

# Commands for Ch1 Package

## Ch2 RVIZ URDF Gazebo

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### Creating a catkin workspace

(Chapter 1, page 9)

```
$ mkdir -p ~/catkin_ws/src
```

```
$ cd ~/catkin_ws/src
```

```
$ catkin_init_workspace
```

```
$ cd ~/catkin_ws/
```

```
$ catkin_make
```

```
$ echo "source ~/catkin_ws/devel/setup.bash" >> ~/.bashrc
```

```
$ source ~/.bashrc
```

```
$ echo $ROS_PACKAGE_PATH
```

### Creating a ROS package

(Chapter 2, page 41)

```
$ cd ~/catkin_ws/src
```

```
$ catkin_create_pkg ros_robotics
```

```
$ cd ~/catkin_ws
```

```
$ catkin_make
```

### Rviz and Gazebo

(Chapter 2, page 36-41 and page 60-68)

```
$ roscore
```

```
$ rosrun rviz rviz
```

```
$ gazebo
```

```
$ roslaunch gazebo_ros empty_world.launch
```

```
$ roslaunch ros_robotics ddrobot_gazebo.launch
```

## roslaunch

(Chapter 2, page 44-45)

## Creating a simple robot model in URDF

(Chapter 2)

Download code from Github:

<https://github.com/FairchildC/ROS-Robotics-By-Example-2nd-Edition>

Copy the ros\_robotics package to the src folder of the catkin\_ws.

```
$ roslaunch ros_robotics ddrobot_rviz.launch model:=dd_robot.urdf
```

Set base\_link, ADD Robot Model, Tf

```
$ roslaunch ros_robotics ddrobot_rviz.launch model:=dd_robot2.urdf Wheels
```

```
$ roslaunch ros_robotics ddrobot_rviz.launch model:=dd_robot3.urdf Caster
```

```
$ roslaunch ros_robotics ddrobot_rviz.launch model:=dd_robot4.urdf Color
```

```
$ roslaunch ros_robotics ddrobot_rviz.launch model:=dd_robot5.urdf gui:=True
```

(Needed to load joint\_state\_Publisher)

## ADD Physical (Page 57-58)

```
$ cd catkin_ws/src/ros_robotics/urdf (Page 59)
```

```
$ check_urdf dd_robot6.urdf
```

```
$ urdf_to_graphviz dd_robot6.urdf
```

```
$ evince dd_robot.pdf
```

```
$ gazebo (Page 61)
```

```
$ env | grep ROS
```

```
$ top (gzserver, gzclient)
```

```
$ roslaunch gazebo_ros empty_world.launch (Page 62)
```

```
$ gz sdf -p dd_robot.gazebo (Note space between gz and sdf) (Page 70)
```

```
$ gz sdf -p $(rospack find ros_robotics)/urdf/dd_robot.gazebo
```

```
$ roslaunch ros_robotics ddrobot_gazebo.launch (Page 72 -ENJOY)
```