

T/MUG

T/MAKER USER'S GROUP NEWSLETTER
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Welcome to the New T/MUG

A Letter From the Editor

First of all, I'd like to welcome you to the new T/MUG newsletter. I hope you will find it as useful and informative as ever. As always, your suggestions, complaints and contributions are encouraged and greatly appreciated. Please note the new address on the back cover.

I thought I'd take a moment to introduce myself. I've been a T/Maker user since early 1980. I'm uniquely qualified for this job for two reasons. For one, prior to joining T/Maker, I was the editor of Tandem Computer's newsletter, **NonStop News**. (Yes Virginia, even English majors can find work in the heart of Silicon Valley!) However, probably the more useful qualification for this particular job is that my brother Peter *wrote* T/Maker. This gives our users group a direct line for questions or problems you might have. It also ensures that your suggestions for program enhancements get to the guy who can do something about them.

Again, please keep in touch. I'm going to get awfully tired of seeing all these "Roizen"s in the bylines if you don't.

--Heidi Roizen



With our new newsletter editor, and our new format for the publication, we decided to run a news column about some of the good things you can expect from T/Maker Company in the future. We hope this column will not only tell you about the things beneficial to us, but also some things that may be useful or remunerative to you.

Contests, Contests

With regard to the latter, we have an announcement that we hope will get your attention like a BDOS error message on a brand new disk. With this issue of the T/MUG newsletter, we are announcing permanent contests for T/Maker enthusiasts who contribute short articles or application stories which illustrate unusual or clever T/Maker usage. Any that we publish will entitle the lucky author to a T/MUG teamug. Future prizes will range from other such trinkets to coupons good for future T/Maker upgrades, depending on the contest. These special contests will be announced in future issues.

Rah Rah and Reviews

We hope that by now you have seen the centerfold spread on T/Maker III in **CP/M Review**. We pooled all our mad money to cover that ad, but couldn't find enough budget for a real centerfold, so we had to settle for our business suited micro using male instead. (Watch for the ad in **InfoWorld**, **Computer Merchandising**, and other publications, as soon as we can afford them!)

Since you probably already own T/Maker, the ads won't mean much to you -- but the upcoming reviews will. Watch **InfoWorld** this month for a detailed review, and keep an eye on **PC**, **PC World**, **Popular Computing**, **CP/M Exchange**, **Desktop Computing**, **Peelings**, **Reference**, **Lifelines**, and, if you happen to be in France, **L'Ordinateur Individuel**. (the Marketing Department's been busy). They all are in the process of reviewing T/Maker III. If you know of publications we should be pursuing, please drop us a note.

What we have liked about various T/Maker reviews in the past is not only that they give the program high grades, but each reviewer seems to come up with different examples and different applications that are described in the review.



We plan to get reprints of the new T/Maker III reviews and will circulate these from time to time. To make sure that you never become disappointed in your T/Maker investment, we promise not to send you any bad reviews, in the unlikely event that there are some. If you want any of our brochures or other literature, please drop us a line and we will be happy to comply.

Distributor List Growing

On the distribution front, T/Maker III is now being handled by major distributors all over the USA and in a few overseas areas (see page 14 for a list of them). They can provide you not only with CP/M, CP/M 86, MS DOS or PC DOS versions of T/Maker III, they can also do upgrades from T/Maker II. Contact them directly for more information.

OEM News

On the OEM front, T/Maker Company has signed an agreement with Personal Micro Computers of Mountain View (CA) to supply a dedicated version of T/Maker III with every MicroMate computer they sell. We have been Beta testing a MicroMate for over a month in our own office, and we are pleased and proud that PMC chose T/Maker for their basic software. We are very impressed with this compact, cost-effective micro and its easy-on-the-eyes Qume terminal. The MicroMate is the size of a 2-pound box of chocolates, has 128k of memory and a built-in 5 1/4" floppy disk drive. It runs on the new CP/M 3.0, and with T/Maker III it's a winning combination. If you need a full-featured, low cost computer, you can get more information by contacting Ron Troxell at PMC, phone (415) 962-0220.

Peter Roizen (the author of T/Maker) has just returned from Tokyo, where he participated in the inaugural introduction of Nippon Univac's new 16-bit micro. He had created a special version of T/Maker III for it, that even does Kanji, the Japanese pictograph characters. In Japan, T/Maker is called Micro REPO and is supplied with every NUK micro as the basic software. The computer was designed with T/Maker in mind, with 23 dedicated keys for all your favorite functions.

Well, that's all the T/Maker news for this broadcast. Keep tuned to NewsCenter 3 for further developments in our next issue. Film at eleven.

Fontastic News

All copy in this newsletter was typeset using a relatively new software program called Fancy Font(TM). The program turns an Epson MX80 or MX100 into a race car, enabling it to do Roman and Sans Serif type styles in point sizes from 8 to 40. It even has some special fonts, such as Olde English. Further, it allows the user to create his own font variations (I haven't dared try that yet). T/Maker's files are completely readable and compatible, and the creative user can think of many ways to use "replace" and "keystroke macro" to help add in the letter-codes the system needs to select typefaces. Of course, the print design commands are not interpreted by Fancy Font, and tables must be printed using their tabs, so as not to be skewed by the proportional spacing. SoftCraft is located at 8726 S. Sepulveda Blvd., Suite 1641, Los Angeles, CA 90045. (213) 641-3822.

Helpful Hints

Please, someone come up with a good name for this column -- you'll get the first T Mug mug to roll off the production line, and I'll be eternally grateful!

Tricking ALIGN into leaving those periods alone -- Those of you who have been with us since T/Maker I can remember the days when periods were aligned with only one space following them. Unfortunately, having two spaces isn't always what you want, for example, between "Mr." and "Jones", or "P." and "O.". Well, for those of you who have ventured into the back of our manual and have created a print.utl file, here is a simple solution. Between the period and beginning of the next word or letter, don't use a plain space. Instead, use the high-bit key, followed by a tap on the space bar. You create something that looks and prints like a space, but is seen by T/Maker as a character. Therefore, it does not change the spacing. Not only does this serve nicely for keeping those periods closer together, it can also be used to keep two words from being separated by ALIGN. Do remember, though, that as far as T/Maker is concerned, any words joined by these high-bit spaces are looked upon as single words, for better or worse.

Using KEYSTROKE MACRO with FIND -- These two features can be very powerful when used together (for example, see the article on replacing minuses with brackets for financial reporting, in this issue). Unfortunately, most people's minds work in what seems to be a logical order: Begin the MACRO, start the FIND, do the required work, RETURN, then execute the MACRO. What happens then, is that every time the MACRO is executed, it asks you for the string to be found. This won't work at all if you try to use the MACRO a commanded number of times. The way to get around this is to define the string in the START FIND *before* you begin the macro. Then, when the time comes in the MACRO to find the required string, just use the CONTINUE SEARCH.

Internal Rate of Return using T/Maker III



Though the Net Present Value (provided by T/Maker) is normally a better guide to action, one does sometimes want to calculate an IRR. Here is a simple little T/Maker program to calculate the Internal Rate of Return of an investment. It uses "load" and assumes that a benefits-cost stream is in a data file named STREAM. You run it by doing GET IRR DO.

THE IRR PROGRAM

```
load stream load blank compute c c c c 16 clip b arrange 7 12 replace " " IRR=
ex 99.99 999,999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99 99999.99
zv
jcl
jc2 dis net pas pas pas pas pas pas pas pas pas pas pas
jc3 sta stb + + + + + + + + + + + + +
jc4* 1.01
jc5 dis net + + + + + + + + + + + + +
+ 1 (stream) { } { } { } { } { } { } { } { } { } { } { } { } { }
jcl fta ftb
-
jcl / +=
jc2 ftb+ /=
jc3 fta+ -=sta
jc4 fta
jc5 pas
=
```

(I've only shown provision for eleven years of returns since that's what fits on this paper.)

Here is an example Stream file for an investment of \$1,000 that returns \$500 after one year, \$400 after another year, then \$300 and finally \$100 after four years.

stream=-1000 500 400 300 100

and here is the result left on the screen after the IRR calculation:

IRR=14.49

Technically, the program starts by assuming a 1% discount rate and then uses Newton's method to iterate to a solution. For reasonable data, this seems to converge very quickly (the five compute iterations are overkill but only take a couple of seconds each). Note that unusual data streams may result in bizarre IRRs (there are technically the same number of answers as there are sign changes in the cash flow). See, for instance, Managerial Finance, J. Fred Weston and Eugene F. Brigham, 5th edition, Appendix A to Chapter 10 for further details.

--Tom Moran

Simultaneous Linear Equations

Here is a T/Maker program to solve 3 simultaneous linear equations for three unknowns. the coefficients must be entered on the three "+" lines at the bottom in the usual form. The example here shows the equations:

$$\begin{array}{rrcr} x & -y & +z & = -4 \\ 5x & -4y & +3z & = -12 \\ 2x & +y & +z & = 11 \end{array}$$

which have the solution $x=3, y=6, z=-1$. Notice when you run this example that the second row shows -6 and the -1 indicates that the sign is reversed. it is left as a challenge to the reader to add a final calculation to make all the signs come out right. Using LOAD and UNLOAD you could then make this a subroutine for, say, a multiple linear regression calculator. If you have only two equations to solve, just enter zero for the "z" coefficients and add a third "z=0" equation. If you have more than three equations, add to the OTHERCOLUMNS and replicate the middle "sort" line.

```

replace COL1 '8 23' replace OTHCOL '24 55' replace RHS '56 67' replace USED '68 69' do
sort d n s COL1 compute 10 find X arrange 1 7 OTHCOL COL1 RHS USED end 1 do
sort d n s COL1 sort a n s USED 1 compute 10 find X arrange 1 7 OTHCOL COL1 RHS USED end 1 do
sort d n s COL1 sort a n s USED 1 compute do
arrange 1 7 OTHCOL COL1 RHS sort d c s OTHCOL sort d c s COL1 clean
ex 9999.999999 9999.999999 9999.999999 9999.999999 9 ,,,,,,
jc0+ 1
jc1 / +=
jc2 / +=
jc3 / +=
jc4 /+=
jc5 sta stc ste
uc6 stx
uc7 += stb std stf
uc8 fta+ftx*=-ftb+= ftc+ftx*=-ftd+= fte+ftx*=-ftf+=
uc9 + sgn+ply
uc10* 2
uc11- 1
uc12 +=sts
uc13 +fts*= +fts*= +fts*=
sc6
sc7
sc8
sc9
sc10
sc11
sc12
sc13
cn X Y Z C
+ 1 -1 1 -4
+ 5 -4 3 -12
+ 2 1 1 11

```

Here is the result:

1.000000	0.000000	0.000000	3.000000
0.000000	-1.000000	0.000000	-6.000000
0.000000	0.000000	1.000000	-1.000000

--Tom Moran

ANALYZING SURVEY DATA WITH T/MAKER



Part II: Next Steps

Note: This is the second in a series of articles on how to analyze survey data with T/Maker. The first described setting up the data set. The present one shows how to clean the data, run marginals, and do recodes, collapses, and typologies.

Last time, we described how to set up a data set, and when we were done the completed data set looked like this:

Figure 1

THE COMPLETED DATA SET

```

Q1  Q2      Q3  Q4  Q5  Q6  Q7  Q8  Q9  Q10
00000000011111111222222222233333333333444444444455555555555666666
12345678901234567890123456789012345678901234567890123456789012345

+   case 01      Am B 15000  C35  Dr  Ea  Fr  G1  H2  I4  J70
+   case 02      Af B 27546  C46  Dr  Eb  Fd  G2  H2  I4  J64
+   case 03      Am B 35123  C67  Dr  Ec  Fr  G2  H4  I4  J73
+   case 04      Am B 22456  C33  Do  Ea  Fd  G0  H5  I1  J69
+   case 05      Af B 57343  C22  D-  Eb  Fr  G2  H4  I1  J62
+   case 06      Af B 67111  C25  Do  Ec  Fd  G2  H3  I1  J66
+   case 07      Am B 11342  C56  Dr  Ea  Fr  G2  H2  I3  J70
+   case 08      Am B109345  C47  D-  E-  Fd  G3  H4  I4  J66
+   case 09      Am B 67000  C21  Dr  Ec  Fr  G0  H1  I5  J71
+   case 10      Af B 19800  C26  Do  Ea  Fd  G1  H1  I2  J61
+   case 11      Am B 34678  C54  Do  Eb  F-  G2  H1  I4  J67
+   case 12      Af B 22333  C42  Do  Ec  Fd  G1  H1  I2  J67
+   case 13      Am B 33222  C70  D-  Ea  Fr  G2  H4  I2  J68
+   case 14      Am B 29999  C33  Dr  Eb  Fd  G1  H5  I2  J74
+   case 15      Af B 30123  C51  Dr  Ec  Fr  G-  H4  I1  J59
+   case 16      Am B 56677  C56  Do  Ea  Fd  G1  H1  I5  J70
+   case 17      Af B 98000  C24  D-  Eb  Fr  G0  H2  I1  J67
+   case 18      Af B 18777  C36  Do  Ec  Fd  G1  H3  I2  J63
+   case 19      Am B 18665  C36  Do  Ea  Fr  G1  H4  I1  J62
+   case 20      Af B----- C40  Dr  Ea  Fd  G1  H5  I4  J66

```

ANALYZING SURVEY DATA, PART TWO -- CONTINUED

You'll recall that this material is typed into a file, just as any other sort of document might be. The data set should be given a file of its own so that data manipulations can go on unencumbered.

The First Step: Cleaning

The first step in a survey analysis is to "clean" the data. This means checking the data for its accuracy. The basic idea is that one does not want to forge ahead--running tables and writing up results--only to find later on that some of the data were incorrectly entered into the file. You could, of course, check it by comparing the data-set file case by case with the original questionnaires. Ordinarily, that's a bit arduous.

Another approach--and the more common one--is to check the data for "logical contingencies." The procedure is simple: Examine the questionnaire with an eye toward finding all questions that are logically related to another question in such a way that particular results should be impossible. Say, for example, you asked respondents if they were currently married or not and then asked about the current spouse's employment. Naturally, anyone who said he was not currently married should also have left blank the question about spouse's employment.

This checking for contingencies is easiest to do with TALLY or with KEEP/DROP commands. For example, you might carry out the check by cross-tabulating marital status with spouse's employment--with TALLY. Or, you might KEEP all unmarried respondents and then check to see that their spouse-employment data were all blank. When you find an inconsistent datum, by the way, be sure that you use it as a sort of probing device to see if other mistakes can be found. Sometimes the data of a particular questionnaire will be consistently displaced one-column-off or something like that. The point is, fully exploit any discoveries.

The Second Step: Producing Marginals

The next step is the production of "marginals". "Marginals" are the frequency distributions of the variables--that is to say, the count of how things came out on each variable. Once more, the process is very simple: Get the data set file on the screen,

ANALYZING SURVEY DATA, PART TWO -- CONTINUED



cursor at the top. Now, quit the editor, and write (for example), TALLY 21 22 END, this command will give you a report of the distribution on the gender variable. The report appears at the top of the screen, and looks like this.

TALLY 21 22 END

Af = 9

Am = 11

This says the gender distribution contained nine females and eleven males. It is a good idea to run straight through your data set producing "marginals" for each variable. These "tally reports" will pile up at the top of the file, and when you've finished running them it is an easy matter to print the results. (Incidentally, since TALLY is happy to tally a file on disk and give its report to the working file, you may choose to create a file called "Marginals" and give the tally commands from that file. This will not require you to clip and rename later on.)

A Third Step. Recodes, Collapses, and Typologies

Before you run tables you may want to manipulate the data in a variety of ways. Recodes are changes in the categorization of a variable. For example, in our data set education has three codes (cols. 43-44): "a" for up to high school graduate, "b" for college grad, and "c" for beyond that. We might want to "collapse" this variable into only two categories (say, combining the b's and c's) in order to maximize the number of cases available for analysis within categories of education. This can be done in two ways:

(1) REPLACE Ec Eb. This method works but it has the problem of losing the original information permanently.

(2) REPLACE "Ec " "Ecb". This is better. Now when you want to analyze the variable in its dichotomized form, you can simply tally in the column containing the recode. Note the use of a blank and quotation marks, so that the rest of the line is not shifted rightward a column throwing off the column designations in one's codebook.

You may also want to dichotomize or otherwise collapse continuous or categorical variables. Our data set, for example, includes income data. Suppose that we wanted to dichotomize respondents into "lower" and "higher" income groups, splitting them at 30,000 dollars. This is easy to do by means of the COMPUTE command:

ANALYZING SURVEY DATA, PART TWO -- CONTINUED

Figure 2

THE COMPLETED DATA SET

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
000000000111111111122222222233333333334444444445555555556666666												
12345678901234567890123456789012345678901234567890123456789012345												
ex			999999								999999	
ac1=											30000	
ac2				+							-ply+sgn	
+	case 01	Am B	15000	C35	Dr	Ea	Fr	G1	H2	I4	J70	0
+	case 02	Af B	27546	C46	Dr	Eb	Fd	G2	H2	I4	J64	0
+	case 03	Am B	35123	C67	Dr	Ec	Fr	G2	H4	I4	J73	1
+	case 04	Am B	22456	C33	Do	Ea	Fd	G0	H5	I1	J69	0
+	case 05	Af B	57343	C22	D-	Eb	Fr	G2	H4	I1	J62	1
.												
.												
.												

The first calculation line merely enters the constant, 30000, into the last column of the data set. The second calculation line first picks up the respondent's income from columns 26-31 and then, in the final column, subtracts 30,000 from it. The "ply" ("positives only") terminator symbol then prunes out all negative results, changing them to zeroes. Positive results are expressed, in transit at least, in their full numerical form. The final "+sgn" converts positive numbers to a designation of their sign, that is to say, a positive value goes to "1" and a "0" goes to "0". Thus, the variable has now been dichotomized: incomes under or equal 30000 become "0" and incomes over 30000 become "1's".

A typology is a new variable created out of the cross-classification of two or more variables. Suppose, for example, that we wanted to create a new variable whose categories were (1) female Republicans, (2) male Republicans, (3) female Democrats, and (4) male Democrats. This is done by using the REPLACE command to create a new variable out of the categories of the two previous variables. But before we can REPLACE we must use ARRANGE in an intermediate step that puts the columns of relevant data next to each other in the file. Let's go through this step by step:

First, look at the data set. We see that gender is in cols. 21-22 and political affiliation is in columns 47-48. The first ARRANGE command, then, will be:

ANALYZING SURVEY DATA, PART TWO -- CONTINUED



WHAT NEXT? arrange 1 23 21 22 47 48 23 100 end

What does this do? Well, let's interpret it. ARRANGE, of course, reorders the sequence of columns in a file. The command-name is followed by a series of number-pairs that designate the columns to be moved. The first such pair is "1 23"—this says that the newly arranged file should have cols. 1-23 first (just as the present files does). That will preserve everything in the file up to and including the gender variable. The next number pair (21-22) says that columns 21-22 should come next in the new file. This, then, creates a duplicate of the gender variable one column to the right of the original gender variable. The next number-pair (47-48) swoops over to the political affiliation variable and brings back a copy of it to the right of the newly created gender variable. In other words, we now have copies of the gender and affiliation variables right next to each other and ready for "recoding" by the REPLACE command. Finally, the number-pair 23-100 preserves the rest of the initial file in the new one. Notice, by the way, that we have retained our "original" copies, so to speak, of the gender and political affiliation variables. This is important because we don't want to lose those variables when we carry out our REPLACE commands. Now come those REPLACEs:

WHAT NEXT? replace AfFr K1 replace AmFr K2 replace AfFd K3 replace AmFd K4

It's a good idea, by the way, to carry out the ARRANGE and the REPLACE commands with the cursor placed just below the column-ruler lines. This will keep the ruler intact, so that you can use it later to put the file columns back into order. Having carried out the above series of REPLACEs you will notice that case 11 has not been successfully recoded--this because that case has missing data on the political affiliation variable. You'll have to do something about that, perhaps call it a category "5" and carry out another REPLACE to put that recode into effect.

This done, the recoded typology is now completed. All that remains is to move this variable to a place to the far right of the data set. We want, after all, to have our original column-to-variable correspondences to be in place. This, of course, is accomplished by a final ARRANGE command.

WHAT NEXT? arrange 1 23 27 71 24 25 end

This command will remove the column containing our new typology to the right end of the data set. Incidentally, even though one is working below the column-ruler one may nevertheless invoke the INFO command to take a look at where things lie. Running this example should show how easy typologies are to construct!

-- Ron Roizen

Next time: Tables and measures of association.

Converting Minuses to Parentheses

Many of you have told us that when using T/Maker for financial reporting, you need to replace the minuses with parentheses or brackets. This can be done one of two ways, either using a MACRO or using a sequence of replacements on a table set up a certain way.

The Keystroke Macro Method

This simple method requires only that the columns all be the same width. Let's take the following table for example:

Example 1:

	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4	TOTALS
EX	9,999.99	9,999.99	9,999.99	9,999.99	9,999.99
AC1	+	+	+	+	=
+	-456.00	954.00	23.00	54.00	575.00
+	23.00	407.00	528.00	-800.00	158.00
+	713.00	-654.00	324.00	717.00	1,100.00
=	280.00	707.00	875.00	-29.00	1,833.00

In order to move the cursor to each minus sign, you first need to establish "-" as the find string (see page 4 "Helpful Hints" for why this is done first). Hit the key for START FIND and type in the "-". It will move to that first minus. Now move the cursor back up to the first column of the first line beneath your equations. The keystrokes are as follows:

BEGIN MACRO

CONTINUE FIND (it will place the cursor on top of a minus sign)

SPACE (to wipe out the minus sign)

CURSOR LEFT (done here four times. Do it enough to move you beyond the left margin of the column, but not far enough to be into the column prior to it.)

TAB

(

CURSOR RIGHT (done here seven times. Do it enough to move you to the space beyond the last digit in the example.)

)

EXECUTE MACRO

After running the macro the same number of times as there are minuses to be changed, and cleaning the table, you will end up with something that looks like Exhibit 2. Remember, that once the minuses are replaced, T/Maker will no longer compute them as minuses, so this should be your last step before printing.

WHERE TO BUY T/MAKER

The following is a list of most of our T/Maker distributors. They can provide both new copies of T/Maker III as well as upgrades from T/Maker II. Call the one nearest you for details.

DOMESTIC DISTRIBUTORS

WESTICO
25 Van Zant Street
Norwalk, Conn
(203) 853-6880

LIFEBOAT ASSOCIATES
1651 Third Avenue
New York, NY 10028
(212) 860-0300

COMPUTER POTENTIALS
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Chicago, ILL 60610
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1-800-621-6872

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1-800-633-1000

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Sweden

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CH-6330 Cham
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