# Running roslaunch files (simulation and programs at once)

Lets base our example roslaunch upon TreeSeeker from Pigwomaniak and tom1322s inspired by Inteligent Quads

## Table of Contents

Running roslaunch files



## Prerequisites

All prerequisites are stored in this file. If you also made your catkin workspace just like shown in attachted file go ahead and skip dependencies section as you should have all you need.

## Dependencies (empty worksapce)

Please check if you have all software installed by going through Prerequisites.

If you want to start with empty catkin warkspace you will need to get packages that are required by dvc:

1. Basic ros/mavros

```
mkdir -p ~/catkin_ws/src
cd ~/catkin_ws
catkin init
```

From catkin_ws directory run:

```
wstool init ~/catkin_ws/src
rosinstall_generator --upstream mavros | tee /tmp/mavros.rosinstall
rosinstall_generator mavlink | tee -a /tmp/mavros.rosinstall
wstool merge -t src /tmp/mavros.rosinstall
wstool update -t src
rosdep install --from-paths src --ignore-src --rosdistro `echo
$ROS_DISTRO` -y --os=ubuntu:focal
catkin build
```

Resorce

```
echo "source ~/catkin_ws/devel/setup.bash" >> ~/.bashrc
source ~/.bashrc
sudo
~/catkin_ws/src/mavros/mavros/scripts/install_geographiclib_datasets.s
h
```

2. Iq sim which you can get directly from Inteligent Quads or my image of iqs repo.

```
cd ~/catkin_ws/src
git clone https://github.com/Intelligent-Quads/iq_sim.git
echo
"GAZEBO_MODEL_PATH=${GAZEBO_MODEL_PATH}:$HOME/catkin_ws/src/iq_sim/mod
els" >> ~/.bashrc
cd ~/catkin_ws
catkin build
source ~/.bashrc
```

3. YOLO from darknet

```
cd ~/catkin_ws/src
git clone https://github.com/kunaltyagi/darknet_ros.git
cd darknet_ros
git checkout opencv4
git submodule update --init --recursive
```

Building:

```
catkin build -DCMAKE_BUILD_TYPE=Release -
DCMAKE_C_COMPILER=/usr/bin/gcc-8
```

## Installing DVC

It is as simple as running this command set:

```
cd ~/catkin_ws/src
git clone https://github.com/printfKrzysztof/Drone-Visual-Controler.git
catkin build -DCMAKE_BUILD_TYPE=Release -DCMAKE_C_COMPILER=/usr/bin/gcc-8
```

## Running program and simulation

To run program you type in unused terminal:

```
roslaunch dvc dronevisualsim.launch
```

In other terminal no. 2 type:

```
./startpray.sh
```

In other terminal no. 3 type:

```
./startdrone.sh
```

**If you use VS CODE you can use Tasks added by me**

You can also use mission commander if you want:

```
cd MissionPlanner-latest/
mono MissionPlanner.exe
```

## Starting mission

To start mission simply type in terminal no.2 and no.3

```
mode GUIDED
```

Which will tell software in the loop to start mission.