ROS Rviz,bag,sensor_msg,tf(1)

학과 : 산업인공지능학과
학번 : 2020254016
이름 : 박 민 우

1. ROS bag

1) Rosbag

- ROSMASTER 실행

- Turtlesim node 실행
- Turtlesim Teleop node 실행

- Rosbag record 실행
- Teleop node에서 방향키로 조작
- Rosbag record 종료

- Bag file 확인


```
ubuntu@Park: ~
[ INFO] [1607137760.616769601]: Subscribing to /turtle1/pose
^Cubuntu@Park:~$ rosbag info 2020-12-05-12-09-20.bag
path:          2020-12-05-12-09-20.bag
version:       2.0
duration:      55.4s
start:         Dec 05 2020 12:09:20.62 (1607137760.62)
end:           Dec 05 2020 12:10:16.00 (1607137816.00)
size:          501.3 KB
messages:      7094
compression:   none [1/1 chunks]
types:         geometry_msgs/Twist [9f195f881246fdfa2798d1d3eebca84a]
               rosgraph_msgs/Log   [acffd30cd6b6de30f120938c17c593fb]
               turtlesim/Color     [353891e354491c51aabe32df673fb446]
               turtlesim/Pose      [863b248d5016ca62ea2e895ae5265cf9]
topics:        /rosout               4 msgs    : rosgraph_msgs/Log   (2 connections)
               /turtle1/cmd_vel    185 msgs    : geometry_msgs/Twist
               /turtle1/color_sensor 3453 msgs : turtlesim/Color
               /turtle1/pose       3452 msgs   : turtlesim/Pose
ubuntu@Park:~$
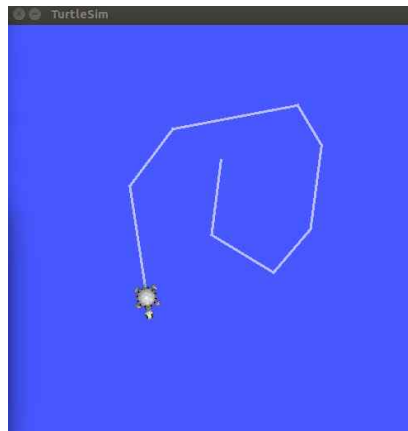```

2) Rosbag play
 - Bag file 재생



```
ubuntu@Park: ~
               /turtle1/pose       3452 msgs    : turtlesim/Pose
ubuntu@Park:~$ rosbag play 2020-12-05-12-09-20.bag
[ INFO] [1607137979.308168996]: Opening 2020-12-05-12-09-20.bag

Waiting 0.2 seconds after advertising topics... done.

Hit space to toggle paused, or 's' to step.
 [RUNNING]  Bag Time: 1607137815.969937   Duration: 55.346475 / 55.378774
Done.
ubuntu@Park:~$
```

- Turtlesim node에서 record된 topic 확인
- Turtlesim node 재시작
- Rosbag play, 동일한 동작 확인


```
ubuntu@Park: ~
ubuntu@Park:~$ rosrun turtlesim turtlesim_node
[ INFO] [1607138106.074535965]: Starting turtlesim with node name /turtlesim
[ INFO] [1607138106.078560303]: Spawning turtle [turtle1] at x=[5.544445], y=[5.544445], theta=[0.000000]
]
```

```
ubuntu@Park: ~
ubuntu@Park:~$ rosbag play 2020-12-05-12-09-20.bag
[ INFO] [1607138237.976785176]: Opening 2020-12-05-12-09-20.bag

Waiting 0.2 seconds after advertising topics... done.

Hit space to toggle paused, or 's' to step.
 [DELAYED]  Bag Time: 1607137760.623462   Duration: 0.000000 / 55.378774   Delay
 [RUNNING]  Bag Time: 1607137760.623462   Duration: 0.000000 / 55.378774
 [RUNNING]  Bag Time: 1607137760.623462   Duration: 0.000000 / 55.378774
 [RUNNING]  Bag Time: 1607137760.624266   Duration: 0.000804 / 55.378774
 [RUNNING]  Bag Time: 1607137760.724437   Duration: 0.100975 / 55.378774
 [RUNNING]  Bag Time: 1607137760.769566   Duration: 0.146104 / 55.378774
 [RUNNING]  Bag Time: 1607137760.770477   Duration: 0.147015 / 55.378774
 [RUNNING]  Bag Time: 1607137760.786591   Duration: 0.163129 / 55.378774
 [RUNNING]  Bag Time: 1607137760.802735   Duration: 0.179273 / 55.378774
 [RUNNING]  Bag Time: 1607137760.817950   Duration: 0.194488 / 55.378774
 [RUNNING]  Bag Time: 1607137760.834132   Duration: 0.210670 / 55.378774
 [RUNNING]  Bag Time: 1607137760.850355   Duration: 0.226893 / 55.378774
 [RUNNING]  Bag Time: 1607137760.866561   Duration: 0.243099 / 55.378774
 [RUNNING]  Bag Time: 1607137760.882737   Duration: 0.259274 / 55.378774
 [RUNNING]  Bag Time: 1607137760.897980   Duration: 0.274518 / 55.378774
 [RUNNING]  Bag Time: 1607137760.914100   Duration: 0.290647 / 55.378774
```


[record 된 turtlesim]