

Re: It has been done before

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Source: <http://coding.derkeiler.com/Archive/Assembler/alt.lang.asm/2006-01/msg01493.html>

- *From:* "Dunny" <paul.dunn4@xxxxxxxxxxxx>
 - *Date:* Sun, 29 Jan 2006 19:31:59 GMT
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Alex McDonald wrote:

- > Machine translation of x86 assembler to another platform is
- > much more complex than outputting equivalent code sequences, and
- > approaches and even exceeds the effort necessary to write a compiler.

I have been approached by a number of people asking for a win32 version of Sinclair Spectrum games. This involves either of two methods:

1. Add the "game" as a stub to an emulator, effectively pre-filling the emulated z80 registers and memory model.
2. Convert the z80 assembly to x86.

Option 1 is trivial, but requires quite a large amount of bloat, as the emulation engine is attached to each executable. It's simpler to load your game into a regular emulator.

Option 2 is a lot harder than it sounds. The x86 being a (distant) relative of the z80, the flags register is largely the same with opcodes almost mapping 1:1 in some cases. However, there's not just the processor to consider – the screen display utilised a rather odd mapping which would have to be taken into account, and the sound was produced either as a square wave or with an AY-3-8912 chip. This would also have to be translated into PCM sounds, which introduces all sorts of timing and interrupt issues – aside from the lowly 50hz interrupt needed to get a decent reproduction of the original code running. It's not *just* the original processor – the rest of the hardware involved needs to be taken into account. I don't know what's involved in setting up a 50hz interrupt in Windows, but I suspect it's non-trivial.

In short, we gave up at the planning stage. We've already written a couple of emulators, and don't feel that the work involved in translating z80 to x86 is worth the end result.

Just my 2p :-)

D.

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 - ◇ *From:* Charles A. Crayne

- *References:*
 - ◆ *It has been done before*
 - ◇ *From:* Charles A. Crayne
 - ◆ *Re: It has been done before*
 - ◇ *From:* Alex McDonald

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