

Rotate Array by 90° [clockwise]

a	b	c	d		m	i	e	d
e	f	g	h	\Rightarrow	n	j	f	b
i	j	k	l	90°	o	k	g	c
m	n	o	p		p	l	h	d

Approach \Rightarrow

TRANSPOSE & swap [i.e. reverse the column]

Transpose \Rightarrow Convert rows to column

a	e	i	m
b	f	j	n
c	g	k	o
d	h	l	p

[TRANSPOSE +
REVERSE COLUMN
Row By Row]

TRANSPOSE LOGIC

```
for (int i = 0; i < arr.GetLength(0); i++) {  
    for (int j = i; j < arr.GetLength(1); j++) {  
        int temp = arr[i, j];  
        arr[i, j] = arr[j, i];  
        arr[j, i] = temp;  
    }  
}
```

if $j=0 \Rightarrow$ while swapping it will reset
 $j=i$ > skip play diagonal

REVERSE COLUMN BY SWAPPING Row By Row

```
for (int i = 0; i < arr.GetLength(0); i++) {  
    for (int j = 0; j < arr.GetLength(1); j++) {  
        int li = arr[i]
```

```
for (int i = 0; i < arr.GetLength(0); i++) {  
    int li = 0;  
    int ri = arr.GetLength(1);  
    while (li < ri) {  
        // swap  
        int temp = arr[i, li];  
        arr[i, li] = arr[i, ri];  
        arr[i, ri] = temp;  
        li++;  
        ri--;  
    }  
}
```