Tyler Andrews

Binary Instruction Encoding

Stack Machine:	**Binary**
.data	.data
0x00000000 3	0x0000000000000003
0x00000001 7	0x0000000100000007
0x00000002 5	0x0000000200000005
0x00000003 4	0x0000000300000004
0x00000004 0	0x0000000400000000
.text	.text
PUSH 0x00000000	0x0000000000
PUSH 0x00000000	0x0000000000
MUL	0x0300000000
PUSH 0x00000001	0x0000000001
MUL	0x0300000000
PUSH 0x00000000	0x0000000000
PUSH 0x00000002	0x0000000002
MUL	0x0300000000
ADD	0x0200000000
PUSH 0x00000003	0x0000000003
ADD	0x0200000000
POP 0x00000004	0x0100000004
END	0x0400000000

BYTES = 8 bytes(5) + 5 bytes(13) = 105 bytes

Accumulator Machine:	**Binary**
.data	.data
0x00000000 3	0x0000000000000003
0x00000001 7	0x0000000100000007
0x00000002 5	0x0000000200000005
0x00000003 4	0x0000000300000004
0x00000004 0	0x0000000400000000
.text	.text
LOAD 0x00000000	0x0000000000
MUL 0x00000000	0x0300000000
MUL 0x00000001	0x0300000001
STO 0x00000004	0x0100000004
LOAD 0x00000000	0x0000000000
MUL 0x00000002	0x0300000002
ADD 0x00000004	0x0200000004
ADD 0x00000003	0x0200000003
STO 0x00000004	0x0100000004
END	0x0400000000

BYTES = 8 bytes(5) + 5 bytes(10) = 90 bytes

MIPS BYTES = 8 bytes(4) + 5 bytes(9) = 77 bytes