

2 student:

Working with files

1. [st2-task-01.cs] {0.8 points or 1.5} Download the `in.txt` file and paste it into directory of your project (~\bin\Debug) or some folder you can read from. Create a program to print out **odd numbers** from the file into the console window. You should use the `BinaryReader` class and `PeekChar()` method. Make a program using `try..catch` block. You shouldn't use here *Lists* and lambda expressions.

Expected output:

Odd numbers:

-1 7 -5 9 9 -7 9 1 3

The similar tasks you can find here: <https://labs-org.ru/c-sharp14-eng/>

Classes

2. [st2-task-02.cs] {1.6 points or 2.5}

1). Create a class with a name `PhysicalCulture` to manage the information about the pupils' achievements in Physical Culture lessons. The fields of the class are:

- pupil's **surname** (of *string* type)
- **sex** (of *char* type: letters `f` or `m`)
- length of the long **jump** (in centimeters, of *double* type)
- number of **push-ups** (of *integer* type)
- 100 meters **running** (in seconds, of *double* type)

2). Create auto read- and write- properties for all the fields (setters and getters).

3). Define a *constructor* with the initializations of the fields and add the `Print` method for the class to output all the information about pupil.

4). Within the `Main` function initialize two instances of the class. Print out the information about those two pupils using `Print` method.

5). Create a `JumpPlanIsDone` method (returns `true` if the plan of length long **jump** is done: it must be greater than 170 centimeters – for boys, and for girls is greater than 150 centimeters; returns `false` otherwise). Call the method for the pupils within the `Main` function.

Note: Specify the meaningful names for the class, its fields, and methods.

Expected output:

Pupil's info:

surname: Ivanov, sex: male, jump length: 175 cm, push-ups: 35, running: 12.5

Pupil's info:

surname: Kruglova, sex: female, jump length: 145 cm, push-ups: 6, running: 18.5

Ivanov: plan of long jump is done – true

Kruglova: plan of long jump is done - false

The similar tasks you can find here: <https://labs-org.ru/c-sharp17-eng/>

Lists

3. [st2-task-03.cs] {1.6 points or 2} Download file `in.txt` and place it into the folder of your project executable files (~\bin\Debug) or some folder you can read from. Create the program to read numbers from the file and to add them to a variable of *List* type. To add the numbers into the list variable (`L1` is a variable of *List* type):

```
while (br.PeekChar() != -1)
{
    L1.Add(br.ReadInt32());
}
```

1. Create a function to output all the **even numbers** from that file. You should use LINQ `Where` method.

2. Create a function to return the **quantity** of all the elements from the file which are **less than 10 and greater than 5**. You should use LINQ `Where` and `Count` methods (`...Where(...).Count();`).

Note: You should use `FileMode.Open` mode and `BinaryReader` class to read from a file.

Expected output:

// Even elements:

-6 -4 4 0 2 -4 8 4 -6 -10 -8

// The quantity of all the elements < 10 and >5:

5