Pick and place with Robot 2

You have arrive to the last assignment of the course, now you will complete the behavior for the entire factory!!

The assignment consist on two parts, on the first one, the Robot 2 picks the part from the Turtlebot and in the second one, it places the part in the output bin.

Important note: You need to have completed the previous assignment to continue and test this one

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Week 6 - Assignment 3 Part 1 --- 1 Point

In this part you will add the necessary states to the "Final Project" behavior so that: after Turtlebot brings the part next to the Robot 2, Robot 2 picks it from the Turtlebot.

To do this you need to open and modify the *"Final Project"* behavior, same as in assignments 1 and 2, and then follow the next steps.

Step 1: Add the necessary states between the state that makes the Turtlebot navigate lo the location next to Robot 2 and "Move R2 back Home", so that Robot 2 picks the part from the Turtlebot.

> **Hint**: See which set of states were used to pick the part with Robot 1, and how they are configured.
> **Hint**: Be aware that over Robot 2 there is another logical camera (logical camera 2) that works analogously to the camera on the conveyor belt (logical camera 1).
>
> **Important note: Y*ou may notice that there are two versions of the* MoveitToJointsDynState *type. One in the package* flexbe_manipulation_states*, and***

another one in the** hrwros_factory_states**.

For the assignments, you need to use the one in** hrwros_factory_states**.

Step 2: Save your changes in the behavior, check that no error messages appear, and close the FlexBE App.

> **Important Note:** Do not change the name of the behavior. The automated grading algorithm will look for a project called *"Final Project"* and it will fail if it does not find it.

To test your work, you can follow the same steps as in indicated in the first assignment. If everything is OK, the Robot 2 should be on its home pose with the white box should being hold by its actuator.

Week 6 - Assignment 3 Part 2 --- 1 Point

In this second part of the assignment, you will add the necessary states to the "Final Project" behavior so that Robot 2 places the part in the output bin.

Same as with previous assignments and parts of this week, to do this you need to open and modify the *"Final Project"* behavior, and then follow the next steps.

Step 1: Add the necessary states between "Move R2 back Home" and the final "finished" outcome of the state machine, so that:

- Robot 2 moves its gripper above the output bin.

Hint: to move the robot you can use the state implementation "SrdfStateToMoveit" and the joint configuration "R2Place".
See how it is configured in "MoveR2 back Home".

- Robot 2 drops the part on the bin.

Step 2: Save your changes in the behavior, check that no error messages appear, and close the FlexBE App.

Important Note: Do not change the name of the behavior. The automated grading algorithm will look for a project called *"Final Project"* and it will fail if it does not find it.

To test your work, you can follow the same steps as in indicated in the first assignment. If everything is OK, Robot 2 should be in the R2Place pose, and the white box should be clearly visible on the output bin.

Congratulations!!

You have completed all the assignments of this course!!

As with previous weeks, you can now go to the submission unit of week 6 and upload all the assignments of this week as a single .zip file.