

Initialization

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|---|
| 0 | 1 | 2 | 3 | 4 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 10 | 9 | 8 | 7 |

```
int last_position = input.length-1;  
  
int i = 0;  
  
int j = last_position;  
  
int temp;
```

Values

| | |
|---------------|------|
| last_position | 3 |
| i | 0 |
| j | 3 |
| temp | null |

Loop #1

```
temp = input[0][i]
      = input[0][0]
      = 1

input[0][i] = input[i][last_position]
input[0][0] = input[0][3]
            = 4
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|---|
| 0 | 1 | 2 | 3 | 4 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 10 | 9 | 8 | 7 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 0 |
| j | 3 |
| temp | 1 |

```
input[i][last_position] = input[last_position][j];
input[0][3] = input[3][3]
            = 7
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|---|
| 0 | 4 | 2 | 3 | 4 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 10 | 9 | 8 | 7 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 0 |
| j | 3 |
| temp | 1 |

```
input[last_position][j] = input[j][0];
input[3][3] = input[3][0]
            = 10
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|---|
| 0 | 4 | 2 | 3 | 7 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 10 | 9 | 8 | 7 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 0 |
| j | 3 |
| temp | 1 |

```
input[j][0] = temp;
input[3][0] = 1

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 2 | 3 | 7 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 10 | 9 | 8 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 0 |
| j | 3 |
| temp | 1 |

```
input[j][0] = temp;
input[3][0] = 1

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 2 | 3 | 7 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 1 | 9 | 8 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 1 |
| j | 2 |
| temp | 1 |

Loop #2

```
temp = input[0][i]
      = input[0][1]
      = 2

input[0][i] = input[i][last_position]
input[0][1] = input[1][3]
           = 5
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 2 | 3 | 7 |
| 1 | 12 | 13 | 14 | 5 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 1 | 9 | 8 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 1 |
| j | 2 |
| temp | 2 |

```
input[i][last_position] = input[last_position][j];
input[1][3] = input[3][2]
           = 8
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 3 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 1 | 9 | 8 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 1 |
| j | 2 |
| temp | 2 |

```
input[last_position][j] = input[j][0];
input[3][2] = input[2][0]
           = 11
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 3 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 1 | 9 | 8 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 1 |
| j | 2 |
| temp | 2 |

```
input[j][0] = temp;
input[2][0] = 2

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 3 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 11 | 16 | 15 | 6 |
| 3 | 1 | 9 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 1 |
| j | 2 |
| temp | 2 |

```
input[j][0] = temp;
input[2][0] = 2

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 3 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 6 |
| 3 | 1 | 9 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 2 |
| j | 1 |
| temp | 2 |

Loop #2

```
temp = input[0][i]
      = input[0][2]
      = 3

input[0][i] = input[i][last_position]
input[0][2] = input[2][3]
            = 6
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 3 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 6 |
| 3 | 1 | 9 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 2 |
| j | 1 |
| temp | 3 |

```
input[i][last_position] = input[last_position][j];
input[2][3] = input[3][1]
            = 9
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 6 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 6 |
| 3 | 1 | 9 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 2 |
| j | 1 |
| temp | 3 |

```
input[last_position][j] = input[j][0];
input[3][1] = input[1][0]
            = 12
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 6 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 9 |
| 3 | 1 | 9 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 2 |
| j | 1 |
| temp | 3 |

```
input[j][0] = temp;
input[1][0] = 3

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|----|----|----|----|
| 0 | 4 | 5 | 6 | 7 |
| 1 | 12 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 9 |
| 3 | 1 | 12 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 2 |
| j | 1 |
| temp | 3 |

```
input[j][0] = temp;
input[1][0] = 3

i++;
j--;
```

input =

| | 0 | 1 | 2 | 3 |
|---|---|----|----|----|
| 0 | 4 | 5 | 6 | 7 |
| 1 | 3 | 13 | 14 | 8 |
| 2 | 2 | 16 | 15 | 9 |
| 3 | 1 | 12 | 11 | 10 |

Values

| | |
|---------------|---|
| last_position | 3 |
| i | 3 |
| j | 0 |
| temp | 3 |

Loop
breaks
here