Lesson Plan Microcontroller programming

Topic/Subject:

Topic Microcontroller programming
Subject Computer science, Electrical Fundamentals, Microcontrollers

Target Group:

Students from 1st to 4th grade, aged between 15 - 18.

Students are of different technical occupations:

- mechatronics,
- CNC operators,
- mechanical technicians and
- mechanical computer technicians.

Objectives:

Obj1. The increase in the level of educational digitalization
Obj2. Integrating the new technologies in the educational process
Obj3. Raising student motivation and awareness through usage of modern technology

Approach/Methodology used:

project learning,
dialogical,
research,
simulation

Means/Tools/Educational technology

Computers, the Internet, technical books, mobile phones, applications, IDE Arduino, Arduino uno, electrical components: LED lights, seven-segment digital display, electric motors, thermal sensors ...soldering iron, acid

Plan for work

Time	Activities	Methods/ means
10min	Basic understanding how to program electrical components, with logical commands in the Arduino IDE software package. The electrical components we used are led lights, seven segment digital display, thermal sensors	Presentation
10min	Show them real examples of how to connect each of these devices and how to control it through commands in the Arduino IDE	Simulation Presentation Dialogical
25min	We divided them into groups and gave them the task to try to connect and program according to the electrical blueprints and text of the task	project learning, dialogical, research, simulation

Assessment/Feedback:

The assessment was based on the success of connecting electrical devices and programming their given task.

Bibliography:

https://issuu.com/paolozenzerovic/docs/arduino_ii._izdanje_-_issue