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pic

Files

```
student@autonomous-systems:~ $ rostopic echo /parameter_updates
WARNING: topic [/parameter_updates] does not appear to be published yet
^Cstudent@autonomous-systems:~ $ rostopic echo /parameter_description
WARNING: topic [/parameter_description] does not appear to be published yet
```

rostopic echo /tf

```
---
transforms:
-
  header:
    seq: 0
    stamp:
      secs: 0
      nsecs: 0
    frame_id: odom
  child_frame_id: base_link
  transform:
    translation:
      x: -5.358
      y: -0.106
      z: 0.0
    rotation:
      x: 0.0
      y: 0.0
      z: -0.52444883577
      w: 0.851441964352
---
```

Visualize robot in scene

student@autonomous-systems:~ \$ rosrn rviz rviz

Python program to listen

```
Position  
-0.015  
-0.011  
Orientation  
0.167506611302  
0.985870952595
```

Position

X

Y

Orientation

Z

W

Python read_all.py

```
TF Position  
-0.029  
0.058  
TF Orientation  
-0.608824248064  
0.793305133583  
  
Pose Position  
-0.029  
0.058  
Pose Orientation  
-0.608824248064  
0.793305133583
```