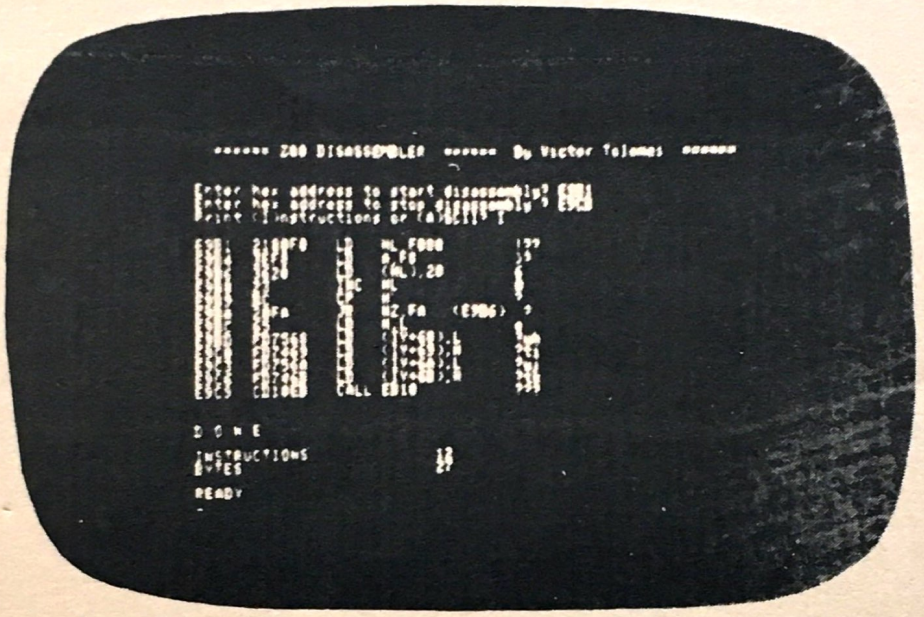
Z80 DISASSEMBLER



A MACHINE CODE DISASSEMBLER
AND ASCII CONVERTER
FOR THE EXIDY SORCERER
by Vic Tolomei

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LOADING INSTRUCTIONS

Z80 DISASSEMBLER is a BASIC program and is written to work on any memory size Sorcerer. To load the tape, follow these steps:

1. Be sure the BASIC ROM-PAC is inserted before turning on the Sorcerer.
2. Ready the tape recorder. High tone settings and about 75% volume are usually required for the Sorcerer.
3. Turn on the Sorcerer and load and execute the program as follows (information from the computer is in italics):

   READY

   CLOAD

   FOUND —ETC.

   LOADING —ETC.

   READY

   RUN

The Z80 DISASSEMBLER program will then begin by asking for the starting hex address.

GETTING STARTED

Z80 DISASSEMBLER begins by asking for three inputs — the beginning and ending hex address and the execution mode.

"Enter hex address to start disassembly?"

You are asked for a memory address to begin disassembly or ASCII conversion. This address must of course be within the size limits of the machine. Enter a 1-4 digit hexadecimal (base 16) number. For example, 00C7 is the same as 0C7 and C7. C000 is the starting address of BASIC and E000 of the monitor.

"Enter hex address to stop disassembly?"

This is the address where disassembly is to stop. It has the same form as the starting address. However a "blank" may be entered as a response, which means address FFFF, the last byte in the machine. Thus the disassembly will effectively continue indefinitely. Control-C may always be entered at any time to interrupt the running program.

"Print (I)nstructions or (A)SCII?"

The response here depends on whether you wish to disassemble instructions or dump ASCII. Simply enter I or A. A null response (just "RETURN") is equivalent to "I."

OUTPUT

An example of the "I" mode output is shown on the cover of this instruction booklet. Another example is printed below.

```
1C96:  77          LD    (HL),A          w
1C97:  ED4B1E1D    LD    BC,(1D1E)       ?K??
1C9B:  78          LD    A,B             x
1C9C:  B1          OR    C               ?
1C9D:  0B          DEC   BC              ?
1C9E:  28FB        JR    Z,FB  (1C9B)    (?
1CA0:  3A101D      LD    A,(1D10)        :??
```

The fields of each line are, from left to right: memory address, machine language, assembly language, and possible ASCII conversion ("?" is either literally a question mark, a control character, or one of the Sorcerer's programmable graphics characters). Note that all relative addressing instructions (eg: JR) have both the relative and absolute address given for convenience. The ASCII is listed in the "I" mode to help indicate when machine code stops and ASCII code starts. This is necessary because every code is a valid Z80 instruction, and there is no foolproof method of knowing what is instruction and what is not.

The "A" mode prints out a line of hex values followed by a line of the ASCII characters that the hex values represent. An example is:

```
2C10:
0D4142434445464748494A4B4C4E0D6162636465663538253D4001687A262074
?  A B C D E F G H I  J  K L N ?  a b c d e f 5 8 %  =  @ ?  h z  &     t

2C30:
etc . . .
```

Z80 DISASSEMBLER FOR THE SORCERER

Z80 DISASSEMBLER is a program written in Exidy Sorcerer BASIC. It performs two functions:

1. It is a "disassembler."
2. It is an ASCII memory dumper.

Both of these functions are missing from the Sorcerer standard monitor, and both are very useful, and oftentimes desperately needed, especially by the assembly language programmer.

What is a disassembler? It is a program which does the exact reverse operation of an assembler. In other words, it runs through memory, and takes the hexadecimal (binary) numbers which are there, and converts them back to the assembly language instructions which they represent.

With the Z80 DISASSEMBLER program an assembly language listing can be obtained for the Sorcerer Monitor, the BASIC ROM, and most any other machine language program for the Sorcerer. The program also functions as a supplement to the Sorcerer Monitor's DUMP command, which dumps memory only in hex. Z80 DISASSEMBLER will also dump memory in hex and convert it to ASCII (if possible).

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