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

Interaction Technology and Techniques
Assignment 6: WiiMote as Pointing Device

Summer semester 2014

Submission due: Sunday, June 15th, 2014, 23:55

Hand in in groups of max. two.

Your task is to implement the WiiMote as a 2D/3D pointing device.

6.1: WiiMote as 2D pointing device

Read the documentation for `wiimote.py` in GRIPS. Write a small Python application `wiipoint2d.py` that takes a Bluetooth MAC address as its only parameter. This application should turn your WiiMote into a 2D pointing device with the following properties:

- extends the WiiMoteNode from the previous exercise to output data from the IR camera
- detect the the most intense IR light source
- a running average of the position is displayed in a PyQtGraph window with a dot representing the position
- using +/- keys on the Wiimote, the amount of smoothing applied to the position data (i.e. how many values are averaged) can be controlled

Hand in the following file:

wiipoint2d.py: a Python script that implements a 2D pointing device

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).

6.2: Extension to 3D pointing device

Write a small Python application `wiipoint3d.py` that takes a Bluetooth MAC address as its only parameter. This application should extend the previous application with the following features:

- use the two most intense IR light sources
- assuming a known distance between the light sources, calculate the distance to the WiiMote
- change the dot size in the PyQtGraph window according to distance
- optional: also calculate and display the horizontal angle of the WiiMote

Hand in the following file:

wiipoint3d.py: a Python script that implements a 3D pointing device

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).

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!