Invoking User Tools in Noteworthy Composer 2

1. First things first...

This document is about how to invoke NWC2 user tools in the fashion that most suits you. It is not about creating the tools nor about how to use any individual tool. The instructions for using the formally published tools are available, along with the tools, here: http://nwc-scriptorium.org/nwc2scripts.html on the "Scripto"

I suggest you read Andrew Purdam's " http://nwc-scriptorium.org/ftp/nwc2scripts/generaldiscussion.pdf " as an introduction to actually using NWC2 user tools.

The first 4 pages of this document are fairly general and go over things you possibly already know. The last 2 pages (5 and 6) have the "good guts" and may be all you really need. You can print them separately.

Now, if you haven't already done so, install the User Tool Starter Kit available at http://www.noteworthysoftware.com/nwc2/usertools/ . This page will have the current starter kit (v1.11 as of this writing) which will provide you with a set of powerful tools that can make life much easier when notating.

WARNING! - WARNING! - Danger Will Robinson!
While I personally think that the user tool functionality is one of the most important new features in NWC2, user tools are potentially DANGEROUS to your music.
ALWAYS work on a copy and remember: "<Ctrl-Z> is your friend!"
HANDLE WITH CARE.

You'll see several command lines throughout the text. You can "copy and paste" these if you want to duplicate the examples.

2. O.K. Lawrie, it's wonderful. Now how do I make it work for me?

When you've installed the starter kit, there will be several tool invocations available via the | Tools | User Tool (<Alt-F8>) dialogue. These are for:

Arpeggiate, Compound Autobeam, Global Modification, Parts, Ranges, Retrograde, Statistics, Transpose Chords and Variable Dump.

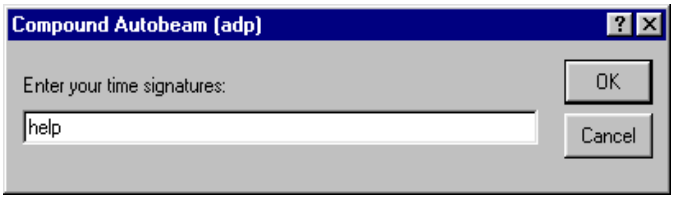
Some of these tools need no further parameters in order to work. Just select the part of the staff you want to work on and run the tool. These ones are:

Arpeggiate, Retrograde, Statistics and Variable Dump.

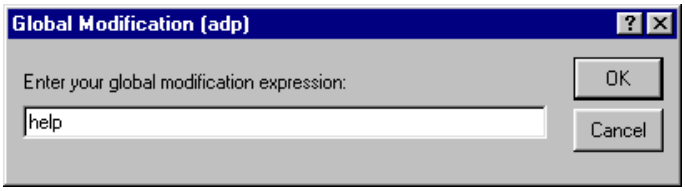
The rest need additional information.

Taking the remaining tools in order, the default installation will behave like this:

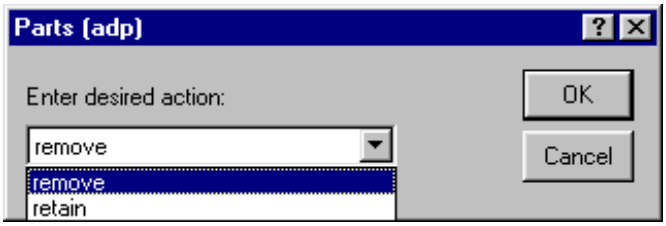
Compound Autobeam will prompt you for *time signatures* and will provide you with a default *help* instruction in the dialogue box:



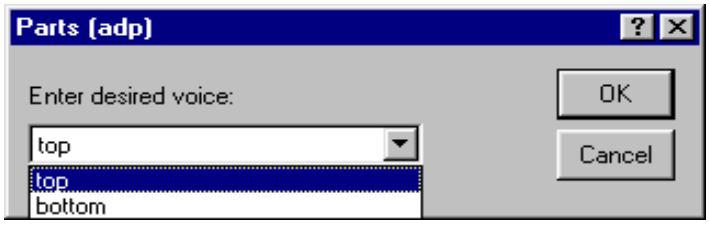
Global Modification will prompt you for an expression, again with a default *help* instruction:



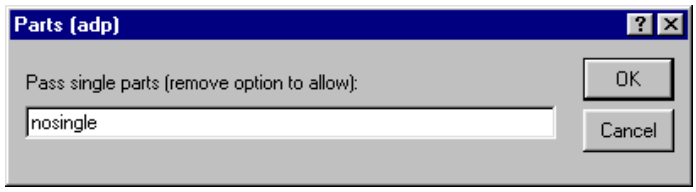
Parts will ask for a) the desired action via a list box:



then b) the desired voice, also via a list box:

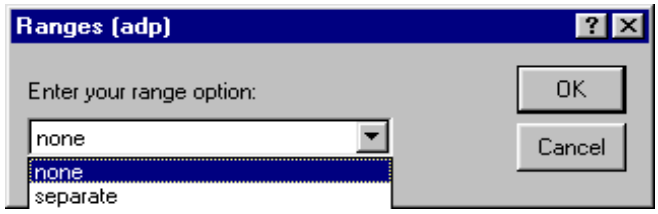


and c) how to treat single parts via an editable field:

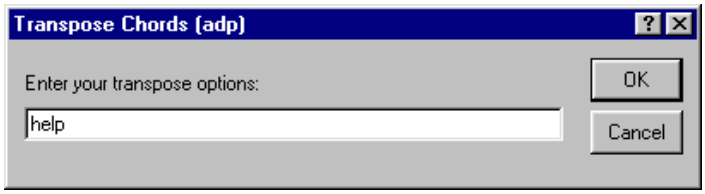


before finally running.

Ranges will prompt you for a range option, again from a list box:



And finally **Transpose Chords** is back to asking you for options to be entered manually (again with a default *help* instruction):



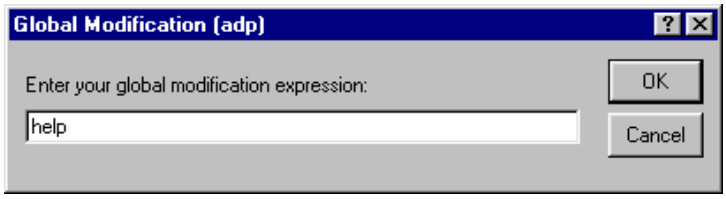
3. Come on Lawrie, make it march. I've already seen all that.

Alright, hold your horses. While all these options are useful, in some cases there is a better way. It's all in how the tool is invoked.

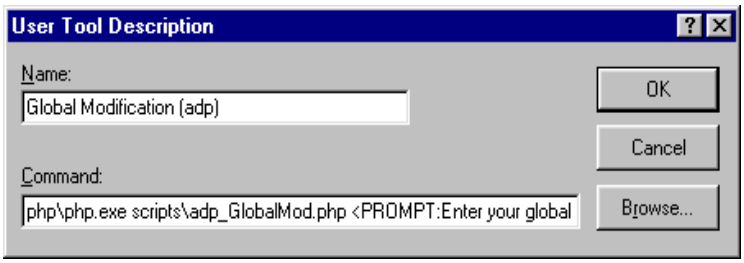
The user tools feature has a memory. It will remember which tool you last used and provided it isn't overruled in the command line, it will remember what the last expression was.

“So what?”, you say. Well, this makes it easy to use the same command on successive staves without having to re-enter it.

As an example lets look at Global Modification. As I've already shown you, the default invocation gives you this dialogue:



The command that causes this is:

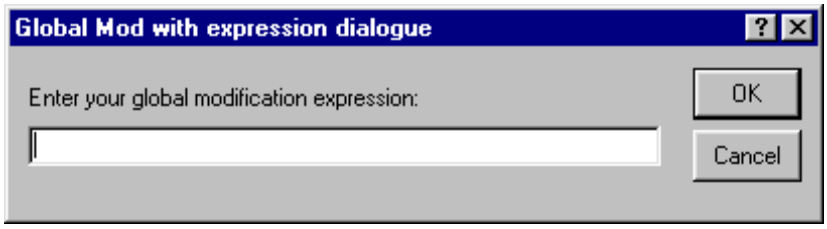


The full command line is:
*php\php.exe scripts\adp_GlobalMod.php <PROMPT:Enter your global modification expression:=*help>*

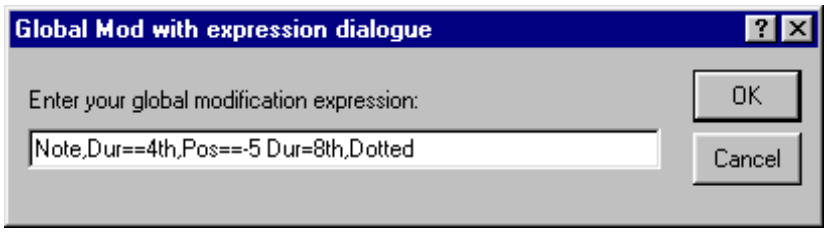
4. Now this is where the good bit starts.

If you just invoke the Global Modification tool as it stands, every time you use it you will have the default "help" in the dialogue box. However, if you remove the "help" from the end of the command line so it looks like this:
php\php.exe scripts\adp_GlobalMod.php <PROMPT:Enter your global modification expression:=>*

The first time you use the tool after starting NWC2 the dialogue box will be empty:



So now you enter your Global Modification expression:

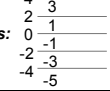


This one will turn all the crotchet (4th) notes on the first space under the staff into dotted quavers (8th notes) in the selection.

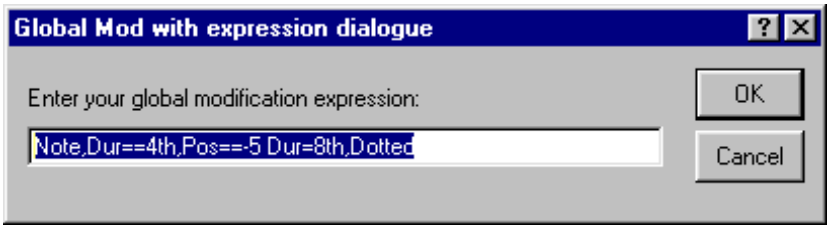
In the above example, "Note" is an element type. The "Pos" parameter refers to the elements' position on the staff: Pos==0 is the centre line. I.E. A "B" on a treble staff. The numbers grow positive as you go up and negative as you go down. NB they extend beyond the staff into "ledger line land" :

The "Dur" parameter is "Dur"ation: Whole, Half, 4th etc. optionally Dotted.

There are other parameters, for the more powerful tools you WILL need to know them.



Now, because the command line no longer has anything after the *, if I make a new selection and access the tool again I get my last command already waiting for me to confirm I want it.



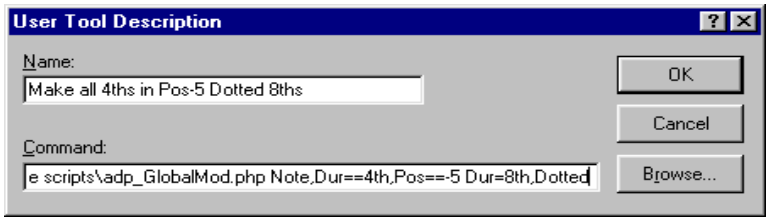
So the sequence is:
1st staff - Select the staff or portion to be modified, press <Alt-F8>, choose the Global Modification tool, enter the expression, <Enter>
2nd and subsequent staves - make the next selection, <Alt-F8>, <Enter>, <Enter>.

Is that good or what? It sure saves a lot of typing and can make doing identical changes to successive selections quite fast without having to create specific invocations of the tool.

5. “What's that?”, you say, “Specific invocations?” or “I hate dialogue boxes!”.

Well, NWC2 doesn't remember the last command or expression if you exit the program so if you wanted to keep a command available for the next time you started NWC2 you could create a new invocation:

Press <Alt-F8> and click the “New” button. In the dialogue enter a name for the tool and the command to run it:



You will note in the “command” field that the first part (*php\php.exe)* has scrolled to the left out of sight. The full command line is:

php\php.exe scripts\adp_GlobalMod.php Note,Dur==4th,Pos==-5 Dur=8th,Dotted

Click OK and you have a new tool invocation that will always be there.

“C'mon Lawrie, how often would I want to do that? Why would I want to save it permanently?”, you ask. Well maybe not that particular Global Modification expression, BUT, there are other tasks that you could well want to repeat fairly regularly... which is why we will now look at invoking **Parts** *without* dialogues.

As I'm sure you know, the purpose of “Parts” is to enable you to separate chords.
E.G. to create an SATB score from a staff (or staves) containing chords.

Like ALL the user tools, “parts” is potentially destructive so I advise you to only work on copies, not original files. Save before you start and don't resave until you've checked the results.

When user tools go wrong: <Ctrl-Z> is your friend!

In the case of “Parts” I suggest you create new staves for each of the new parts and copy the source staff to all of them. That way you have a reference staff to compare with/copy from in case something goes awry.

If you follow the default Parts invocation you end up with 3 dialogue boxes to work your way through. Now Parts will only do a few things; Remove or Keep the Top or Bottom notes in a chord and replace or not replace single notes with a rest. 6 useful combinations, 7 new tool invocations if you have one with an expression dialogue. (I have one of these because the new version of Parts also allows you to specify a note position. It is available at: http://nwc-scriptorium.org/nwc2scripts_parts.html - I saved it as “adp_parts.php”)

The extra invocations I have configured (with their respective command lines) are:

a) Extract Parts with expression dialogue
php\php.exe scripts\adp_Parts.php <PROMPT:Enter your parts expression:=>*

b) Extract Parts – Remove Bottom
php\php.exe scripts\adp_Parts.php remove bottom

c) Extract Parts – Remove Bottom – No Single Notes
php\php.exe scripts\adp_Parts.php remove bottom nosingle

d) Extract Parts – Remove Top
php\php.exe scripts\adp_Parts.php remove top

e) Extract Parts – Remove Top – No Single Notes
php\php.exe scripts\adp_Parts.php remove top nosingle

f) Extract Parts – Retain Bottom
php\php.exe scripts\adp_Parts.php retain bottom

g) Extract Parts – Retain Top
php\php.exe scripts\adp_Parts.php retain top

Make it a habit to always check the “User Tools” page on the Scripto for the latest versions.

It can be quite easy to miss an “update alert” if you are not a regular Forum or News Group denizen.

I didn't configure any “nosingle” variants of “retain” as they don't actually do anything different. As you can see, this is much faster than working your way through the dialogues.

You may wish to print the next 2 pages as a reference. All the really useful bits are in them.

NB In method 4, part c) there is a rather large command line that has wrapped. I suggest that if you wish to “copy and paste” this command, do it via *notepad so that you can remove the line breaks.*

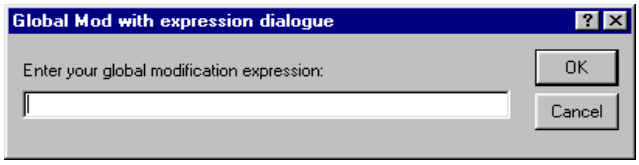
6. O.K. So what's the bottom line here?

Any user tool that accepts expressions can be invoked several ways...

Method 1 – use a dialogue box to enter an expression:

a) Create a new tool invocation in the tools window by clicking the “New..” button
b) Give the tool a name, E.G. “Global Mod with expression dialogue”
c) Enter the command line, E.G.

php\php.exe scripts\adp_globalmod.php <PROMPT:Enter your global modification expression:=>*



The dialogue box's title is the name of the user tool, and as you can see from the image, the text in the < > provides the directives to the user tool interface to create the rest of dialogue box.
“PROMPT:” (in upper case and terminated by a colon) declares that what follows is a prompt...
the “=” after the text is a delimiter and along with
the ”*” defines the expression entry point.

*NB The asterisk ***** has a particular function. It is prompting for “general text input”. It could just as easily be a hash (pound sign) **#** which is a prompt for a numeric (integer) value. It will generate a numeric entry box. We can set a range for the numeric value (negative numbers are allowed) by adding an upper and lower limit inside square brackets **[ ]** and separated by a comma thus: <PROMPT:Enter a number between 1 and 5:=#[1,5]>. We can also define a list box using the “pipe” **|** to start and separate alternatives (see method 4 for an example).*

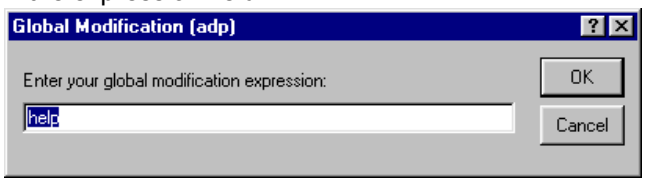
*The angle brackets **< >** define the start and finish of the prompt. The only spaces allowed within these brackets are for word separation in the prompt text itself:
I.E. Between the words after the “PROMPT:” and before the ”=” sign.*

Method 2 – use a dialogue box to enter an expression with a default:

a) Create a new tool invocation in the tools window by clicking the “New..” button
b) Give the tool a name, E.G. “Global Modification (adp)” (This one is already there from the install)
c) Enter the command line, E.G.

*php\php.exe scripts\adp_globalmod.php <PROMPT:Enter your global modification expression:=*help>*

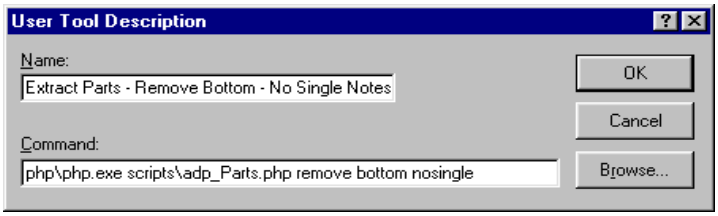
This command line works the same as for method 1 except that the included “help” is a default expression that will be entered in the expression field.



Method 3 – use a predefined expression:

a) Create a new tool invocation in the tools window by clicking the “New..” button
b) Give the tool a name, E.G. “Extract Parts – Remove Bottom – No Single Notes”
c) Enter the command line, E.G.

php\php.exe scripts\adp_Parts.php remove bottom nosingle



If you need to know what an elements' type and its active parameters are, just copy a selection of a staff to Notepad and you will see the textual representation.

NB. If you only select 1 element, you will also see “default” values. Default values are NOT passed as “clip text” to user tools so you can test for their absence in some tools. E.G. Global Mod (Latest version.)

If you don't want to know defaults, ensure that you select more than one element.

You can also use the “Variable Dump” user tool installed with the “Starter Kit” which is what I usually do

When used, this invocation will operate on the selection with no further user input.

This is the fastest method for executing a user tool but may require many entries in your list of User Tools. I only use it when other methods would be too slow or when I use the expression on a regular basis.

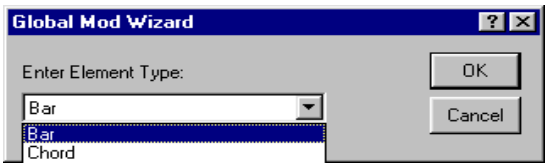
Method 4 – use a wizard:
a) Create a new tool invocation in the tools window by clicking the “New..” button
b) Give the tool a name, E.G. “Global Mod with wizard”
c) Enter the command line, E.G. (note that the command line has wrapped on this page. It is all one line)
php\php.exe scripts\adp_globalmod.php "<PROMPT:Enter Element Type:=|Bar|Chord|Clef|Dynamic|DynamicVariance|Ending|Flow|Instrument|Key|MPC|Note|PerformanceStyle|Rest|RestChord|SustainPedal|Tempo|TempoVariance|Text|TimeSig>,<PROMPT:Enter Comparison Expression (optional):=>" "<PROMPT:Enter Modification Action:=*>"*

This method results in a series of dialogue boxes with predefined options to select from. Lets break it down:

Part a)
php\php.exe scripts\adp_globalmod.php – this is the actual program to be run.

Part b)
“<PROMPT:Enter Element Type:=|Bar|Chord|Clef|Dynamic|DynamicVariance|Ending|Flow|Instrument|Key|MPC|Note|PerformanceStyle|Rest|RestChord|SustainPedal|Tempo|TempoVariance|Text|TimeSig>

This creates the first dialogue:

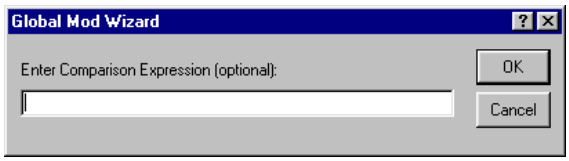


with all the defined element types (read available options) that are appropriate to the user tool being invoked (in this case Global Modification) in the list... (note the opening quote)

Part c)
A comma *“,”* - this is part of a normal Global Modification expression. (No quotes!) It's only here because Global Modification expects it.

Part d)
<PROMPT:Enter Comparison Expression (optional):=>”*

This creates the next dialogue:

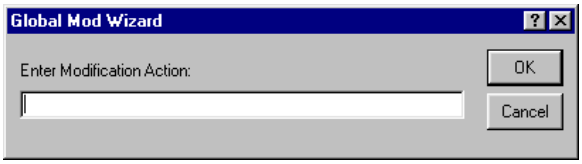


where an optional comparison may be entered. (note the closing quote)

Part e)
A space. The way things have wrapped you can't easily see it but it is there. This is a required part of a normal Global Modification expression.

Part f)
"<PROMPT:Enter Modification Action:=>"*

This creates the last dialogue:



Where the desired modification is defined. (Note the opening and closing quotes)

The quotes, comma and space outside the < > brackets are passed to Global Modification. They are not required for “wizard” mode to work. Actually, all characters outside the < > brackets will be passed to the user tool being invoked. Using quotes helps to keep things clear and in some cases the tool needs them.

This example has shown a series of 3 dialogues. I have tested up to 10 just fine but there does seem to be a 512 character limit on the command line. Use as many dialogues as you need, I doubt you'll run out.

As you can see, wizard mode is good if you cannot remember the parameter alternatives for the tool being used but otherwise it can be very slow.

Have Fun!