


Write a program to rotate the matrix by 90 degrees anti-clockwise.


```
2darray2 > G+ assignment2.cpp > main()
1  #include<iostream>
2  using namespace std;
3  int main(){
4      cout<<" enter the row of matrix: ";
5      int m;
6      cin>>m;
7      cout<<" enter the column of matrix: ";
8      int n;
9      cin>>n;
10     int arr[m][n];
11     cout<<"enter the matrix element: ";
12     for(int i=0;i<=m-1;i++){
13         for(int j=0;j<=n-1;j++){
14             cin>>arr[i][j];
15         }
16     }
17     for(int j=n-1;j>=0;j--){
18         for(int i=0;i<=m-1;i++){
19             cout<<arr[i][j]<<" ";
20         }
21         cout<<endl;
22     }
23 }
```

Write a program to print the matrix in wave form.


2darray2 >  assignment3.cpp > ...

```
1  #include<iostream>
2  using namespace std;
3  int main(){
4      cout<<" enter the row of matrix: ";
5      int m;
6      cin>>m;
7      cout<<" enter the coloumn of matrix: ";
8      int n;
9      cin>>n;
10     int arr[m][n];
11     cout<<" enter the element of matrix: ";
12     for(int i=0;i<=m-1;i++){
13         for(int j=0;j<=n-1;j++){
14             cin>>arr[i][j];
15         }
16     }
17     for(int j=0;j<=n-1;j++){
18         if(j%2==0){
19             for(int i=m-1;i>=0;i--){
20                 cout<<arr[i][j]<<" ";
21             }
22         }
23         else{
24             for(int i=0;i<=m-1;i++){
25                 cout<<arr[i][j]<<" ";
26             }
27         }
28     }
29 }
```

Given a positive integer n, generate a n x n matrix filled with elements from 1 to n² in spiral order.

```
2darray2 >  assignment4.cpp > ...  
1  #include<iostream>  
2  using namespace std;  
3  int main(){  
4      cout<<" enter the row of matrix: ";  
5      int m;  
6      cin>>m;  
7      cout<<" enter the coloumn of matrix: ";  
8      int n;  
9      cin>>n;  
10     int arr[m][n];  
11     cout<<" enter the element of matrix: ";  
12     for(int i=0;i<=m-1;i++){  
13         for(int j=0;j<=n-1;j++){  
14             cin>>arr[i][j];  
15         }  
16     }  
17     for(int i=0;i<=m-1;i++){  
18         for(int j=0;j<=n-1;j++){  
19             if(i==j || i+j==n-1){  
20                 cout<<arr[i][j];  
21             }  
22             else{  
23                 cout<<" ";  
24             }  
25         }  
26         cout<<endl;  
27     }  
28 }
```

Q5. Predict the output

```
2darray2 >  assignment5.cpp > ...  
1  #include<iostream>  
2  using namespace std;  
3  int main(){  
4  int a[][2] = {{1,2},{3,4}};  
5  int i, j;  
6  for (i = 0; i < 2; i++)  
7  for (j = 0; j < 2; j++)  
8  cout << a[i][j];  
9  return 0;  
10 }
```

OUTPUT : - 1234