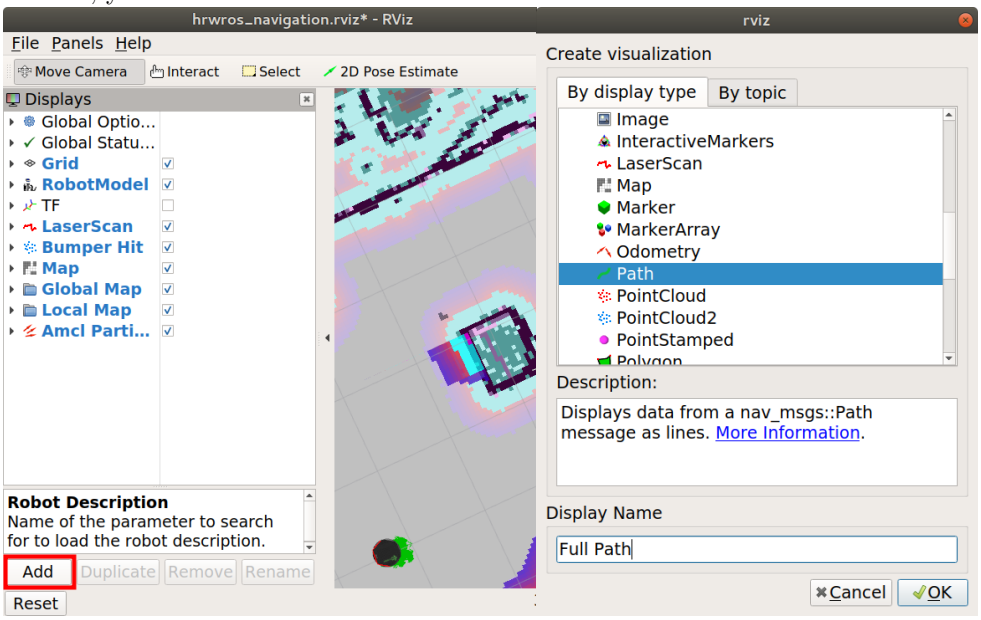
## HRW ROS Assignment 2 Week 3 Part 1

Planning can be visualized in RViz by adding so-called path elements. At the bottom of the left panel in RViz, you can see a button marked 'Add'. Below is a screenshot with the Add button marked red:




After clicking on it, select the Path display type like in the screenshot below, and change the display name to Full Path

The only thing left to do is point the Path display to the topic it will use to get the path itself. Navigate to the topic field, and select `/move_base/NavfnROS/plan`.

This topic will visualize the overall global path planned by the navigation stack using Dijkstra's algorithm. If you set a new navigation goal in RViz, a green line will appear, showing you the path the Turtlebot intends to take.

The assignment is to upload a screenshot of RViz with a planned path displayed on the screen. Give it a long path, for example from near robot 1 to near robot 2, so it is clearly visible.

## HRW ROS Assignment 2 Week 3 Part 2

We now can see the globally planned path. But ROS navigation stack also provides more than just the 'pre-planned' global path. The ROS navigation stack also provides an implementation of the DWA local planner for planning around unknown and dynamic obstacles! That is, the path can also be dynamically modified, when previously unknown obstacles appear. For example, there is a new crate blocking its path, it will attempt to drive around it. Finally, there is a very short plan that corresponds to the path that the TurtleBot will follow in the next few seconds.

The assignment is as follows:

1. Add a new path display and subscribe it to `/move_base/DWAPlannerROS/global_plan`. Change the colour from green to blue `(0; 0; 255)`, and the name to Global Plan.

   Notice how this global plan is different from the overall global plan when the TurtleBot starts navigating.

2. Do the same for `/move_base/DWAPlannerROS/local_plan`, colour it red `(255; 0; 0)` and name it Local Plan.

3. Give the robot a new navigation goal, and look at the displayed paths. You might need to zoom in a little to view the local plan, as it is very short.

This completes assignment 2. And only one last assignment to go! You may now terminate RViz, Gazebo and amcl launch with Ctrl+C on all the CCSs where you started them.

*This completes HRW ROS Assignment 2 Week 3*