

SECTION XXVIII. PÉDAGOGIE ET ÉDUCATION

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ABOUT THE RELEVANCE OF TASKS TO LABORATORY WORKS FOR STUDENTS OF COMPUTER SCIENCES AND INFORMATION TECHNOLOGIES

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The educational process is intellectual, creative activity in the sphere of education and science, which is carried out in the educational institution (scientific institution). The process takes place through the system of scientific-methodical and pedagogical measures and is directed on transfer, mastering, application and use of knowledge, skills and other competencies in the persons who study, and also on formation of harmonious developed personality [1].

The problem of relevance of tasks of laboratory works for students of computer specialties is regularly faced by teachers. Getting actual practical skills for students is very important at a time of rapid changes and development of computer technologies. The factors of motivation, speed and desire to perform works depend on the relevance of tasks. The actual tasks for computer specialties are website development, chat bots, phone applications, games for phone and computers.

In addition to the relevance of tasks, attention should be paid to the relevance of programming languages and programs through which tasks are created. The C# language developed by Microsoft is one of the most popular modern programming languages on the software development market in different countries. C# is used to create local programs for PCs, develop complex web services or mobile applications. The language that emerged to meet the needs of the Microsoft.NET platform has gradually become a very popular language, which testifies to the regular use of this language in the educational process [2-5].

The second most popular programming language among Ukrainian developers in 2022 is C#(14,7%) [6]. This statistics is presented by the Ukrainian web-site dou.ua where the researches of the current languages of programming since 2010 are conducted. Note that programming language C# was in the top 5 programming languages from 2010 to 2015, and since 2015 and now, takes place in the top 3. According to the statistics given by foreign sites [7-10], the programming language takes from 5 to 7 places in the top 10 popular programming languages for 2022.

The most popular development environment for different programming languages is a well-known full-functionality development environment of Visual Studio from Microsoft [11-14]. It allows you to work with platforms such as Windows, Internet, cloud technologies and Android and others. The IDE's Visual Studio features allow you to write code correctly and efficiently, organize, analyze, and correct code problems. This IDE makes it easier for beginners to enter the development process. Thus, it is rather actual to introduce modern tasks for laboratory work to students of computer disciplines in C# programming language performed in Microsoft Visual Studio.

One of the examples of tasks to laboratory work of students is creation of chat for communication. This task is chosen for several reasons, first possibility to get skills of programming language C#, second to get skills of work in the program Visual Studio, third to get actual practical knowledge, in the fourth motivation and desire it is possible in the future to create something like Telegram, Viber, WhatsApp or even better.

Since the task is serious and has a rather large amount of work for the student, the work is carried out within a few classes in the computer class. The tasks are divided into three parts:

Part 1: Creating a "Server";

Part 2: Creating a "Host";

Part 3: Creating a "Client".

Let us give a brief description of the creation of the parts "Chat of Communication".

"Server" will be created using WCF. Next you need to describe the methods that will work with the IServiceChat.cs server. All interface methods will be implemented in ServiceChat.cs. It is also necessary to connect all clients to the same host. Create a class that will serve as a container and store data, describe the procedures for creating a new user, and implement the method of sending messages.

"Host" will be created by the console application. This is where we will describe the host configuration. The description App.config for the host is required to determine how it will work, which ports to use, and how to transfer data.

"Client" will be implemented as a WPF plugin. Let's connect to the host and server for further interaction. Let's describe the interface, we will use quite simple elements: Button - button of user connection and disconnection; TextBox - it will store the user name, which will be connected to chat; ListBox - here will be shown all messages from the server; TextBox - here users will print messages. We will perform client functions, describe operation of buttons, methods for connection and disconnection of the user, and one of the most important parts is sending messages.

This will complete the laboratory task of creating Chat. Once you have finished creating Chat, you can start the server and host and start the communication between users (Fig. 1). As you can see the chat has quite simple laconic design. Different number of interlocutors may join such a chat.

Thus, in case of created tasks to laboratory works, it is necessary to pay great attention to the relevance of tasks, to carry out work on analysis of the latest tendencies of languages and means of programming. This interesting laboratory work gives students the opportunity to gain practical knowledge, as well as the teacher to raise his qualification level.

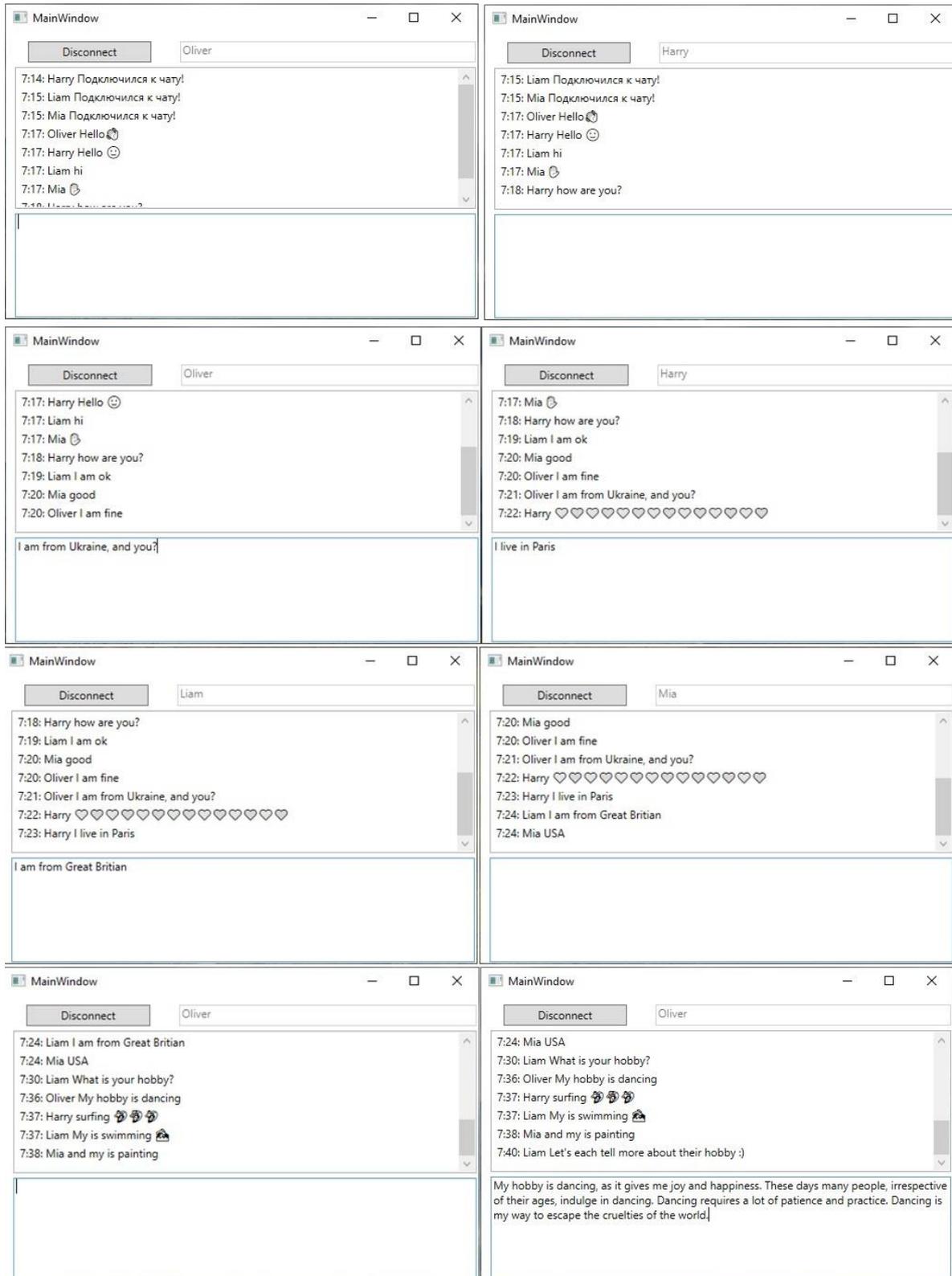


Fig. 1. Laboratory work "Chat"

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