Lab 8
Nested Loops and Double Array
11.12.2023

Write C code that draws the pattern given in below:

```
Enter the length of sides: 20
* * * * * * * * * * * * * * * * * * * *
* * 2 2 2 2 2 2 2 2 2 2 2 2 2 2 * *
* 1 * 2 2 2 2 2 2 2 2 2 2 2 * 3 *
* 1 1 * 2 2 2 2 2 2 2 2 2 * 3 3 *
* 1 1 1 * 2 2 2 2 2 2 2 * 3 3 3 *
* 1 1 1 1 * 2 2 2 2 2 * 3 3 3 3 *
* 1 1 1 1 1 * 2 2 2 * 3 3 3 3 3 *
* 1 1 1 1 1 1 * 2 2 * 3 3 3 3 3 *
* 1 1 1 1 1 1 1 * 2 * 3 3 3 3 3 3 *
* 1 1 1 1 1 1 1 1 * * 3 3 3 3 3 3 3 *
* 1 1 1 1 1 1 1 1 * * 3 3 3 3 3 3 3 *
* 1 1 1 1 1 1 1 * 4 4 * 3 3 3 3 3 3 *
* 1 1 1 1 1 1 * 4 4 4 4 * 3 3 3 3 3 *
* 1 1 1 1 1 * 4 4 4 4 4 4 * 3 3 3 3 *
* 1 1 1 1 * 4 4 4 4 4 4 4 4 * 3 3 3 *
* 1 1 1 * 4 4 4 4 4 4 4 4 4 4 * 3 3 *
* 1 1 * 4 4 4 4 4 4 4 4 4 4 4 4 * 3 *
* 1 * 4 4 4 4 4 4 4 4 4 4 4 4 4 4 * 3 *
* * 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 * *
* * * * * * * * * * * * * * * * * * * *

Process returned 0 (0x0)   execution time : 3.540 s
Press any key to continue.
```

- Take the length of the square from the user. (5 pts)

- Use a double char array (coordinates[i][j]) to store the coordinates of stars (*) and numbers ('1', '2', '3', '4'). Initially, fill it with empty spaces (i.e., ' '). (10 pts)

- Write a function that stores the required data for the pattern in the double array: (65 pts)
  void storePattern(char coordinates[ ][ ], int length)
    - Square frame with stars (*) → 9 pts
    - Diagonals with stars(*) → 20 pts
    - Numbers ('1', '2', '3', '4') in each region → 9x4= 36 pts
- Write a function that prints the stored data in the double array: (20 pts)
  void printArrays(char pA[ ][100], int length)