TD 4

Protocols, Screens

Hardware (not exhaustive):

- 1 Arduino (UNO)
- 1 Arduino USB power cable
- 1 Breadboard
- 4 Push buttons
- 1 LCD Screen
- Resistors
- About 10 Dupont cables male/male
- About 10 Dupont cables male/female

1. Hello World 👋



Goal: Display "Hello World!" on an LCD screen



- 1. The LCD Screen is properly wired
- 2. The LCD Screen displays the string "Hello World!"
- ? Reference: https://docs.arduino.cc/learn/electronics/lcd-displays
- b Call the teacher for verification once the setup is complete
- Keep the setup for later

2. Moving Square

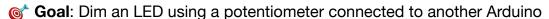


Goal: Display dynamic data (a moving square)



- 1. A square is displayed on the LCD Screen
- 2. 4 buttons are used to move square in all 4 directions (right, bottom, left, top)
- 3. Going top when already at the top or bottom when already at bottom line does nothing
- 4. Going left when already at screen's left limit teleports the square to the opposite screen's limit. Same for right side
- de Call the teacher for verification once the setup is complete

3. Arduino to Arduino 🤙



- Rules:
- 1. Both Arduino communicate with I2C
- 2. Arduino 1 is connected to a Potentiometer
- 3. Arduino 2 is connected to an LED
- 4. Moving the potentiometer dims the LED
- Let Call the teacher for verification once the setup is complete
- BONUS: Display the potentiometer value on an LCD screen on Arduino 2