Assignment 1: DIPPID and pyglet (15P)

Goals

You are familiar with the infrastructure we use in ITT and refresh your Python skills. You have experimented with pyglet and understand how DIPPID works.

1   DIPPID Sender   5P

Recommended Packages: socket, numpy, time

Create a program called *DIPPID-sender.py* based on the *simple-sender.py* code sample. Your program should be able to simulate DIPPID input devices by sending data to a DIPPID receiver via UDP to localhost. The program should have at least the two capabilities *accelerometer* and *button_1*.

Implement plausible behavior for the simulated sensors. For example, you could use sine functions with different frequencies for each axis of the accelerometer and randomly press and release the button.

Score

(**1P**) packets arrive at the receiving end and their format is compatible to DIPPID

(**1P**) the *accelerometer* capability works and plausible values are simulated

(**1P**) the *button_1* capability works and plausible values are simulated

(**1P**) the code is well-structured and readable

(**1P**) the program runs robustly without bugs

2   2D Game   10P

Recommended Packages: pyglet, DIPPID

Implement a simple 2D game (for example Breakout, Space Invaders, Snake, Tetris, ...) with Python and pyglet. The game should use DIPPID as an input device. Use plausible interaction techniques to control your game, for example moving the player by tilting the device.

Score

(**3P**) all important features of the game are implemented, it runs robustly and no bugs occur

(**2P**) input with DIPPID works

(**2P**) the code is well-structured and readable

(**1P**) the chosen interaction technique makes sense and feels good

(**1P**) the game looks pretty

(**1P**) a virtual environment is used and all required dependencies can be installed with a *requirements.txt*