Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} A_{00}B_0 + C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_1 = \widehat{C}_1 + A10B_0 + A_{11}B_1$ $C_0 = \widehat{C}_0 + A_{10}B_1$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline A_{10} + B_0 + A_{11}B_1 + C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \to \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right)$, $B \to \left(\dfrac{B_T}{B_B}\right)$, $C \to \left(\dfrac{C_T}{C_B}\right)$

  where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

  Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \to \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right), \left(\dfrac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right), \left(\dfrac{C_T}{C_B}\right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

  where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

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$C_1 = \widehat{C}_1 + A10 B_0 + A_{11} B_1$

$C_0 = \widehat{C}_0 + A_{10} B_1$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right), \left(\dfrac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right), \left(\dfrac{C_T}{C_B}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ B_1 \\ \hline B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_1 = \widehat{C}_1 + A10B_0 + A_{11}B_1$ $C_0 = \widehat{C}_0 + A_{20}B_2$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline A_{10} + B_0 + A_{11}B_1 + C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline C_B = \widehat{C}_B \end{array} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \to \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

    where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

    Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

        where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$C_1 = \widehat{C}_1 + A10B_0 + A_{11}B_1$

$C_0 = \widehat{C}_0 + A_{20}B_2$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline A_{BL}B_T + C_B = \widehat{C}_B \end{array} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline A_{BL}B_T + C_B = \widehat{C}_B \end{array} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_0 = \widehat{C}_0 + A10^T B_1$ $C_1 = \widehat{C}_1 + A_{11}B_1$ $C_2 = \widehat{C}_2 + A_{21}B_1$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline A_{10} + B_0 + A_{11}B_1 + C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline A_{BL}B_T + C_B = \widehat{C}_B \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\begin{array}{c} A_{TL}B_T + C_T = \widehat{C}_T \\ \hline A_{BL}B_T + C_B = \widehat{C}_B \end{array} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \rightarrow \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right) , \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right) , \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$C_0 = \widehat{C}_0 + A10^T B_1$
$C_1 = \widehat{C}_1 + A_{11} B_1$
$C_2 = \widehat{C}_2 + A_{21} B_1$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right) , \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right) , \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	**Annotated Algorithm:** $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \rightarrow \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \rightarrow \left(\dfrac{B_T}{B_B} \right)$, $C \rightarrow \left(\dfrac{C_T}{C_B} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\dfrac{A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BL}B_T + C_B = \widehat{C}_B} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\dfrac{A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BL}B_T + C_B = \widehat{C}_B} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_1 = \widehat{C}_1 + A11 B_1 + A_{21}B_2$ $C_2 = \widehat{C}_2 + A_{21}B_1$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} A_{00}B_0 + A_{10}B_1 + C_0 = \widehat{C}_0 \\ \hline A_{10} + B_0 + A_{11}B_1 + C_1 = \widehat{C}_1 \\ \hline C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\dfrac{A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BL}B_T + C_B = \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\dfrac{A_{TL}B_T + A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BL}B_T + C_B = \widehat{C}_B} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

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while $m(A_{TL}) < m(A)$ **do**

    Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

      where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$C_1 = \widehat{C}_1 + A11B_1 + A_{21}B_2$

$C_2 = \widehat{C}_2 + A_{21}B_1$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\dfrac{B_T}{B_B} \right)$, $C \to \left(\dfrac{C_T}{C_B} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\dfrac{C_T = \widehat{C}_T}{A_{BR}B_B + C_B = \widehat{C}_B} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\dfrac{C_T = \widehat{C}_T}{A_{BR}B_B + C_B = \widehat{C}_B} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\dfrac{\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \end{array}}{A_{22}B_2 + C_2 = \widehat{C}_2} \right) \right\}$
8	$C_2 = \widehat{C}_2 + A21B_1$ $C_1 = \widehat{C}_1 + A_{11}B_1 + A_{21}^T B_2$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\dfrac{\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline A_{11} + B_1 + A_{21}^T B_2 + C_1 = \widehat{C}_1 \end{array}}{A_{21}B_1 + A_{22}B_2 + C_2 = \widehat{C}_2} \right) \right\}$
2	$\left\{ \left(\dfrac{C_T = \widehat{C}_T}{A_{BR}B_B + C_B = \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\dfrac{C_T = \widehat{C}_T}{A_{BR}B_B + C_B = \widehat{C}_B} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \to \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$C_2 = \widehat{C}_2 + A21 B_1$
$C_1 = \widehat{C}_1 + A_{11}B_1 + A_{21}^T B_2$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \rightarrow \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \rightarrow \left(\dfrac{B_T}{B_B} \right)$, $C \rightarrow \left(\dfrac{C_T}{C_B} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\dfrac{C_T = \widehat{C}_T}{A_{BL}B_T + A_{BR}B_B + C_B = \widehat{C}_B} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\dfrac{C_T = \widehat{C}_T}{A_{BL}B_T + A_{BR}B_B + C_B = \widehat{C}_B} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_1 = \widehat{C}_1 + A_{10}B_0 + A_{11}B_1 + A_{21}^T B_2$
5b	**Continue with** $\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline A_{10}B_0 + A_{11} + B_1 + A_{21}^T B_2 + C_1 = \widehat{C}_1 \\ \hline A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\dfrac{C_T = \widehat{C}_T}{A_{BL}B_T + A_{BR}B_B + C_B = \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\dfrac{C_T = \widehat{C}_T}{A_{BL}B_T + A_{BR}B_B + C_B = \widehat{C}_B} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \to \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

    where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

    Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

      where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$$C_1 = \widehat{C}_1 + A_{10}B_0 + A_{11}B_1 + A_{21}^T B_2$$

    Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \gets \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \gets \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \gets \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\dfrac{B_T}{B_B} \right)$, $C \to \left(\dfrac{C_T}{C_B} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\dfrac{A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BR} B_B + C_B = \widehat{C}_B} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\dfrac{A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BR} B_B + C_B = \widehat{C}_B} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_0 = \widehat{C}_0 + A_{10} B_0$ $C_1 = \widehat{C}_1 + A_{11} B_1$ $C_2 = \widehat{C}_2 + A_{21}^T B_2$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right)$, $\left(\dfrac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$, $\left(\dfrac{C_T}{C_B} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline A_{10} B_0 + A_{11} + B_1 + A_{21}^T B_2 + C_1 = \widehat{C}_1 \\ \hline A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\dfrac{A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BR} B_B + C_B = \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\dfrac{A_{BL}^T B_B + C_T = \widehat{C}_T}{A_{BR} B_B + C_B = \widehat{C}_B} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \rightarrow \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

    where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

    Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

        where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$$C_0 = \widehat{C}_0 + A_{10}B_0$$
$$C_1 = \widehat{C}_1 + A_{11}B_1$$
$$C_2 = \widehat{C}_2 + A_{21}^T B_2$$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile

Step	Annotated Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle
1a	$\left\{ C = \widehat{C} \right\}$
4	**Partition** $A \to \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right), B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right), C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$ **where** A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline A_{BL} B_T + A_{BR} B_B + C_B = \widehat{C}_B \end{array} \right) \right\}$
3	**while** $m(A_{TL}) < m(A)$ **do**
2,3	$\left\{ \left(\left(\begin{array}{c} A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline A_{BL} B_T + A_{BR} B_B + C_B = \widehat{C}_B \end{array} \right) \right) \wedge (m(A_{TL}) < m(A)) \right\}$
5a	**Repartition** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$ **where** A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline C_1 = \widehat{C}_1 \\ \hline A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
8	$C_0 = \widehat{C}_0 + A_{10}^T B_1$ $C_1 = \widehat{C}_1 + A_{10} B_0 + A_{11} B_1$
5b	**Continue with** $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$
7	$\left\{ \left(\begin{array}{c} C_0 = \widehat{C}_0 \\ \hline A_{10} B_0 + A_{11} + B_1 + A_{21}^T B_2 + C_1 = \widehat{C}_1 \\ \hline A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + C_2 = \widehat{C}_2 \end{array} \right) \right\}$
2	$\left\{ \left(\begin{array}{c} A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline A_{BL} B_T + A_{BR} B_B + C_B = \widehat{C}_B \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\left(\begin{array}{c} A_{BL}^T B_B + C_T = \widehat{C}_T \\ \hline A_{BL} B_T + A_{BR} B_B + C_B = \widehat{C}_B \end{array} \right) \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\left\{ C = AB + \widehat{C} \right\}$

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangle

Partition $A \to \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$, $C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right)$

   where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ **do**

   Repartition

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \to \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \to \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

      where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$C_0 = \widehat{C}_0 + A_{10}^T B_1$

$C_1 = \widehat{C}_1 + A_{10} B_0 + A_{11} B_1$

Continue with

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array} \right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array} \right)$$

endwhile