

# Robot de 4 ruedas con controlador



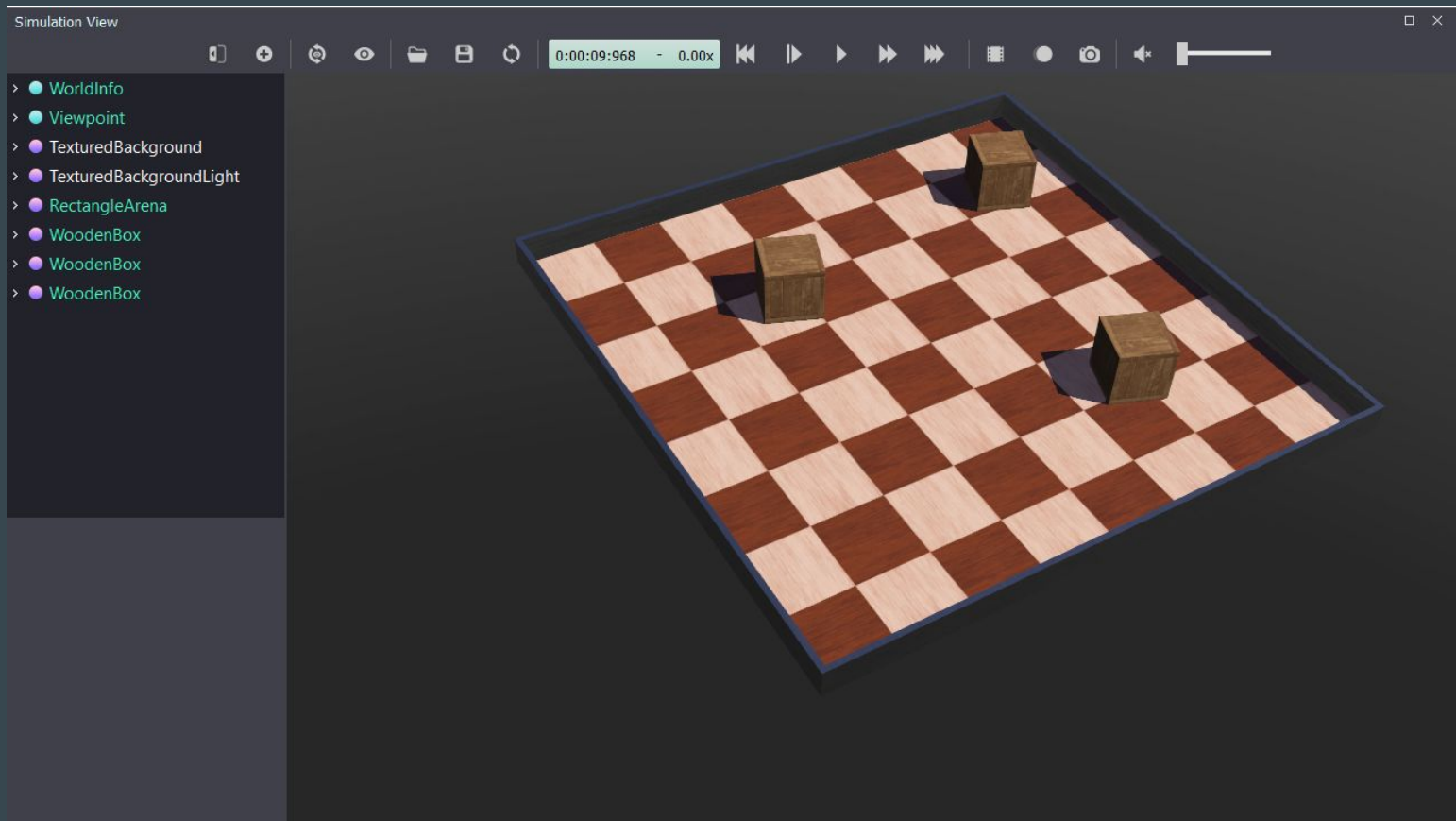
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# Objetivo

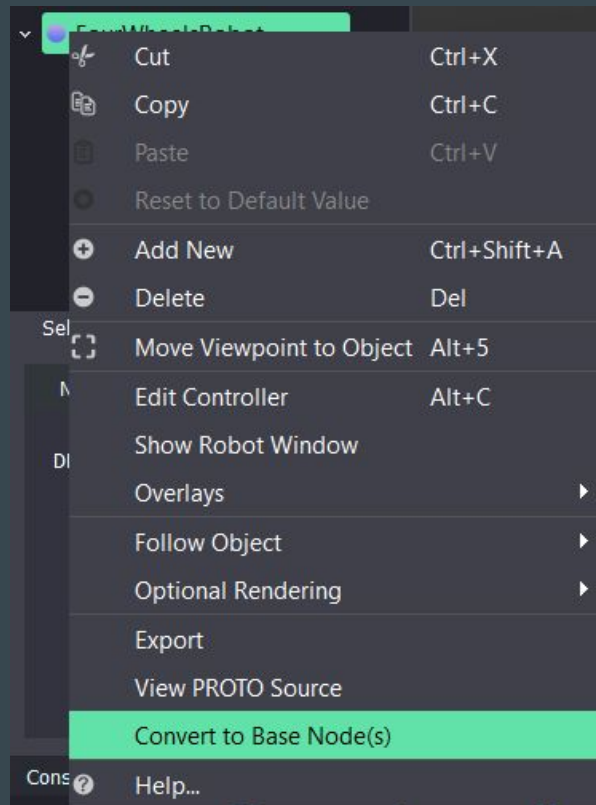
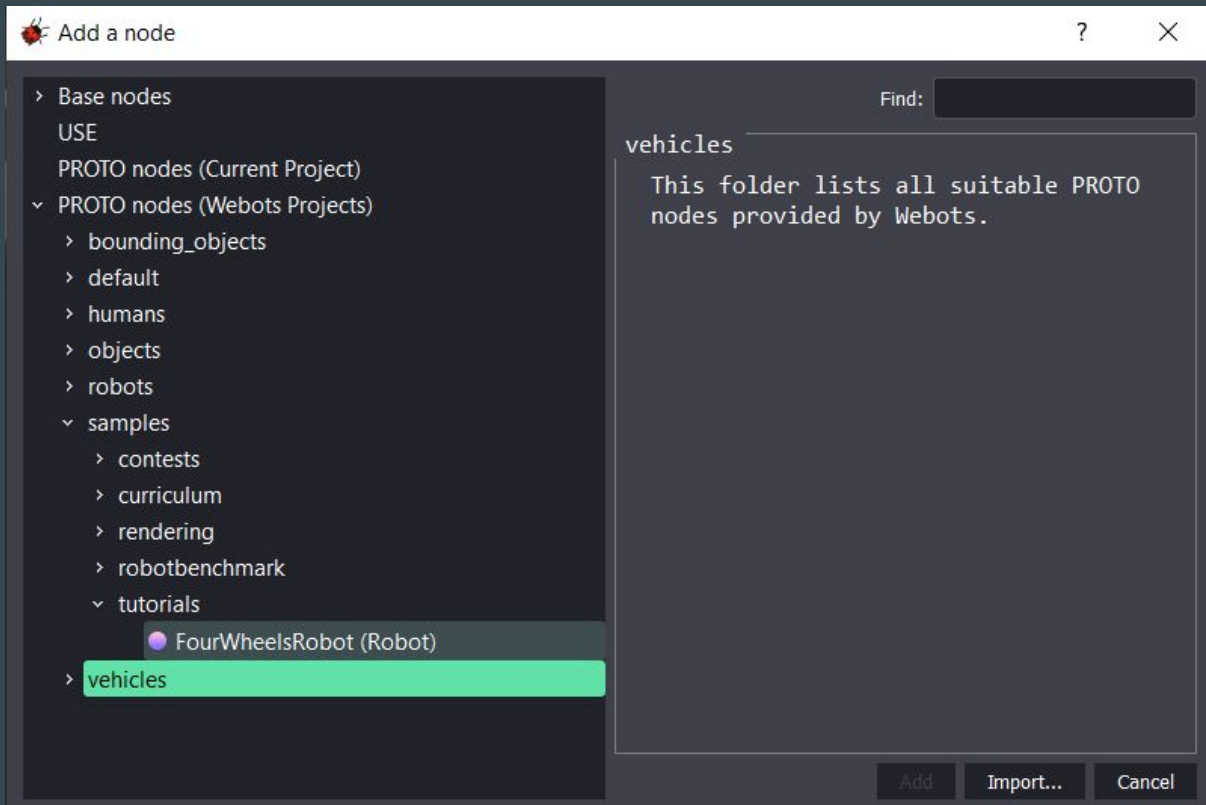
Un robot de 4 ruedas que cambie de sentido al encontrarse ante un obstáculo

Este robot tiene dos sensores de distancia y girará sobre su centro en sentido horario al encontrarse ante un obstáculo .

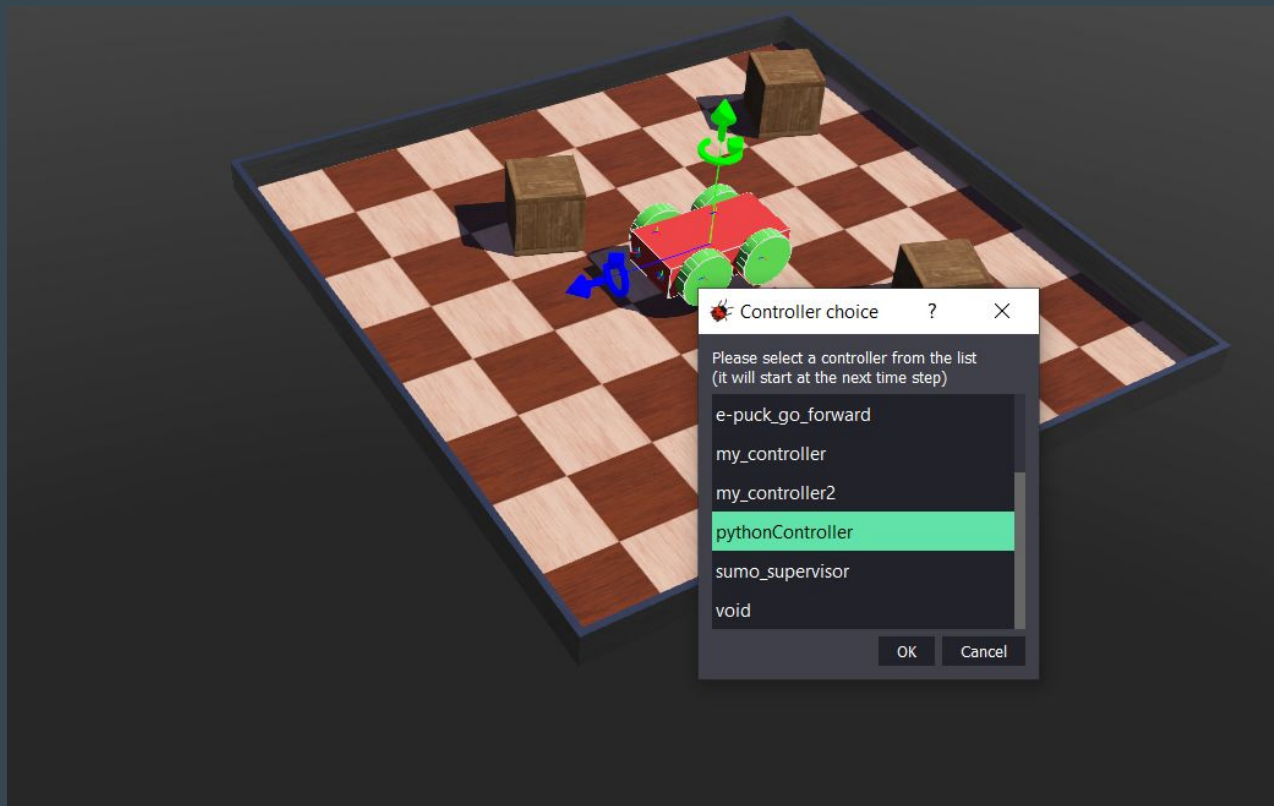
# Escenario



# Robot



# Controlador



# Código

Simulation View

0:00:11:648 - 1.06x

WorldInfo  
Viewpoint  
TexturedBackground  
TexturedBackgroundLight  
RectangleArena  
WoodenBox  
WoodenBox  
WoodenBox  
Robot

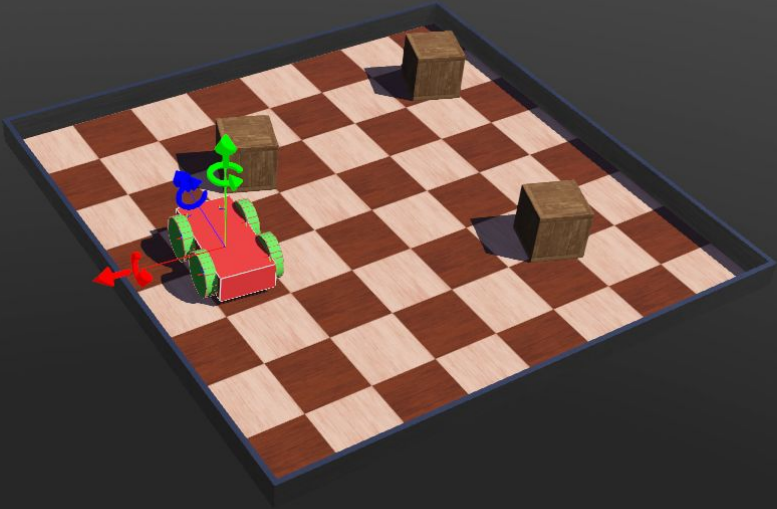
- translation 0.00709 0.0399
- rotation -1.72e-09 -1 1.58e
- scale 1 1 1
- children
  - name "robot"
  - model ""

Selection: Robot

Node Mass Position

DEF:

☐ show resize handles



pythonController.py

```
1 from controller import Robot
2
3 TIME_STEP = 64
4 robot = Robot()
5 ds = []
6 dsNames = ['ds_right', 'ds_left']
7 for i in range(2):
8     ds.append(robot.getDistanceSensor(dsNames[i]))
9     ds[i].enable(TIME_STEP)
10 wheels = []
11 wheelsNames = ['wheel1', 'wheel2', 'wheel3', 'wheel4']
12 for i in range(4):
13     wheels.append(robot.getMotor(wheelsNames[i]))
14     wheels[i].setPosition(float('inf'))
15     wheels[i].setVelocity(0.0)
16 avoidObstacleCounter = 0
17 while robot.step(TIME_STEP) != -1:
18     leftSpeed = 1.0
19     rightSpeed = 1.0
20     if avoidObstacleCounter > 0:
21         avoidObstacleCounter -= 1
22         leftSpeed = 1.0
23         rightSpeed = -1.0
24     else: # read sensors
25         for i in range(2):
26             if ds[i].getValue() < 950.0:
27                 avoidObstacleCounter = 100
28     wheels[0].setVelocity(leftSpeed)
29     wheels[1].setVelocity(rightSpeed)
30     wheels[2].setVelocity(leftSpeed)
31     wheels[3].setVelocity(rightSpeed)
```

Console

```
INFO: pythonController: Terminating.
INFO: pythonController: Starting controller: python.exe -u "pythonController.py"
INFO: pythonController: Terminating.
INFO: pythonController: Starting controller: python.exe -u "pythonController.py"
```

```
1 from controller import Robot
2
3 TIME_STEP = 64
4 robot = Robot() #Creación del robot
5 ds = [] #Sensores de distancia
6 dsNames = ['ds_right', 'ds_left']
7 for i in range(2):#inicializar sensores
8     ds.append(robot.getDistanceSensor(dsNames[i]))
9     ds[i].enable(TIME_STEP)
10 wheels = [] # inicializar llantas
11 wheelsNames = ['wheel1', 'wheel2', 'wheel3', 'wheel4']
12 for i in range(4):
13     wheels.append(robot.getMotor(wheelsNames[i]))
14     wheels[i].setPosition(float('inf'))
15     wheels[i].setVelocity(0.0)
16 avoidObstacleCounter = 0
17
18 #while infinito
19 while robot.step(TIME_STEP) != -1:
20     leftSpeed = 1.0 # [rad/s]
21     rightSpeed = 1.0 # [rad/s]
22     if avoidObstacleCounter > 0:#girar durante avoidObstacleCounter
23         avoidObstacleCounter -= 1
24         leftSpeed = 1.0 # [rad/s]
25         rightSpeed = -1.0 # [rad/s]
26     else: # Leer sensores
27         for i in range(2):
28             if ds[i].getValue() < 950.0:#Distancia max
29                 avoidObstacleCounter = 100
30         wheels[0].setVelocity(leftSpeed)
31         wheels[1].setVelocity(rightSpeed)
32         wheels[2].setVelocity(leftSpeed)
33         wheels[3].setVelocity(rightSpeed)
```