

1. Interleave the first half of the queue with second half

Given a queue of integers of even length, rearrange the elements by interleaving the first half of the queue with the second half of the queue. You can use only one stack can be used as an additional space.

Examples: Input : 1 2 3 4

Output : 1 3 2 4

Input : 11 12 13 14 15 16 17 18 19 20

Output : 11 16 12 17 13 18 14 19 15 20

2. Permutations of string of length n

3. Generate Binary numbers from 1 to n using a Queue

4. Sort a Queue (Either recursion or iteration or Both)

Count the Number of Islands

0 for water

1 for land

1's in all eight directions put together constitutes an island.

Look at PPT for the island matrix to get idea.

you have to get answer 5:

No input is given in the test case, as you have to initialize the matrix in your program as shown below.

After executing your program , only one cout<< that should match with answer 5.

Your program should contain no cin >> statements, and only one cout << statement.

```
int mat[M][N]=
{
    { 1, 0, 1, 0, 0, 0, 1, 1, 1, 1
    { 0, 0, 1, 0, 1, 0, 1, 0, 0, 0
    { 1, 1, 1, 1, 0, 0, 1, 0, 0, 0
    { 1, 0, 0, 1, 0, 1, 0, 0, 0, 0
    { 1, 1, 1, 1, 0, 0, 0, 1, 1, 1
    { 0, 1, 0, 1, 0, 0, 1, 1, 1, 1
    { 0, 0, 0, 0, 0, 1, 1, 1, 0, 0
    { 0, 0, 0, 1, 0, 0, 1, 1, 1, 0
    { 1, 0, 1, 0, 1, 0, 0, 1, 0, 0
    { 1, 1, 1, 1, 0, 0, 0, 1, 1, 1
};
```

Evaluate prefix expression using a Q.

No input is given in the test case, as you have to initialize a character array in your program as shown below.

P[] = "-+*9+28*+4863" ;

You can use P[] as your input.



After executing your program , only one cout<< that should match with answer.

Your program should contain no cin >> statements, and only one cout << statement.