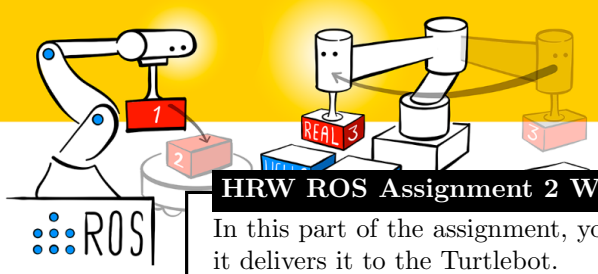


HRW ROS Assignment 2 Week 6 Part 1

In this part of the assignment, you will modify the state machine so that, after robot1 picks the part, it delivers it to the Turtlebot.
Open and modify the "Final project" state machine to achieve this behavior, follow the instructions below:

1. Add a state to of type "MoveBaseState" to the state machine. You can name it Navigate to robot1.

   This new state should become active after "Move R1 back Home" finishes with outcome "reached".

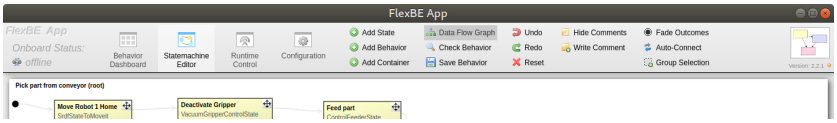
2. Configure the input key `waypoint` of the newly added state so that the Turtlebot navigates to a location next to robot1. (Tip: check the constant variables in "Private configuration")

3. Make the necessary changes to the state machine (so re-wire it: change the transitions between states) so that:

   When the new state you added in step 1 outputs "arrived", the states: "Locate Turtlebot", "Compute place Turtlebot", and "Move R1 to place" are executed in that order. (Hint: You need to remove their connection to the finished output, and set it to the correct state)

4. Add the necessary states in between "Move R1 to place" and the "finished" outcome of the state machine, so that robot1 drops the part on top of the Turtlebot and returns to its home pose.

5. In the Statemachine Editor, Click on the Data Flow Graph button.



6. Save your changes to the behavior and close the FlexBE App.

7. Start the simulation using:

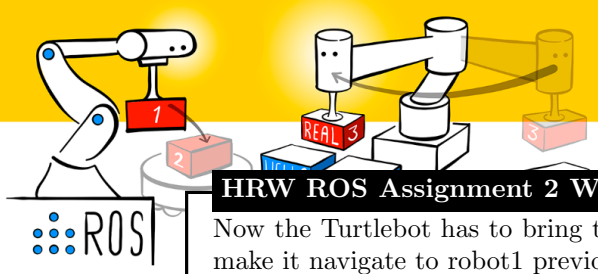
   ```
   $ roslaunch hrwros_week6 hrwros_final_project.launch
   ```

8. On another CCS terminal, launch the full flexbe app:

   ```
   $ roslaunch flexbe_app flexbe_full.launch
   ```

9. Load the "Final Project", then go to the Runtime Control, and Execute the behavior.

This assignment continues on the next page



HRW ROS Assignment 2 Week 6 Part 2

Now the Turtlebot has to bring the part to `robot2`. For this, you can use the state type you used to make it navigate to robot1 previously.
Open and modify the "Final project" state machine to achieve this behavior, follow the instructions below:

1. Add another state, between the last state you added in the part 1 of this assignment and the "finished" outcome of the Final Project state machine, so that The Turtlebot navigates to the position given by `x=-4.3, y=-0.9, theta=0.0`

   Hint 1: Check the documentation of "MoveBaseState" Hint 2: You may want to add another constant variable in the Private Configuration of the behavior.

2. Go back to the Statemachine Editor, and select the new state so its information is shown.

   Take a first screenshot of the FlexBE App. It should show the state machine with the new state you just added and, on the right panel, the details of the new state.

3. Make sure you have saved your changes, and close the Flexbe App.

4. Start the simulation using:

   ```
   $ roslaunch hrwros_week6 hrwros_final_project.launch
   ```

5. On another CCS terminal, launch the full flexbe app:

   ```
   $ roslaunch flexbe_app flexbe_full.launch
   ```

6. Load the "Final Project", then go to the Runtime Control, and Execute the behavior.

This completes HRW ROS Assignment 2 Week 6