's complement math
anãa
$0000=0$
$001=1$
$\begin{array}{llll}0 & 0 & 0 & 1=1 \\ 0 & 0 & 1 & 0\end{array}$
$\begin{array}{lllll}0 & 0 & 1 & 0 & =2 \\ 0 & 0 & 1 & 1=3\end{array}$
$\begin{array}{lllll}0 & 0 & 1 & 1 & =3 \\ 0 & 1 & 0 & 0 & =\end{array}$
$0101=5$
$0110=6$
$0111=7$
$1000=-8$
$1001=-7$
$\begin{array}{llll}1 & 0 & 1 & 1 \\ 1 & =-6 \\ 1\end{array}$
$1010=-6$
$011=-5$
$100=-4$
$\begin{array}{lllll}1 & 1 & 0 & 1=-3 \\ 1 & 1 & 1 & 0 & =-2\end{array}$
$1111=-1$
Normally math is binary

$0000=0$
$0001=1$
$0010=2$
$011=3$
0 $100=4$
1 $01=5$
$0110=6$
$01111=7$
$\begin{array}{llll}1 & 1 & 1 & =7 \\ 1 & 0 & 0 & =8\end{array}$
$001=9$
$10=9$
$\begin{array}{lll}0 & 1 & 0 \\ 0 & 1 & =A \\ B\end{array}$
$\begin{array}{lll}0 & 1 & 1 \\ 1 & =B \\ C\end{array}$
$\begin{array}{llll}1 & 1 & 0 & 0 \\ 1 & 1 & 0 & 1\end{array}=C D$
$110=E$
$1111=F$

N
NHO
NO
$000=C T E A R$
$001=\mathrm{B}$ MINUS A
$010=A$ MINUS B
$011=A$ PLUS B
$100=A$ EX-OR B
$101=$ A OR B
$110=A$ AND B
111 = PRESET (ALL HIGH)

An ALU performs arithmetic or
logic operations on two values.
Carry In comes from the lowr stage. Carry Out goes to the next higher stage.

Uverflow indicates an overflow in
2's complement math that uses
negative numbers.

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