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

Determine block size b

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

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

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

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

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

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

endwhile