_01)_Print_Snack_Pattern.cpp

```cpp
#include<iostream>
using namespace std;

const int R=4, C=4;
void printSnake(int mat[R][C])
{
    for(int i=0; i<R; i++)
    {
        if(i%2 == 0)
        {
            for(int j=0; j<C; j++)
                cout<<mat[i][j]<<" ";
                cout<<endl;
        }
        else
        {
            for(int j=C-1; j>=0; j--)
                cout<<mat[i][j]<<" ";
                cout<<endl;
        }
    }
}

int main()
{
    cout<<"Snake Pattern = \n";
    int mat[4][4] = {{1, 2, 3, 4},
                     {5, 6, 7, 8},
                     {9, 10, 11, 12},
                     {13, 14, 15, 16}};
    printSnake(mat);
    cout<<endl;
}
```

```
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Snake Pattern =
1 2 3 4
8 7 6 5
9 10 11 12
16 15 14 13


Process returned 0 (0x0)   execution time : 0.370 s
Press any key to continue.
```

_02)_Print_Boundry_Element.cpp

```cpp
const int R=4, C=4;
void BTraversal(int mat[R][C])
{
    if(R == 1)
    {
        for(int i=0; i<C; i++)
            cout<<mat[0][i]<<" ";
            cout<<endl;
    }
    else if(C == 1)
    {
        for(int i=0; i<R; i++)
            cout<<mat[i][0]<<" ";
            cout<<endl;
    }
    else
    {
        for(int i=0; i<C; i++)
            cout<<mat[0][i]<<" ";
            cout<<endl;
        for(int i=1; i<R; i++)
            cout<<mat[i][C-1]<<" ";
            cout<<endl;
        for(int i = C-2; i>=0; i--)
            cout<<mat[R-1][i]<<" ";
            cout<<endl;
        for(int i=R-2; i>=1; i--)
            cout<<mat[i][0]<<" ";
            cout<<endl;
    }
}

int main()
{
    cout<<"Boundary Traversal = \n";
    int mat[4][4] = {{1, 2, 3, 4},
                     {5, 6, 7, 8},
                     {9, 10, 11, 12},
                     {13, 14, 15, 16}};
    BTraversal(mat);
    cout<<endl;
}
```

```
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Boundary Traversal =
1 2 3 4
8 12 16
15 14 13
9 5


Process returned 0 (0x0)   execution time : 0.443 s
Press any key to continue.
```

_03)_Transpose_of_Matrix.cpp

```cpp
#include<iostream>
using namespace std;

const int n=4;
void Transpose(int mat[n][n])
{
    int temp[n][n];
    for(int i=0; i<n; i++)
        for(int j=0; j<n; j++)
            temp[j][i] = mat[i][j];

    for(int i=0; i<n; i++)
        for(int j=0; j<n; j++)
            mat[i][j] = temp[i][j];

    for(int i=0; i<n; i++)
    {
        cout<<endl;
        for(int j=0; j<n; j++)
            cout<<mat[i][j]<<" ";
    }
}

int main()
{
    cout<<"Transpose of Matrix = ";
    int mat[4][4] = {{1, 2, 3, 4},
                     {5, 6, 7, 8},
                     {9, 10, 11, 12},
                     {13, 14, 15, 16}};
    Transpose(mat);
    cout<<endl;
}
```

```
Select "C:\Users\Akash Singh\Documents\Coding\' CHALLENGE '\365-Days-of-Code\176). Complete DSA (2D_Array[1-4])\_03)_Transpose_...
Transpose of Matrix =
1 5 9 13
2 6 10 14
3 7 11 15
4 8 12 16

Process returned 0 (0x0)   execution time : 0.334 s
Press any key to continue.
```

_04)_Transpose_of_Matrix.cpp

```cpp
#include<iostream>
using namespace std;

const int n=4;
void Transpose(int mat[n][n])
{
    for(int i=0; i<n; i++)
        for(int j=i+1; j<n; j++)
            swap(mat[i][j], mat[j][i]);

    for(int i=0; i<n; i++)
    {
        cout<<endl;
        for(int j=0; j<n; j++)
            cout<<mat[i][j]<<" ";
    }
}

int main()
{
    cout<<"Transpose of Matrix = ";
    int mat[4][4] = {{1, 2, 3, 4},
                     {5, 6, 7, 8},
                     {9, 10, 11, 12},
                     {13, 14, 15, 16}};
    Transpose(mat);
    cout<<endl;
}
```

```
Select "C:\Users\Akash Singh\Documents\Coding\' CHALLENGE '\365-Days-of-Code\176). Complete DSA (2D_Array[1-4])\_04)_Tra...
Transpose of Matrix =
1 5 9 13
2 6 10 14
3 7 11 15
4 8 12 16

Process returned 0 (0x0)   execution time : 0.202 s
Press any key to continue.
```