Attached a sketch of the general GUI layout.

1. Top bar: is a menu bar. At the moment the only 2 menus are “Input” and “Display”.

Clicking on a menu element bring a pop up window.

1. Input: allows configuring input stream, with similar parameters as current script (single camera with choice of which, or all cameras). Camera URLs are still hard coded for now, use RTSP addresses and numbering convention as in script. Main display should reset if different input is selected. Use a “apply” button to confirm changes.
2. Display: allows customising the detection bounding boxes / keypoints / segments (lines between keypoints) similar to what draw\_skeleton\_custom() does in lab\_mocap\_2dsquat.py.

For connecting lines, option to display / not display lines as defined by the default drawing options. Option to set line color and thickness separately for each line.

Default values should be the RTMpose values, i.e., default values should display bounding boxes, IDs and keypoints / segments similar to lab\_mocap\_stream.py.

1. Main display area: displays video feed for camera(s) selected similar to current script, plus bounding boxes, IDs and keypoints / lines as selected in Display options.
2. Left side graph area: three groups with one dropdown and one graph area in each group. The dropdown allows selecting a keypoint and the graph will show the joint angle for selected keypoint (same style and conventions as in lab\_mocap\_2dsquat.py.) For now only hip, knee and elbow are selectable since angles for other joints are not straightforward. Angle calculations follow same convention as knee angle calculation in lab\_mocap\_2dsquat.py.

ANSWERS

1. Each graph should track the same person, you can add a drop down at the very top of the graphing area to select which ID to graph. Dropdown can show current existing IDs, list should be generated when dropdown is expanded. Handle losing the graphed ID (if the ID is lost display empty data, likewise if some keypoints are lost such that the angle cannot be computed)
2. When “all cameras” is selected, add an option to select which camera is used for angle computation
3. For joint angles:

Knee is as defined in existing script e.g. keypoints11-13-15 for left)

Elbow is shoulder – elbow write (e.g. keypoints 5-7-9 for left, 6-8-10 for right)

Hip is shoulder – hip – knee (e.g. 5-11-13 for left)

1. Group them for now