)	Partially done (minor problems)	Completed
			x

Explanation:
We successfully completed the homework.

Part 2a:
Using the GUI we set PA8 to EXTI8 and enabled interrupts on lines [9:5] in the NVIC panel.
In the same page we set PA9 to TIM1_CH2 and configured TIM1 with the following parameters:

- Clock source: Internal clock
- Channel 2 to PWN Generation CH2
- Prescaler to 999

We set the flag “play” in the interrupt callback of PIN_8. The while loop checks its value and when true it calls the function to play the song.

Part 2b:
Sarting from part 2a, in the GUI we enabled TIM10 and set the prescaler to 8399.
We wrote a function set_delay(milliseconds) that sets the period of the timer and starts it. If the milliseconds specified are greater than 6400, we set it to 6400. The period is set to (milliseconds*10-1).
In order to make this program non-blocking, we moved the code that plays the song into the main while loop storing a global index representing the note to be played next. Every time we want to play a note, we start the PWM and call set_delay(…) that starts the timer. We set a “flag” to zero to make the while loop wait for the next note to play when the flag will be set to one. We also solved the fact that the callback is called immediately after we set the time the first time.

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