

English (auto-generated) MAXIMUM ABSOLUTE DIFFERENCE

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wait hi



0:05 / 9:48



(i,j)

Brute For



1:05 / 9:48



Find (in 2D array)

$$\{ | \underline{a_i} - \underline{a_j} | + | \textcircled{i} - \textcircled{j} | \}$$

$$(i, j)$$

Brute Force



int maxm = 0;

return maxm;

the value store inside this variable now  
what I am doing is that I am



Find (n-2) values

$$\{ |a_i - a_j| + |i - j| \}$$

(i, j)

Brute Force



int maxm = 0;

return maxm;

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so for the first case if we want to find the value of this expression



$$|a_i - a_j| + |i - j|$$

$\left( \begin{matrix} a_i > a_j \\ i > j \end{matrix} \right)$

$\left( \begin{matrix} a_i < a_j \\ i < j \end{matrix} \right)$

$\left( \begin{matrix} a_i < a_j \\ i > j \end{matrix} \right)$

$\left( \begin{matrix} a_i > a_j \\ i < j \end{matrix} \right)$

- 1)  $(a_i - a_j) + (i - j)$
- 2)  $-(a_i - a_j) + (-)(i - j)$
- 3)  $-(a_i - a_j) + (i - j)$
- 4)  $(a_i - a_j) + -(i - j)$

negative sign plus minus off I minus J  
so let's



$$|a_i - a_j| + |i - j|$$

$\left( \begin{matrix} a_i > a_j \\ i > j \end{matrix} \right)$ 
 $\left( \begin{matrix} a_i < a_j \\ i < j \end{matrix} \right)$ 
 $\left( \begin{matrix} a_i < a_j \\ i > j \end{matrix} \right)$ 
 $\left( \begin{matrix} a_i > a_j \\ i < j \end{matrix} \right)$

- 1)  $(a_i - a_j) + (i - j)$
- 2)  $-(a_i - a_j) + (-)(i - j)$
- 3)  $-(a_i - a_j) + (i - j)$
- 4)  $(a_i - a_j) + -(i - j)$



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have a I minus J of J plus J minus I so  
we have a of I minus I




$$\begin{aligned}
 & \left( \begin{matrix} a_i > a_j \\ i > j \end{matrix} \right) \quad \left( \begin{matrix} a_i < a_j \\ i < j \end{matrix} \right) \quad \left( \begin{matrix} a_i < a_j \\ i > j \end{matrix} \right) \quad \left( \begin{matrix} a_i > a_j \\ i < j \end{matrix} \right) \\
 & 1) \frac{(a_i + i) - (a_j + j)}{-(a_i + i) + (a_j + j)} \quad \left. \begin{matrix} 3) (i - a_i) - (j - a_j) \\ 4) (a_i - i) - (a_j - j) \end{matrix} \right\} \\
 & \quad \quad \quad \left( a_i + i \right) \quad \left( \frac{\text{max } 1}{\text{min } 1} \right) \quad (a_i + i) \quad a_0 \quad a_1 \quad \text{-----} \quad a_{n-1}
 \end{aligned}$$

them so for the first case we will get the maximum value for any index  $i$  and



$$\begin{array}{ll} 1) \frac{(a_i + i) - (a_j + j)}{- (a_i + i) + (a_j + j)} \quad \} & 3) \frac{(i - a_i) - (j - a_j)}{(a_i - i) - (a_j - j)} \quad \} \\ 2) \frac{(a_i + i) - (a_j + j)}{- (a_i + i) + (a_j + j)} \quad \} & 4) \frac{(i - a_i) - (j - a_j)}{(a_i - i) - (a_j - j)} \quad \} \end{array}$$

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$$\begin{aligned}
 &1) \underline{(a_i + i) - (a_j + j)} \\
 &\cancel{2) \underline{-(a_i + i) + (a_j + j)}} \\
 &\cancel{3) \underline{-(i - a_i) - (j - a_j)}} \\
 &4) \underline{(a_i - i) - (a_j - j)}
 \end{aligned}$$

$$\begin{aligned}
 &(a_i + i) \quad \text{max 1} \quad \text{min 1} \quad (a_i + i) \\
 &2) \underline{-(\underline{(a_i + i)} - \underline{(a_j + j)})} \\
 &\quad \quad \quad \uparrow \quad \quad \quad \uparrow \\
 &\quad \quad \quad \text{min} \quad \quad \quad \text{max}
 \end{aligned}$$



$$\underline{\text{max 2}} \quad \underline{\text{min 2}} \quad (a_i - i)$$

this expression so we have two expression



$$\begin{aligned}
 &1) \underline{(a_i + i) - (a_j + j)} \\
 &\cancel{2) \underline{-(a_i + i) + (a_j + j)}} \\
 &\cancel{3) \underline{-(i - a_i) - (j - a_j)}} \\
 &4) \underline{(a_i - i) - (a_j - j)}
 \end{aligned}$$

$$\begin{aligned}
 &(a_i + i) \quad \text{max 1} \quad \text{min 1} \quad (a_i + i) \\
 &2) - \left[ \underline{(a_i + i)} - \underline{(a_j + j)} \right] \\
 &\quad \quad \quad \uparrow \quad \quad \quad \uparrow \\
 &\quad \quad \quad \text{min} \quad \quad \quad \text{max}
 \end{aligned}$$



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$$\underline{\text{max 2}} \quad \underline{\text{min 2}} \quad (a_i - i)$$

I'm going to compute the value of Max 1 min 1 and Max

