

# ADDING A SEED

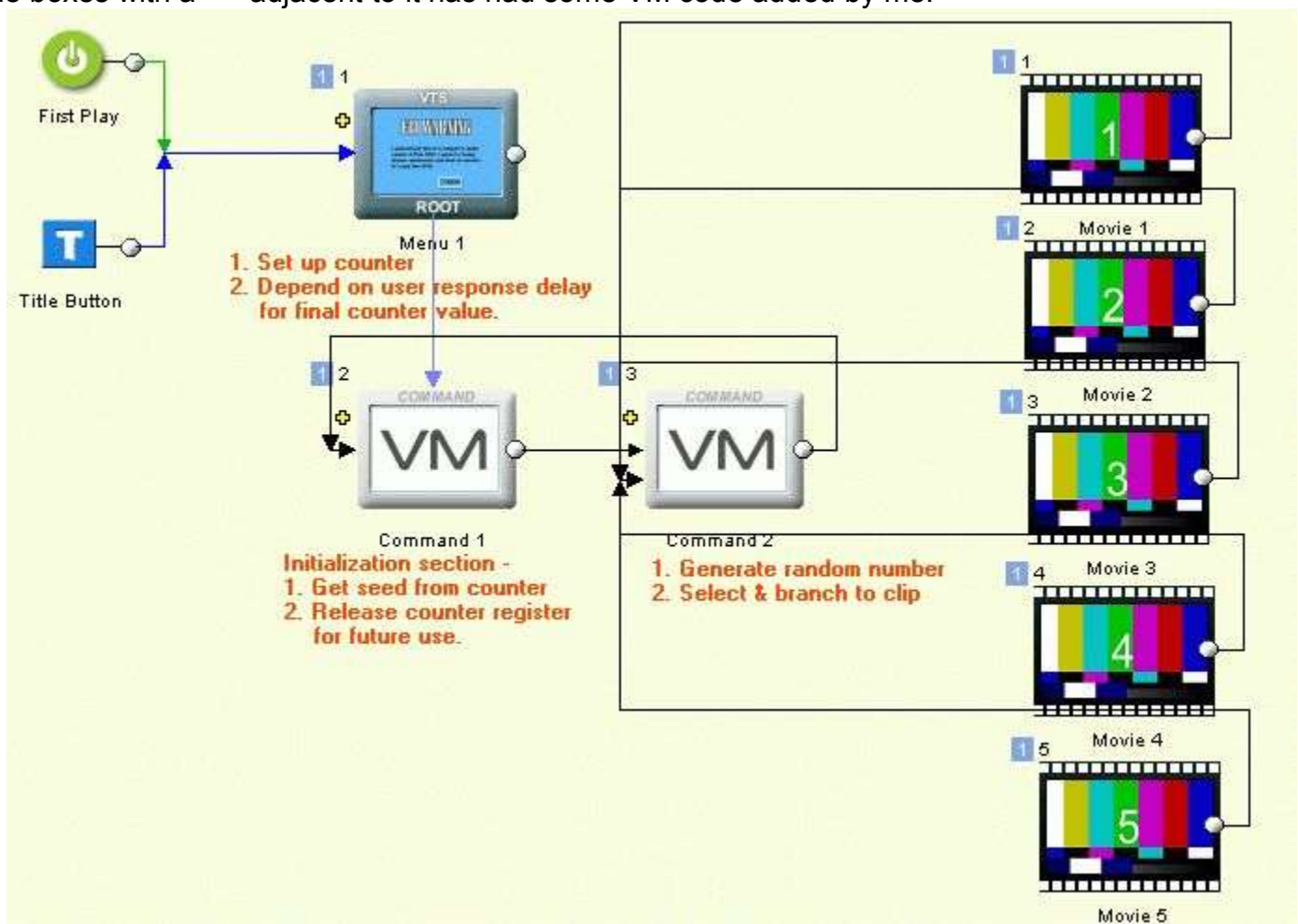
If you've digested the pseudo-random generator, and have it working, you may be ready to add the source of a random seed.

## Seed approach

Any of the unused general purpose registers can be used as a counter. This approach sets up a counter, and waits for a user input while the counter runs. The longer the delay in user input, the larger the counter value. This counter value can range from 1 (second) to 32767 (seconds), depending on how long the user takes to provide his input. This variable value is then used as a seed.

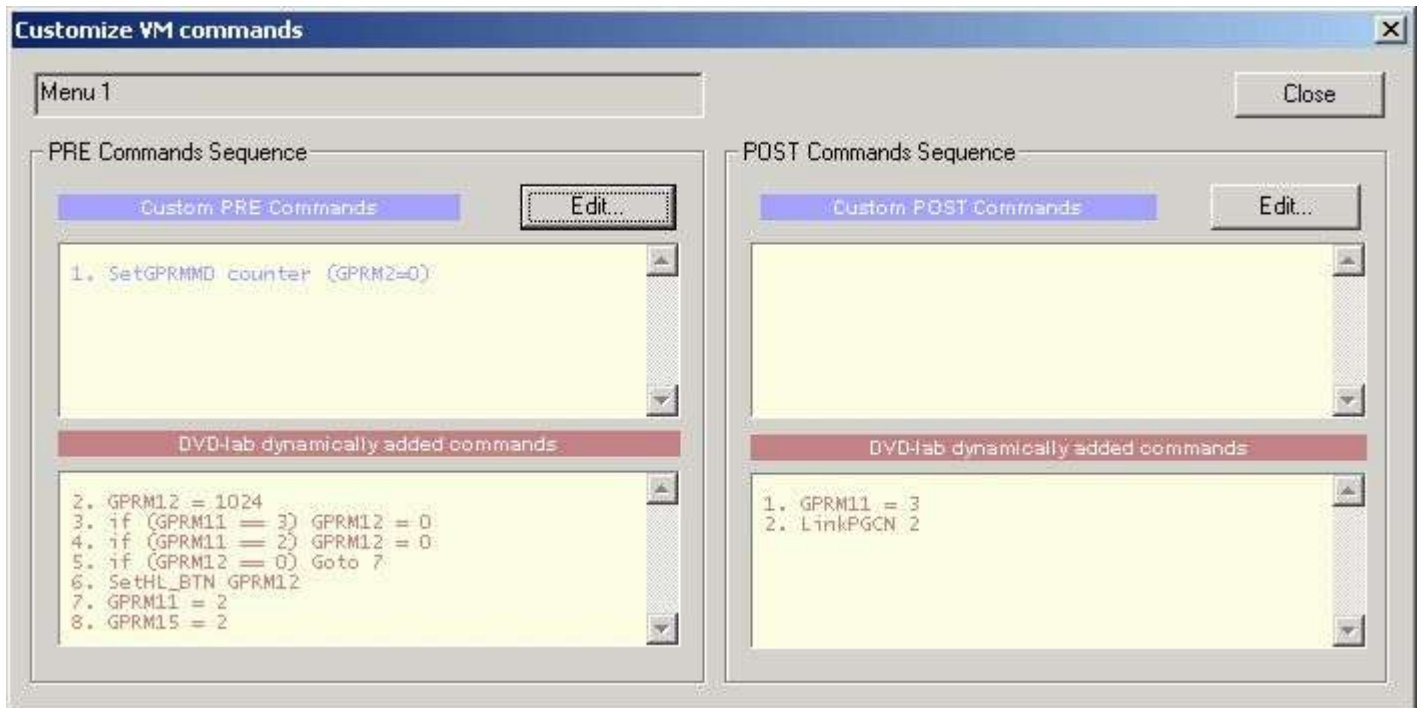
## Implementation

I have tested the approach, and verified its functionality. The layout I used is shown below. Each of the boxes with a "+" adjacent to it has had some VM code added by me.



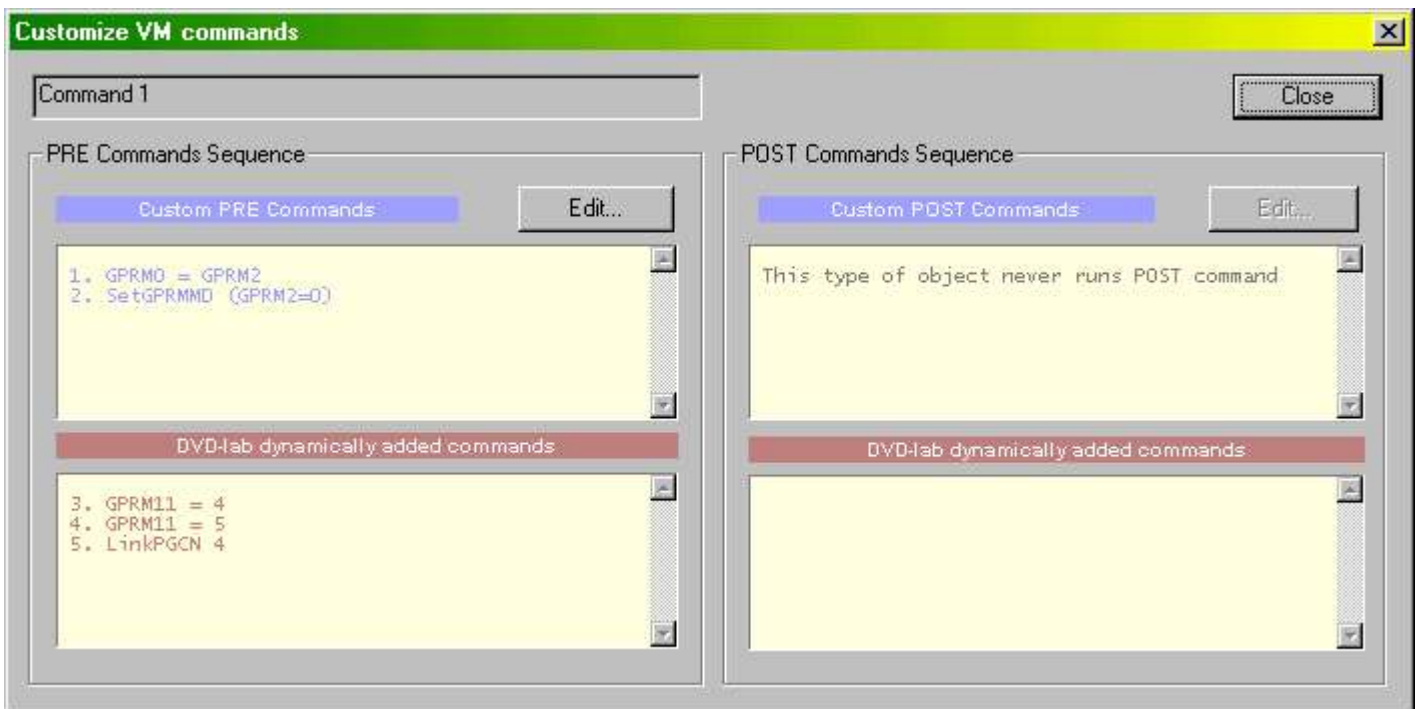
I used a menu to obtain the user input, setting up the counter in the pre-section VM commands. Here's what that section looks like:

At this point, the counter is off and running. You may recall from a discussion on a previous page that the pseudo-random number generator requires an initialization section when a seed is used.



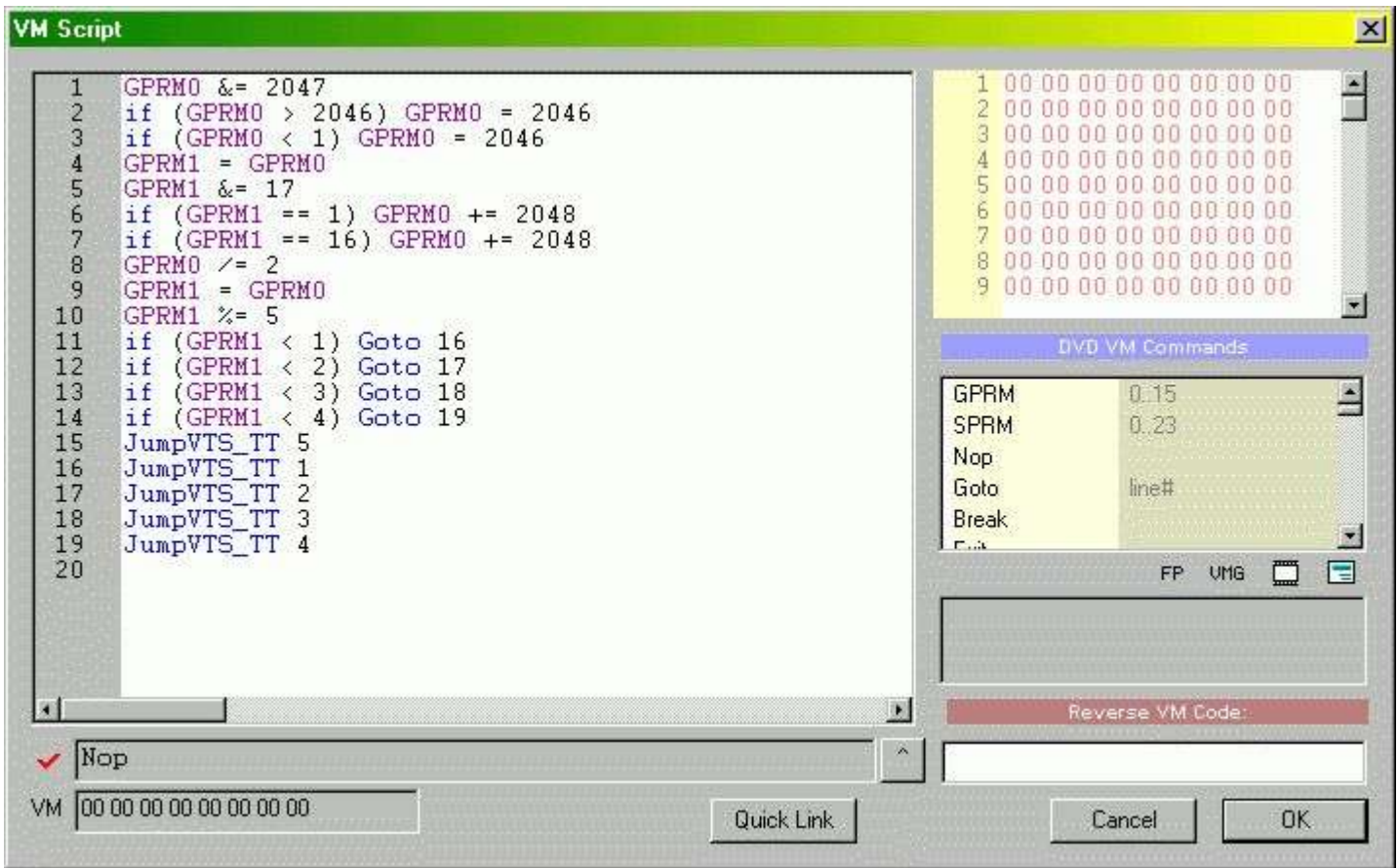
This code must play only once, when you initialize the pseudo-random number generator.

The VM code looks like this. It just puts the present counter value in GPRM0. I released GPRM2, because I plan to use it later, when I add additional capabilities.



Next comes the pseudo-random number generator you've already seen. It uses the seed in GPRM0 to generate the next random number.

In case you've forgotten, that code looks like this.



You may notice in the layout above that I had the output of the target videos (1-5) loop back to the menu containing the pseudo-random number generator. I did this because I was testing the generator, and wanted to watch it run. Also, if you wish the random selection to continue immediately, the videos must loop back here. **However**, the target videos must never branch back to the original menu or to the initialization section (whatever you use for Command 1). If you do, you will reset the pseudo-random number generator, and invalidate its random nature. But that's up to you.

It's definitely a case of no pain, no gain. You can expect to have problems getting all this running. I recommend you test it using Markham's player, and watch the contents of the registers for clues as to why things go wrong.