

Python for MotionBuilder

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Detailed Outline:

1. Why script in MotionBuilder?

- A. When?: Next Generation game and film development
- B. Who?: Technical animator or artist
- C. Why?: Large volume of work threatens costs
- D. What?: Automate animation process
- E. How?: Use MotionBuilder's Python Scripting

2. Why Python?

- A. Open Source/Free
- B. Object Oriented
- C. Powerful
- D. Expandability
 - i. Packages
- E. Industry Darling
 - i. MotionBuilder
 - ii. Maya
 - iii. Major Studios

3. Python 2.5.1 Basics

- A. Compare to MEL
- B. Syntax
 - i. White space
- C. Variables
- D. Arrays
 - i. Lists
 - ii. Dictionaries
 - iii. Tuples
- E. Strings
- F. Defining Functions
 - i. Passing a variable
- G. Classes/OOP
 - i. Member Functions
- H. Resources
 - i. Books
 - ii. Websites
 - iii. Help Docs
- I. Expandable
 - i. Libraries
 - ii. Tools
- J. Compiled files

4. MotionBuilder's Python

- A. Resources
- B. How do I run code?
 - i. Drag and Drop a Script.py
 - a. Execute

- b. Add to Scene
 - ii. Assign a hotkey
 - iii. Console Tool
 - a. No echo
 - b. Telnet Console
- C. Python Scripting Reference Guide
- D. Documentation of FBClasses
- E. What classes to use?
 - i. Graphical Class Hierarchy
 - a. The Big Picture
 - ii. Inheritance Diagram
 - a. Digging through the trees
 - iii. Public Member Functions
 - a. The Constructor
 - iv. Changing Public Attributes
 - a. Selecting
 - b. Parenting

5. The Commands

- A. Create objects
 - i. Elements
 - ii. Actor
 - a. Assigning Markers
 - iii. Character
 - a. Setting Input
 - b. Defining Character
 - c. Character Settings
 - iv. Constraints
- B. Renaming
- C. Transforming
 - i. Set Vector
 - ii. Get Vector
- D. Plotting
 - i. PlotAnimation
 - ii. FBPlotOptions
 - iii. Takes
 - a. FBTime
 - b. FBSystem
 - c. FBScene
- E. Animation Curves

- i. AnimationNode
 - ii. FBFCurve
 - iii. FBPlayerControl
- F. File Manager
 - i. FBApplication
- G. Rigging
 - i. Relation Constraint
- H. UI
 - i. FBMessageBox
 - ii. FBFilePopup
 - iii. FBFolderPopup
 - iv. ORSDK
 - v. TK
- I. Cleanup
 - i. Deleting Hierarchy

6. Put to the Test

- A. Perform the process by hand
- B. Determine the automation
- C. Write the Code

7. Resolution

- A. Crisis and Solution
 - i. Next generation production volume threatens our ability to meet our milestones
 - ii. Use MotionBuilder's Python scripting to create an animation
- B. Doing it right
 - i. Script Editors
 - ii. Formatting: Commenting & Headers
 - iii. Debugging
 - iv. Optimization
 - v. Utility functions
 - vi. Idiot-proofing, I mean "User friendly"
- C. Warning: addictive! Or "Changing careers" 😊