

Global Modification

This tool enables the user to modify attributes of all instances of a particular musical object in a staff. You will often need to use NWC's Variable Dump to get specific spelling of various attributes correct, but this is not too difficult.

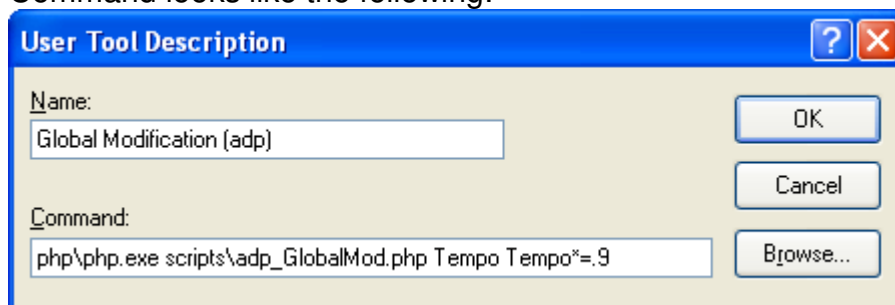
Quick Example **Changing Tempo Globally**

Let's say that you've put in dozens of really fine tempo settings to make your piece "come alive", but all your reviewers say it is slightly too fast. Faced with the daunting task of manually altering each tempo setting sounds a bit too much, but the `global_mod` tool will do it all in one action.



Firstly, we'll assume that you have the NWC distribution of `global_mod`, from the more recent user tool kit.

Now, we'd like to tweak each tempo setting by reducing it by, let's say 10% (so we can hear the difference). So we bring up the User Tools with Alt-F8 or Menu | Tools | User Tools, we Edit the Global Modification tool such that the Command looks like the following:



and then we run it on the whole staff (ie. *don't* select a smaller section)



Voila! Each Tempo setting is reduced by 10%.

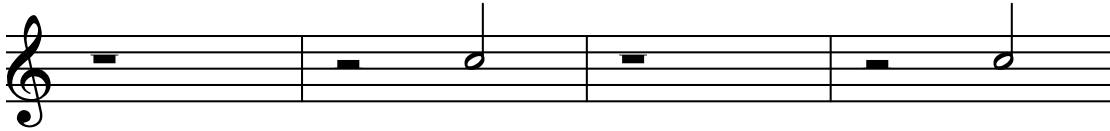
After the php command invoking `adp_globalmod.php`, you will see two parameters. The first one, `Tempo` will match all `Tempo` objects in the staff. This is called the Match parameter. The second, `Tempo*=".9`, is the action to be applied to the matching object. In this case, the `Tempo` object has an attribute called `Tempo`, which is the tempo setting.

We then decide to hide all the tempo markings. The full command would be `php\php.exe scripts\adp_GlobalMod.php Tempo Visibility=Never` Resulting in the following... (greyed to show that they won't print).



Quick Example, **Adjusting Rest Positions**

You have a part that you need to overlay, but all the half rests are one line too low for the overlay, and get in the way of the other part.



It just so happens that there are four hundred half rests, and you are wanting to avoid getting RSI. So you want to use `global_mod` to find each rest that is of half length. However you are not sure of the parameters to use.

So you select a single half-rest, tweak it up two positions, which is what you want to do to all of them, and use the NWC user tool variable dump to inspect it. You get something like this...

```
nwc2clipitem Object
(
  [ObjType] => Rest
  [Opts] => Array
    (
      [Dur] => Array
        (
          [Half] =>
        )
      [Opts] => Array
        (
          [Stem] => Up
          [VertOffset] => 2
        )
    )
)
```

The important bits here are the `Dur` array with the “Half” in it, and the `Opts` Array with the `VertOffset`. Now we can craft our `global_mod` command.

We want to match only the half rests, and not the whole ones, so the match parameter is

Rest,Dur==Half

Note the two equals signs. This is a convention that is widely used in programming to indicate a comparison rather than an assignment of a value.

You can sling together as many tests as you like.

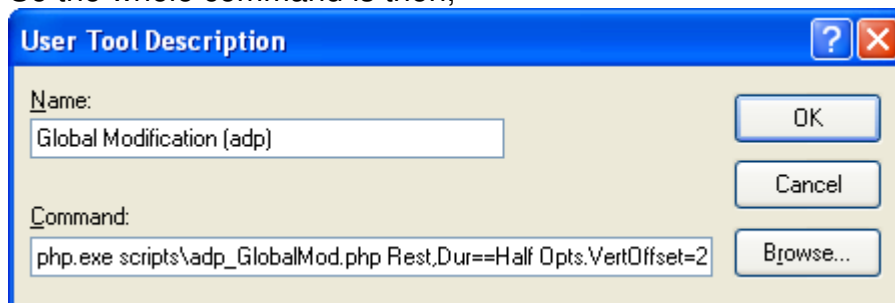
Eg *Note,Pos>0,Color!=1,Dur==Dbldotted*

Will match all double dotted notes above the centre line which aren't set to colour 1.

To set the Vertical Offset, we use the following assignment:

Opts.VertOffset=2

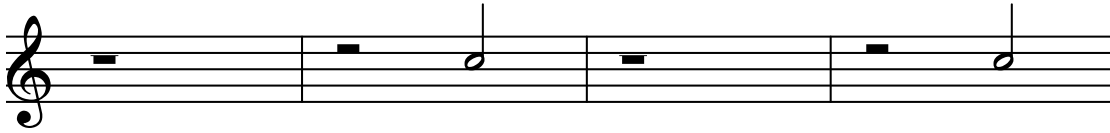
So the whole command is then,



(Note that the start of the command has scrolled to the left. The whole line says:

```
php\php.exe scripts\adp_GlobalMod.php Rest,Dur==Half Opts.VertOffset=2
```

So we plug that in and run it and get the following result:



and all our viola players are happy again, or whatever.

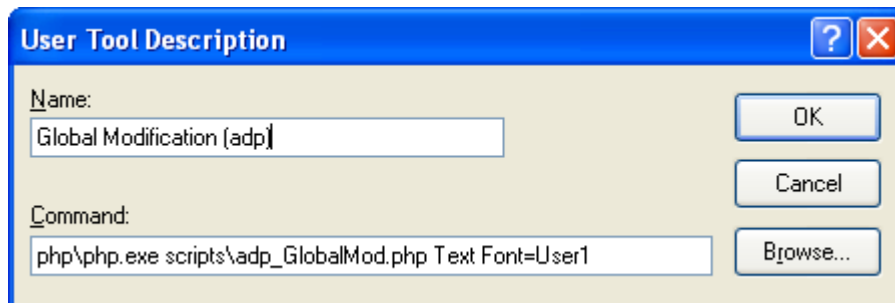
Quick Example **Altering text font**

You've decided that the font of your text insertions for one particular staff need to be different to distinguish them from other marks in the score.



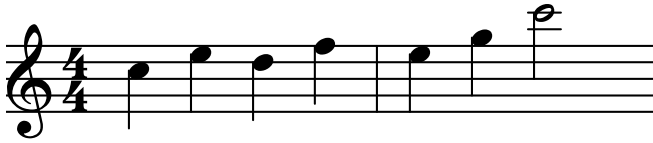
Rather than edit each text entry on the line, you can use global mod. The command line would be something like

```
php\php.exe scripts\adp_GlobalMod.php Text Font=User1
```



Long Example. **Inversion**

Global_mods can also change the positions of notes (but alas not the notes in chords, for that you need to use parts.php to extract the notes). With a little persistence, this can be used to create basic inversions. So far, we've written a horrible little segment...



and want to add a quick harmony to it like Bach did, by adding an inversion (where the notes' intervals go in opposite direction). The attribute describing where a note goes on a staff is "Pos". In this example, the "Pos"s are 1,3,2,4,3,5 & 7. ie the centre line is zero. Since we want to reflect about the C, we need to first subtract one from each note's position.

```
php\php.exe scripts\adp_GlobalMod.php Note Pos-=1
```

This is a frequently used programming notation for modifying values. Global mod uses = (assignment), += (add something) -= (subtract), *= (multiply) and /= (divide).



Next we need to change the direction of the notes,

```
php\php.exe scripts\adp_GlobalMod.php Note Pos*=-1
```

This basically reflects the notes about the centre line.



But they are all in the wrong spot, so let's transpose them up 5 lines.
Pos+=5



Now, the trick is that you can do all these actions in one command, simply by putting each match/action pair one after the other. They are executed left to right.

```
php\php.exe scripts\adp_GlobalMod.php Note Pos-=1 Note Pos*=-1 Note Pos+=5
```