Step	Algorithm:
1a	
4	where
2	
3	while do
2,3	$\wedge$
5a	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge\ \neg($)
1b	

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR1}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \rightarrow \left(\begin{array}{c\|c} B_L & B_R \end{array}\right)$, $C \rightarrow \left(\begin{array}{c\|c} C_L & C_R \end{array}\right)$ where B_L has 0 columns, C_L has 0 columns
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
3	while $n(B_L) < n(B)$ do
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge n(B_L) < n(B)$
5a	$\left(\begin{array}{c\|c} B_L & B_R \end{array}\right) \rightarrow \left(\begin{array}{c\|c\|c} B_0 & b_1 & B_2 \end{array}\right)$, $\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) \rightarrow \left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right)$ where b_1 has 1 column, c_1 has 1 column
6	$\left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right) = \left(\begin{array}{c\|c\|c} AB_0 + \widehat{C}_0 & \widehat{c}_1 & \widehat{C}_2 \end{array}\right)$
8	$c_1 := Ab_1 + c_1$
5b	$\left(\begin{array}{c\|c} B_L & B_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} B_0 & b_1 & B_2 \end{array}\right)$, $\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right)$
7	$\left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right) = \left(\begin{array}{c\|c\|c} AB_0 + \widehat{C}_0 & Ab_1 + \widehat{c}_1 & \widehat{C}_2 \end{array}\right)$
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg(n(B_L) < n(B))$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR1}(A, B, C)$
$B \rightarrow \left(\begin{array}{c\|c} B_L & B_R \end{array}\right)$, $C \rightarrow \left(\begin{array}{c\|c} C_L & C_R \end{array}\right)$ where B_L has 0 columns, C_L has 0 columns while $n(B_L) < n(B)$ do $\left(\begin{array}{c\|c} B_L & B_R \end{array}\right) \rightarrow \left(\begin{array}{c\|c\|c} B_0 & b_1 & B_2 \end{array}\right)$, $\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) \rightarrow \left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right)$ where b_1 has 1 column, c_1 has 1 column
$c_1 := Ab_1 + c_1$
$\left(\begin{array}{c\|c} B_L & B_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} B_0 & b_1 & B_2 \end{array}\right)$, $\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right)$ endwhile

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR1}(A, B, C)$
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5a	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg($ $)$
1b	$[C] = \text{symm\_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR1}(A, B, C)$
1a	$C = \widehat{C}$
4	where
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
3	while do
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge$
5a	where
6	
8	
5b	
7	
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
	endwhile
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg($ $)$
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3	while $n(B_L) < n(B)$ do
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge n(B_L) < n(B)$
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Step	Algorithm: $[C] := \text{SYMM\_LU\_UNB\_VAR1}(A, B, C)$
1a	$C = \widehat{C}$
4	$B \rightarrow \left(\begin{array}{c\|c} B_L & B_R \end{array}\right)$, $C \rightarrow \left(\begin{array}{c\|c} C_L & C_R \end{array}\right)$ where B_L has 0 columns, C_L has 0 columns
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
3	while $n(B_L) < n(B)$ do
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge n(B_L) < n(B)$
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8	
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7	
2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg(n(B_L) < n(B))$
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6	
8	
5b	$\left(\begin{array}{c\|c} B_L & B_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} B_0 & b_1 & B_2 \end{array}\right)$, $\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} C_0 & c_1 & C_2 \end{array}\right)$
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2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg(n(B_L) < n(B))$
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2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
3	while $n(B_L) < n(B)$ do
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	endwhile
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg(n(B_L) < n(B))$
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2	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c\|c} C_L & C_R \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_L & \widehat{C}_R \end{array}\right) \wedge \neg(n(B_L) < n(B))$
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	$B \rightarrow \left(B_L \middle\vert B_R\right)$, $C \rightarrow \left(C_L \middle\vert C_R\right)$ where B_L has 0 columns, C_L has 0 columns
	while $n(B_L) < n(B)$ do
	$\left(B_L \middle\vert B_R\right) \rightarrow \left(B_0 \middle\vert b_1 \middle\vert B_2\right)$, $\left(C_L \middle\vert C_R\right) \rightarrow \left(C_0 \middle\vert c_1 \middle\vert C_2\right)$ where b_1 has 1 column, c_1 has 1 column
	$c_1 := Ab_1 + c_1$
	$\left(B_L \middle\vert B_R\right) \leftarrow \left(B_0 \middle\vert b_1 \middle\vert B_2\right)$, $\left(C_L \middle\vert C_R\right) \leftarrow \left(C_0 \middle\vert c_1 \middle\vert C_2\right)$
	endwhile

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