```c
#include <stdio.h>

#define MAXSIZE 100

/*
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*/

// recursive function

int fillMatrix(int n)
{
	int output = 0;

	if(n < 1)
	{
		return 0;
	}

	output = fillMatrix(n-1) + 1;

	return output;
}

int main()
{
	int sizeIn;
	int i;
	int j;

	// user input

	printf("Please enter a size for the array, between 1 and %d: \n", MAXSIZE);
	scanf("%d", &sizeIn);

	// error correction

	if((sizeIn < 1) || (sizeIn > MAXSIZE))
	{
		printf("Error, please enter a value between 1 and %d. \n", MAXSIZE);

		return 0;
	}

	int matrix[MAXSIZE][MAXSIZE];

	// filling matrix by calling recursive function

	for(i = 0; i < sizeIn; i++)
	{
		for(j = 0; j< sizeIn; j++)
		{
			if(j<=i)
			{
				matrix[i][j] = fillMatrix(j+1);
```

```
                }
            }
        }

        // printing matrix

        for(i = 0; i < sizeIn; i++)
        {
            for(j = 0; j < sizeIn; j++)
            {
                if(matrix[i][j] == 0)
                {
                printf("  ");
                }
                else
                {
                printf("%d ", matrix[i][j]);
                }
            }
            printf("\n");
        }

        return 0;
}
```