Introduction to Robotics: Homework #7

Mini 8x8 LED Matrix game

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Due Date

Submit your completed assignment to your respective lab session during the week of ~~December 4th - December 10th, 2023~~ **December 11th - December 17th**, 2023. Ensure your Git repository is ready and the assignment is submitted before the lab begins. Submit to the HOMEWORK github repo. Seeing that it's a "mini vacation", we will try to be more understanding with the deadline. But the official date stays the same.

1 Objective: Basic matrix functionality

Add the following functionality for this checkpoint:

1. **Intro Message** - When powering up the project, a greeting message should be shown for a few moments.
2. **Menu:**
   (a) **Start game**, starts the initial level of
   (b) **Settings**
      i. LCD brightness control. Save value to EEPROM and load it upon system start.
      ii. Matrix brightness control (see function setIntesnity from the led-Control library). Make sure to display something on the matrix when selecting it. Save value to EEPROM and load it upon system start.
   (c) **About:** should include details about the creator(s) of the game. At least game name, author and github link or user (use scrolling text?)
3. **End Message** - When the game ends, add a message. Wait for a promt from the user (a button push, for example), before returning to main menu again.

4. **During gameplay:**
   (a) Show relevant details, that are dynamic (change with gameplay): time, level, lives etc. Doesn't matter, what can be used. You can implement the number of LEDs that are still switched on.
   (b) Implement an **end game / level** functionality. You current game should end. For example, if you implemented the game where you "destroy" all the LEDs, it should end when you finished them all. Upon ending, it should display the aforementioned message, wait for user prompt and then return to the main menu again.

2 Submission Guidelines

Upload your code to the GitHub repo and update the README with at least:

1. Task requirements. Include the menu structure in the description.
2. A photo of your setup
3. A link to a video demonstrating the functionality (preferred: YouTube)
4. Ensure the video is correctly oriented.

Submit your homework through MS Teams once your Git repository reflects the latest changes.