Matrix maker 2.5 (fat)

TWELVE-TONE MATRIX APPLICATION

ReadMe FILE for using ***Matrix maker 2.5 (fat)*** with Microsoft Word 5.1

The *Matrix maker 2.5* folder contains the latest (January, 1996) version of ***Matrix maker***. This program is a "fat" binary application, containing both 68K and native PowerPC code.

The folder containing this text file includes several items:

1) the Macintosh ***Matrix maker 2.5 (fat)*** application, a fat binary application containing both 68K and PowerPC native code;
2) a SimpleText **ReadMe** file;
3) a folder labeled "for MSW 5.1 users" (the folder containing the file that you are now reading);
4) a folder labeled "for MSW 6 users";
5) the *Matrix maker script* AppleScript application (usable only with MSW 6.x)
6) a sample output file labeled ‘sample “matrix.txt”’;
7) a sample output file labeled ‘sample “header.txt”’;
8) a sample of the “finished product”, labeled “sample matrix output”.

If you are equipped with Microsoft Word 6.x, you should stop here and open the folder "for MSW 6 users", read the enclosed documentation, test the operation of the AppleScript "*Matrix formatter*" application, and then (if everything works properly) drag this folder and its contents to the trash.

If you have reached this line, then I assume that either your MSW version is 5.1 rather than 6.x or you have not been able to use the AppleScript application *"Matrix formatter"* with your Word 6.x installation. This folder ("for MSW 5.1 users") contains five items:

1) this **ReadMe** file
2–5) four Stationery files in Microsoft Word (5.1a) for converting the output of the ***Matrix maker 2.5 (fat)*** application into easily readable form as 12 by 12, 7 by 7, 6 by 6, and 5 by 5 matrices.

This application was originally designed (v 1.0) to facilitate the necessary but often somewhat laborious "busy-work" of constructing 12 by 12 matrices used in the composition (or analysis) of twelve-tone musical compositions. The application was subsequently (v 1.1) augmented to allow the creation of matrices of other dimensions than twelve, particularly those involving five, six, and seven elements. From its inception, the software package has also allowed the use of the M5 and M7 transforms and rotation as optional operations. The stationery files included for matrices of five, six, seven, and twelve elements allow the easy creation of matrices, either with or without pitch-class names, within the standard grid format. An additional option allows the selection of any pitch-class name as "0" (zero). ***Matrix maker 1.2.1*** added "hidden text"

instructions for pasting the created data onto each of the (MS Word only) stationery files. ***Matrix maker 2.0 (fat)*** eliminated some remaining error-detection bugs, provided a more user-friendly interface, and added the option (for MSW 6.x users) of automating the formatting process by using an AppleScript application, while still allowing the formatting to be accomplished manually, as before, for those who either do not have MSW 6.x or whose MSW 6.x applications stubbornly refuse to work with the script provided (an option dictated by the always prudent application, whenever computers are involved, of Murphy's Law). The additions that distinguish ***Matrix maker 2.5 (fat)*** are explained in the MSW 6.x **ReadMe** file in the folder "for MSW 6 users"; users of MSW 5.1 are not affected by these changes.

Creating an output file

To use the ***Matrix maker 2.5 (fat)*** application with Microsoft Word 5.1, perform the following steps to create a 12 by 12 matrix:

1) Double-click on the ***Matrix maker 2.5 (fat)*** icon.

2) The console window will appear, and you will be issued several prompts. In each case, after entering the information requested, press <ENTER>. You may exit from the application at any time by typing "<COMMAND>–Q".

a) You will be prompted to enter the name of the piece for which the matrix will be used.

b) You will next be prompted for the set on which you want the matrix to be based. (These instructions apply to the creation of a 12 by 12 matrix, but they may be used with some modifications for other matrices as well—see below.) This set MUST be entered as a series of one-digit numbers from 0 to 11, all but the last followed by a comma. The numbers "10" and "11" must be represented by the characters "t" and "e", respectively (whether these characters are in upper or lower case is irrelevant; this is also the case with all other alphabetic characters entered when this application is used). Typing errors will be flagged, including the entry of duplicate pitch-class numbers and the typing of more that twelve entries, and an opportunity for re-entry of the set will be provided. The set entered need not begin on "0" (zero); a set entered as beginning on any other number will automatically be transposed so that the first note becomes zero. You will be asked if the number of elements in the array is correct. As in all such prompts, type "y" (yes) or "n" (no).

c) You will be asked whether or not you wish the set entered to be subjected to an M5 or M7 transform. Enter "y" or "n", as above. If you entered "n", the program will proceed to **d)** below. If you entered "y", you will be prompted for the number of the transform, in which case you should enter either 5 or 7. (If you are not familiar with this relatively recent twelve-tone transformation, enter "n".)

d) You will be asked whether or not you want rotation. If you entered "n", the program will proceed to **e)** below. If you entered "y", you will be asked for the number of the note within the hexachord or set on which the rotation will begin (the numbers range

from 2 through 6, in the case of hexachords). Obviously, you could enter "1", but this would result in no rotation at all.

e) You will be asked whether or not you wish pitch-class names to appear below the numbers. If you enter "n", the window will display the message "**The matrix has been successfully created! The matrix output files have been saved in the folder in which this application is located.**" (2 spaces) "**To exit, type <Return>.**" (2 spaces) "**If you are using Microsoft Word 6.x with the AppleScript "Matrix maker script" automated formatting application, the matrix will be formatted without further user intervention.** (space) **If you are not taking advantage of the full automation capabilities of this package but are using the AppleScript "Matrix formatter" application, then double-click on the "Matrix formatter" icon within the folder "for MSW 6 users" to format and save your matrix.** (space) **Otherwise, format and save it manually according to the instructions in the appropriate "ReadMe" document.**"

If you enter "y", you will be prompted to enter the pitch-class name (either single letters from A through G (case irrelevant) or two-character names consisting of one of these letters followed by "#" (no flats, please--there is no flat character in the font!). After you enter this item, the message mentioned earlier in this paragraph will appear. In either case, *do not follow the instruction to double-click on the "Matrix formatter" script, which works only with MSW 6.x*. Instead, proceed to the instructions below.

Processing the output file

When you have exited the application, you will notice that the output files "matrix.txt", "header.txt", and "mtrxsize.txt" will reside within the same folder that contains the ***Matrix maker 2.5 (fat)*** application. (For the purposes of this procedure, you should drag the file "mtrxsize.txt" to the trash, since it is not used without the MSW 6.x AppleScript application.)

With the default font set to "Times" (12 pts.)—this is not an absolute necessity, but the script is designed with that font and type size in mind—, open "matrix.txt" in Microsoft Word 5.1, highlight the matrix with the "Select All" command from the "Edit" menu (or use the keyboard shortcut "<Command>–A"), and from the "Insert" menu select "Text to Table". (If you selected the option of displaying the set data in the matrix *without* pitch-class letter-names, there will be a line consisting entirely of commas above the first line of the output data and there will always be such a line below the last line of numbers; be sure that any such line is included in those highlighted.) When the dialogue box appears, "comma delimited" will in all likelihood be checked; if not, check it now.

When the text-to-table conversion is complete, copy the table (if it is not already highlighted, highlight it with "Select All" or "<Command>–A", as above) with the "<Command>–C" copying command (or choose "Copy" from the "Edit" menu).

Next, open the appropriate matrix stationery file (the files supplied are suitable for 5 by 5, 6 by 6,

7 by 7, and 12 by 12 matrices), highlight the grid by double-clicking anywhere within it while holding down the <Option> key, and press "<Command>–V" (or select "Paste" from the "Edit" menu) to paste the clipboard contents onto the matrix.

In case you forget the procedure to be used, you may refer to the "hidden text" that appears above the grid; this text, and the sectional divisions marked by the dotted lines, will not normally appear when the final document is printed. (You may find it necessary to nudge the number in the upper left-hand corner one space to the right to line it up with the others.)

Next, open and copy, as above, the contents of the file "header.txt" and paste the line(s) at the top of the matrix grid document, centering the line(s) and making font changes if desired.

All that remains is to name and save the file in the usual fashion, as a "Normal" file. Be sure not to save it with the name of any of the existing stationery files, and do not save it as type "Stationery"! If you do, you will destroy the existing stationery template!

Testing the "Matrix maker 2.5 (fat)" application

To test the application after installing it, enter the following information at the prompts. (In this list each prompt line is preceded by "<" and followed by ">" for your convenience; these symbols do not appear in the prompts on the screen. You should enter in turn all items not preceded by "<" and followed by ">".):

<Enter the title of the piece.>
My Incomparable Masterpiece
<Enter the set in one-digit integers, separated by commas;>
<for pc numbers 10 and 11, use "t" and "e" respectively.>
3,t,7,6,e,2,9,0,5,4,1,8
<You have asked for a 12 by 12 matrix. Is this correct? Enter y>
<or n.>
y
<Do you want an M5 or M7 transform? Enter y or n.>
y
<Enter the M-transform number.>
7
<Do you want set-rotation? Enter y or n.>
y
<Your set is a full twelve-tone set. Do you want intra-hexachordal>
<rotation? [This type of rotation will preserve the properties of the>
<source hexachord.] If so, enter y.>
<If not, enter n, in which case the rotation>
<will be applied to the set as a whole.>
y
<Enter 2 for 2nd note, 3 for 3rd note, etc. for the desired rotation.>

3
<Do you want pitch-class names to appear under the pc>
<numbers in your matrix? Enter y or n.>
y
<Enter pitch-class name to be used as pitch-class 0 as>
<letter-name--sharps only.>
f#
< (space)>
< (space)>
<The matrix has been successfully created!>
<The matrix output files have been saved in the folder in which this application>
<is located.>
< (space)>
<To exit, type <Return>.>
< (space)>
<If you are using Microsoft Word 6.x with the AppleScript “Matrix maker script”>
<automated formatting application, the matrix will be formatted without further>
<user intervention.>
< (space)>
<If you are not taking advantage of the full automation capabilities of this>
< package but are using the AppleScript “Matrix formatter” application, then>
<double-click on the "Matrix formatter" icon within the folder “for MSW 6 users”>
<to format and save your matrix.>
< (space)>
<Otherwise, format and save it manually according to the instructions in the>
<appropriate "ReadMe" document.>

The output file "matrix.txt", should be identical to the sample file ‘sample “matrix.txt”’ provided for comparison; likewise, the output file "header.txt" should match the sample file ‘sample “header.txt”’. The sample input data listing and output files are designed to create a 12 by 12 matrix, but other matrices can be created in the same way by following the instructions on the screen. If at any time you should wish to abort the program, simply type "<COMMAND>–<period>", followed by "Quit" from the file menu (or simply use the shortcut "<Command>–Q"). Remember that the file "mtrxsize.txt" is useless for the purpose being described here and should thus be trashed. You should also trash "matrix.txt" and "header.txt" after formatting your matrix in order to avoid future file-name conflicts, should you create more matrices.

Differences between v 2.5 and v 2.0

As explained earlier, there are no differences between these two versions that affect users of Microsoft Word 5.1.

Differences between v 2.0 and v 1.2.1

The differences between v 2.0 and earlier versions are significant. Some remaining bugs have been ironed out, and a much more user-friendly interface has been added. The principal change, however, has been the addition of an AppleScript application that can automatically copy, format, and save a completed matrix with almost no user intervention, provided that the user has an active installation of Microsoft Word 6.x on his/her system. Since the use of the script application may not work in all cases, however, the option of formatting the matrix manually, as in earlier versions, has been retained. Folders for use with both MSW 5.1 and MSW 6.x have been included, each with pertinent documentation.

Differences between v 1.2.1 and 1.2

The principal change in this version was the addition of the "hidden text" in the stationery files. Version 1.2.1 also contained some significant fixes regarding bugs in error-detection that managed to slip by in v 1.2!

Differences between v 1.2 and 1.1

This version was the first "fat" binary version, containing both Macintosh 68K (68020 and above) and native PowerPC code. The code for both types of processor was optimized to run more quickly and efficiently than in previous versions. Improved error-detection for typing errors in the entry of data not present in earlier versions was included in v 1.2. Additional word-processing template files for matrix layout were provided. The option of selecting either intra-hexachordal or entire-set rotation for full twelve-tone sets was also added (v 1.1 allowed only intra-hexachordal rotation). The other principal difference was a fix of a minor but potentially annoying bug involving creator types.

Differences between v 1.1 and 1.0

The differences between v 1.1 and v 1.0 were minimal. The code was optimized somewhat, and it became unnecessary to adjust the column width in the Microsoft Word text-to-table conversion prior to pasting the table onto the appropriate stationery file.

This application is freeware, with no strings attached except that the application and related files may not be sold or otherwise commercially exploited (though it may, of course, be used by composers and/or analysts—after all, that's why it was written!). For information, comments, etc., e-mail me at "j-melby@uiuc.edu" or "JBMelby@aol.com". Enjoy!

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