Lehrstuhl für Medieninformatik
Institut für Information und Medien, Sprache und Kultur
Universität Regensburg

Interaction Technology and Techniques
Assignment 5: WiiMote and PyQtGraph

Summer semester 2014

Submission due: Sunday, 1. June 2014, 23:55

Hand in in groups of max. two.

Your task is to implement a framework for analyzing the sensor data of the WiiMote.

5.1: WiiMote as a digital bubble level

Read the documentation for `wiimote.py` in GRIPS. Write a small Python application `level.py` that takes a Bluetooth MAC address as its only parameter. This application should turn your WiiMote into a digital bubble level with the following properties:

- the accelerometer measures inclination in X and Y axis
- the directional buttons allow setting the axis of measurement to be used (X or Y)
- LEDs show direction and amount of deviation from the horizontal
- once the WiiMote is perfectly horizontal, all LEDs light up and the WiiMote rumbles once

Hand in the following file:

level.py: a Python script that implements your digital bubble level

Points

- **1** The python script has been submitted, is not empty, and does not print out error messages.
- **2** The script correctly implements the features above.
- **1** The script is well-structured and follows the Python style guide (PEP 8).

5.2: A custom PyQtGraph flowchart node for the WiiMote

Read the documentation for `wiimote.py` in GRIPS and the PyQtGraph documentation[1]. Write a small Python application `analyze.py` that takes a Bluetooth MAC address as its only parameter. This application should generate a PyQtGraph flowchart with the following elements:

- a WiiMoteNode node that stores the *n* (choose a reasonable value) most recent accelerometer values from the WiiMote and provides these values on three outputs (one for each axis)
- one or more of the default filter nodes
- three nodes that plot the accelerometer data

Hand in the following file:

analyze.py: a Python script that implements this flowchart

[1] http://pyqtgraph.org/documentation/

Points

- **1** The python script has been submitted, is not empty, and does not print out error messages.
- **2** The script correctly implements and displays a flowchart.
- **2** The WiiMoteNode class correctly reads accelerometer data and outputs it.
- **1** The script is well-structured and follows the Python style guide (PEP 8).

Submission

Submit via GRIPS until the deadline

All files should use UTF-8 encoding and Unix line breaks. Python files should use spaces instead of tabs.

Have Fun!