Dance Dance Revolution

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1. General Presentation

The main inspiration of our project was the well-known game *Dance Dance Revolution*, which has a pad with 9 squares, out of which 4 are used for the actual game. Those used are highlighted by 4 arrows (up, down, right, left) which are meant to be pressed when the game displays the corresponding arrow.

Under each arrow square there is a pressure sensor, which will help us to detect if the user steps on that square. Unless, a buzzer will release an error sound such that to inform the player that he/she misstepped. The 4 sensors and the buzzer are connected to the *Arduino Uno* board.

2. Used Components

- *Arduino Uno* board
- 4 square shaped pressure sensors
- buzzer
- jumpers
- 1x1 m PFL pad
- colored sheets

The sensors are connected to the analogic pins A0-A3 of the Arduino board and they represent the input of our system. One sensor has 3 pins, GND, VCC and Vout. The first two are connected through the breadboard, while the Vout is connected directly.

The buzzer is connected to the digital pin 8 as an output with the red wire and the black one, to the ground.
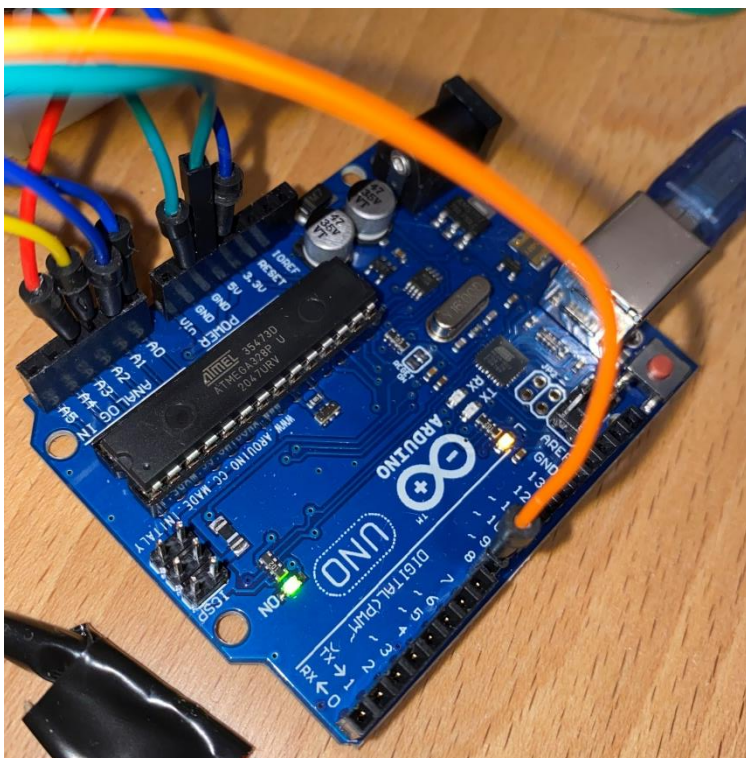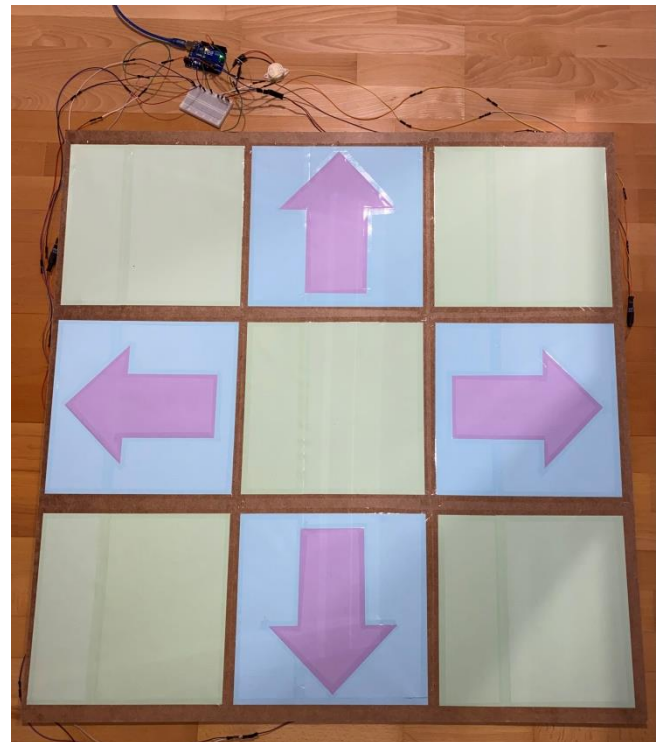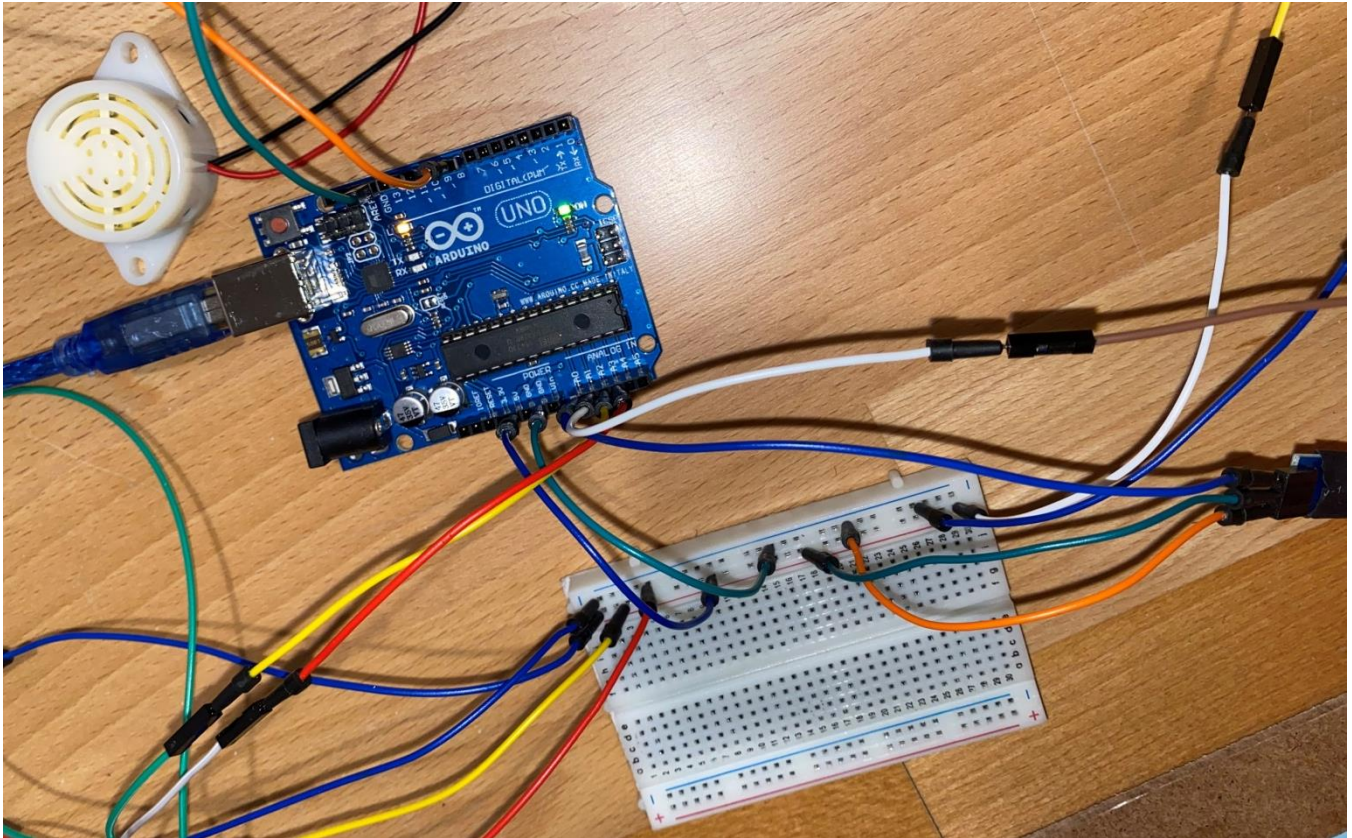
3. Needed Software

- Arduino IDE 1.8.16

4. Application Usage

When the application starts, the four sensors are calibrated while the users seen the message "Loading…". Then, the user has to choose the song he/she wants to play on (the songs have their titles numbered, so the user introduces the corresponding number on the Serial Monitor) or the option "0" for "Exit". The user has 5 seconds to choose the song, or the game will exit itself and display "Bye, bye!".

After the song is chosen, the round of the game starts and the arrows to be pressed appear on different rows.

After the round, the score is displayed (+100 for correct step and -100 for missed step) and the user can choose another song.

5. Bibliography