



PROJECT SPECIFICATION

Go Chase It!**Basic Requirements**

CRITERIA	MEETS SPECIFICATIONS
Does the submission include the my_robot and the ball_chaser ROS packages?	The student submitted all required files specified in the criteria.
Do these packages follow the directory structure detailed in the project description section?	The student followed the same directory structure detailed in the project description section.

Robot Design

CRITERIA	MEETS SPECIFICATIONS

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Does the submission include a design for a differential drive robot, using the Unified Robot Description Format?	<p>Robot design requirements:</p> <ul style="list-style-type: none"> • Lidar and camera sensors. • Gazebo plugins for the robot's differential drive, lidar, and camera. • Housed inside the world • Significant changes from the sample taught in the project lesson. • Robot is stable when moving

Gazebo World

CRITERIA	MEETS SPECIFICATIONS
Does the my_robot ROS package contain the Gazebo world?	<p>Gazebo world requirements:</p> <ul style="list-style-type: none"> • Same as the world designed in the Build My World project or a new world that you design on the building editor for this project. • Includes a white-colored ball

Ball Chasing

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Does the <code>ball_chaser</code> ROS package contain two C++ ROS nodes to interact with the robot and make it chase a white-colored ball?	<p><code>drive_bot</code> requirements:</p> <ul style="list-style-type: none"> • A <code>ball_chaser/command_robot</code> service. • Service accepts linear x and angular z velocities. • Service publishes to the the wheel joints. • Service returns the requested velocities. <p><code>process_image</code> requirements:</p> <ul style="list-style-type: none"> • Subscribes to the robot's camera image. • A function to analyze the image and determine the presence and position of a white ball. • Requests a service to drive the robot towards a white ball (when present).

Launch Files

CRITERIA	MEETS SPECIFICATIONS
Does the submission include <code>world.launch</code> and <code>ball_chaser.launch</code> files that launch all the nodes in this project?	<p><code>world.launch</code> requirements:</p> <ul style="list-style-type: none"> • Launch the world (which includes a white ball). • Launch the robot. <p><code>ball_chaser.launch</code> requirements:</p> <ul style="list-style-type: none"> • Run the <code>drive_bot</code> C++ node. • Run the <code>process_image</code> C++ node.

Suggestions to Make Your Project Stand Out!

Stand out submissions should have skid-steer robots designs or robots that can chase balls of any color.
