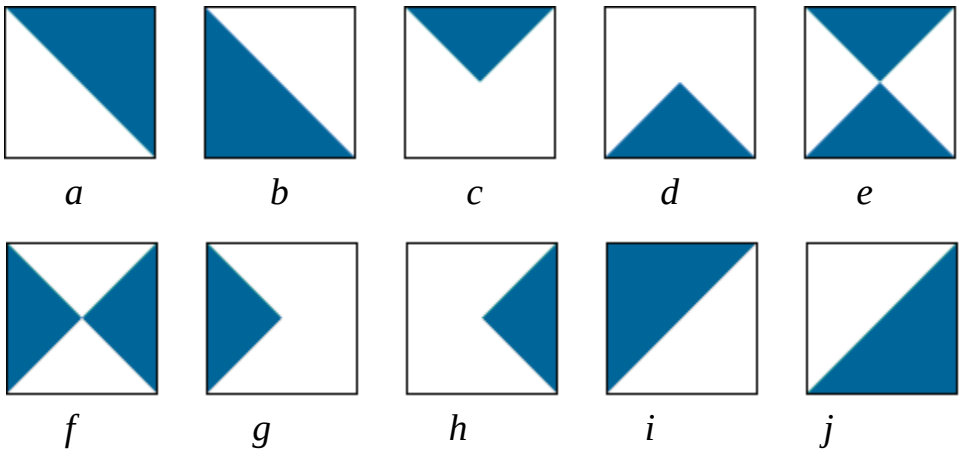
Homework 38

Course «C Programming Language»

Topic: Loops

Homework

Exercise 1.
Output to the screen shapes filled with asterisks. The dialogue with the user you should implement using a menu.



Exercise 2.
Count a number of integers in the range from 100 to 999 that have two identical figures

Exercise 3.
Count a number of integers in the range from 100 to 999 all figures of which are different

Exercise 4.
The user enters any integer. From this integer you should remove numbers 3 and 6 and output back to the screen.

Exercise 5.
The user enters any integer A. You should output all integers B for which A is divisible by B * B without remainder and is not divisible by B * B * B without remainder.

Exercise 6.
The user enters an integer A. The program must determine that the cube of the sum of digits of this number is equal to A *A

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Exercise 7.
The user enters an integer. It is necessary to output all integers by which a given number is divisible without remainder.

Exercise 8.
The user enters two integers. It is necessary to output all integers, by which both entered numbers are divisible without remainder.

Exercise 9.
The user enters a number. Determine a number of digits in this number; calculate their sum and an arithmetic mean. Determine a number of zeros in this number. Communication with the user must be arranged through the menu.

Exercise 10:
Write a program that displays a chessboard with a given cell size. For example,

```
***___***___***___***___
***___***___***___***___
***___***___***___***___
___***___***___***___***
___***___***___***___***
___***___***___***___***
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Course «C Programming Language»

Topic: One-dimensional arrays

Homework

Exercise 1.
In one-dimensional array filled with random numbers, determine minimum and maximum elements.

Exercise 2.
The user enters a company's profit for the year (12 months). The user then enters a range (for example, 3 and 6 - a search between the 3rd and 6th months). It is necessary to determine a month in which the profit was maximal, and a month in which the profit was minimal in view of the selected range.

Exercise 3.
In one-dimensional array consisting of N real numbers, calculate:

- the sum of negative elements;
- the product of elements located between the min and max elements;
- the product of even-numbered elements;
- the sum of elements located between the first and the last negative elements.

Exercise 4.
Write a program that copies sequentially elements of one array of 10 elements in 2 arrays each of which has 5 elements.

Exercise 5.
Write a program that implements the sum of elements of two arrays separately and results are recorded in third array.