Sumoroboti ettevalmistamine

Enne igat koolitust tuleb veenduda, et:

1. Arvutitel on installeeritud Arduino ja Sumoroboti teek:
    - lae alla ja installeeri Arduino http://www.arduino.cc/download
    - lae alla ja installeeri Sumoroboti teek https://github.com/silps/sumoino
2. Sumoroboti akud oleks täidetud:
    - multimeetriga mõõda ligikaudu 7,4V aku kohta
3. Sumorobotil töötavad näiteprogrammid:
    - lae Sumorobotisse näiteprogramm

Juhul, kui midagi ei tööta:

Vaata üle kas juhtmed on õigesti ühendatud:

- parem mootor nr 6 ja vasak nr 5 pistikus
- vastase parem andur nr 0 ja vasak nr 1 pistikus
- joone parem andur nr 2, keskmine nr 3 ja vasak nr 4 pistikus

Kasuta teeki sisse ehitatud “test” funktsioone:

- testOpponent(); (nähes vastast, ründab)
- testLine(); (sõidab otse ja väldib joont)
- testSensors(); (väljastab kõik anduri väärtused konsooli)

Kalibreeri võimalike väärtusi “Sumo.h” failis:

- valguse intensiivsust jooneanduril (LIGHT_INTENSITY)
- vastase nägemise kaugust (OPPONENT_DISTANCE)
- servo mootorite keskpunkti, ehk stopp punkti (MIDPOINT)

```
32  /* configuration */
33  /* movement */
34  #define SECOND 1000
35  #define SEKUND 1000
36  #define MAX_SPEED 100    // 100
37  #define SLOW 10          // 10%
38  #define FORWARD 0        // for
39  #define EDASI 0
40  #define BACKWARD 1       // bac
41  #define TAGASI 1
42  #define MAX_FORWARD 180 // max
43  #define MIDPOINT 94      // ser
44  #define MAX_BACKWARD 0   // max
45  /* pins */
46  #define RIGHT_WHEEL 6
47  #define LEFT_WHEEL 5
48  #define FRONT_RIGHT_SENSOR 0
49  #define FRONT_LEFT_SENSOR 1
50  #define BOTTOM_RIGHT_SENSOR 2
51  #define BOTTOM_MIDDLE_SENSOR 3
52  #define BOTTOM_LEFT_SENSOR 4
53  /* calibration */
54  #define LIGHT_INTENSITY 600
55  #define OPPONENT_DISTANCE 200
```

Preparation of Sumorobot

Before the workshop, be sure that:

1. The computers have installed Arduino and the Sumorobot library:
    - download and install Arduino http://www.arduino.cc/download
    - download and install the Sumoroboti library https://github.com/silps/sumoino
2. The batteries of the Sumorobots are charged:
    - measure approximately 7,4V per battery
3. The example programs are working on the Sumorobots:
    - upload the examples to the Sumorobots

In case something doesn't work:

Check that all cables are connected correctly:

- right motor nr 6 and left nr 5 pin
- opponent right sensor nr 0 and left nr 1 pin
- line right sensor nr 2, middle nr 3 and left nr 4 pin

Use the built-in “test” functions:

- testOpponent(); (attacks the opponent, when in range)
- testLine(); (drives forward and avoids line)
- testSensors(); (prints out all the sensor values to the console)

Calibrate possible values in “Sumo.h” file:

- the light intensity of the line sensor (LIGHT_INTENSITY)
- the opponent detection distance (OPPONENT_DISTANCE)
- servo motor midpoint or stopping point (MIDPOINT)

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