

# DayNight System

## Overview

The DayNight component allows your Unity scene to dynamically switch between day and night modes, controlling skyboxes, directional light intensity, ambient lighting, street lights, and building materials. It was designed to work with the "City-Maker" GameObject and can be adapted for custom environments.

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## How to Use

### 1. Add the DayNight Component

Simply drag the prefab located at:

Assets \ Fantastic City Generator \ DayNight \ DayNight.prefab  
into your scene.

### 2. Assign the Directional Light

Drag your scene's Directional Light (sun/moon) into the Directional Light field in the Inspector.

### 3. Assign the Player (Optional but Recommended)

Assign the player Transform to enable distance-based light activation. Only lights near the player are enabled for better performance. If not set, the system will attempt to assign the Main Camera at runtime.

**Note on Skyboxes:** The prefab already includes skyboxes for both day and night. However, you can replace them with your own skyboxes if desired by modifying the SkyBox Day and SkyBox Night fields in the Inspector.

**Note on Materials:** The included buildings already have day and night materials assigned and registered in the Material Day and Material Night arrays. If you add third-party buildings that use separate materials for day and night, you can register those materials in these fields to enable automatic switching.

## Adjusting Appearance


After placing the DayNight prefab in the scene, you can customize both daytime and nighttime appearance directly from the Unity Inspector:

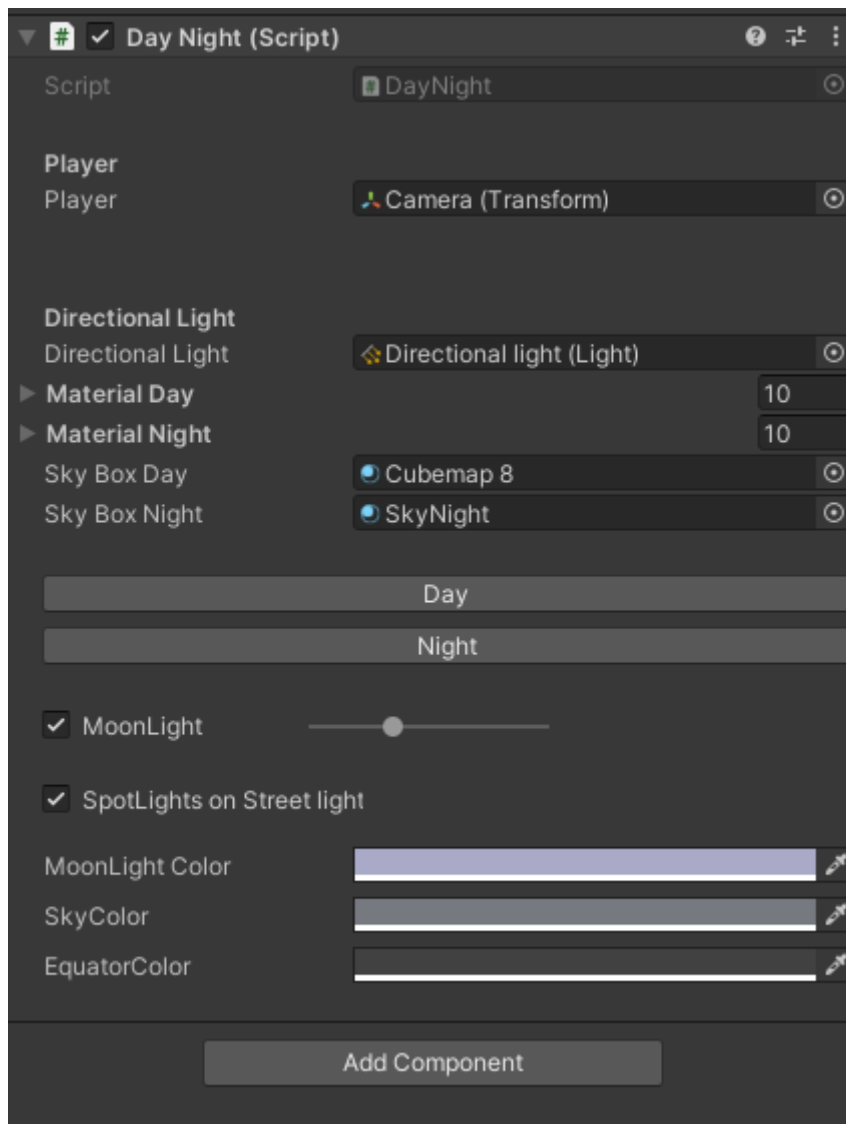
### Daytime Adjustments:

- Sunlight intensity (Sun Intensity)
- Sunlight color (Sun Light Color)
- Ambient lighting (SkyColor, EquatorColor)

### Nighttime Adjustments:

- Enable/disable moonlight (MoonLight)
- Moonlight intensity (Moon Light Intensity)
- Moonlight color (MoonLight Color)
- Ambient lighting (SkyColor, EquatorColor)
- Enable/disable streetlights (SpotLights)

 **Performance Tip:** For mobile, VR, or WebGL builds, you can disable the MoonLight option at night to significantly reduce draw calls and batch counts.



## Troubleshooting

- **Player not set?**

The system will attempt to assign Camera.main or the first available camera at runtime.

- **Materials not changing?**

Ensure that the materials in the renderers match the ones listed in the materialDay and materialNight arrays. If you add third-party buildings that use separate materials for day and night, you can register those materials in these fields to enable automatic switching.

## **API Summary**

- `ChangeMaterial()` – Applies all changes for time-of-day swap.
- `SetStreetLights(bool renew = false)` – Activates/deactivates light sources.
- `SetCameraPlayer()` – Automatically assigns a camera as the player if one isn't set.
- `SetDirectionalLight()` – Adjusts intensity and enables/disables the directional light.
- `UpdateColor()` – Updates the ambient environment lighting.