Module 4 - Catkin Workspace

ME4140/ME6640 - ROS Workshop

Mechanical Engineering

Tennessee Technological University

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- Software Packages - Review
- Directory Structure - Linux and ROS
- Catkin Workspace - Working Directory
- Tutorial 4 - Create a Package

Software Packages - Review

In general, software is organized in packages

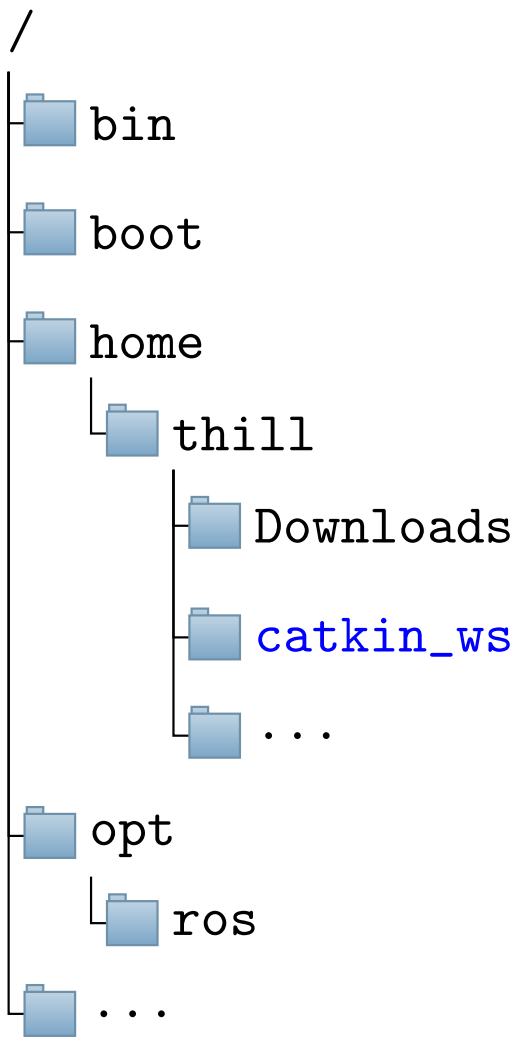
- Definition: A suite of programs that function as a single entity to accomplish a task, or group of related tasks.
- *Software in ROS is organized in packages. A package might contain ROS nodes, a ROS-independent library, a dataset, configuration files, a third-party piece of software, or anything else that logically constitutes a useful module.***
- a collection of related nodes, each node belongs to a package

Software Packages - Review

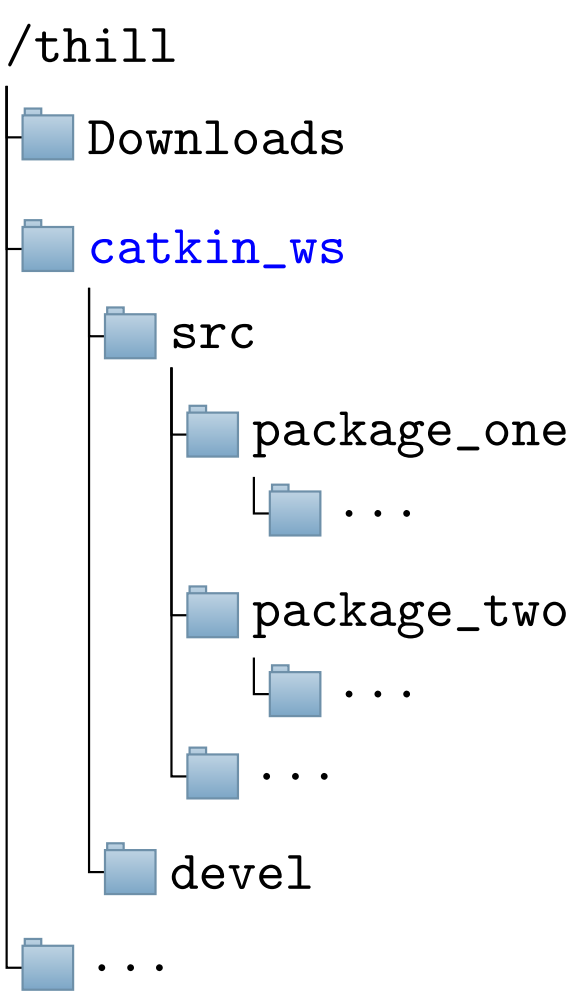
Where do packages come from?

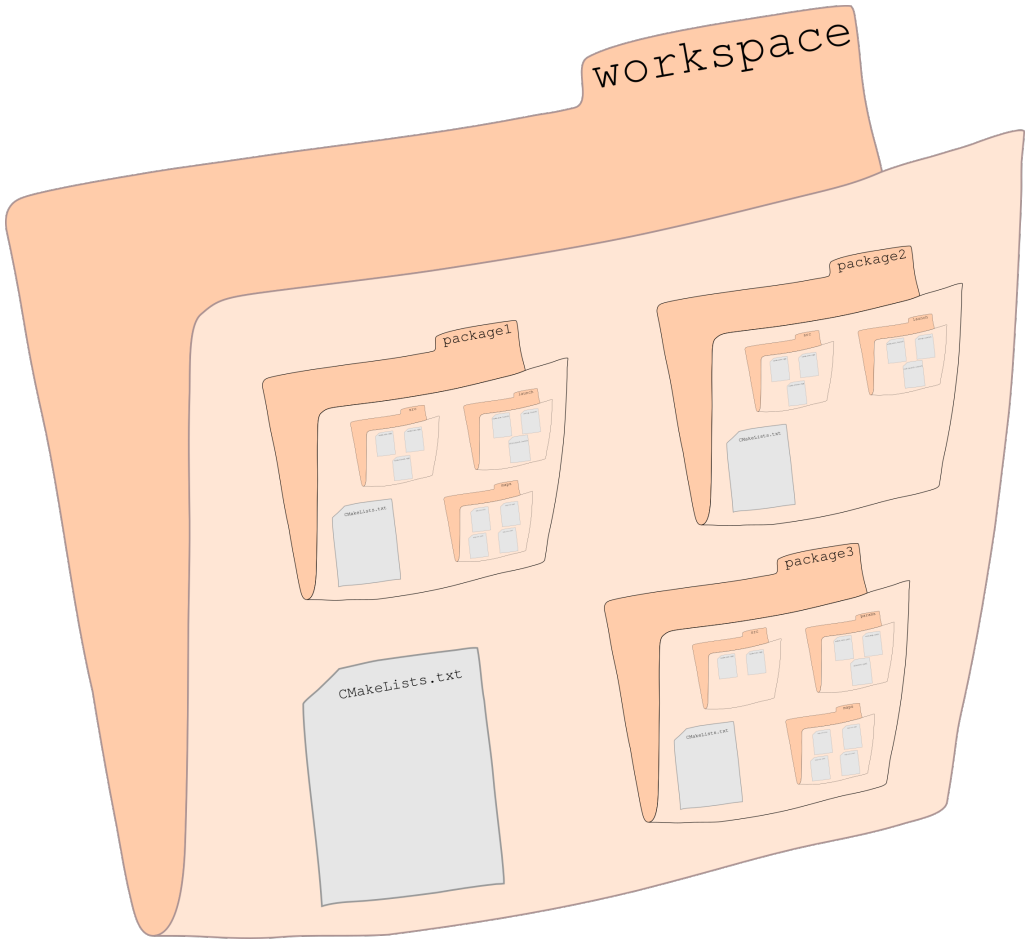
- package manager **apt** - install pre-built packages from a repository
- dependency tool **rosdep** - helps install system dependencies for software that you are building from source
- local ROS **workspace** - build custom software packages in your home folder

Directory Structure - Linux and ROS

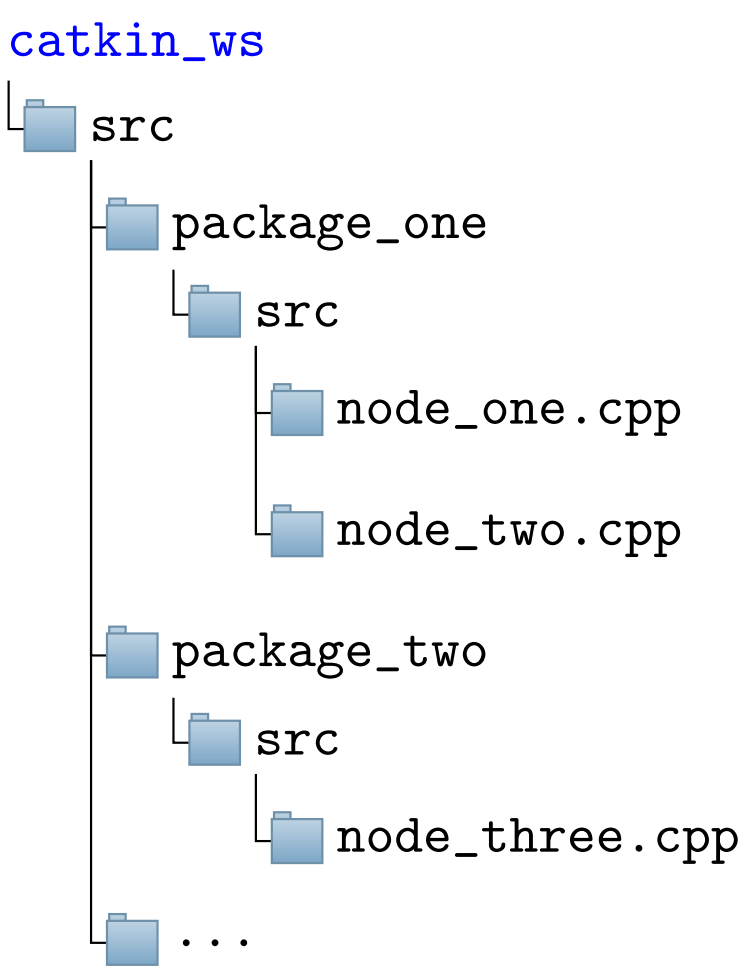


Catkin Workspace - Working Directory





Catkin Workspace - Working Directory



Tutorial 4 - Create a Package

- **Overview:** You can customize your ROS system! Your exercise is to build a custom package and C++ node to control the turtlesim.
- **Assignment:** Complete the tutorial in the document *tutorial4_create_package.pdf* on ilearn. Your custom package and node must send a velocity command to the turtle and make it move without using the keyboard drive node.
- **Deliverable:** Write a one to two paragraph summary of what you accomplished and what you struggled with the most. Include an image of the turtlesim window after your turtle has driven a pattern.
- **Next Week:** After completion of Module 4, you are ready for a better robot. You will learn to use a simulated turtlebot3 in a Gazebo simulator.