

# Add URDF

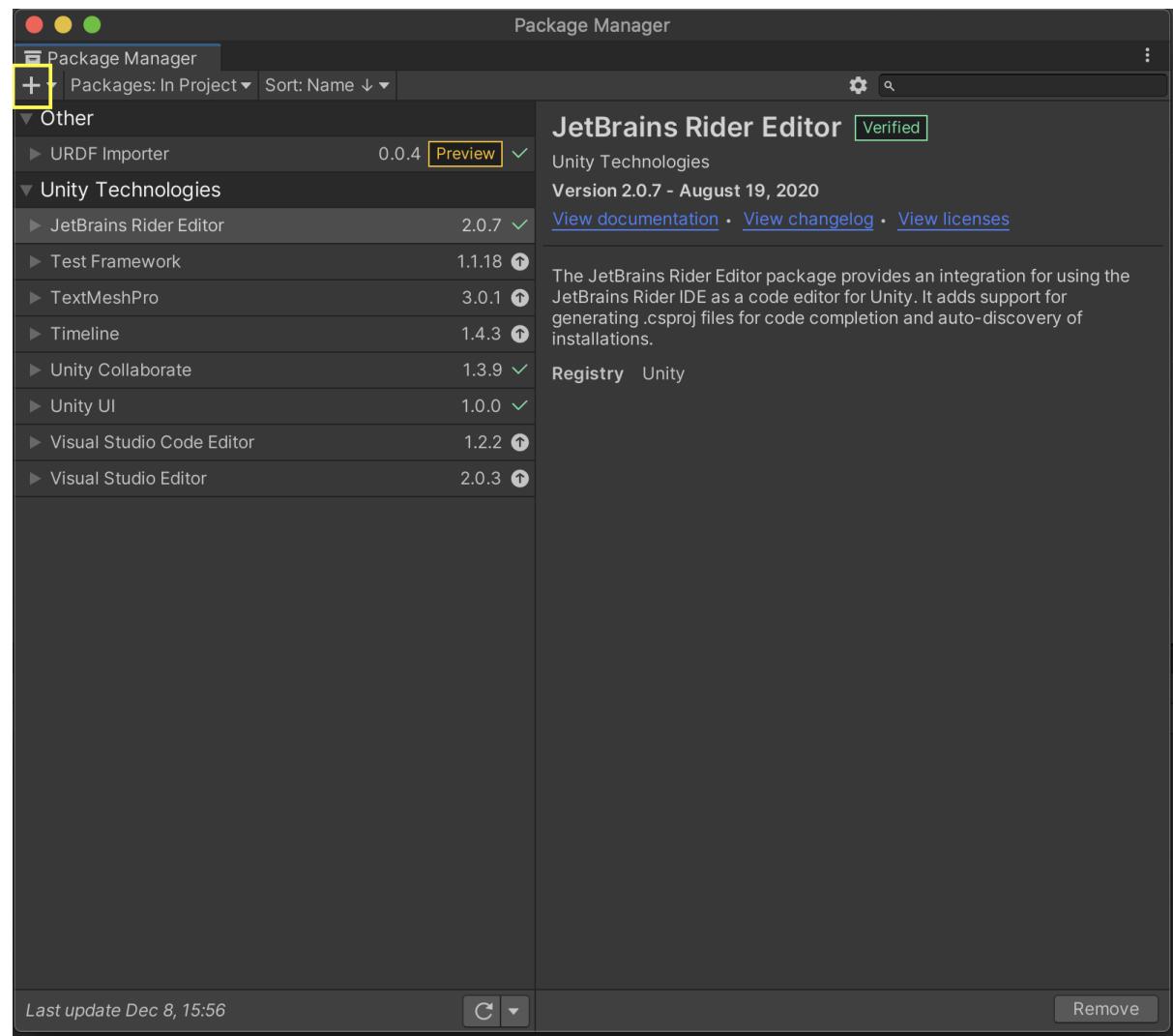
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- ref : <https://github.com/Unity-Technologies/URDF-Importer>
- URDF 개념 참고 <https://pinkwink.kr/1007>
- Tutorial: Using a URDF in Gazebo [http://gazebosim.org/tutorials/?tut=ros\\_urdf](http://gazebosim.org/tutorials/?tut=ros_urdf)

Name	Type	Description
material	value	Material of visual element
gravity	bool	Use gravity
dampingFactor	double	Exponential velocity decay of the link velocity - takes the value and multiplies the previous link velocity by (1-dampingFactor).
maxVel	double	maximum contact correction velocity truncation term.
minDepth	double	minimum allowable depth before contact correction impulse is applied
mu1 / mu2	double	Friction coefficients $\mu$ for the principal contact directions along the contact surface as defined by the Open Dynamics Engine (ODE) (see parameter descriptions in ODE's user guide)
fdir1	string	3-tuple specifying direction of mu1 in the collision local reference frame.
kp / kd	double	Contact stiffness $k_p$ and damping $k_d$ for rigid body contacts as defined by ODE (ODE uses erp and cfm but there is a mapping between erp/cfm and stiffness/damping)
selfCollide	bool	If true, the link can collide with other links in the model.
maxContacts	int	Maximum number of contacts allowed between two entities. This value overrides the max_contacts element defined in physics.
laserRetro	double	intensity value returned by laser sensor.

## Add Package from Git URL

1. 패키지 추가



- [https://github.com/Unity-Technologies/URDF-Importer.git?  
path=/com.unity.robotics.urdf-importer#v0.5.0](https://github.com/Unity-Technologies/URDF-Importer.git?path=/com.unity.robotics.urdf-importer#v0.5.0)

## Import Robot from Selected URDF file

- ref : [https://github.com/ROBOTIS-GIT/turtlebot3/tree/master/turtlebot3\\_description/urdf](https://github.com/ROBOTIS-GIT/turtlebot3/tree/master/turtlebot3_description/urdf)

Asset에 미리 작성한 URDF 파일 드래그엔드롭

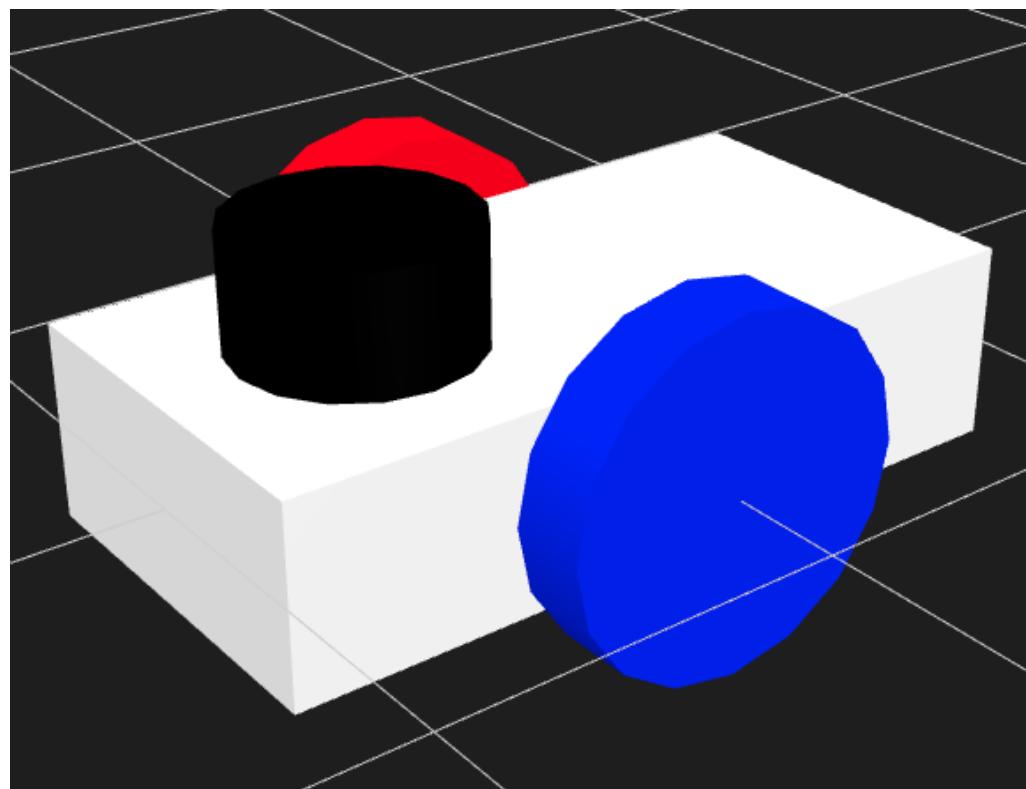
급히 만든 mybot urdf

**URDF**

**Images**

**URDF****Images**

[nw\\_mybot](#)

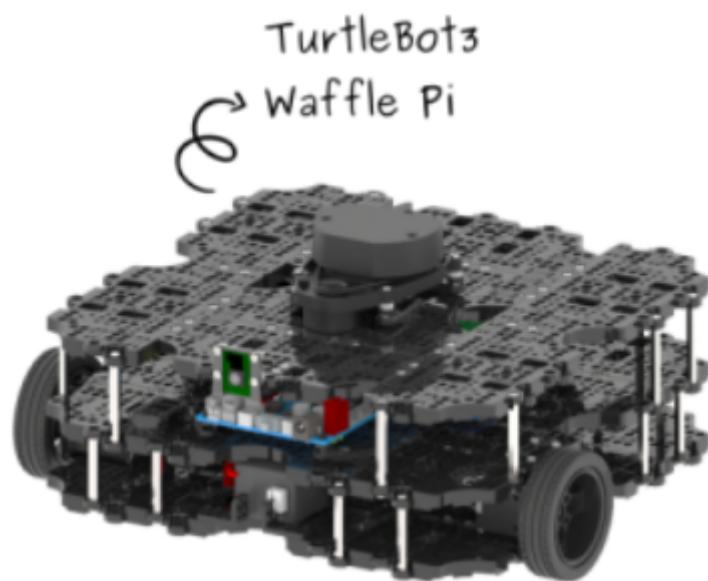


TurtleBot<sub>3</sub>

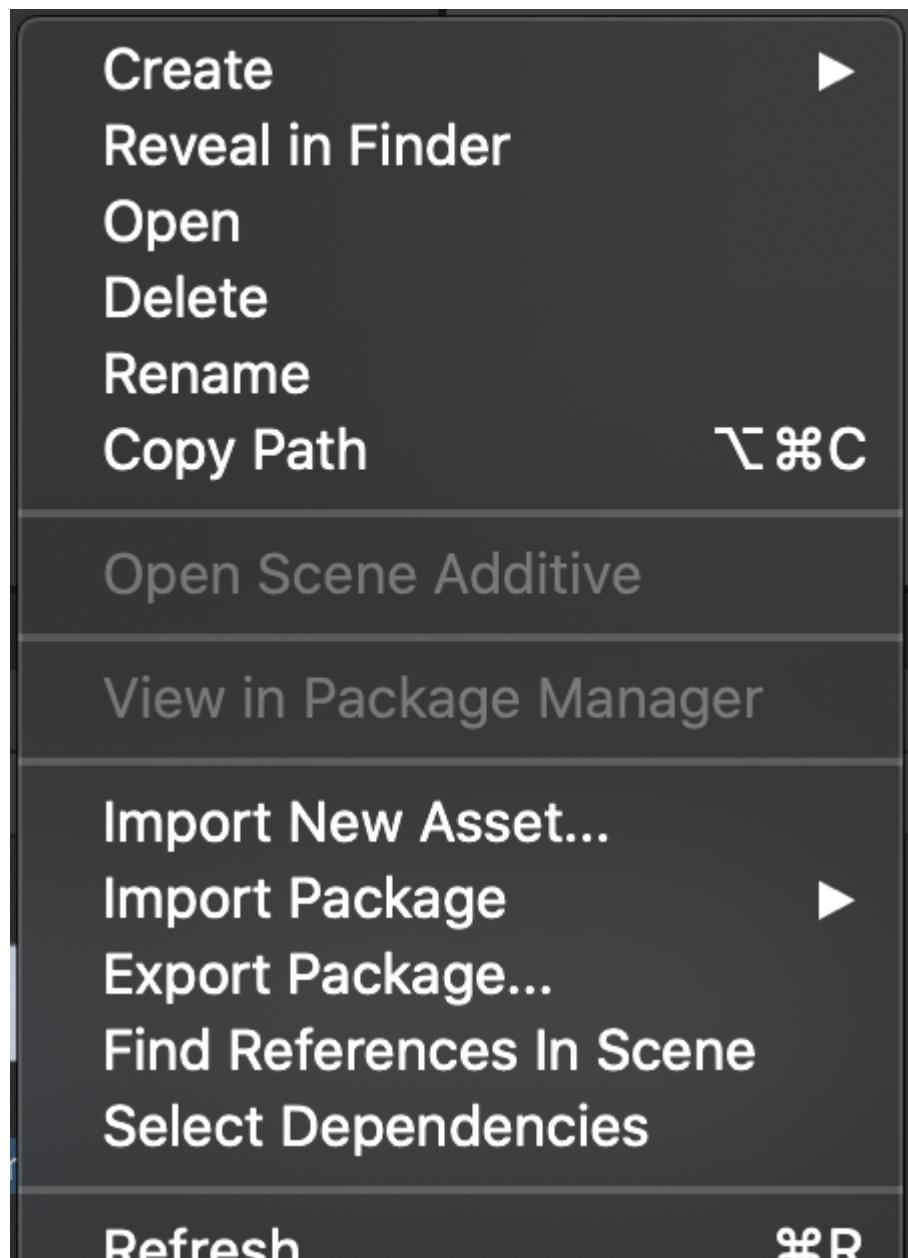
Burger

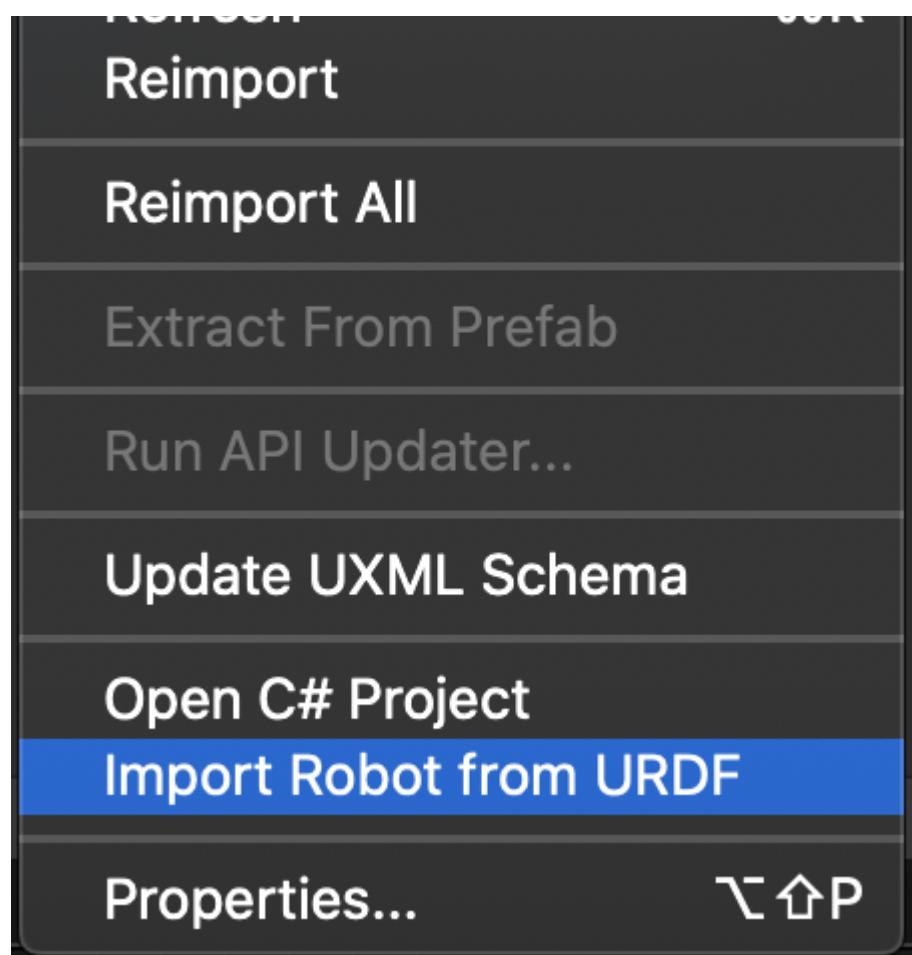
[turtlebot3\\_burger](#)

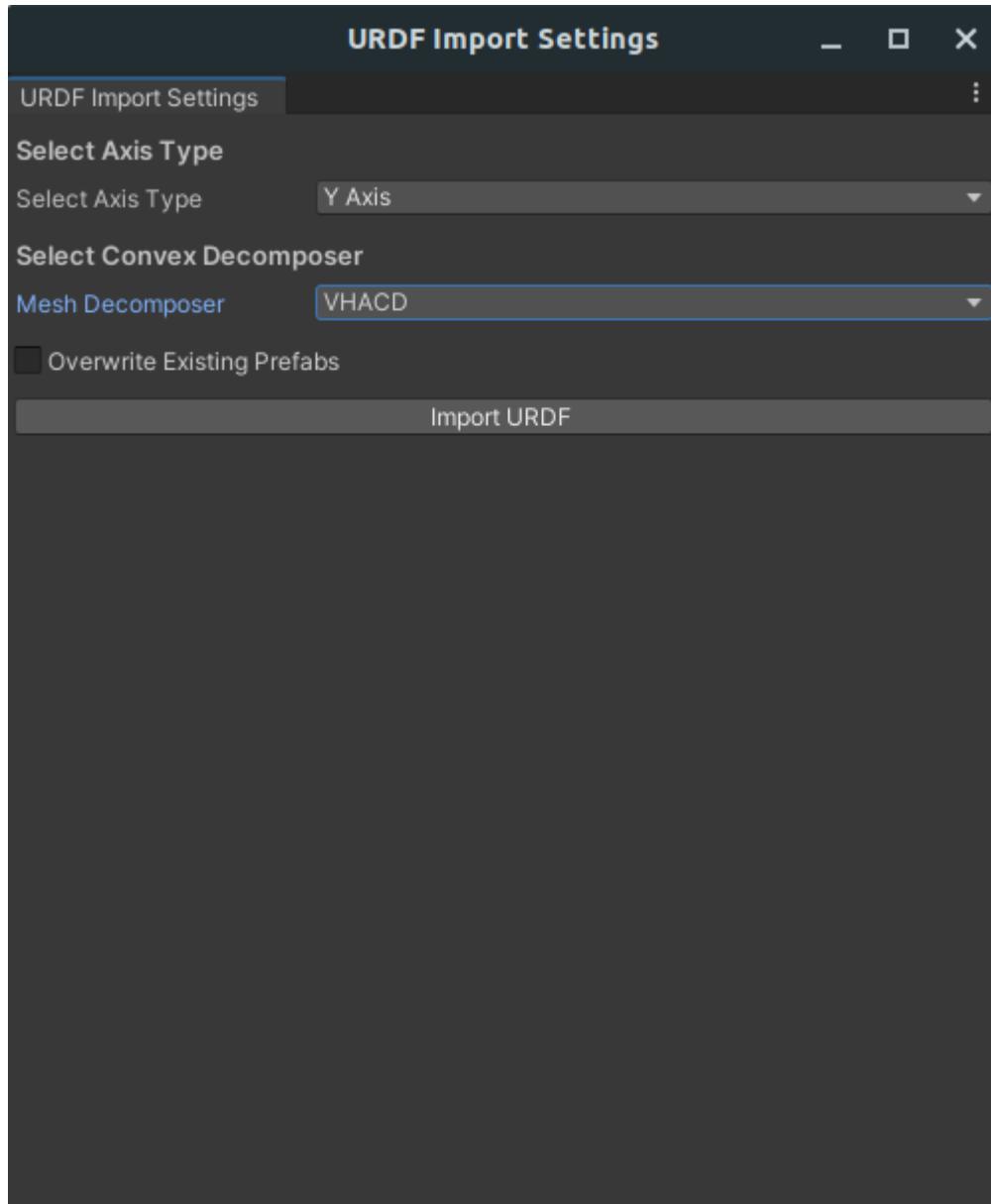


[URDF](#)[Images](#)[turtlebot3\\_waffle\\_pi](#)

오른쪽 클릭해서 불러오기



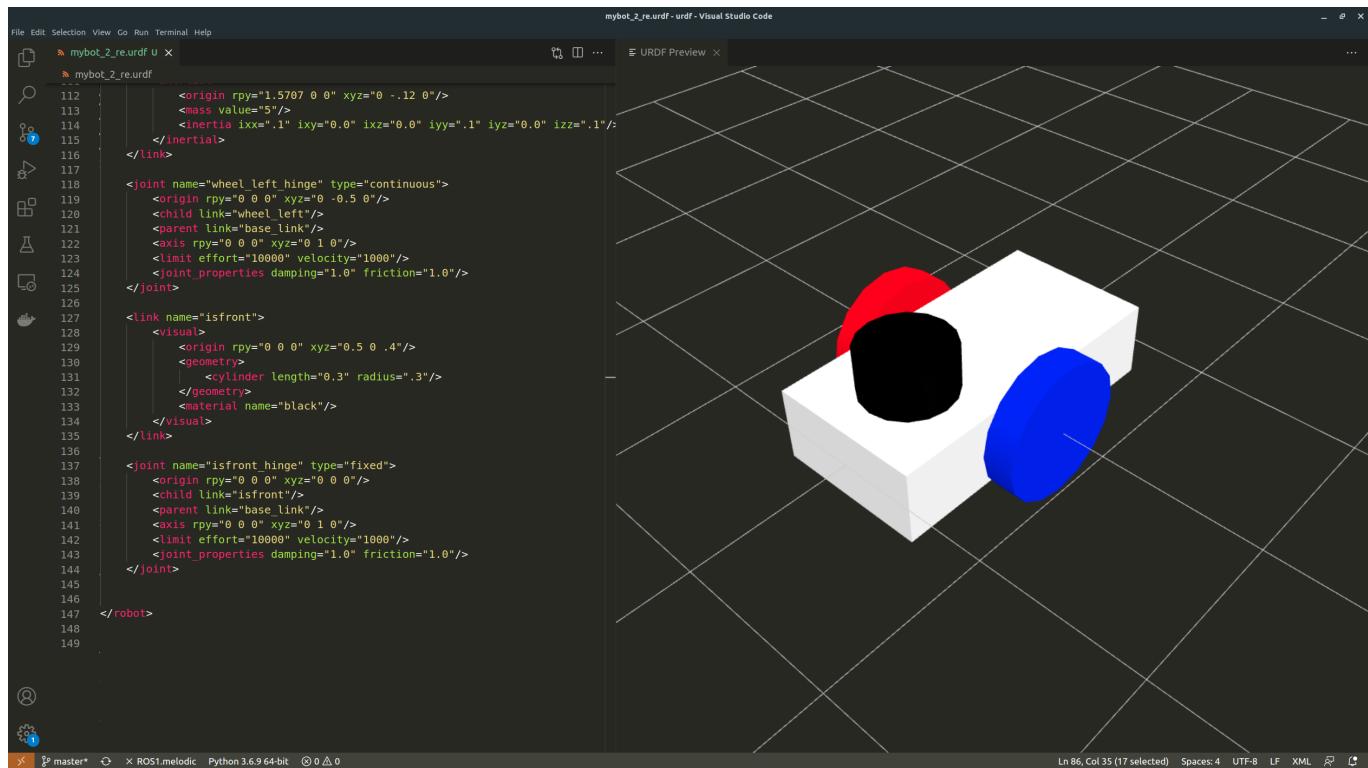




일단 모르니까 기본 불러오기

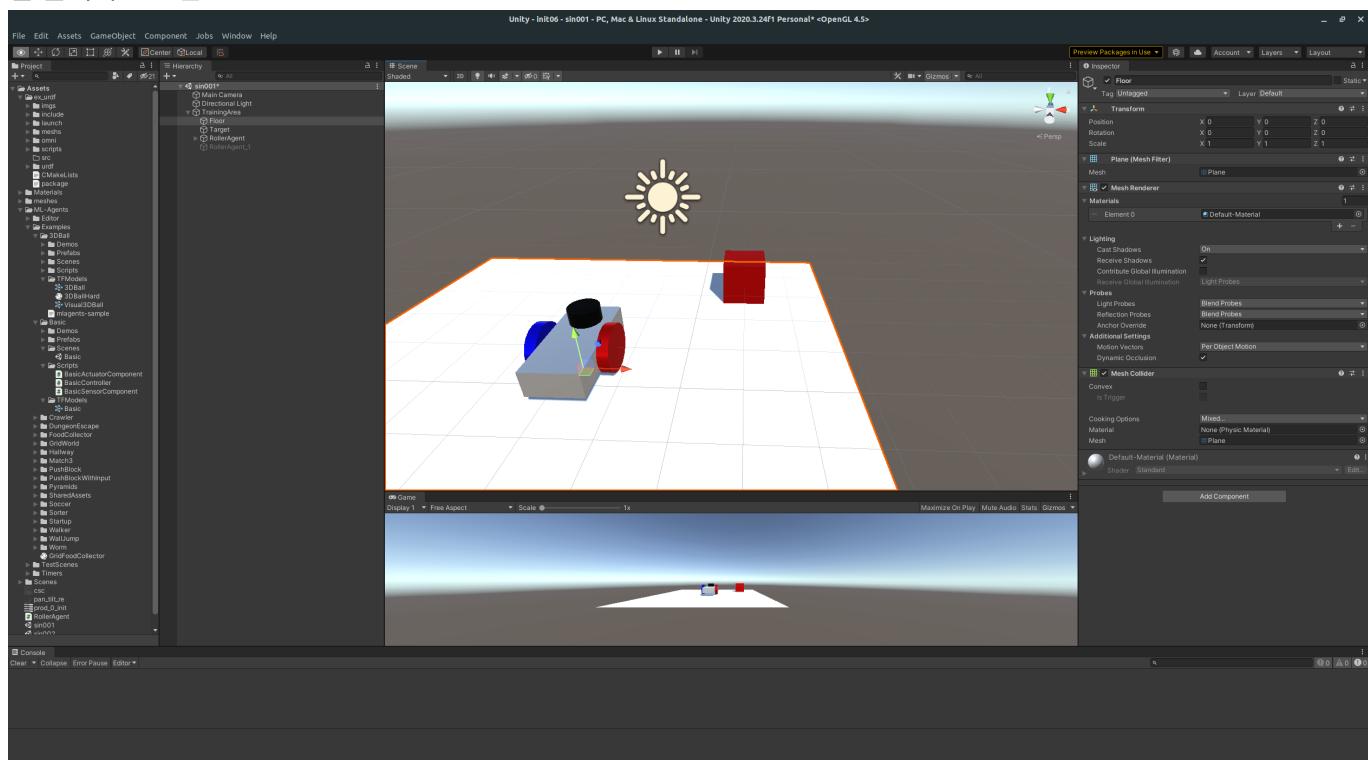
급히 만든 mybot

- wheel 2개
- caster 1개
- 상단 라이다 모형 1개



done

잘 불러와진 모습



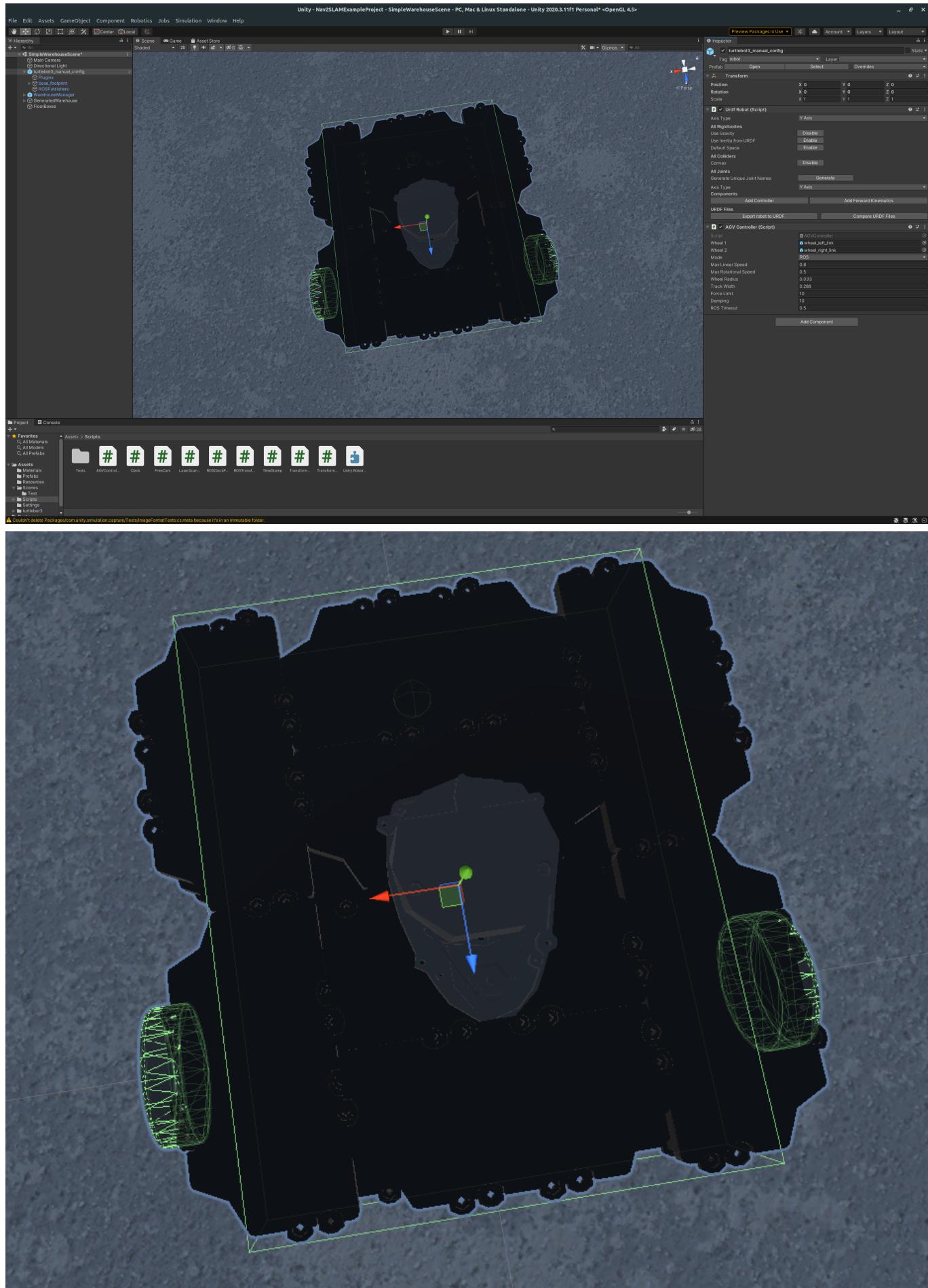
참고

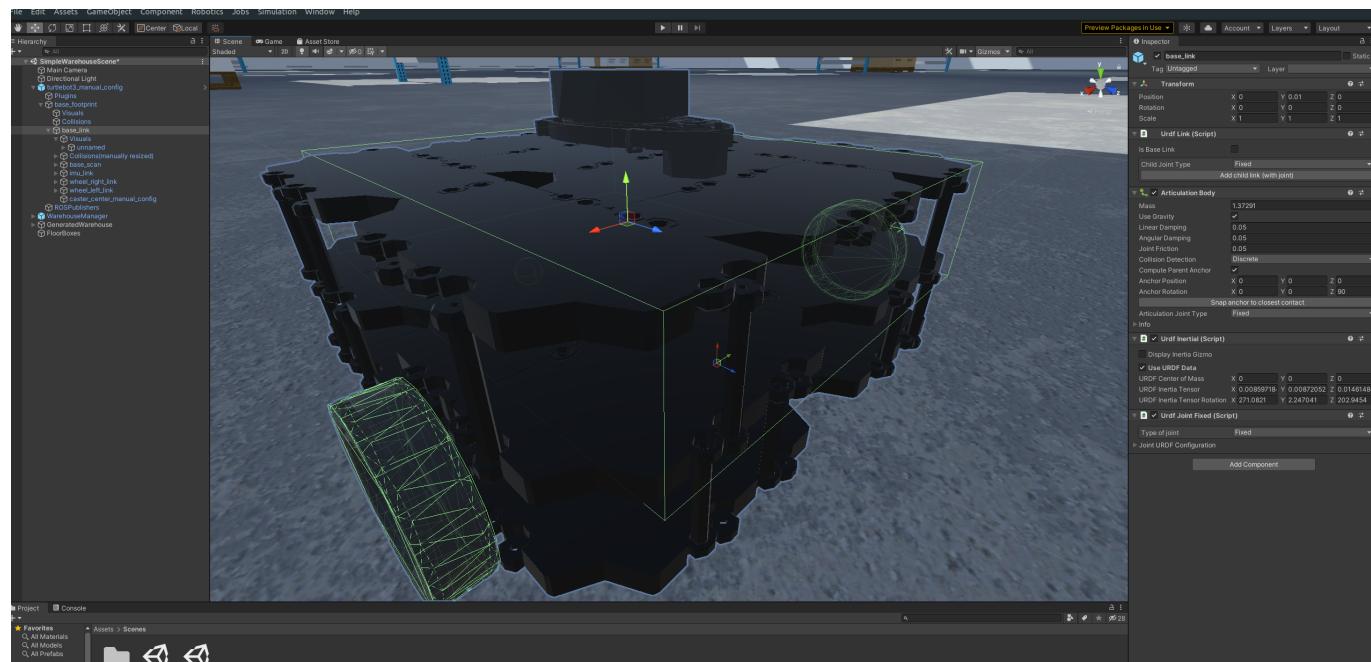
```
# urdf check
$ check_urdf ./turtlebot3_waffle_pi.urdf
robot name is: turtlebot3_waffle_pi
----- Successfully Parsed XML -----
root Link: base_footprint has 1 child(ren)
```

```
child(1): base_link
    child(1): camera_link
        child(1): camera_rgb_frame
            child(1): camera_rgb_optical_frame
    child(2): caster_back_left_link
    child(3): caster_back_right_link
    child(4): imu_link
    child(5): base_scan
    child(6): wheel_left_link
    child(7): wheel_right_link
```

## 비교

1. **visual** - 검은 색, 3D 모델링 프로그램으로 그린 부분
2. **collider** - 초록 색, 충돌 가능한 부분





## 추가해야할 부분

- ros component
- ArticulationBody <https://docs.unity3d.com/Manual/class-ArticulationBody.html>

<https://user-images.githubusercontent.com/8021479/146311174-cd3efe74-cbc5-4cc7-b187-6b5af9b2e00b.mp4>

다시 # Home main 으로