



$a = 2, 7, 4, 6$
 $b = 3, 6, 6, 1$

$(6+6)^2$
 $(4+1)^2$
 $(6+1)^2$
 $(4+6)^2$
 $(6+1)^2$



$P \in S_n$
 $S_1 \subseteq S_2$

$n-2 \quad n-1 \quad n$
 $3, 6, 4, 6$
 $2, 7, 6, 1$
 $j=0 \rightarrow j=1 \rightarrow j=n$

626

632

$(A[i] + A[j])^2 + B[i] + B[j]$
 $(6+4)^2 + (6+6)^2 + (4+6)^2$
 $(7+6)^2 + (7+1)^2 + (6+1)^2$
 $(7+4)^2 + (7+6)^2 + (4+6)^2$
 $(6+6)^2 + (6+1)^2 + (6+1)^2$

Optimized

$(3+6)^2 + (3+4)^2 + (3+6)^2$

$(2+7)^2 + (2+6)^2 + (2+1)^2$

$(2+6)^2 + (2+4)^2 + (2+6)^2$

$(3+7)^2 + (3+6)^2 + (3+1)^2$

987

$$\begin{array}{ccc|c} 6 & 7 & 2 & 4 \\ 2 & 5 & 3 & 5 \end{array} \quad \text{min}$$

$$\begin{array}{cccc} 2 & 5 & 2 & 4 \\ 6 & 7 & 3 & 5 \end{array}$$

$$\begin{array}{ccc} 6 & 5 & 2 & 4 \\ 2 & 7 & 3 & 5 \end{array} \quad \begin{array}{l} 914 \\ 267 \end{array}$$

$$(2+5)^2 + (2+2)^2 + (2+4)^2 + (5+2)^2 + (5+4)^2 + (2+4)^2$$

$$(6+7)^2 + (6+3)^2 + (6+5)^2 + (7+3)^2 + (7+5)^2 + (3+5)^2$$

$$679$$

$$946$$

$$451 \quad (6+5)^2 + (6+2)^2 + (6+4)^2 + (5+2)^2 + (5+4)^2 + (2+4)^2$$

$$463 \quad (2+7)^2 + (2+3)^2 + (2+5)^2 + (7+3)^2 + (7+5)^2 + (3+5)^2$$

$$914$$

$$\sum_{i=1}^n \sum_{j=i+1}^n (b_i + b_j)^2.$$

$$\text{for } (i=0; i < n; i++)$$

$$\text{for } (j=i+1; j < n; j++)$$

$$i=0 \quad (6+5)^2 + (6+2)^2 + (6+4)^2$$

$$\text{opt} = 0$$

$$\text{for } (i=n-1; i \neq 0; i--)$$

$$\text{for } (j=i; j < n; j++)$$

$$\text{sum}_1 = (A[i] + A[j])^2 + (B[i] + B[j])^2 + \text{opt};$$

$$\text{sum}_2 = (B[i] + A[j])^2 + (A[i] + B[j])^2 + \text{opt};$$

$$\text{if } (\text{sum}_2 < \text{sum}_1)$$

$$\text{swap}(\text{sum}_2, \text{sum}_1);$$

$$\text{opt} = \min(\text{sum}_1, \text{sum}_2);$$