

CISC124 – Today's Topics		
<ul style="list-style-type: none"> Two's complement subtraction Numeric error Javadoc 		
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Complements		
<ul style="list-style-type: none"> Diminished radix complement (base r) <ul style="list-style-type: none"> For an integer N with n digits $\rightarrow (r^n - 1) - N$ Radix complement (base r) <ul style="list-style-type: none"> For an integer N with n digits $\rightarrow r^n - N$ Two's complement (base 2) <ul style="list-style-type: none"> For an integer N with n bits $\rightarrow 2^n - N$ Or $(r^n - 1) - N + 1$ which is One's complement + 1 Subtraction $\rightarrow M - N$ (minuend - subtrahend) <ul style="list-style-type: none"> $M > 0, N < 0 \rightarrow M + r^n - N \rightarrow M - N + r^n \rightarrow$ discard carry $\rightarrow M - N$ $M < 0, N < 0 \rightarrow r^n - M + (r^n - N) \rightarrow 2 * r^n - (M + N) \rightarrow$ discard carry $\rightarrow -(M + N)$ 		
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Float representation (32 bits)		
<p>Example:</p> <p>$b_{31} \quad b_{30} \quad \quad \quad b_{23} \quad b_{22} \quad \quad \quad b_0$</p> <p>0 01111100 010000000000000000000000</p> <p>Value = $(-1)^0 \times 2^{124-127} \times (1 + 2^{-2})$</p> <p>Value = $1 \times 2^{-3} \times (1.25)$</p> <p>Value = 0.15625</p> <p>Not all real values can be represented \rightarrow round-off error in computations</p>		
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Javadoc		
<ul style="list-style-type: none"> Formatted documentation of classes using special tags in comment blocks Comment block starts with: <code>/**</code> Comment block ends with: <code>*/</code> Javadoc tool applied to a source MyClass.java file generates all the web pages, style sheets, etc. for documentation of the class using the "Java API Documentation" format and style. Tags \rightarrow @author, @version, @param, @throws, @return, @deprecated, @see Syntax \rightarrow @tag [Comment string] 		
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