# APT's Borrowed Round-Robin

Round-Robin (RR) is a necessary feature in modern sample libraries. But unfortunately many libraries don't have this feature :(

Borrowing is a common trick to make fake RR, that is, using the neighbor samples and pitch them up or down to the current pitch. Usually this trick can do almost as good as real RR!

However, internally editing Kontakt instruments is truly not a simple work, especially when the libraries already have complex scripts. Not to mention that most commercial libraries don't allow you to edit the scripts legally :(

So, APT proudly present this little multi script! This is what I have been looking forward to for a long time - using something to externally perform this trick, so you don't have to do any f\*\*king sophisticated technical work!

## Usage

### 1. Load the Instruments

The script uses midi channel mapping to implement the trick. So you need to load **multiple instances of the instrument**, **each corresponding to one RR**.

The script supports **up to 7** borrowed RRs. The number of RR should be set by the `RR Number` option. Then load that number of instrument instances, and make sure their `MIDI Ch` are set to "1, 2, 3, ...", not "omni".

### 2. Set Borrowing Bias

Open the wrench icon of your instrument, and check the **"sampling interval"** of it. Usually it should be 1 or 2 semitones. You should set that value as `Borrowing Bias`. (If you have other ways to do RR and don't want to borrow, or you want to use this script for other things, just set it to 0!) For example, in this case you should set it to 2:
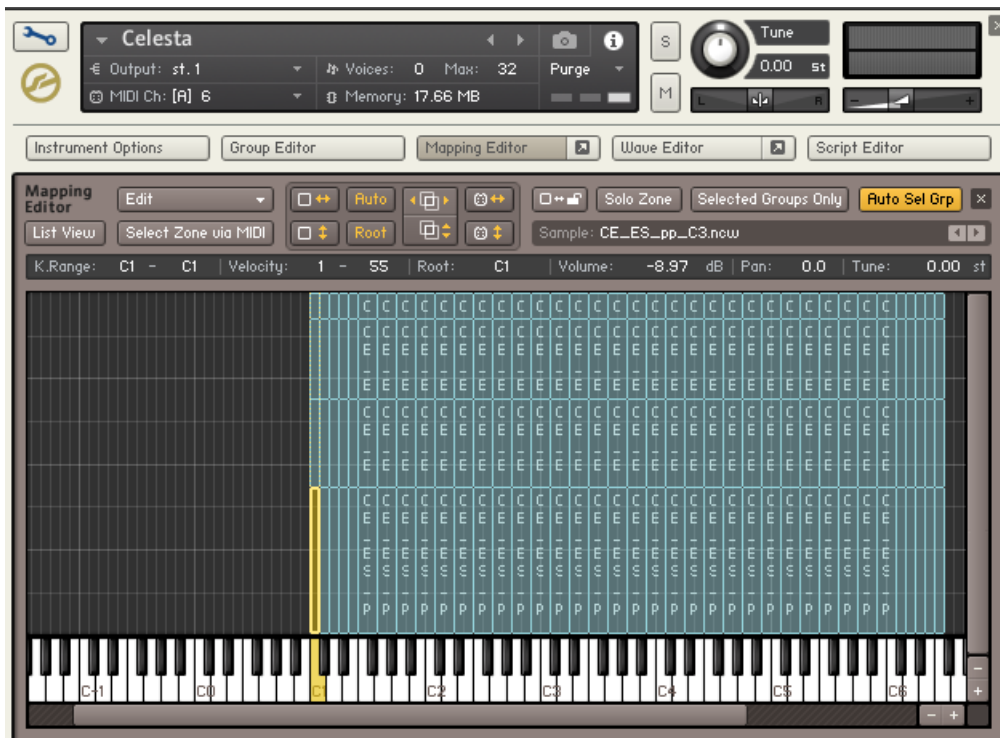
Then, use the `Tune` knob at the right side of the instances to compensate the borrowing. In turn, set them to $0, -bias, +bias, -2bias, +2bias, -3bias, +3bias$. For example, this is how you should set them when `Borrowing Bias` is 2 and `RR Number` is 5:

### 3. Set Playing Range

Without this feature, the borrowed notes of the notes at the edge of the playing range could be out of the range! And this feature even allow you to use Key Switch and more features of the instrument as it is used individually!

Setting playing range is easy. Just click the `MIDI Learn` button at the right of `Starting Note` and `Ending Note`, and click the virtual keyboard to set them respectively! Instruments should show the playing range by color on the virtual keyboard.

### 4. Random RR?

There's only one button left - `Random RR`, which is on by default. Literally, when it is on, RRs would be triggered randomly (but still automatically avoiding triggering the same RR continuously). When it is off, RRs would be triggered in order.

### 5. Have Fun!

Now you can effortlessly make a fake RR instrument in 1 minute! No f**king editing and scripting! You can save it as multi for future use!

And, yes, you can still use Key Switch, Sustain Pedal, Mod Wheel and any other of the instrument's feature, just as how it is used individually!

# APT's Fake Ensemble

What if you let 5 pianos play together? With this script you can easily make the ensemble version of any Kontakt instruments, without f**king editing and scripting!

This script is very similar to Borrowed RR.

> **Known issues:** Very fast playing may cause missing notes or infinity sustained notes. This is caused by some limitations and concurrency bugs inside the KSP interpreter, and I don't know how to fix :( If you can solve it, please tell me.

## Usage

### Step 1~3 are very similar to that of Borrowed RR

But you may want to do more to get a better ensemble effect. You can add some **additional detune** to each instance, and **pan** them across the stereo field. Here's an example:

## 4. Time Staggering and Velocity Randomize

Multiple players won't play perfectly simultaneously. This script has time staggering feature to simulate this ensemble character. The `Time/ms` knob allows you to change the staggering time, that is, the interval between triggering each "player". Furthermore, the script random each interval by a certain percentage, which you can set by the `Time Ran` knob.

And, yes, it is this feature that triggers the "known issues". The script also includes release staggering feature, which you can turn on by the `Release Staggering` button. But this would make the bug easier to be triggered.

Also, the script can randomize each "player"'s velocity. The percentage can be set by the `Vel Ran%` knob.

Both time and velocity randomize strategies are something like:

$$Randomized = Base + \text{Random}(-Percentage * Base, \ Percentage * Base)$$

## 5. Have Fun!

Note that if you play at the edge of the playing range, the "players" who's borrowed notes are out of the range, would not be triggered. So the ensemble size would be smaller at the edge :)

Have fun making weird ensemble instruments! There must be some ensemble instruments that would surprise you!