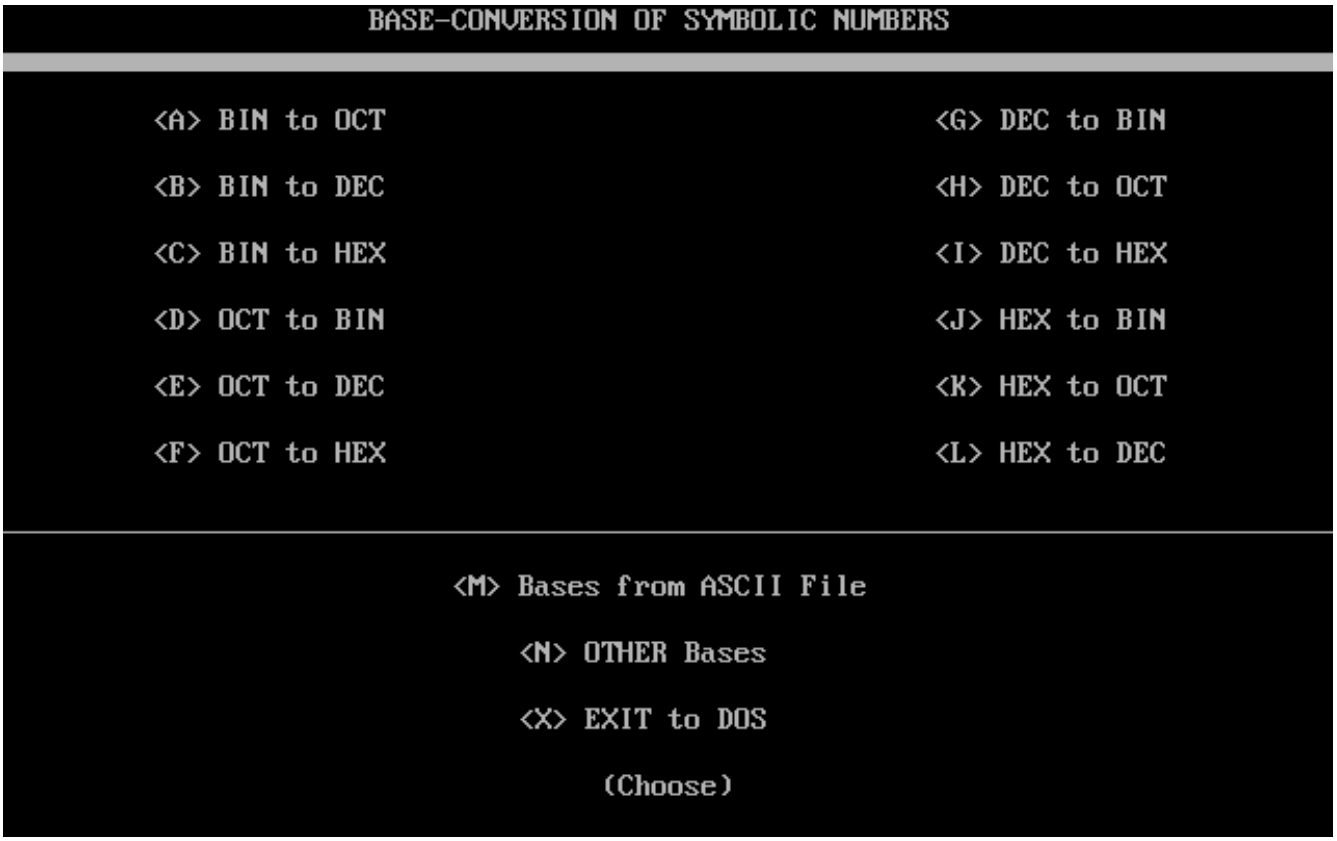
Normal Base Conversion Utility
And
Base Conversion of Symbolic Numbers

There are two programs (with source code) included:

SWAPBASE.EXE & SWAPBASE.BAS

MAKEBASE.EXE & MAKEBASE.BAS

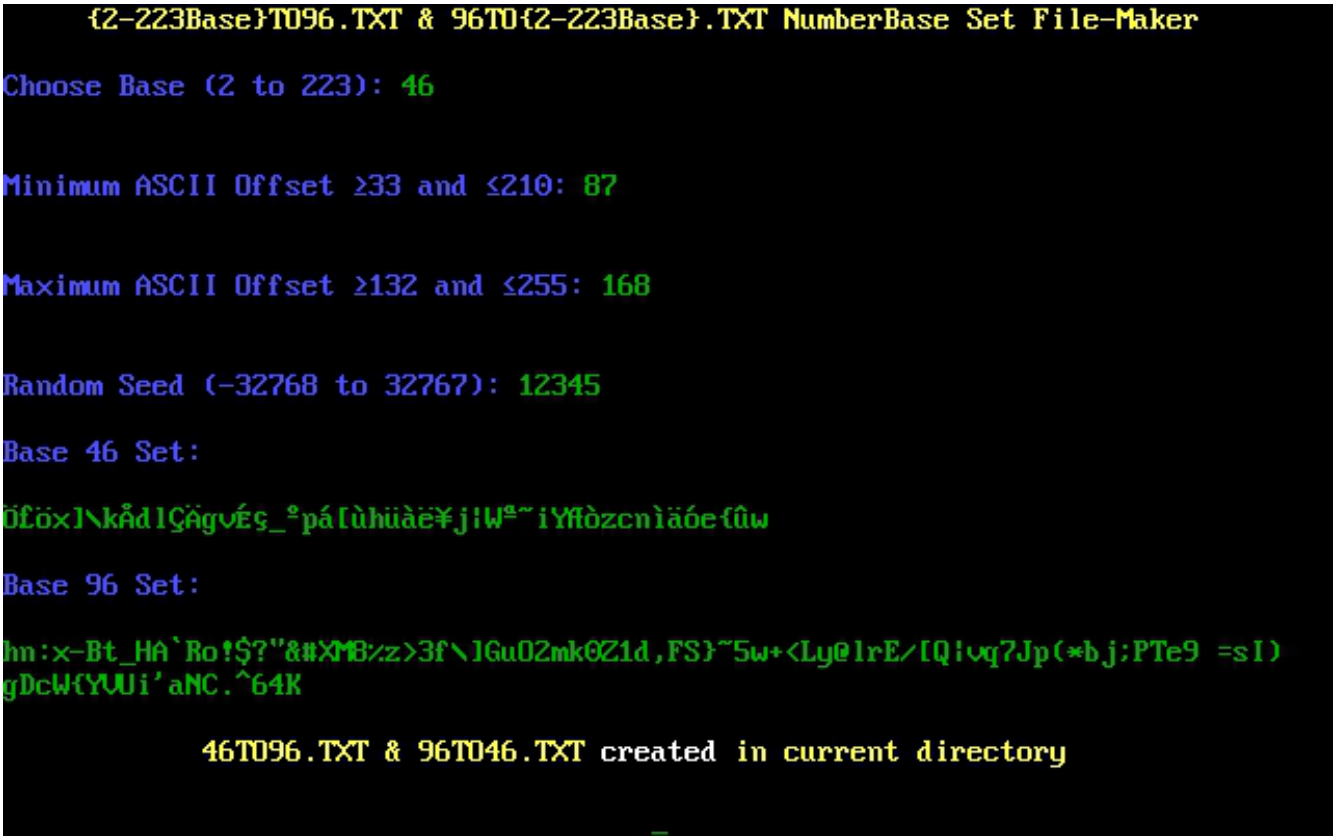


The opening screen for SWAPBASE.EXE

Choices <A> through <L> require no explanation

For Choice <N>, the user manually types in non-standard bases such as Base-4 to Base-7

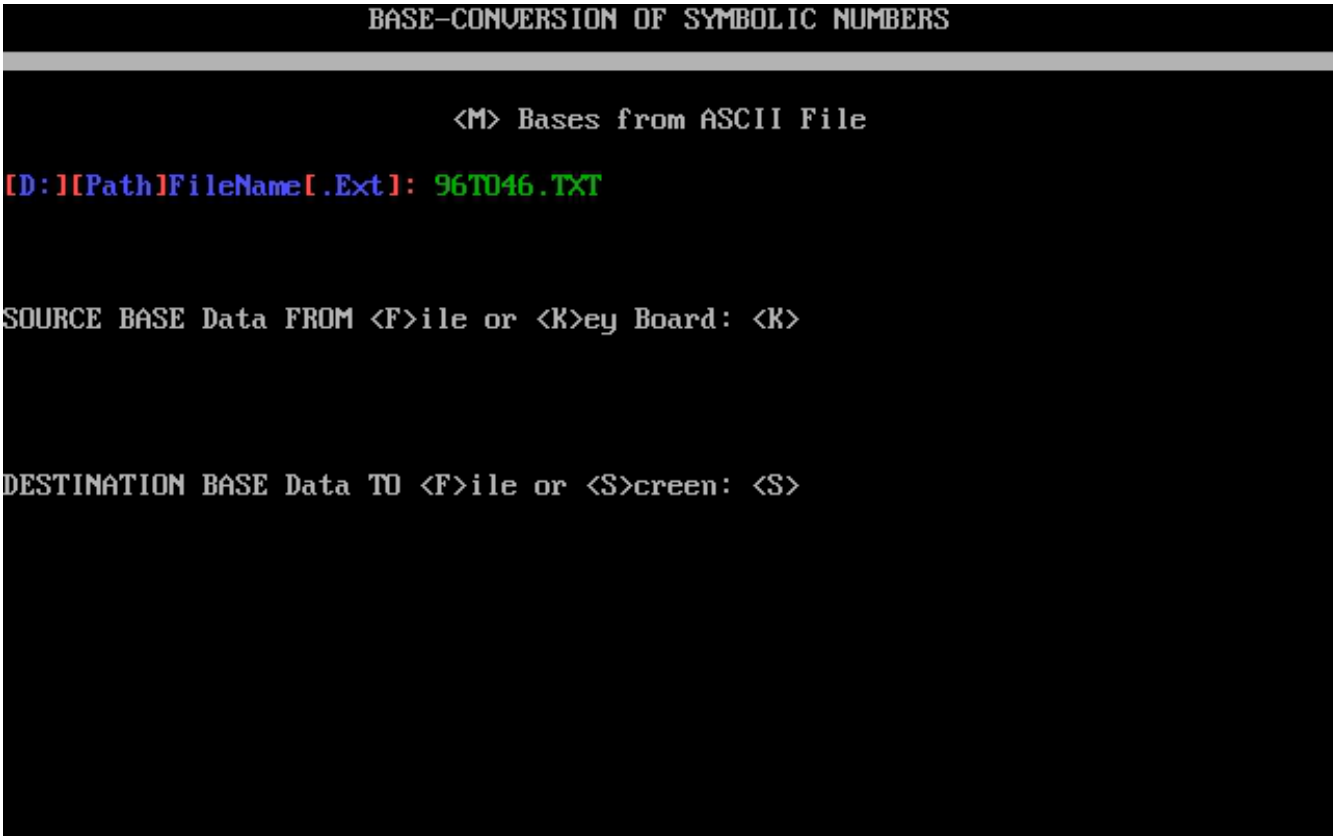
For Choice <M> (Symbolic Nunbers), the user must first use MAKEBASE.EXE as shown below.



MAKEBASE.EXE makes a variety of Symbolic Number-Bases

Base-96 is constant and uses ALL of the normal typing keys, Chr$(32) through Chr$(126) plus Chr$(9), the Tab key. However, these symbols are completely reorganized for each Random Seed that is chosen.

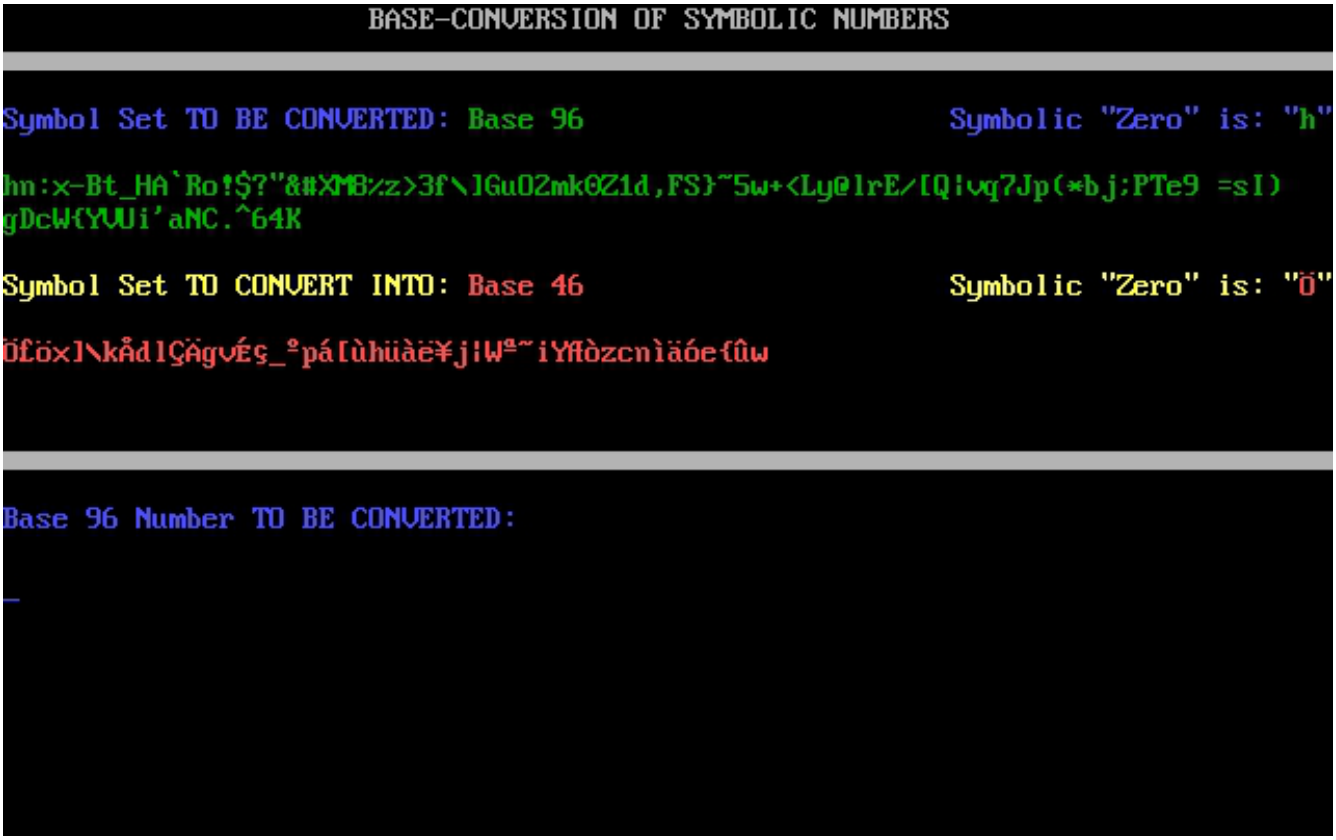
The second symbolic number-base is for the user to choose. Notice from the screen shot that there are several parameters that can be chosen. The user defined symbolic number-base that is chosen can be varied at will within the paramaters shown in each prompt. Different parameters result in different user symbolic number-base sets. Notice how two text files are created in the current directory. These two text files are the files that will be used by SWAPBASE.EXE for Choice <M>. to convert FROM the Symbolic Base-96 “number” entered TO the user defined symbolic number-base “number” and FROM the user defined symbolic number-base “number” BACK INTO the Symbolic Base-96 “number” as originally entered.



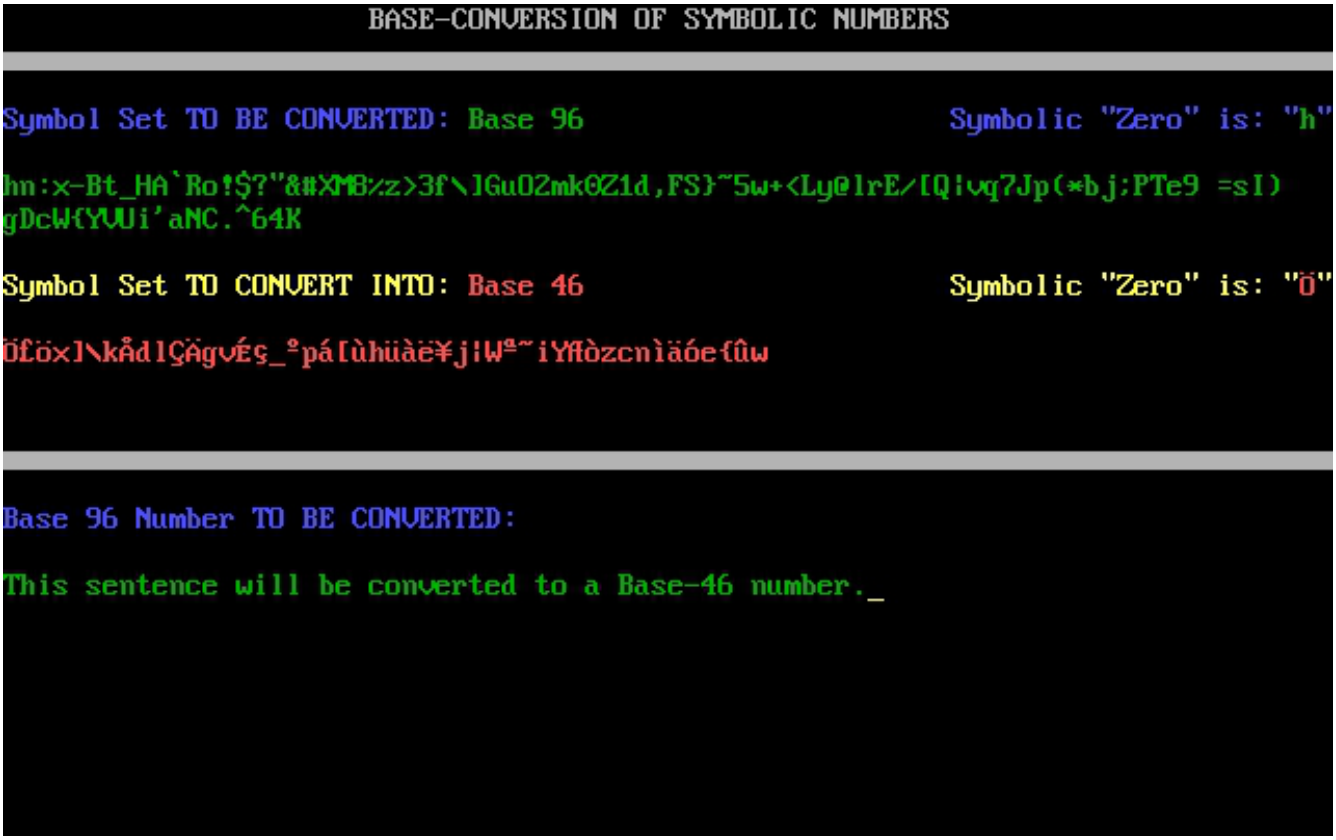
SWAPBASE.EXE using Choice <M> with 96TO46.TXT loaded

Notice the choice of Source Base Data from either a file or the keyboard. The choice to read from a file would only be possible if sentences had been previously entered into a text file. The rule that is required for each sentence is that the maximum length must be much less than 255 characters long because each sentence will be loaded as a LINE INPUT. If the keyboard is used instead of a previously made file, then SWAPBASE.EXE will not accept more characters than are allowed. In actual practice, a much shorter sentence is normally used because of the time required to convert a long symbolic 96-number base sentence into the user base that is chosen. Also if the user chooses to convert to a much smaller symbolic number-base, then the maximum characters allowed for each smaller symbolic-base "sentence" might be exceeded.

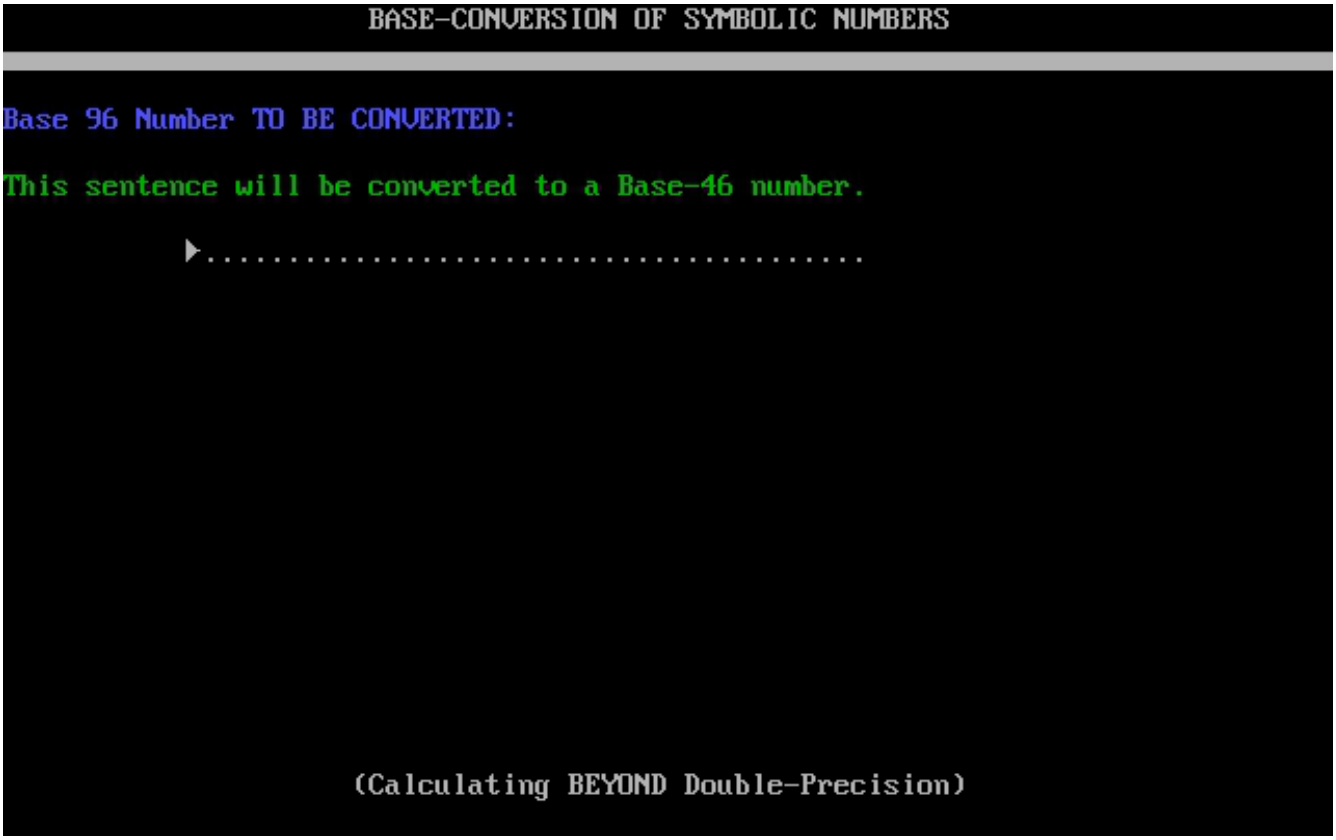
The Destination Base Data can either be saved to a text file or displayed on the screen. If there are several sentences to be converted, then the text file option will mean that the user will not have to hand copy the results manually, sentence by sentence into a text file. Then to reverse the process, 46TO96.TXT would be loaded and the Base-46 data could then come from a file and the destination Base-96 data would either be to a file or to the screen.



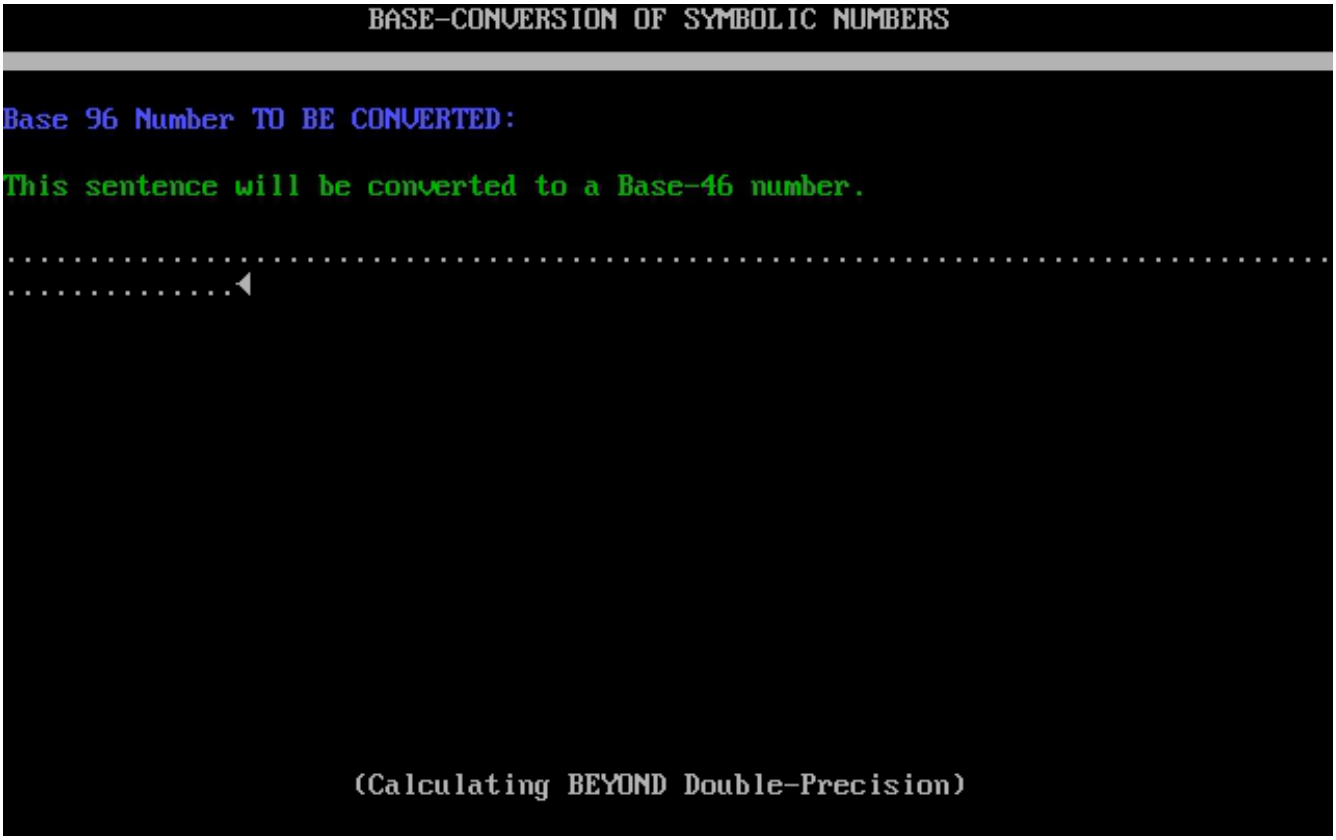
The next screen using Choice <M> with 96TO46.TXT loaded. Notice the Symbolic "Zeros"



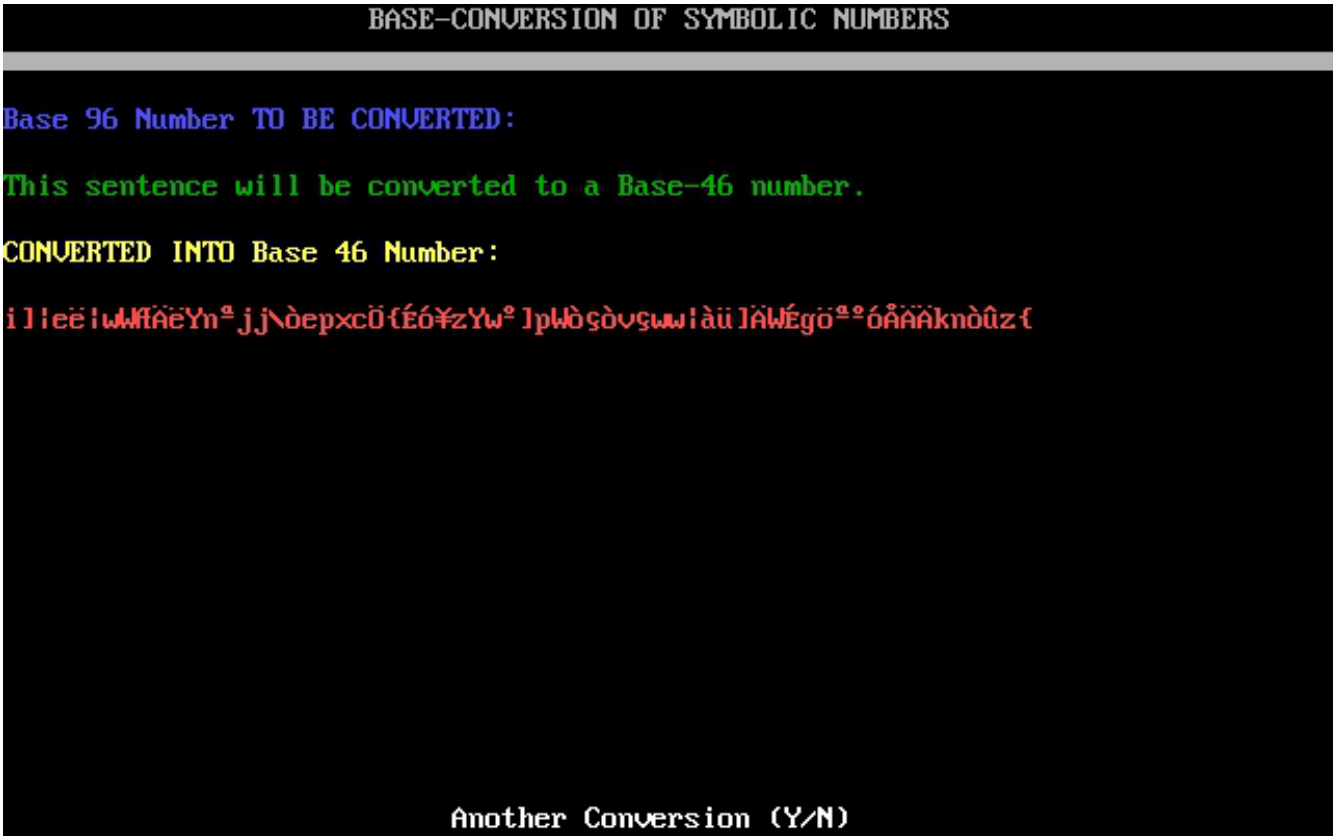
Base-96 Symbolic Number typed in



Calculating...Blinking right arrow “eats” the dots as it progresses (Longer sentences are slower)



Converting...Blinking left arrow “eats” the dots very fast



The conversion from the Base-96 Symbolic Number into the user defined Base-46 Symbolic Number

The whole concept of Choice <M>, Symbolic Numbers, is the realization that for any number system, the symbols chosen are culturally chosen and really do not matter as long as agreed upon by all users. For instance using our Number-Base 10, the agreed upon symbols are: 0123456789. However, pretend that we had been raised and educated with this Number-Base 10 set of symbols: ABCDEFGHIJ. If the ordering was as shown then “zero” would be “A”, and “nine” would be “J”. Calculations in Base-10 would remain the same. Therefore for any Symbolic Number-Base, all that is needed is the correct number of non-repeating symbols with the understanding that the symbol-set order defines the quantities from the lowest value (“zero”) as the very first symbol, and the highest value as the very last symbol. The choice of symbols do not really matter as long as agreed upon by all users.

As an interesting side effect, this conversion of Base-96 Symbolic Number sentences into user defined symbolic number-base sentences could be used as a form of encryption. All of the parameters that were used by MAKEBASE.EXE would have to be remembered and/or recorded in order to convert back into the original Base-96 Symbolic Number sentences.