



[Return to "Robotics Software Engineer" in the classroom](#)

Home Service Robot

REVIEW

CODE REVIEW

HISTORY

Meets Specifications

Dear student

First of all, the previous reviewer was wrong. Your path construction was fine. Of course, I would not pick such a nested package to do my work. I would just do

```
world_file:= $(rospack find add_markers)/../map/myworld.world
```

Now for the project

The project was to get you started with "autonomous" mapping and localization.

You can use that as a starting point to explore and build upon this knowledge.

For example, a first step would be to expand the wall follower, which is certainly not a trivial task.

Here are some interesting links to start exploring indoor mapping!

- [Maze solving algorithm](#)
- [Dynamical Wall Following for a Wheeled Robot Using a Passive Tactile Sensor](#)
- [Frontier-Based Exploration](#)
- [Autonomous Visual Mapping](#)
- [Book. The Map-Building and Exploration Strategies of a Simple Sonar-Equipped Mobile Robot , David, Lee](#)
- [Algorithms and a Framework for Indoor Robot Mapping in a Noisy Environment Using Clustering in Spatial and Hough Domains](#)
- [A LASER-SLAM ALGORITHM FOR INDOOR MOBILE MAPPING](#)

Basic Requirements

Basic Requirements

Student submitted all required files:

ROS Packages

Shell scripts

- ✓ Include in your project submission your catkin_ws/src directory.
- ✓ Your directory must contain the official ROS packages you downloaded
- ✓ Include C++ packages and nodes,
- ✓ Include world files,
- ✓ Include shell scripts.

Simulation Setup

Student's simulation world and robot could properly load in Gazebo.

- ✓ Student's simulation world and robot could properly load in Gazebo.

Mapping

The student should write a test_slam.sh script file and launch it to manually test SLAM.

- ✓ The student should write a test_slam.sh script file and launch it to manually test SLAM.

Student created a functional map of the environment which would be used for localization and navigation tasks.

- ✓ Student created a functional map of the environment which would be used for localization and navigation tasks.

Localization and Navigation

The student's robot could navigate in the environment after a 2D Nav Goal command is issued. The student created a test_navigation.sh script file to launch it for manual navigation test.

- ✓ The student's robot could navigate in the environment after a 2D Nav Goal command is issued.

- ✓ The student created a test_navigation.sh script file to launch it for manual navigation test.

"The student created a pick_objects.sh file that will send multiple goals for the robot to reach. The robot travels to the desired pickup zone, displays a message that it reached its destination, waits 5 seconds, travels to the desired drop off zone, and displays a message that it reached the drop off zone."

- ✓ The student should write a pick_objects.sh file that will send multiple goals for the robot to reach.
- ✓ The robot has to travel to the desired pickup zone, display a message that it reached its destination, wait 5 seconds, travel to the desired drop off zone, and display a message that it reached the drop off zone.

Home Service Functions

The student should write a add_marker.sh file that will publish a marker to rviz. The marker should initially be published at the pickup zone. After 5 seconds it should be hidden. Then after another 5 seconds it should appear at the drop off zone.

- ✓ The student should write a add_marker.sh file that will publish a marker to rviz.
- ✓ The marker should initially be published at the pickup zone. After 5 seconds it should be hidden. Then after another 5 seconds it should appear at the drop off zone.

The student should write a home_service.sh file that will run all the nodes in this project.

The student's home service robot should be simulated as follow:

Initially show the marker at the pickup zone.

Hide the marker once your robot reach the pickup zone.

Wait 5 seconds to simulate a pickup.

Show the marker at the drop off zone once your robot reaches it.

- ✓ The student should write a home_service.sh file that will run all the nodes in this project.

Your home service robot should be simulated as follow:

- ✓ Initially show the marker at the pickup zone
- ✓ Hide the marker once your robot reach the pickup zone
- ✓ Wait 5 seconds to simulate a pickup
- ✓ Show the marker at the drop off zone once your robot reaches it

The student should include a brief write-up explaining the packages used for this project, covering

localization, mapping and navigation.

- ✓ brief write-up explaining the packages used for this project,
- ✓ covering localization,
- ✓ mapping
- ✓ navigation.

 [DOWNLOAD PROJECT](#)

[RETURN TO PATH](#)

[Rate this review](#)