CSC210 Advanced Algorithm and Design Lab
30/01/2023

Time: 1 Hour

Instructions

1. Write the programs with proper comments and indentation
2. Create a directory <Admission Number>_<Date> [21JEXXXX_090122], copy all the files into it and **upload in Google Class Room**
3. Submit a single C/C++ source file
4. Do not use STL calls
5. **Each program should start with these comment lines:**

```
/*
Name:
ID No:
*/
```

Q1. The magic square is a square matrix, whose order is odd and where the sum of the elements for each row or each column or each diagonal is same.

Write a function *MagicSquare* that takes the dimension of the matrix and a given arbitrary matrix of same size as input. The function should generate all possible magic squares and print the one which has minimum edit cost from the given matrix. The cost is computed as summation of absolute difference of values in each cell. [40+10]

The **main()** function:

1. Take input (size of matrix) from user. Generate an arbitrary matrix of same size and fill it with random numbers.
2. Call *MagicSquare* to find out the minimum cost magic square for the arbitrary matrix.

Magic Square

8	1	6
3	5	7
4	9	2

Arbitrary One

9	2	3
6	5	1
4	8	7

Cost: 1 + 1 + 3 + 3 + 0 + 6 + 0 + 1 + 5 = 20

Figure 1: Arbitrary matrix and one sample magic square with cost 20