C/C++ – Exercise 2
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Problem 1
Write a C program using two <u>for</u> loops to produce the following pattern of asterisks.

```
*
**
***
****
*****
******
*******
********
```
Rewrite the program using <u>two</u> while loops.

Problem 2
Write a C program that enters an 8-digit string for a birthdate from the keyboard. The first two digits in the string are the month of birth, the next two are the day and the remaining four are the year. The C code should squeeze out these substrings and display it on the screen as follows:

Month of birth:
Day of birth:
Year of birth:

Problem 3
Write a C program that reads in three floating point numbers from the keyboard and calculate their <u>average</u>.

> ./calc 12.4 56.7 345.32

Change the program to accept a command line argument which is: "+", "-"; between the numbers:

> ./calc 12 + 45.4 – 12.4

Hint: atoi, atof, atol,…

Problem 4
Write C functions to:
a. swap two integers
b. compute the maximum of two integers.
c. count the number of set bits in an integer.

Problem 5

Write a C program that gets two integers and return their GCD (greatest common divisor)

GCD(a,b) (אלגוריתם)

Suppose that a is less than b (otherwise swap them), if a is 0, then the GCD is b,
otherwise
Continue with *a* and *a-b*.

- use your swap method in the solution

Problem 6

בתוכנית שיצרתם בתרגיל 1, הוסף אפשרות לשמור ולטעון את הצורות לקובץ חיצוני. שם הקובץ ינתן
כפרמטר לתוכנית. אם הקובץ לא קיים, לא מוצג דבר על המסך.
יש להגיש את התוכנית כולה כמו בתרגיל 1.