1.6 ROS Launch files

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Running multiple ROS nodes

- Start ROS nodes with **rosrun** command
  - rosrun hrwros_week1 sensor_info_publisher.py
  - rosrun hrwros_week1 sensor_info_subsciber.py
  - roscore

- Required new terminals to start each node and roscore

- Action client-server example
  - Quickly switch between terminals to view feedback topic and client output at the same time.

Running multiple ROS nodes - roslaunch

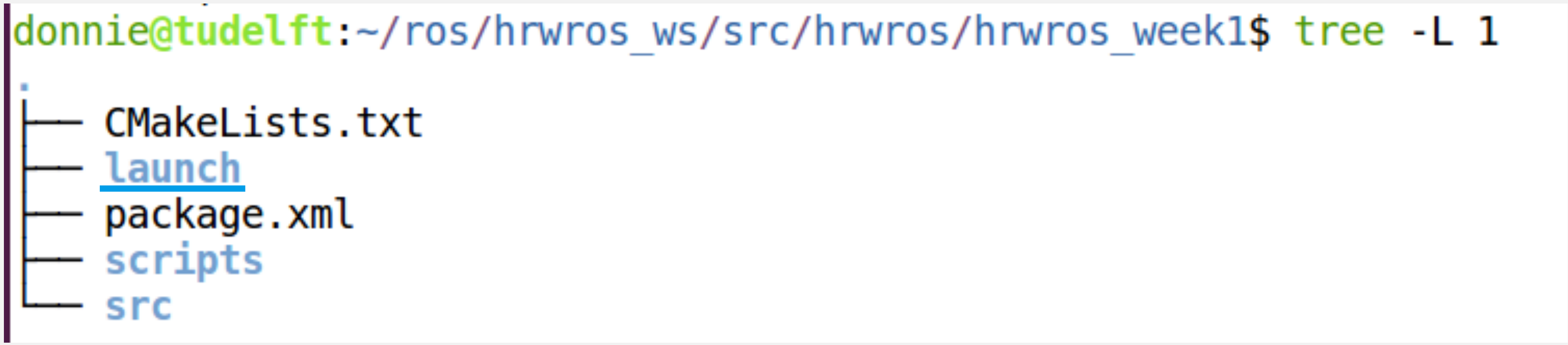
- Group multiple ROS nodes in one file
  - **launch** file in **xml** format.

```
• $ roslaunch <package_name> <launch_file.launch>
```

- Starts up all nodes in the launch file
  - **arguments, node specific parameters,** namespaces.

- Also possible to include launch files from other packages in the same launch file.

Launch files on ROS filesystem



```
donnie@tudelft:~/ros/hrwros_ws/src/hrwros/hrwros_week1$ tree -L 1
.
├── CMakeLists.txt
├── launch
├── package.xml
├── scripts
└── src
```

- **<package_name>_<file_name>**.launch file
  - hrwros_week1_servers.launch

Example launch file

hrwros_week1/launch/hrwros_week1_servers.launch file

```
<?xml version="1.0"?>
<launch>
  <!--Argument to the launch file-->
  <arg name="counter_delay_parameter" default=”1.0"/>

  <!--Start the metres_to_feet service server ROS node-->
  <node name="metres_to_feet" pkg="hrwros_week1"
type="metres_to_feet_server.py” output=“screen”/>
```

Example launch file

hrwros_week1/launch/hrwros_week1_servers.launch file

```
<!-- Start the action server ROS node-->
  <node name="counter_with_delay" pkg=”hrwros_week1"
     type="counter_with_delay_as.py” output="screen">
     <param name=”counter_delay” type=“double”
          value=“$(arg counter_delay_parameter)”/>
 </node>
</launch>
```