Module	ALU32
Dependencies	OneBitAdder, SameBit, MUX4, MUX2, ALUBit31, ALUBits0To30

Inputs	Name	Size (Bits)
	A	32
	alu_op	5
	B	32

Outputs	Name	Size (Bits)
	Result	32

| Description | Computes A op B, where A and B are 32-bit values and 'op' depends on the value of alu_op (see below). Stores result in a 32-bit value Result.

alu_op is a five bit value, consisting of the following bits in order: **Ainvert**, **Binvert**, **CarryIn**, **Op1**, **Op0**. The following operations are then supported: |
|---|---|

Ainvert	Binvert	CarryIn	Op1	Op0	Result
0	0	0	0	0	A & B
0	0	0	0	1	A | B
0	0	0	1	0	A + B
0	1	1	1	0	A − B
0	1	1	1	1	A < B
1	1	0	0	1	!(A&B)
1	1	0	0	0	!(A|B)