

# HW3: Isaac Lab

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## 1 Screenshots

### 1.1 Scene Layout

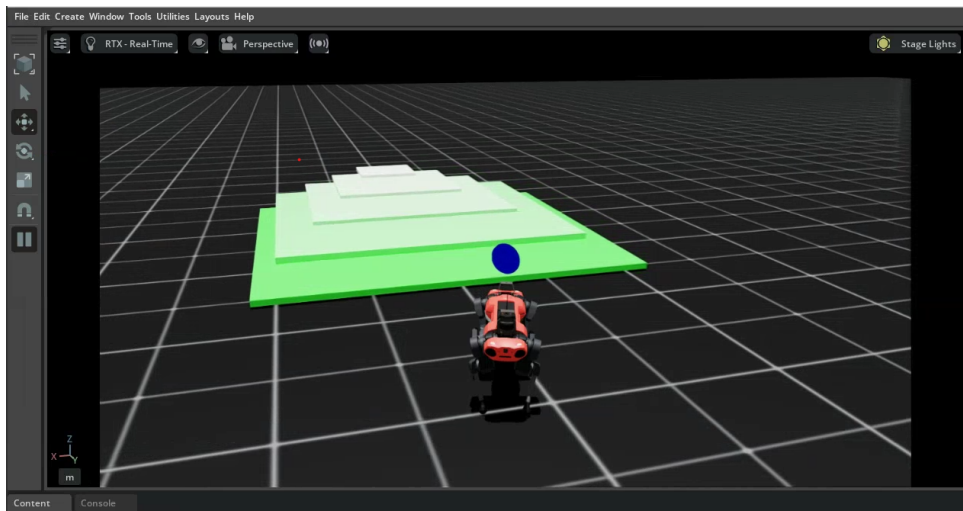


Figure 1: Custom scene layout

### 1.2 Running Effect

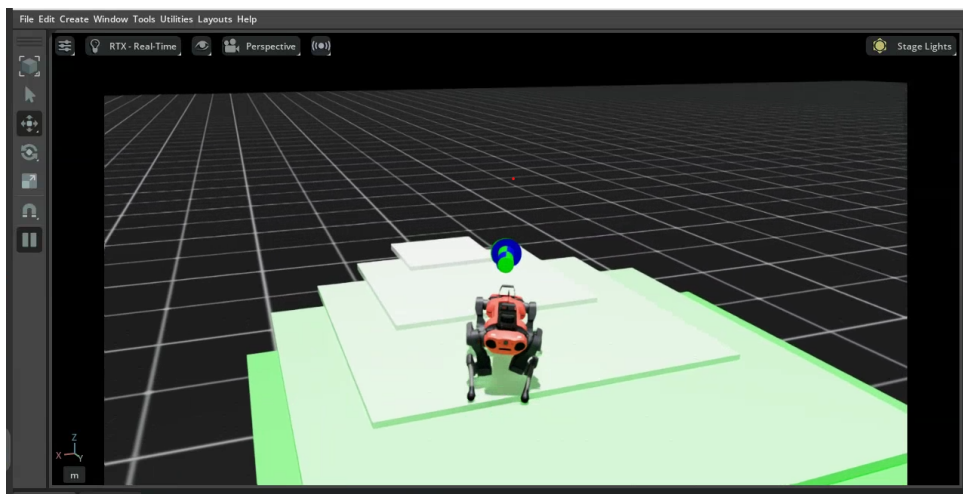


Figure 2: Robot running effect

## 2 Scene Design Description

The custom scene consists of five cuboid-shaped platforms. Each object has specific dimensions, positions, and color tones as described below:

- **CuboidDeformable1**

Size:  $4.5 \text{ m} \times 4.5 \text{ m} \times 0.07 \text{ m}$  (length  $\times$  width  $\times$  height)

Position:  $x = 0.0 \text{ m}$ ,  $y = -5.0 \text{ m}$ ,  $z = 0.07 \text{ m}$

Physics: Kinematic enabled, mass = 1.0 kg

Color: Light green ( $R = 0.1$ ,  $G = 1.0$ ,  $B = 0.1$ )

Purpose: Large flat platform.

- **CuboidDeformable2**

Size:  $4.0 \text{ m} \times 4.0 \text{ m} \times 0.07 \text{ m}$

Position:  $x = 0.0 \text{ m}$ ,  $y = -6.0 \text{ m}$ ,  $z = 0.15 \text{ m}$

Physics: Kinematic enabled, mass = 1.0 kg

Color: Medium green ( $R = 0.3$ ,  $G = 1.0$ ,  $B = 0.3$ )

Purpose: Slightly smaller platform placed after CuboidDeformable1.

- **CuboidDeformable3**

Size:  $3.0 \text{ m} \times 3.0 \text{ m} \times 0.07 \text{ m}$

Position:  $x = 0.0 \text{ m}$ ,  $y = -7.0 \text{ m}$ ,  $z = 0.20 \text{ m}$

Physics: Kinematic enabled, mass = 1.0 kg

Color: Light green ( $R = 0.5$ ,  $G = 1.0$ ,  $B = 0.5$ )

Purpose: Intermediate platform for stepping or obstacle crossing.

- **CuboidDeformable4**

Size:  $2.0 \text{ m} \times 2.0 \text{ m} \times 0.07 \text{ m}$

Position:  $x = 0.0 \text{ m}$ ,  $y = -8.0 \text{ m}$ ,  $z = 0.25 \text{ m}$

Physics: Kinematic enabled, mass = 1.0 kg

Color: Pale green ( $R = 0.7$ ,  $G = 1.0$ ,  $B = 0.7$ )

Purpose: Smaller elevated step.

- **CuboidDeformable5**

Size:  $1.0 \text{ m} \times 1.0 \text{ m} \times 0.07 \text{ m}$

Position:  $x = 0.0 \text{ m}$ ,  $y = -9.0 \text{ m}$ ,  $z = 0.30 \text{ m}$

Physics: Kinematic enabled, mass = 1.0 kg

Color: Very light green ( $R = 0.9$ ,  $G = 1.0$ ,  $B = 0.9$ )

Purpose: Final small stepping platform.