Electronics II
exercise 7

Deadline: Wed 23.3.2022 14:00

1.

a) Display the position of the joystick as a dot on the dot matrix display. Use the joystick button to change the brightness. (0.5p)
b) Read the RFID tag's ID (0.5p)
c) Use Arduino as primitive "USB stick": write a string of text from the computer to the EEPROM, unplug the Arduino, replug it and read the text back to computer. (1p)

2.

Make a snake game (or come up with your own minigame) using the joystick and the dot matrix. Before the game starts display "Show RFID" (on the serial monitor or on an LCD). If it's an unknown ID assign a new player number to it and store the ID on the EEPROM. Then display the current highscore and the player number of the record holder. When the game ends, if it's a new highscore congratulate the player and store it on the EEPROM. (2p)

3.

Extract data from the accelerometer and make an orientation detector. The detector is calibrated to the current orientation when a button is pressed. Use an RGB LED to indicate if the orientation is within a certain angle from the calibrated orientation. Include also a way to change the angle value which is registered as "tilted". (2p)