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RBE 550: Motion Planning
Final Project
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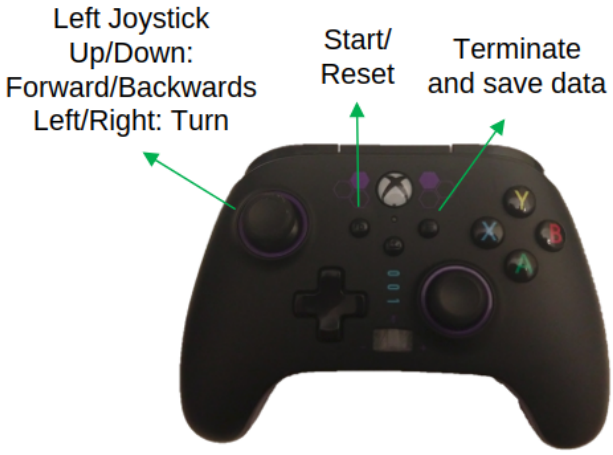
Collaborative Motion Planning: Demonstration Guide

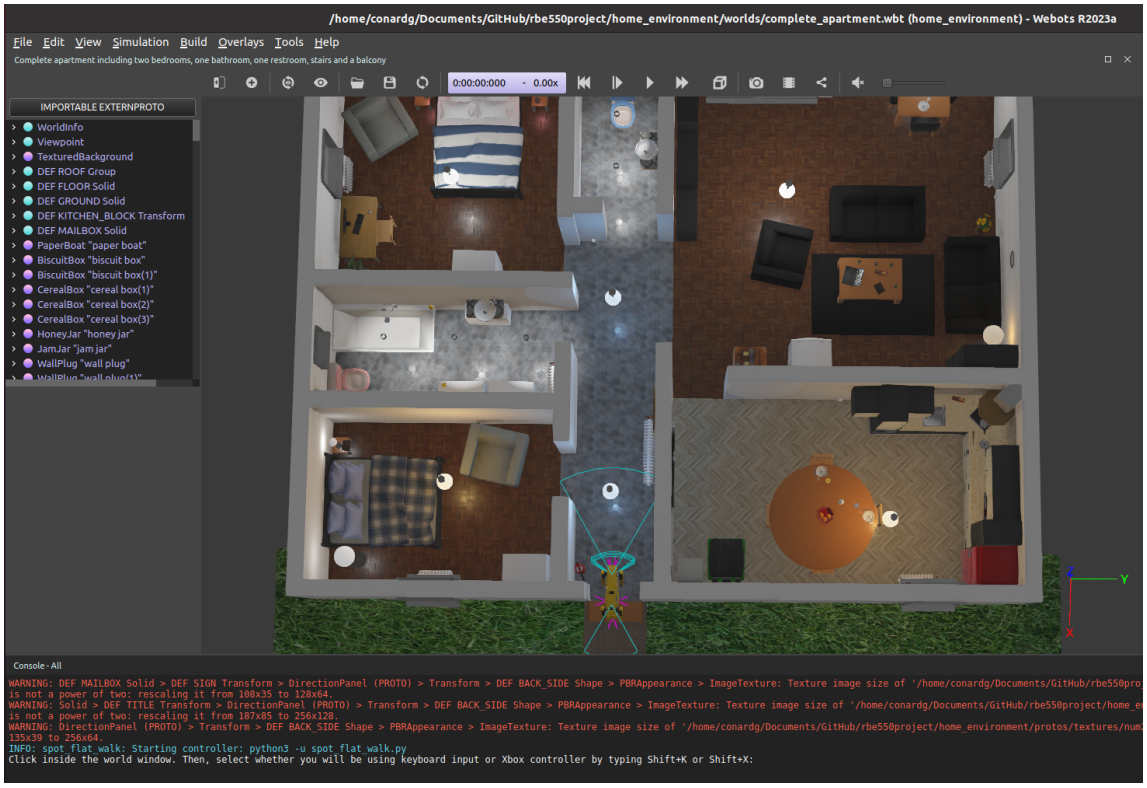
1. To run the simulation, first download and install Cyberbotics Webots (https://www.cyberbotics.com/) if you do not have it installed on your device already.

2. If you are using an Xbox controller, plug it into your computer. If you are using keyboard input, move on to the next step.
    a. Diagram of buttons shown here:



3. Launch Webots and select File -> Open World. Navigate to where you saved this repository and select rbe550project -> home_environment -> worlds -> complete_apartment.wbt. This will load

the world file. You should see Spot standing in front of the apartment.



   a. Spot is controlled by our main script, “spot_flat_walk.py”, by default. If you would like to view it, it is located under rbe550project -> home_environment -> controllers -> spot_flat_walk -> spot_flat_walk.py.

4. When you first load the world, it will often start the simulation automatically. If it does not, press the Play button in the top center toolbar.

   a. While the simulation is paused, you can click and drag Spot where you would like.

5. Once you see the prompt “Click inside the world window. Then, select whether you will be using keyboard input or Xbox controller by typing Shift+K or Shift+X:” in the terminal (as shown above), indicate whether you would like to use keyboard input or Xbox controller input.

   a. You must click inside the simulation window (i.e. on the apartment) for keyboard input to be recognized.

6. Keyboard Input:

   a. Increment the arrow keys (up, down, left, right) to drive Spot.

   b. To temporarily stop the simulation, press the Pause button in the top center toolbar of Webots at any time.

   c. If you would like to quit and save the data, press Shift+Q.

   d. To reload the world, pause the simulation and press the circling arrows directly to the left of the simulation time in the top center toolbar.

7. Xbox Controller:

    a. Once you see the prompt “State 2” in the terminal, press the Start button on the Xbox controller.
    b. Use the Xbox controller (following the figure in step 2) to drive the robot around.
    c. To temporarily stop the simulation, press the Pause button in the top center toolbar of Webots at any time.
    d. To reset the robot and data at a particular location, press the Start button again.
    e. To reload the world, pause the simulation and press the circling arrows directly to the left of the simulation time in the top center toolbar.
    f. To terminate the simulation, press the Terminate button on the Xbox controller while the simulation is still playing. Pause the simulation and exit out of Webots.