* Strasson's Matrix Multiplication

- Strasson used product matrices to approac this problem:

$$P_1 = A \cdot (F-H) = DC\_Mat\_Mul(A, F-H)$$
$$P_2 = (A+B) \cdot H = DC\_Mat\_Mul(A+B, H)$$
$$P_3 = (C+D) \cdot E = DC\_Mat\_Mul(C+D, E)$$
$$P_4 = D \cdot (G-E) = DC\_Mat\_Mul(D, G-E)$$
$$P_5 = (A+D) \cdot (E+H) = DC\_Mat\_Mul(A+D, E+H)$$
$$P_6 = (B-D) \cdot (G+H) = DC\_Mat\_Mul(B-D, G+H)$$
$$P_7 = (A-C) \cdot (E+F) = DC\_Mat\_Mul(A-C, E+F)$$

- We divide our answer matrix in four par to execute:

$$\left[\begin{array}{c|c} P_5 + P_4 - P_2 + P_6 & P_1 + P_2 \\ \hline P_3 + P_4 & P_1 + P_5 - P_3 - P_7 \end{array}\right]$$

- Complexity Analysis

$$T(n) = 7T(n^2/4) + O(n^2)$$

$$a > b^d \implies T(n) = O(n^{2 \log_4 7})$$
$$= O(n^{\log_4 49})$$
$$= O(n^{2.81})$$