



Autodesk MotionBuilder 2013

Programming in MotionBuilder || Focusing on Python

Naiqi Weng, Developer Consultant
Autodesk Developer Network

Module 7



Animation

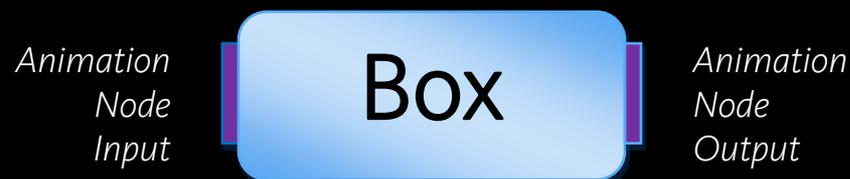
Module 7

Module's Agenda

- Animation Nodes
- Keying Animation
- FCurve
- Time
- Player Control (aka Transport Control)
- Filters
- Assignment

Boxes and Animation Nodes

- A Box is the fundamental base object in MotionBuilder
- An animation node is the data attribute of a Box in MotionBuilder
- Represents a channel through which data flows in either direction



Access Animation Node

- Animation Nodes are organized in hierarchy
- Subnode
- FBAnimationNode and FBPropertyAnimatable class
- Let's take a look in MotionBuilder...

Keying Animation

- Add keys directly to:
 - animation node (KeyAdd() or KeyCandidate() of FBAnimationNode)
 - through the FCurve (KeyAdd() or KeyInsert() of FBFCurve).
- Use KeyRemove() function for removing keys.

FCurve

- FBAnimationNode.FCurve
- FBFCurve Class
- Let's take a look in MotionBuilder...

Time

- FBTime
- FBSystem().SystemTime
- FBReferenceTime().GetTime
- FBScene().LocalTime

Transport Controls

- FBPlayerControl
- Let's take a look...

Filters

- FBFilterManager: provides list of all available filter types and a factory method in order to create an instance of the desired filter type.
- FBFilter : objects which can be applied on a FCurve, or the animation node associated with an animated object property, to modify shape and number of keys.

Assignment

- A part that is just as important as doing completing animation is the ability to undo the animation.
- Anything that is completed in the Python SDK is not added to the MotionBuilder undo stack automatically, we must use the class `FBUndoManager` to personally add to the Undo Stack.

Next Agenda

- The 'What' and 'Why' of Constraints?
- Different Constraints Types
- Working with Constraints
- Triggering Scripts in Constraints
- Assignment