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/*PROGRAM TO CHECK FOR MAGIC SQUARE*/
#include <stdio.h>
int rowCheck(int magicSquare[][10], int row, int col)
{
    int i, j, sum = 0, prevSum = 0;
    for (int i = 0; i < row; i++)
    {
        for (int j = 0; j < col; j++)
        {
            sum += magicSquare[i][j];
        }
        if (i != 0 && sum != prevSum)
        {
            return -1;
        }
        prevSum = sum;
        sum = 0;
    }
    return prevSum;
}

int colCheck(int magicSquare[][10], int row, int col)
{
    int i, j, sum = 0, prevSum = 0;
    for (int j = 0; j < col; j++)
    {
        for (int i = 0; i < row; i++)
        {
            sum += magicSquare[i][j];
        }
        if (j != 0 && sum != prevSum)
        {
            return -1;
        }
        prevSum = sum;
        sum = 0;
    }
    return prevSum;
}

int diagCheck(int magicSquare[][10], int row, int col)
{
    int i, j, diag1 = 0, diag2 = 0;
    for (i = 0; i < row; i++)
    {
        for (j = 0; j < col; j++)
        {
            if (i == j)
            {
                diag1 += magicSquare[i][j];
            }
            if (i + j == row - 1)
            {
                diag2 += magicSquare[i][j];
            }
        }
    }
}

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        }
    }
}
if (diag1 != diag2)
{
    return -1;
}
return diag1;
}

int main()
{

    printf("20BCS065 RAVI GOWRI JASWANTH\n");

    int n;
    printf("Enter Magic square size: ");
    scanf("%d", &n);

    int magicSquare[10][10];
    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j < n; j++)
        {
            scanf("%d", &magicSquare[i][j]);
        }
    }

    int rowValid = rowCheck(magicSquare, n, n);
    int colValid = colCheck(magicSquare, n, n);
    int diagValid = diagCheck(magicSquare, n, n);
    if (rowValid == -1 || colValid == -1 || diagValid == -1)
    {
        printf("Not a Magic Square\n");
    }
    else
    {
        if (rowValid == colValid && rowValid == diagValid)
        {
            printf("Magic Square with Sum = %d\n", rowValid);
        }
        else
        {
            printf("Not a Magic Square\n");
        }
    }
}

```