Lab 02 - Line features with Split and Merge

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1. Implementation and issues

The objective of this lab is to apply split and merge algorithm, and check it over a simulation of a robot detecting the edges (walls) of a room.

The problems that appeared during the implementation of the algorithm where related with the limits for the loops. Also is important to apply correctly the formulas for general equation of a line given two points and distance from a point to a line. At the beginning one of these formulas was wrong and it was a big issue to solve.

For the merge part it had been checked all the possible distances between the two points of each segment that represents a line. It was chosen the minimum one and checked before merge.

Once that the method was implemented there where several lines, even when very few should have appeared. This was related with an overwriting of the points while checking if it was needed to merge or not.
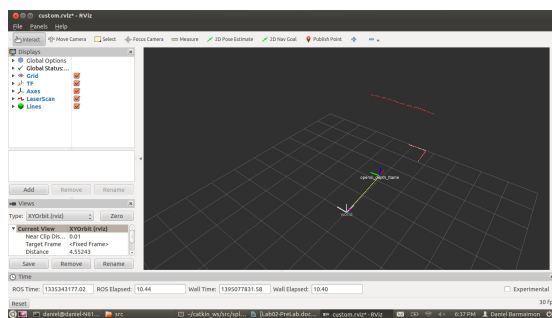

Figure 1: Initial movement for the robot

For the implementation of the optional part, it was necessary to check the messages that where published and once that the message of type *Marker* was located,
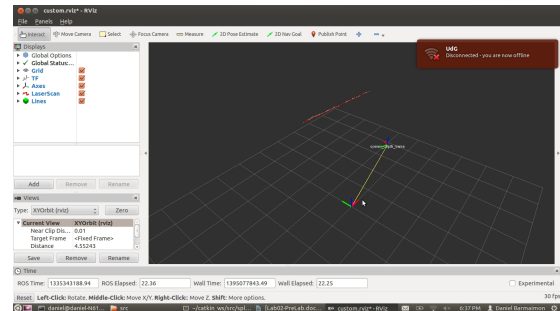

Figure 2: Split and merge results

it was tried to set different values for the time-stamp duration without any succeed. At the end it was set a different ID for each message using a global variable, avoiding overwriting with each single message.
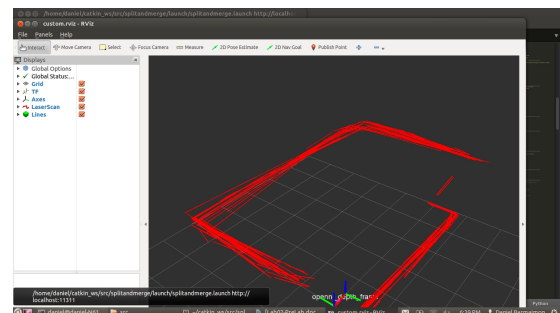

Figure 3: Split and merge with all lines