Checklist draft

1. roscore

2. ~~roslaunch ur\_gazebo ur5e\_bringup.launch~~ rosrun ur5e\_control ur5e\_ros\_connection.sh

3. manual initialization

4. rosrun ur5e\_control ur5e\_controller

5. rosrun ur5e\_control task\_space\_traj

6. roslaunch ur5e\_control frame\_publisher.launch

7. ./play\_data.sh in the Downloads folder

8. rviz

9. rosrun robot\_vision\_lectures crop\_visualize\_3D

10. rosrun robotics\_report2 detect\_ball.py

11. rosrun robotics\_report2 sphere\_fit.py

* + **Simulations (what you have been using):**
    - pos\_joint\_traj\_controller/command
    - Type: trajectory\_msgs/JointTrajectory
  + **Real robot:** 
    - /scaled\_pos\_joint\_traj\_controller/command
    - Type: trajectory\_msgs/JointTrajectory
  + When using the control node ur5e\_controller, you can simply run the new launch file provided in the ur5e\_control package
    - *roslaunch ur5e\_control ur5e\_controller.launch* (in the previous labs and reports, you used to directly run the node via *rosrun ur5e\_control ur5e\_controller*).
    - When running codes with the **simulator**, you can set the ‘sim’ parameter in this launch file to true
      * <param name="sim" value="**true**"/>
    - When running codes with the **real robot**, you can change set the ‘sim’ parameter in this launch file to false
      * <param name="sim" value="**false**"/>