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**Introduction to C Programming**

**Module 14.5: Practice Day 01**

**(Codeforces Links and Practice Questions)**

**Topics:**

1. Nested Loop
2. Pattern Printing
3. Functions

**Codeforces Problem Links:**

1. [P. Shape1](https://codeforces.com/group/MWSDmqGsZm/contest/219432/problem/P)
2. [T. Shape2](https://codeforces.com/group/MWSDmqGsZm/contest/219432/problem/T)
3. [W. Shape3](https://codeforces.com/group/MWSDmqGsZm/contest/219432/problem/W)
4. [H. Sorting](https://codeforces.com/group/MWSDmqGsZm/contest/219774/problem/H)

**Question:** Take a positive integer N as input and print the pattern shown in the sample input output.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| 5 | \*     \*\*    \*\*\*   \*\*\*\*  \*\*\*\*\* |
| 7 | \*       \*\*      \*\*\*     \*\*\*\*    \*\*\*\*\*   \*\*\*\*\*\*  \*\*\*\*\*\*\* |

**Question:** Take a positive integer N as input and print the pattern shown in the sample input output.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| 5 | \*\*\*\*\*\*\*\*\*   \*\*\*\*\*\*\*    \*\*\*\*\*     \*\*\*      \* |
| 8 | \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*   \*\*\*\*\*\*\*\*\*\*\*\*\*    \*\*\*\*\*\*\*\*\*\*\*     \*\*\*\*\*\*\*\*\*      \*\*\*\*\*\*\*       \*\*\*\*\*        \*\*\*         \* |

**Question:** Make a function named **char\_to\_ascii()** which will take a character as parameter and it will convert that character to ascii value and return through that function. So, the return type will be int. Now in the main function take a character input and call that function to get the integer value of it and print that in the main function.

**Bonus**: You can also try this with 4 different types of function use cases.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| a | 97 |
| A | 65 |
| 0 | 48 |

**Question:** Make a function named **small\_to\_capital()** which will take a small alphabet as a parameter (which is a character) and it will convert that small alphabet to capital alphabet and return through that function. So, the return type will be char. Now in the main function take a character input which will be small alphabets and call that function to get the capital alphabet and print that in the main function.

**Bonus**: You can also try this with 4 different types of function use cases.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| a | A |
| z | Z |
| q | Q |

**Question:** Make a function named **capital\_to\_small()** which will take a capital alphabet as a parameter (which is a character) and it will convert that capital alphabet to small alphabet and return through that function. So, the return type will be char. Now in the main function take a character input which will be capital alphabets and call that function to get the small alphabet and print that in the main function.

**Bonus**: You can also try this with 4 different types of function use cases.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| A | a |
| Y | y |
| Q | q |