REMOTE ACCESS MICROCONTROLLER LABORATORY

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Abstract
Especially when the curriculums of vocational schools that acquire the mission and the vision to educate intermediate trainees are examined, it is seen that the majority of the courses are mainly applied. The applications are realized in laboratory environment using real devices. Laboratories, which play an important role in strengthening the theoretical knowledge that students learn, are obliged to carry out the experiments in groups because of the high number of students and low availability of the existing laboratories. It is also clear that students with limited time and numerous sets of experiments will not be able to implement these applications efficiently. Today, remote access laboratories are being developed as an alternative solution to such problems. In the scope of Microcontrollers course, which is the main course of Electrical-Electronic or Electronics-Automation departments of vocational schools, there are many applications from controlling DC motor to driving graphical LCD display. These applications are given in project form. The situation most often encountered during the realization of these given projects is that students are prone to use pre-circuit and program codes. In this work, we developed a remote access laboratory application using the LabVIEW program to increase the competence of students in microcontroller system design. Students can do the experiments on the developed interface and observe their results in real time with the camera. Thus, it is aimed to ensure that students learn to control the basic components of the system separately before designing an entire system, and to ensure that they reach a level that will design an entire system. As a result, it is aimed to provide more permanent learning by increasing the motivation of the students to the lesson.

Keywords: Remote access laboratory, LabVIEW, microcontroller.