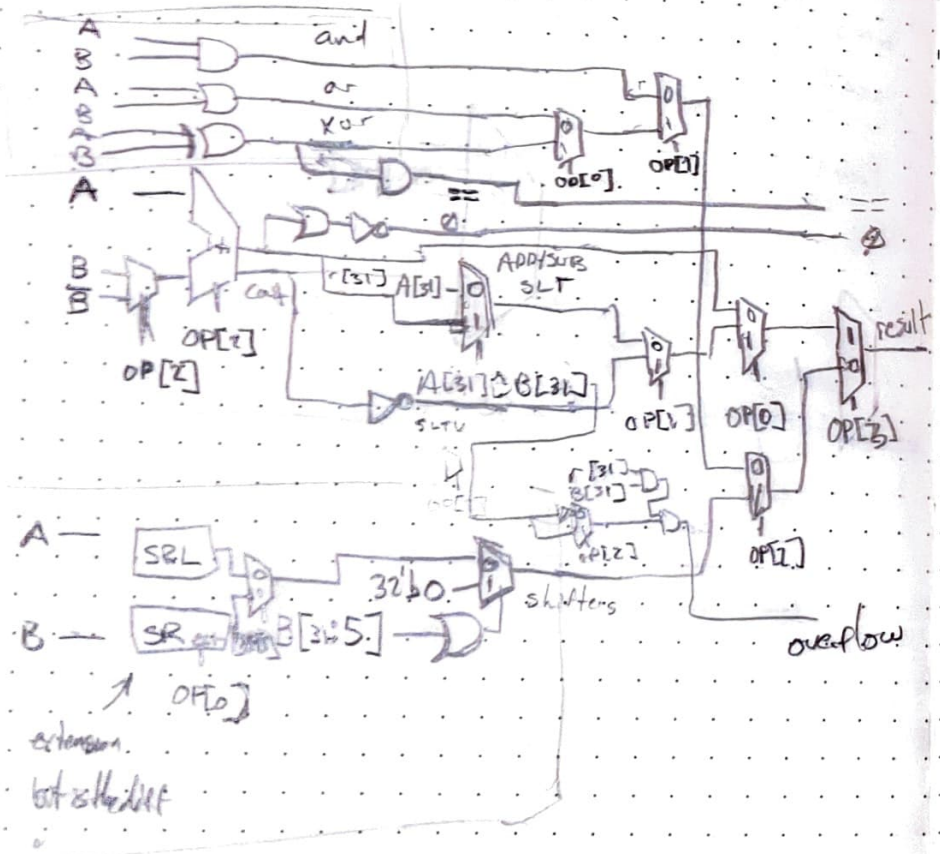
INSTRUCTION	(OP)
AND	0 0 0 1
OR	0 0 1 0
XOR	0 0 1 1
SLL	0 1 0 1
SRL	0 1 1 0
SRA	0 1 1 1
ADD	1 0 0 0
SUB	1 1 0 0
SLT	1 1 0 1
SLTU	1 1 1 0



I caught a few bugs testing not reflected here

SLTU

4 2 1
1 1 1 = 7
+ 1 0 1 = 5
1 1 0 0

4 2 1
1 1 1 = 7
- 1 0 1 = -7
0 1 1 0

0 0 1 = 1
+ 0 0 0 = 4
1 0 0 1

1 1 1 = 7
+ 0 1 0 = 5
1 0 0 1

1 1 1 = 7
+ 0 0 0 = 7
1 1 1 0

1 1 0 = 6
+ 0 0 1 = 6
1 1 1 1

1 1 0 = 6
+ 0 0 0 = 7
1 1 0

+ 1
1 1 1

1 0 0 0

⇒ ~cout

✓ Equal

A == B ⇔ ~(A ^ B)

✓ Zero

A == 0 ⇔ ~(|A)

✓ Shamt ≥ 32

(shamt >> 5) != 0

Overflow

~~ADD cout~~ ADD

A	B	C
+	+	−
+	−	+
−	+	−
−	−	+

expected sign
← risk
← risk

SUB

A	B	C
+	+	−
+	−	+
−	+	+
−	−	−

~(A[31] ^ B[31] ^ C[31])

overflow = ~(A ^ B) & (C & B)

overflow = (A ^ B) & (C & B)