

## Non-linear Media in DVD Studio Pro

<http://www.cla.purdue.edu/vpa/etb/>

Fabian Winkler

Required software/materials for this workshop:

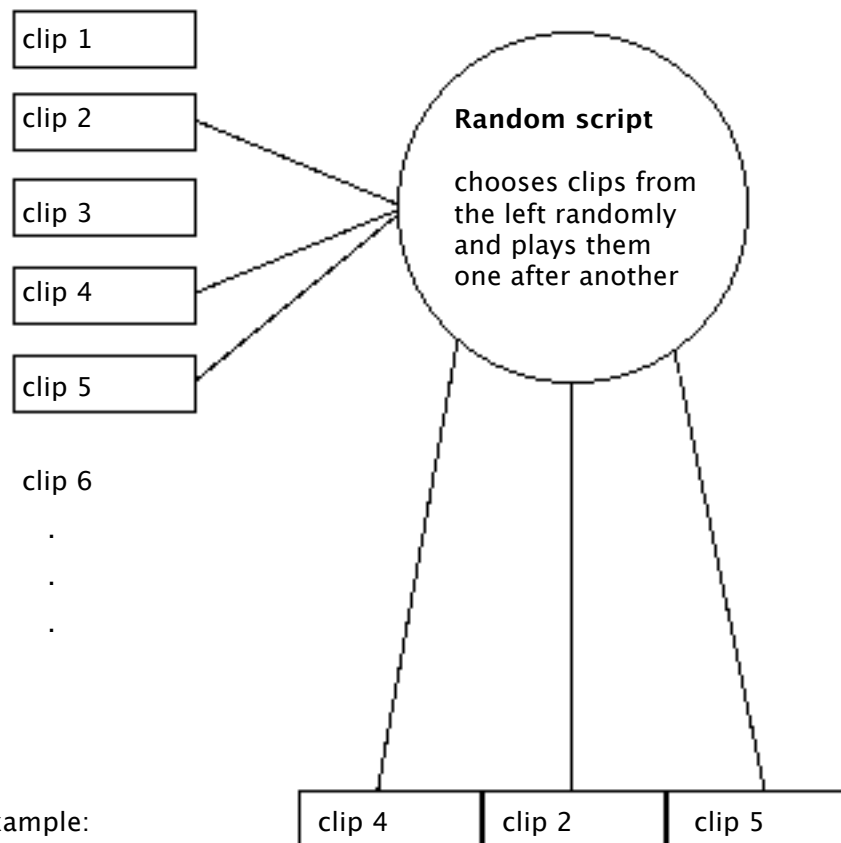
Description	
Apple DVD Studio Pro <a href="http://www.apple.com/finalcutstudio/dvdstudiopro/">http://www.apple.com/finalcutstudio/dvdstudiopro/</a>	
Some video clips for experimentation <a href="http://www.archive.org">www.archive.org</a>	

## Non-linear storylines in DVD Studio Pro

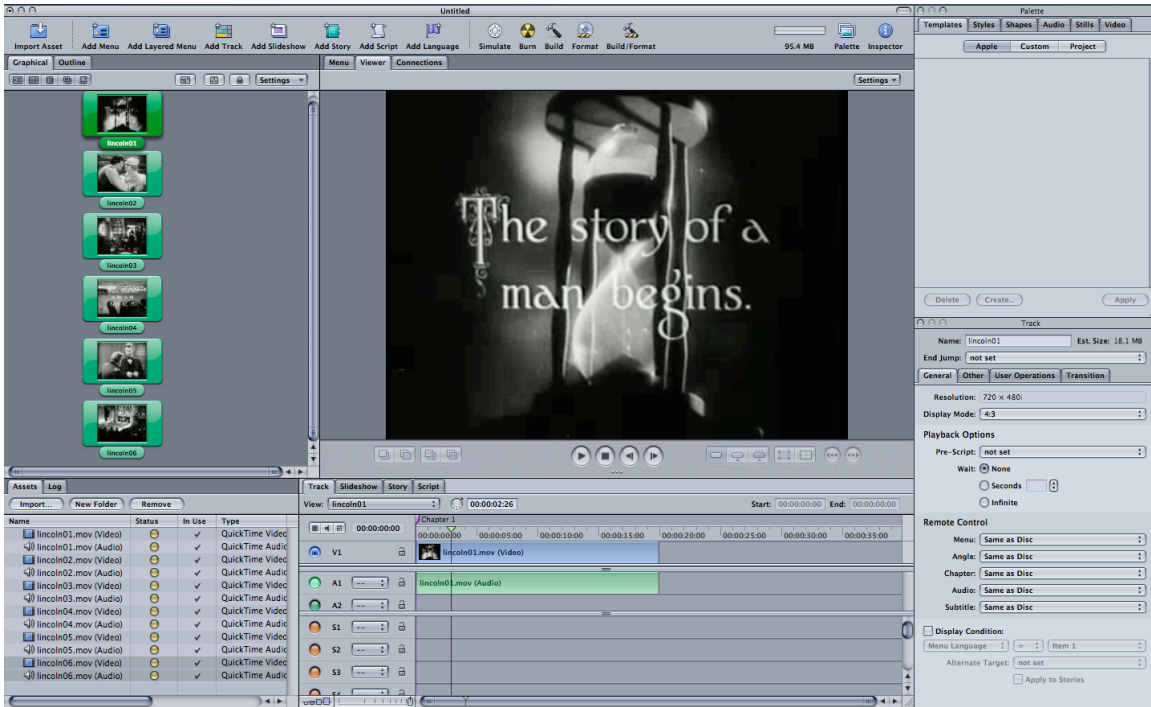


The source footage for this workshop comes from D. W. Griffith's 1930 movie "Abraham Lincoln" ([http://www.archive.org/details/abraham\\_lincoln](http://www.archive.org/details/abraham_lincoln)). Using recombinant structures and the random function in the DVD Studio Pro scripting environment the traditionally linear storyline is re-edited automatically every time the video is played back. The idea is that viewers get a different interpretation/reading of the source clips by remixing them, i.e. presenting them out of their expected order.

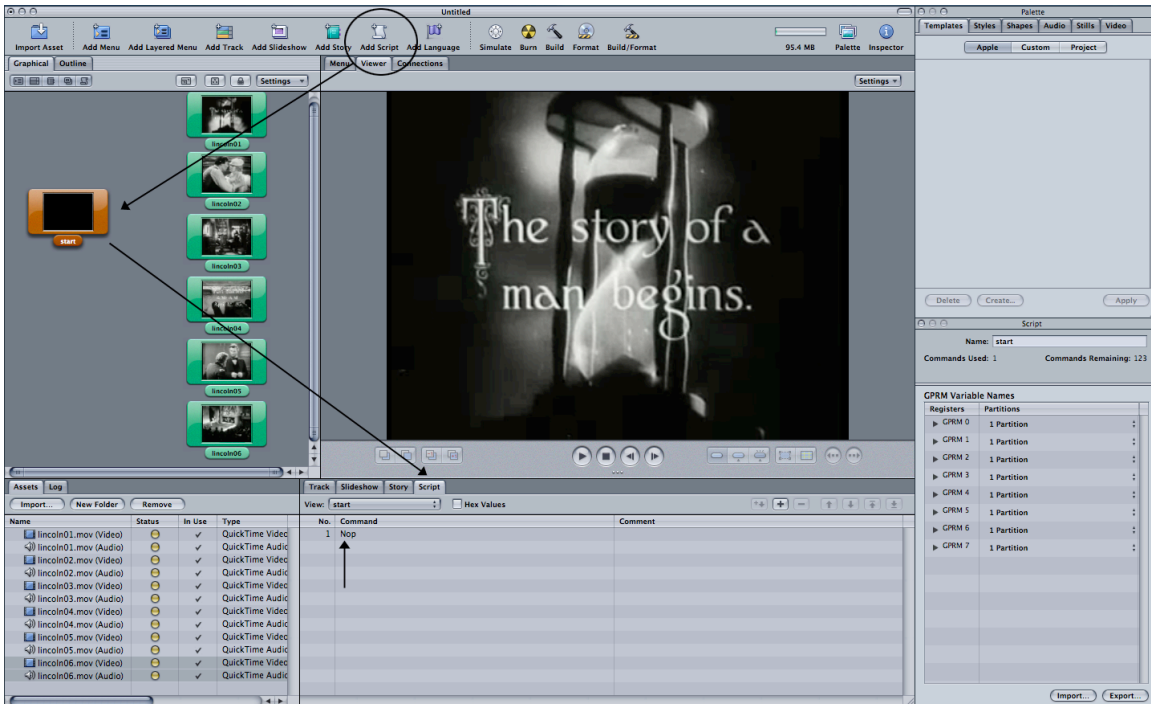
For demonstration purposes I only chose 6 source clips in total out of which 3 will be randomly picked for each composition.



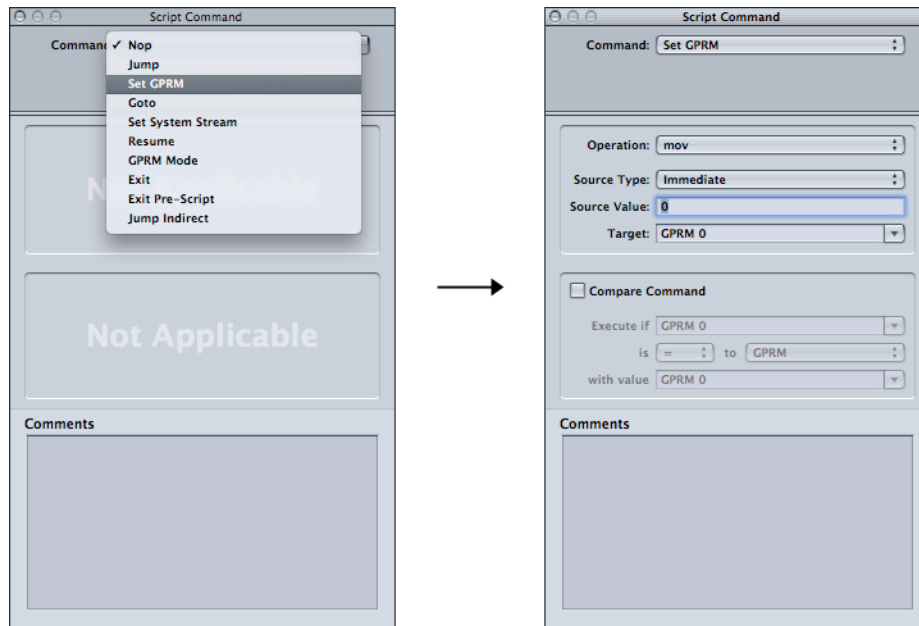
Start by importing the source clips into DVD studio Pro. Then create six tracks and place each of the imported clips into one track.



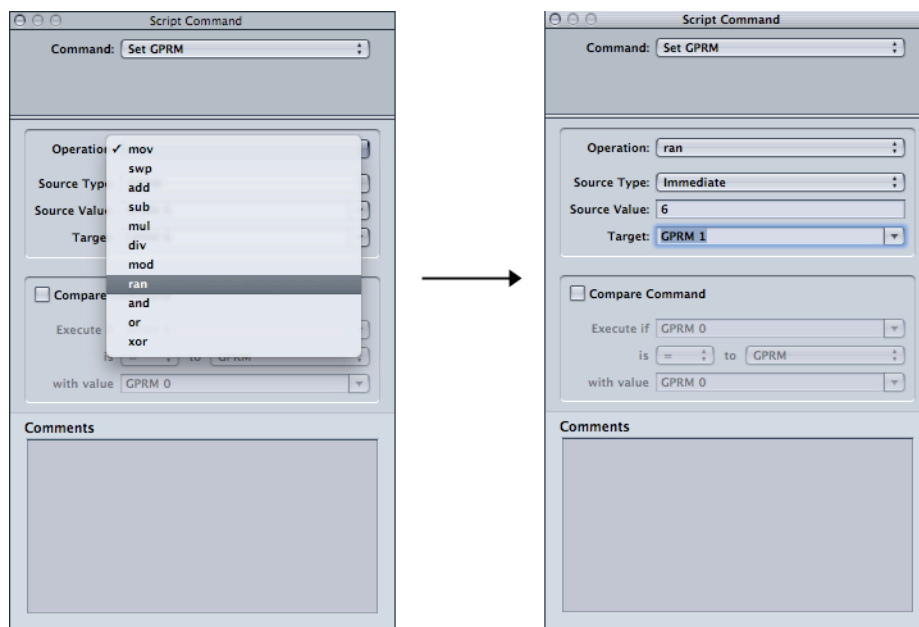
Since we only want to use three of the six clips that we imported and that form a database of content for the final clip we need to have one variable that keeps track of how many clips have already been played. We define and initialize this variable in our first script that we can call "start". Create a new script by clicking the "Add Script" button in the toolbar, a brown container is added to the graphical layout window. Double clicking this container opens the script tab and changes the property inspector to show settings related to the script.



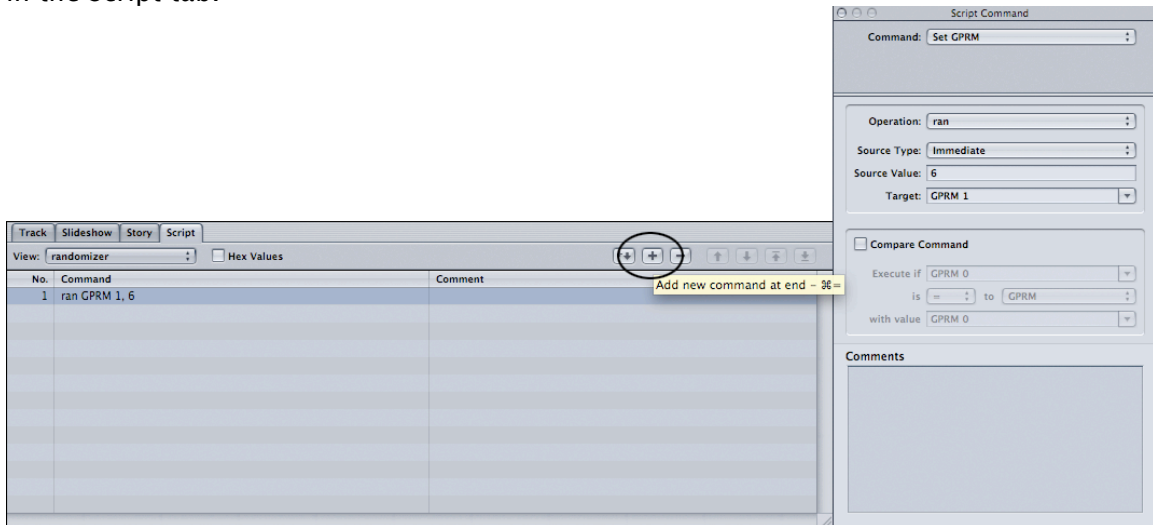
In the Script window on the bottom of the page you see “Nop” this is a placeholder for the first command in your script. Click on “Nop” and see how the property inspector changes to allow you to choose a command for the first line of your script.



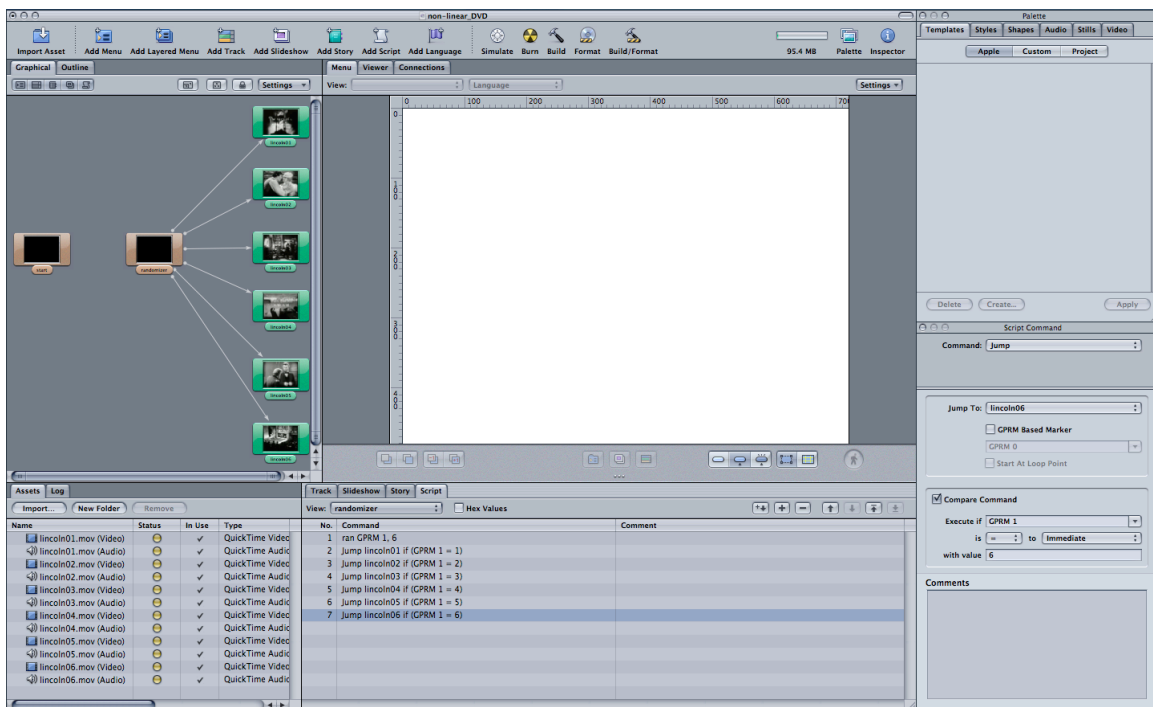
Next we need to create **another** script, which will choose clips based on a random function. We name this Script “randomizer” and introduce another variable that holds a random number from 1 - the number of total clips in this project, e.g. in our case with 6 source clips this number will be 6. Choose “ran” from the pulldown menu to create this random number. The source value of “6” guarantees that the numbers created by the random function will be between 1 and 6.



We then create another line of code for the “randomizer script by clicking the “+” button in the Script tab.

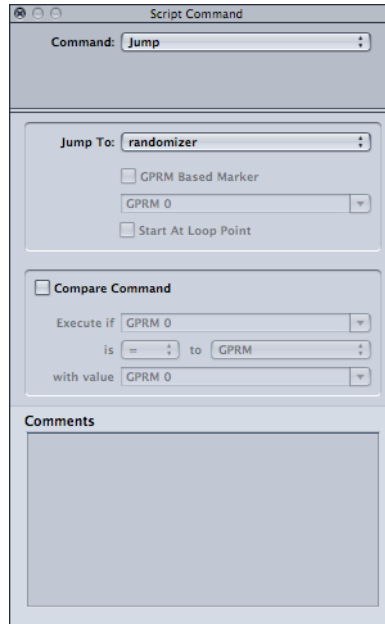


We now need to use conditional statements to jump to the respective clip based on the random number that was created. This involves checking the “Compare Command” box and comparing the value of GPRM 1 with each possible outcome of the random function:



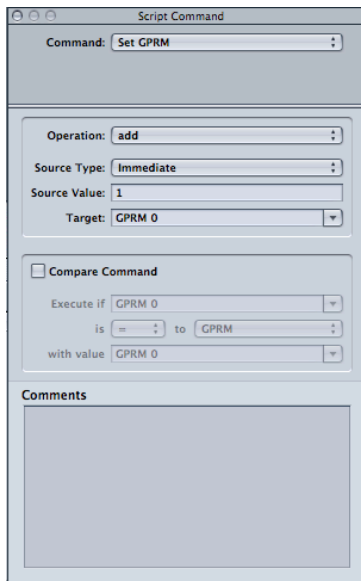
For each new line added to the script and successfully completed with the compare command, an arrow appears in the layout window connecting the script with the clip it is referencing.

We can now also connect script “start” with script “randomizer”. The idea is that first the counter variable (GPRM 0) is initialized in the “start” script and then it is updated after each playback of a clip in a third script.

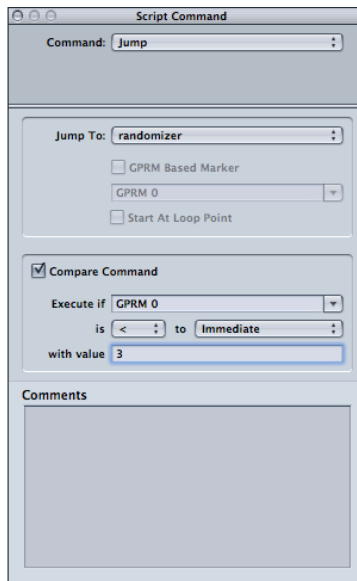


In the third script, which we call “counter” we need to keep track of the number of clips that have been played back. After the playback of each clip the value of GPRM 0 needs to be increased by 1. If this number reaches 3, we want to stop the playback of the DVD (or route back to a title screen for the start of a new sequence of clips, etc.). If the number is less than 3 we want to jump back to the “randomizer script to randomly pull another clip from the database and play it back.

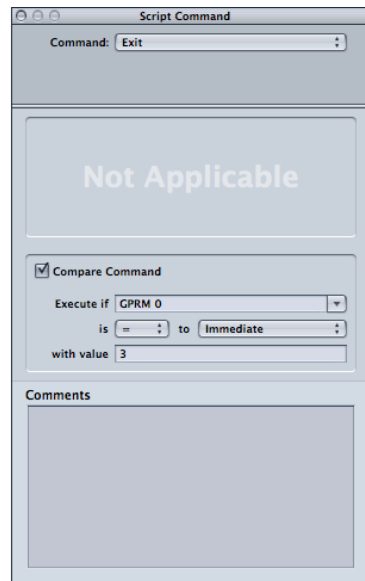
Script “counter” line 1:



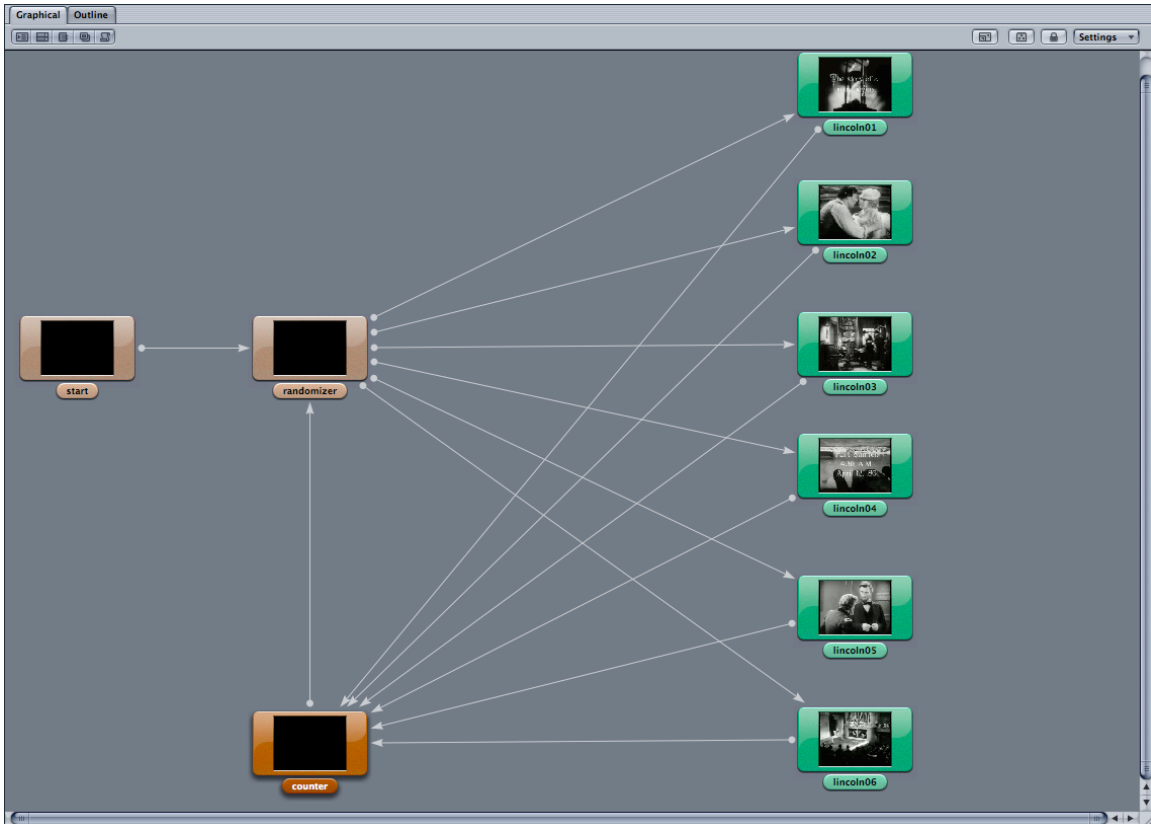
line 2:



line 3:



Now we just need to link the end jump of each track to script “counter” to complete the arrangement of clips in the layout window:



In the last step we set the first play property to script “start” by clicking in the gray area of the layout window and choosing this script from the pulldown menu in the property inspector.



It is now time to test this project in the Simulator (Simulate button in the toolbar).

Appendix – all scripts at one glance:

**start**

No.	Command	Comment
1	mov GPRM 0, 0	Initialize the variable GPRM 0 with the value 0. This variable will keep track of how many clips have been played back to make sure the playback stops after 3 clips.
2	Jump Randomizer	Jump to the randomizer script

**randomizer**

No.	Command	Comment
1	ran GPRM 1, 6	Create a random number between 1 and 6 and store it in GPRM 1
2	Jump lincoln01 if (GPRM 1 = 1)	Compare the value in GPRM 1 with values 1 – 6. In this case if the randomizer function generated number 1 and put it in GPRM 1 then jump to the clip “lincoln01”
3	Jump lincoln02 if (GPRM 1 = 2)	The same for number 2 and so on...
4	Jump lincoln03 if (GPRM 1 = 3)	
5	Jump lincoln04 if (GPRM 1 = 4)	
6	Jump lincoln05 if (GPRM 1 = 5)	
7	Jump lincoln06 if (GPRM 1 = 6)	

**counter**

No.	Command	Comment
1	Add GPRM 0, 1	Add 1 to the current value that is stored in GPRM 0 (the variable that keeps track of the number of clips that have been played back already)
2	Jump randomizer if (GPRM 0 < 3)	If the value of GPRM 0 is less than 3 jump back to the randomizer script and choose another clip
		If the value of GPRM 0 is 3 then stop the



3	Exit if (GPRM 0 = 3)	playback of the DVD ( or find another good way to indicate an end of the sequence of clips
---	----------------------	--