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

📚 **Rules**:
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

👍 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)

📚 **Rules**:
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

👍 Call the teacher for verification once the setup is complete

3. Arduino to Arduino 🤙

🎯 **Goal**: Dim an LED using a potentiometer connected to another 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

👍 Call the teacher for verification once the setup is complete

🎰 **BONUS:** Display the potentiometer value on an LCD screen on Arduino 2