

Karadeniz Technical University
Engineering Faculty
Programming I – Project Assignment

Pattern Printing with Loops

Objective

Write a C program that prints the following patterns separately, one below the other. You must use for, while, or do...while loops to generate the patterns. All asterisks (*) must be printed using a single printf statement of the form: `printf("%s", "*");`. This ensures that the asterisks appear side by side.

Assignment Instructions

1. The program must first ask the user whether they want to draw a pattern.
 - If the answer is 'y', the program should:
 - Ask the user to choose the type of pattern.
 - Ask the user to enter the width (the number of asterisks).
 - Draw the selected pattern accordingly.
2. After drawing the pattern, the program must again ask the user:
"Do you want to draw another pattern?"
 - If the user enters 'y', the program continues.
 - If the user enters 'n', the program terminates.

How to test the code?

- During code testing, both the pattern type and the width will be selected randomly, and your program must draw the pattern correctly.
- Students will be asked to explain how their code produces the pattern.
Any code that the student does not explain will receive a score of zero.
- The tests will be performed on four randomly selected patterns from the list below.
- Project evaluations will be done face to face in the classroom.
- Students are responsible for all the code they write.

Example Output:

```
>> Do you want to draw a pattern? (y/n):
>> 'y'
>> Choose the pattern type:
>> 8
>> Enter the width (the number of asterisks):
>> 10
>>
*****
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*       *
*****
```

Patterns:

The number of asterisks in the width of each pattern will be taken as a parameter (i.e., the number of columns). The number of rows must be determined by the student based on the examples provided below.

1	2	3	4
<pre>* ** *** **** *****</pre>	<pre> * ** *** **** *****</pre>	<pre> * *** ***** ***** *****</pre>	<pre>* ** *** **** ***** ***** **** *** ** *</pre>
5	6	7	8
<pre> * *** ***** ***** ***** ***** ***** **** *** *</pre>	<pre> ***** ***** ***** ***** *****</pre>	<pre> ***** * * * * * * * * *****</pre>	<pre>***** * * * * * * * * *****</pre>

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