Quick Note on tiny-assembler

This is the assembly language to machine code translator I wrote to help debug tiny-gpu. It's unoptimized, lacks features, and works for only what I've tested, but it's certainly better than writing machine code by hand. While I didn't intend on putting this much work towards this portion of the project, it seemed like an eventual necessity for any kind of verification.

It outputs text in a format that can easily be copied into the python CocoTB test files.

It can be run with:

> cargo run – ./my_source_file.asm

You can find examples and their compiled outputs in ./src and ./build .

Mnemonic	Semantics	Encoding
NOP	PC = PC + 1	0000 xxxx xxxx xxxx
BRnzp	NZP ? PC = IMM8	0001 nzpx iiii iiii
CMP	NZP = sign(Rs - Rt)	0010 xxxx ssss tttt
ADD	Rd = Rs + Rt	0011 dddd ssss tttt
SUB	Rd = Rs - Rt	0100 dddd ssss tttt
MUL	Rd = Rs * Rt	0101 dddd ssss tttt
DIV	Rd = Rs / Rt	0110 dddd ssss tttt
LDR	Rd = global_data_mem[Rs]	0111 dddd ssss xxxx
STR	global_data_mem[Rs] = Rt	1000 xxxx ssss tttt
CONST	Rd = IMM8	1001 dddd iiii iiii
RET	done	1111 xxxx xxxx xxxx

> From https://github.com/adam-maj/tiny-gpu