Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{ C = \widehat{C} \}$
4	$C \rightarrow \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right)$, $A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge m(C_{BR}) < m(C) \right\}$
5a	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \rightarrow \left(\begin{array}{cc\|c} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array} \right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \rightarrow \left(\begin{array}{c} A_0 \\ a_1^T \\ \hline A_2 \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array} \right)$ where λ_{11} is 1×1, a_1 and b_1 have 1 row
6	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right) = \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array} \right) \right\}$
8	$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$
7	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right) = \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & a_1^T b_1 + b_1^T a_1 + \widehat{\lambda}_{11} & * \\ C_{20} & A_2 b_1 + B_2 a_1 + \widehat{c}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array} \right) \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|cc} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ A_2 \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array} \right)$
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Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{ \qquad \}$
4	where
2	$\left\{ \qquad \right\}$
3	while do
2,3	$\left\{ \qquad \wedge \qquad \right\}$
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8	
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Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{ C = \widehat{C} \}$
4	$C \rightarrow \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right), A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right), B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge m(C_{BR}) < m(C) \right\}$
5a	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \rightarrow \left(\begin{array}{cc\|c} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array} \right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \rightarrow \left(\begin{array}{c} A_0 \\ a_1^T \\ \hline A_2 \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array} \right)$ where λ_{11} is 1×1, a_1 and b_1 have 1 row
6	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right) = \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array} \right) \right\}$
8	$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$
7	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right) = \left(\begin{array}{ccc} C_{00} & * & * \\ c_{10}^T & a_1^T b_1 + b_1^T a_1 + \widehat{\lambda}_{11} & * \\ C_{20} & A_2 b_1 + B_2 a_1 + \widehat{c}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array} \right) \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|cc} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array} \right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ A_2 \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array} \right)$
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{ C := AB^T + BA^T + \widehat{C}. \}$

Algorithm: $C := AB^T + BA^T + C$

$$C \rightarrow \left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right), B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$$

where C_{BR} is 0×0, A_B and B_B have 0 rows

while $m(C_{BR}) < m(C)$ do

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \rightarrow \left(\begin{array}{cc|c} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ a_1^T \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right)$$

where λ_{11} is 1×1, a_1 and b_1 have 1 row

$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$

$c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|cc} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array}\right)$$

endwhile

Algorithm: $C := AB^T + BA^T + C$

$$C \rightarrow \left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), \; A \rightarrow \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right), \; B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$$

where C_{BR} is 0×0, A_B and B_B have 0 rows

while $m(C_{BR}) < m(C)$ **do**

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \rightarrow \left(\begin{array}{cc|c} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array}\right), \; \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ a_1^T \\ \hline A_2 \end{array}\right), \; \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right)$$

where λ_{11} is 1×1, a_1 and b_1 have 1 row

$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$

$c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|cc} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array}\right), \; \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ A_2 \end{array}\right), \; \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array}\right)$$

endwhile