Tema 5. Navigation - Roobótica Móvil

Comandos

```
source /opt/ros/humble/setup.bash
export ROS_LOCALHOST_ONLY=1
export TURTLEBOT3_MODEL=burger
ros2 launch turtlebot3_gazebo turtlebot3_house.launch.py
```

```
source /opt/ros/humble/setup.bash
export ROS_LOCALHOST_ONLY=1
export TURTLEBOT3_MODEL=burger
ros2 launch turtlebot3_navigation2 navigation2.launch.py \
  use_sim_time:=True map:=<path_to>/map.yaml
```

- Ahora dentro de rviz le damos al botón de `2D Pose Estimate` y colocamos la flecha más o menos donde está el robot.
- Podremos hacer que se dirija a ciertos lugares pulsando el botón `Navigation2 Goal` y pulsando en la zona del mapa a la que queramos ir.

Topics:

```
ros2 bag record /clock /tf /tf_static /map /robot_description /scan
/particle_cloud /plan /local_plan /waypoints
/mobile_base/sensors/bumper_pointcloud /global_costmap/costmap
/global_costmap/costmap_updates /global_costmap/voxel_marked_cloud
/downsampled_costmap /downsampled_costmap_updates /local_costmap/costmap
/local_costmap/costmap_updates /local_costmap/published_footprint
/local_costmap/voxel_marked_cloud
```

Verificar con rviz

```
rviz2 -d \
    /opt/ros/humble/share/nav2_bringup/rviz/nav2_default_view.rviz

ros2 bag play ...
```

Topic PoseStamped

```
ros2 topic pub --once /goal_pose \
  geometry_msgs/msg/PoseStamped \
  "{header: {stamp: {}, frame_id: 'map'}, \
```

```
    pose: {position: {x: -1, y: 3, z: 0.0}, \
           orientation: {x: 0.0, y: 0.0, z: 0.0, w: 1.0}} }"
```