3D Wed Gallery for Game

Title: 3D Web Gallery for Game
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Chapter 10 ANIMATION

Learning Outcome

Objectives of this chapter are: -

➢ Animation
➢ 3D Transform
➢ Rigging
  Keyframes

ANIMATION

Animation is making an object move or change shape over time. Objects can be animated in many ways, such as changing positions, rotations, scale, brightness, color, transparency, and etc of the objects over the time.

Computer animation is the process used for generating animated images. The more general term Computer-Generated Imagery (CGI) encompasses both static scenes and dynamic images, while computer animation only refers to the moving images. Modern computer animation usually uses 3D computer graphics, although 2D computer graphics are still used for stylistic, low bandwidth, and faster real-time renderings. Sometimes, the target of the animation is the computer itself, but sometimes film as well.

Animation is the process of taking a 3D object and getting it to move. Animation comes in a few different flavours. There's keyframe animation, where the animator manipulates the objects on a frame-by-frame basis, similar to old hand-drawn cartoons. Other methods of animation include placing objects on splines and setting them to follow the path of the curve, or importing motion capture data and applying it to a character rig. Yet another way to animate is to use your 3D application's built-in physics engines, such as when your scene requires that objects fall.
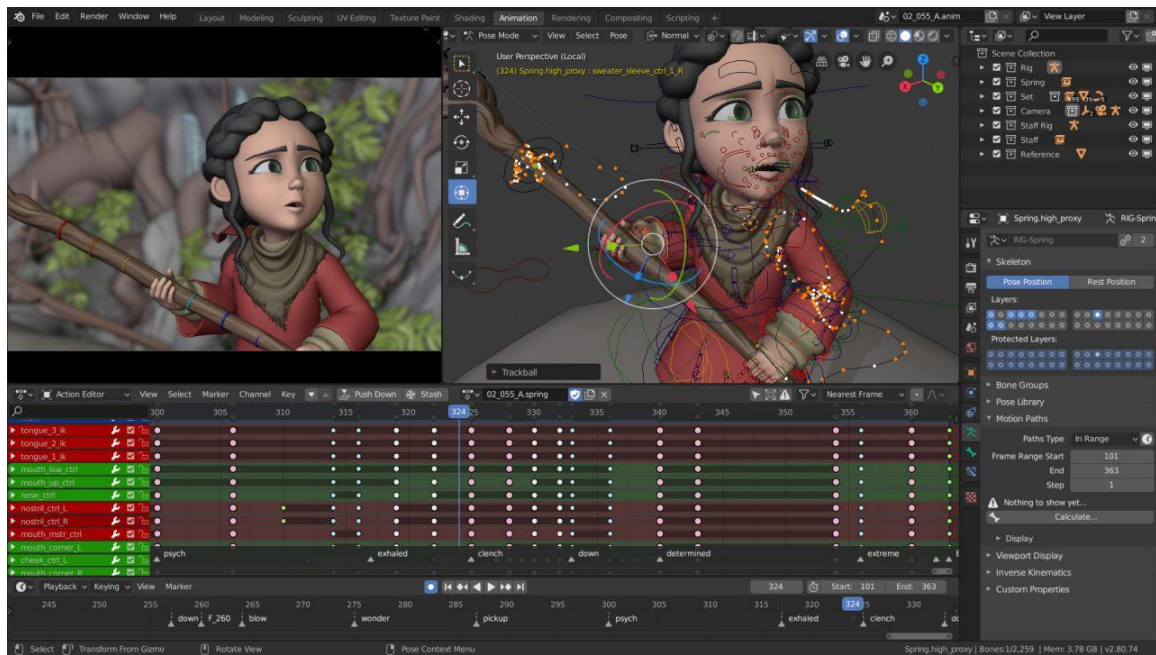
Figure 1 Blender animation panel example

Any properties of object with variable value can be animated but the most frequently animation properties are **Transform** panel.
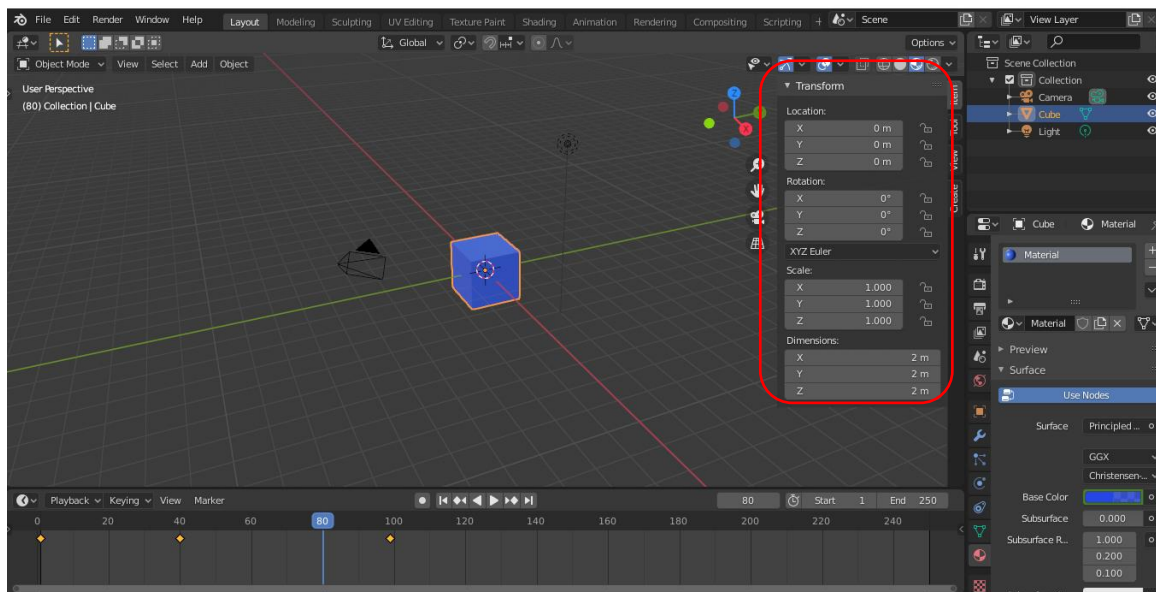

Figure 2 Blender Transform Panel

What is the mean 3D transformation?

3 operations collectively are called transformations. The three operation are: -

➢ Move
➢ Rotate
➢ Scale

Move

Moving an object in space. Relocate an object in space in order to move an object to its final position, it can be moved in all 3 axis or constricted to certain axis.

Rotate

Rotating an object in space rotate an object into other orientation. Rotations, like translations are usually written as a set of 3 values, on each for the X rotations, the Y rotations and Z rotations.

Rotate (90, 0, 0) means rotate X 90 degrees around and nothing around Y and Z.

Scale

Changing size an object. Change the size or the proportions of the object.

Animation done mostly by transform panel as the following manner: -

➢ Moving as a whole object
➢ Changing their position, orientation or size in time
➢ Deforming them
➢ Animating their vertices or control points
➢ Inherited animation
➢ Causing the object to move based on the movement of another object (e.g. its parent, hook, armature, etc.).
➢ In this chapter, we will cover the first two, but the basics given here are actually vital for understanding the following chapters as well.
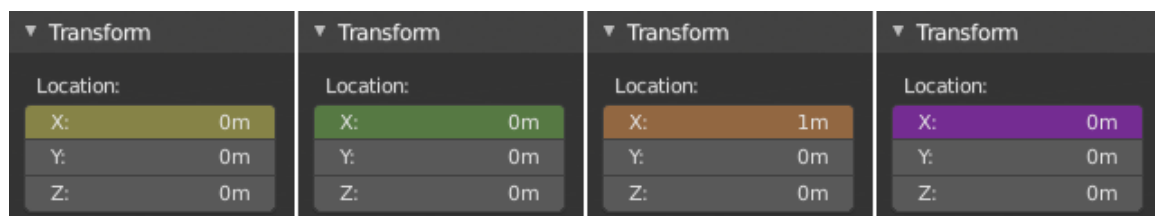➢ Animation is typically achieved with the use of **keyframes**.

State Colors

Figure 3 State colors of properties.

Properties have different colors and menu items for different states.

Gray	Not animated
Yellow	Keyframed on the current frame
Green	Keyframed on a different frame
Orange	Changed from the keyframed value
Purple	Controlled by a driver

The changed value highlight currently doesn't work with NLA.