Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	$C \to \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right)$, $A \to \left(\frac{A_T}{A_B}\right)$, $B \to \left(\frac{B_T}{B_B}\right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C) \right\}$
5a	**Determine block size b** $\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\frac{A_T}{A_B}\right) \to \left(\begin{array}{c} A_0 \\ B_1^T \\ \hline A_2 \end{array}\right)$, $\left(\frac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
6	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right) = \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 B_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right) \right\}$
8	$C_{11} := A_1^T B_1 + B_1^T A_1 + C_{11}$ $C_{10}^T := A_1^T B_0^T + C_{20}$ $C_{21} := B_2 A_1 + C_{21}$
7	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right) = \left(\begin{array}{ccc} C_{00} & * & * \\ A_1^T B_0^T + \widehat{C}_{10}^T & A_1^T B_1 + B_1^T A_1 + \widehat{C}_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 b_1 + B_2 A_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right) \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\frac{A_T}{A_B}\right) \leftarrow \left(\begin{array}{c} A_0 \\ A_1^T \\ \hline A_2 \end{array}\right)$, $\left(\frac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{$ $\}$
4	where
2	$\Big\{$ $\Big\}$
3	**while** **do**
2,3	$\Big\{$ $\wedge$ $\Big\}$
5a	**Determine block size** b where
6	$\Big\{$ $\Big\}$
8	
7	$\Big\{$ $\Big\}$
5b	
2	$\Big\{$ $\Big\}$
	endwhile
2,3	$\Big\{$ $\wedge \neg ($ $)$ $\Big\}$
1b	$\{$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\Big\{$ $\Big\}$
3	while do
2,3	$\Big\{$ $\wedge$ $\Big\}$
5a	**Determine block size** b where
6	$\Big\{$ $\Big\}$
8	
7	$\Big\{$ $\Big\}$
5b	
2	$\Big\{$ $\Big\}$
	endwhile
2,3	$\Big\{$ $\wedge \neg($ $)$ $\Big\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	
	where
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
3	while do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge \right\}$
5a	**Determine block size** b
	where
6	$\left\{ \right\}$
8	
7	$\left\{ \right\}$
5b	
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge \neg( ) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge m(C_{BR}) < m(C) \right\}$
5a	**Determine block size b** where
6	$\Big\{ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \Big\}$
8	
7	$\Big\{ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad \Big\}$
5b	
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

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	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C) \right\}$
5a	**Determine block size** b where
6	$\left\{ \right\}$
8	
7	$\left\{ \right\}$
5b	
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	$C \to \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right)$, $A \to \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right)\right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C)\right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c} A_0 \\ B_1^T \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
6	$\left\{ \right\}$
8	
7	$\left\{ \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c\|cc} C_{00} & * & * \\ \hline C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1^T \\ A_2 \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ B_2 \end{array}\right)$
2	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right)\right\}$
	endwhile
2,3	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C))\right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	$C \to \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right)$, $A \to \left(\dfrac{A_T}{A_B}\right)$, $B \to \left(\dfrac{B_T}{B_B}\right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right)\right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C)\right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\dfrac{A_T}{A_B}\right) \to \left(\begin{array}{c} A_0 \\ \hline B_1^T \\ \hline A_2 \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ \hline B_2 \end{array}\right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
6	$\left\{\begin{pmatrix} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 B_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{pmatrix}\right\}$
8	
7	$\left\{\right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\dfrac{A_T}{A_B}\right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1^T \\ \hline A_2 \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ \hline B_2 \end{array}\right)$
2	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right)\right\}$
	endwhile
2,3	$\left\{\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C))\right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	$C \to \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right)$, $A \to \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c} A_0 \\ B_1^T \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
6	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right) = \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 B_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right) \right\}$
8	
7	$\left\{ \color{red}{\left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right)} = \color{red}{\left(\begin{array}{ccc} C_{00} & * & * \\ A_1^T B_0^T + \widehat{C}_{10}^T & A_1^T B_1 + B_1^T A_1 + \widehat{C}_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 b_1 + B_2 A_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right)} \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c\|cc} C_{00} & * & * \\ \hline C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right)$, $\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ A_1^T \\ \hline A_2 \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C = \widehat{C}$ $\}$
4	$C \to \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) , A \to \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) , B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
3	while $m(C_{BR}) < m(C)$ do
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge m(C_{BR}) < m(C) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c} A_0 \\ B_1^T \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
6	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right) = \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 B_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right) \right\}$
8	$C_{11} := A_1^T B_1 + B_1^T A_1 + C_{11}$ $C_{10}^T := A_1^T B_0^T + C_{20}$ $C_{21} := B_2 A_1 + C_{21}$
7	$\left\{ \left(\begin{array}{ccc} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array}\right) = \left(\begin{array}{ccc} C_{00} & * & * \\ A_1^T B_0^T + \widehat{C}_{10}^T & A_1^T B_1 + B_1^T A_1 + \widehat{C}_{11} & * \\ A_2 B_0^T + \widehat{C}_{20} & A_2 b_1 + B_2 A_1 + \widehat{C}_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{array}\right) \right\}$
5b	$\left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c} A_0 \\ A_1^T \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ B_1^T \\ \hline B_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c\|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) = \left(\begin{array}{c\|c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array}\right) \wedge \neg(m(C_{BR}) < m(C)) \right\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$ $\}$

	Algorithm: $C := AB^T + BA^T + C$
	$C \rightarrow \left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right)$, $A \rightarrow \left(\dfrac{A_T}{A_B} \right)$, $B \rightarrow \left(\dfrac{B_T}{B_B} \right)$ where C_{BR} is 0×0, A_B and B_B have 0 rows
	while $m(C_{BR}) < m(C)$ do
	Determine block size b $\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \rightarrow \left(\begin{array}{cc|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array} \right)$, $\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\begin{array}{c} A_0 \\ B_1^T \\ A_2 \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \rightarrow \left(\begin{array}{c} B_0 \\ B_1^T \\ B_2 \end{array} \right)$ where C_{11} is $b \times b$, A_1 and B_1 have b rows
	$C_{11} := A_1^T B_1 + B_1^T A_1 + C_{11}$ $C_{10}^T := A_1^T B_0^T + C_{20}$ $C_{21} := B_2 A_1 + C_{21}$
	$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|cc} C_{00} & * & * \\ \hline C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array} \right)$, $\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1^T \\ A_2 \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ B_2 \end{array} \right)$
	endwhile

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

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

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

Determine block size b

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \rightarrow \left(\begin{array}{cc|c} C_{00} & * & * \\ C_{10}^T & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array} \right) \,,\; \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline B_1^T \\ \hline A_2 \end{array} \right) \,,\; \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ \hline B_2 \end{array} \right)$$

where $\quad C_{11}$ is $b \times b$, A_1 and B_1 have b rows

$C_{11} := A_1^T B_1 + B_1^T A_1 + C_{11}$

$C_{10}^T := A_1^T B_0^T + C_{20}$

$C_{21} := B_2 A_1 + C_{21}$

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|cc} C_{00} & * & * \\ \hline C_{10}^T & C_{11} & * \\ C_{20} & C_{21} & C_{22} \end{array} \right) \,,\; \left(\begin{array}{c} A_T \\ \hline A_B \end{array} \right) \leftarrow \left(\begin{array}{c} A_0 \\ \hline A_1^T \\ \hline A_2 \end{array} \right) \,,\; \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1^T \\ \hline B_2 \end{array} \right)$$

endwhile