Checklist for Running a UR5E Robot

Core:

- rosrun roscore
    - Not necessary with real robot

Camera:

- Change to Downloads and run ./play_data.sh
    - For real robot, roslaunch realsense2_camera rs_rgbd.launch
- In new terminal, rosrun robotics_lab7 detect_ball
- In new terminal, rosrun robot_vision_lecture crop_3d_visualization
- In new terminal, rosrun robotics_lab7 sphere_fit
- (Optional) In new terminal, rosrun rqt_gui rqt_gui
    - From the “Plugins” tab, from the “Visualization” group, select “Image View”
    - Select the “ball_2d” topic
    - Ensure only the ball is displayed

Robot:

- In new terminal, roslaunch ur_gazebo ur5e_bringup.launch
    - For real robot, rosrun ur5e_control ur5e_ros_connection.sh
        - It may already be running
- In new terminal, roslaunch ur5e_control frame_publisher.launch
- In new terminal rosrun robotics_lab7 manual_initialization.py
    - For real robot, rosrun manual_initialization_real_robot.py if your joint parameters are different
- After manual init stops moving, end the scrip in the terminal with ctr+c and do rosrun ur5e_control ur5e_controller
    - For real robot instead do roslaunch ur5e_control ur5e_controller.launch
        - Before launching, ensure the “sim” parameter is set to true
- In new terminal, rosrun ur5e_control task_space_trajectory
- In new terminal, rosrun robotics_lab7 simple_planner.py
    - In real robot, run real_planner.py instead
- After simple_planner prints plan and it looks adequate:
    - in new terminal, rosrun rqt_gui rqt_gui
    - In the “Plugins” dropdown, in the “Topics” group, select “Message Publisher”
    - add the movement_start topic
    - change value from false to true and publish