


CODE THE FUTURE

 KA229 ERASMUS+ SCHOOL EXCHANGE PARTNERSHIPS



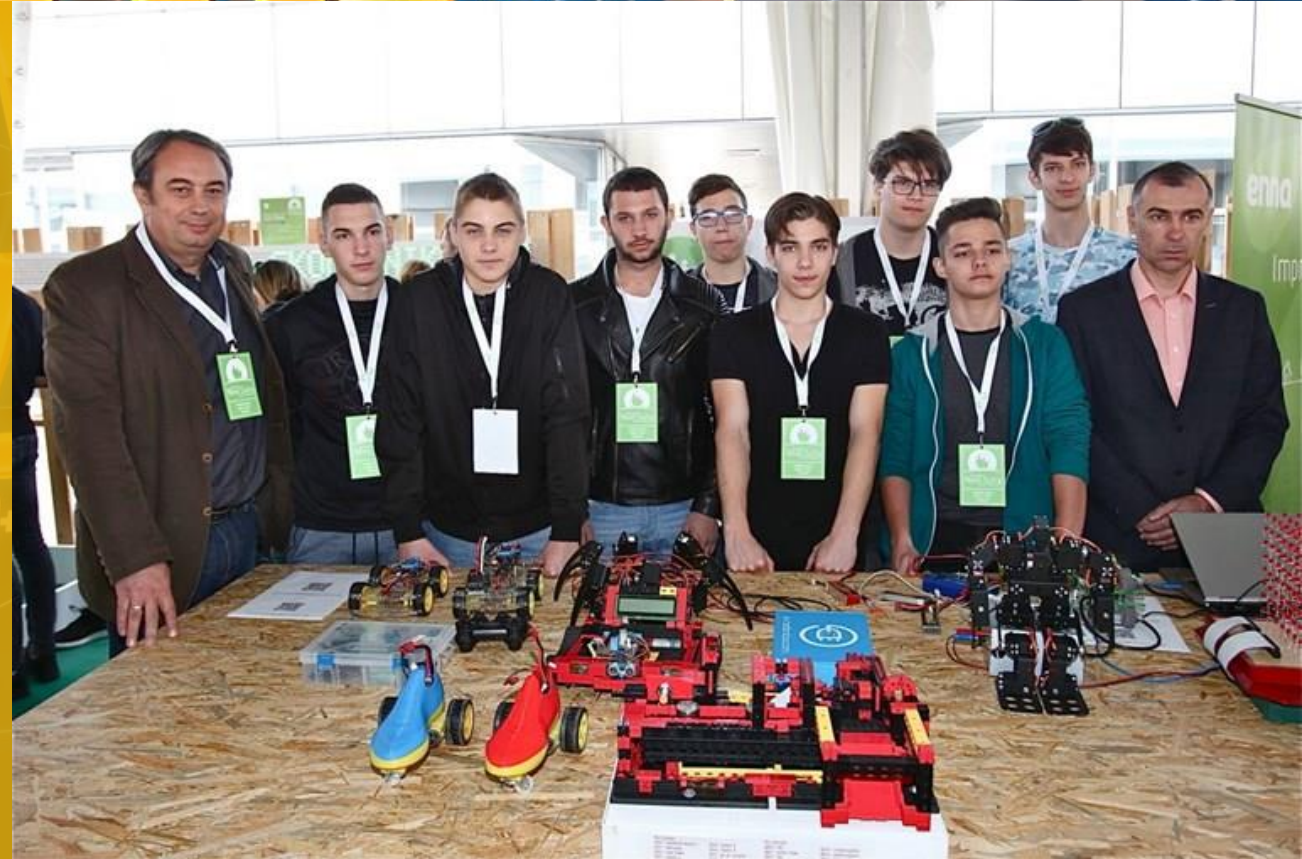
Arduino integration in the current curricular

one of the main goals of this project

**How do we do the Arduino integration
in our current curricular?**

Programs which include Arduino in their curricula:

- computer technician,
- computer technician in mechanical engineering



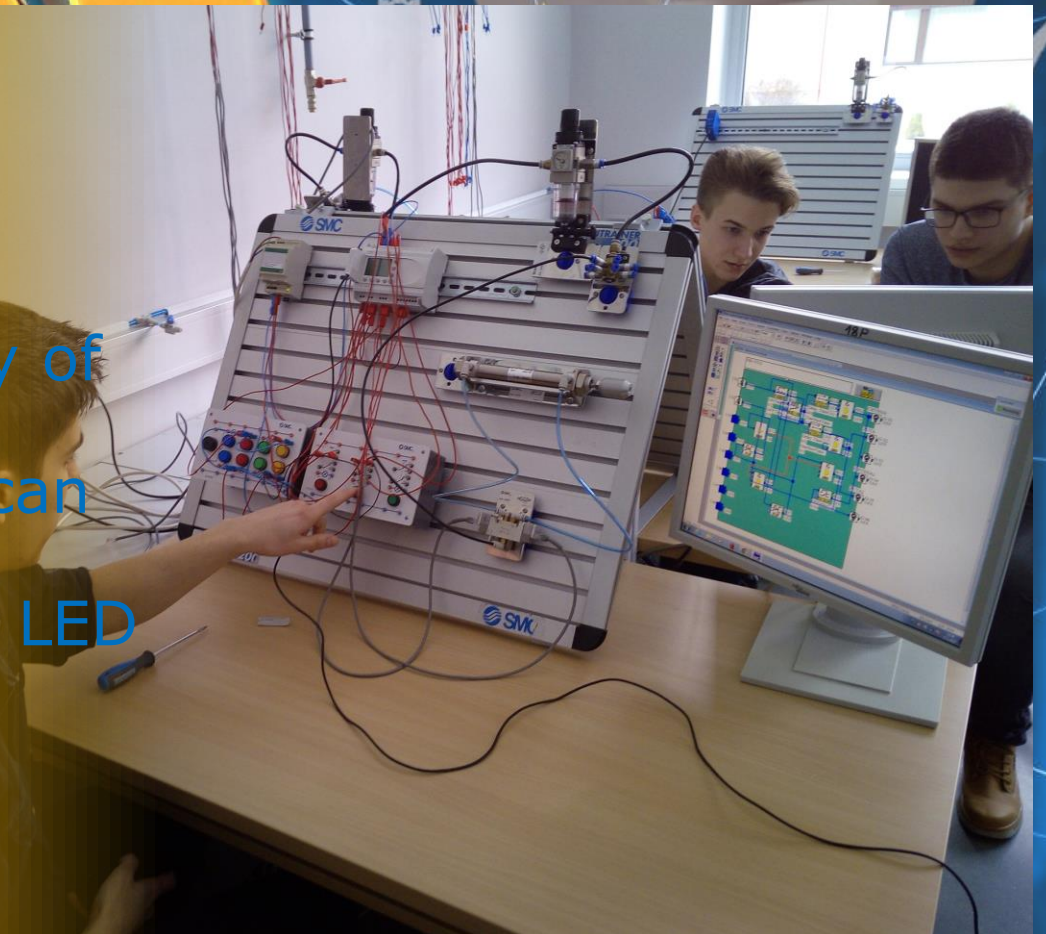
There are subjects that allow implementation in their curricular:



- **Embedded systems**
- **Microcontrollers**
- **Electronics**
- **Algorithms and programming**
- **Scripting Languages and Web Programming**

The Arduino platform

The Arduino platform is ideal for learning and teaching due to its modular nature, and the array of sensors and kits available meaning you can work through everything from blinking a LED to building a robot as an **educational experience.**



Arduino projects:

There are lots of skills that our pupils need to master in order to make the projects work.



The Arduino projects have been done by connecting a large number of subjects, free activities and different skills like electronics, mechatronics, mechanics, automation and industrial engineering.

Arduino projects:

Of great importance for the development of increasing the number of quality projects in our school is the project Code the Future and Code the Future club.



Arduino projects:

Our projects were mostly led and mentored by two teachers, Mr. B. Ivanković and Mr. Zoran Konjević.



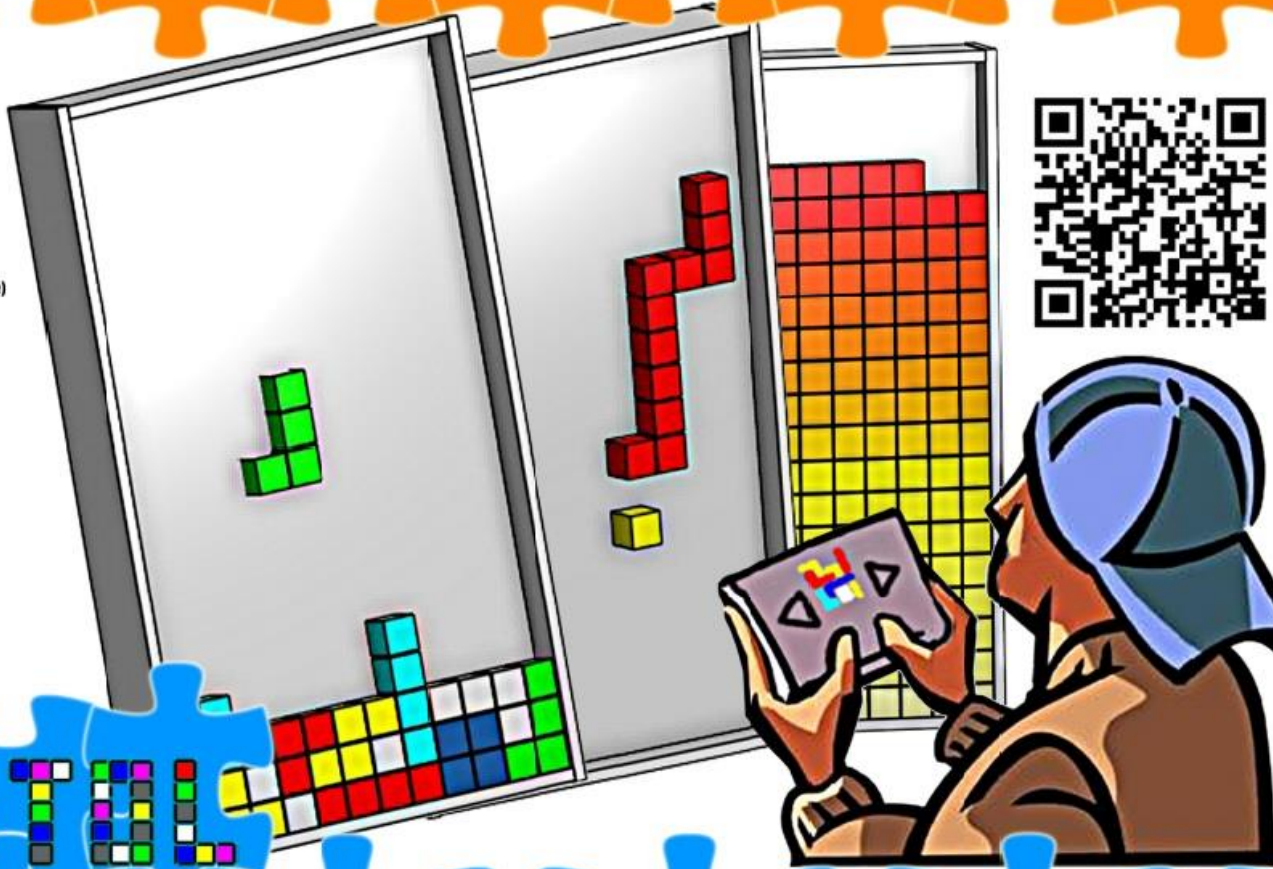


TEHNIČKA ŠKOLA NIKOLE TESLE VUKOVAR

- 1 Animation (izmjenjivanje 3 animacije)
- 2 Fire (animacija vatre)
- 3 Stars (animacija zvijezda)
- 4 Drawing (crtanje)
- 5 Dice (simulacija bacanja kocke)
- 6 Tetris (igra Tetris)
- 7 Snake (igra Snake)



LED STOL realiziran pomoću mikroupravljačkog sustava Arduino MEGA i 240 RGB "pametnih" svjetlećih diodatipa WS2812B. Komunikacija s pametnim telefonom ostvarena je bluetooth modulom HC-06, a Android aplikacija za upravljanje LED STOLOM izrađena je pomoću MIT App Inventor programskog okruženja. Kako biste se povezali s LED STOLOM potrebno je upariti se s bluetooth modulom imena LED_STOL i pinom 1111. Android aplikaciju za upravljanje LED STOLOM moguće je skinuti skeniranjem QR koda.

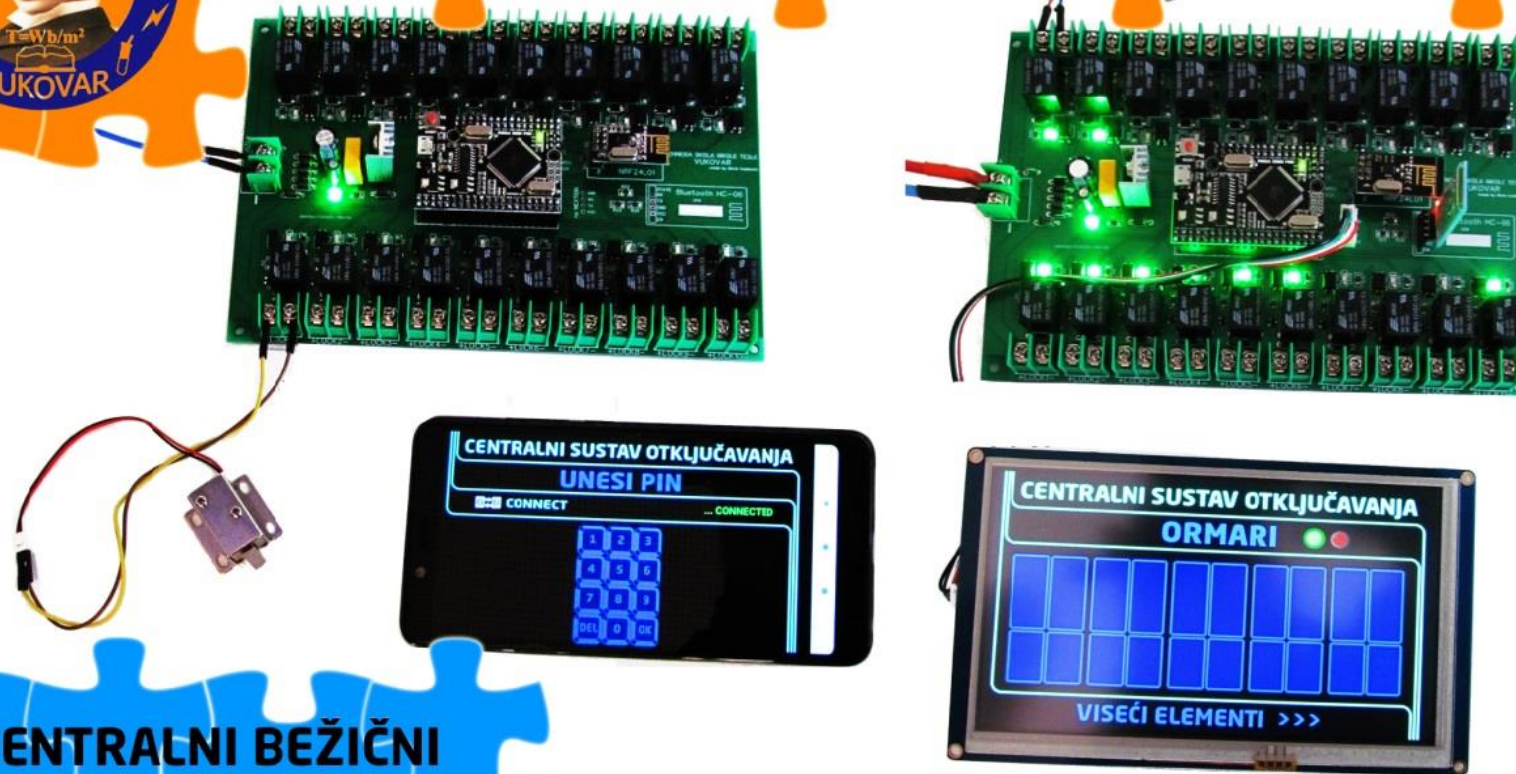


LED STOL is realized using the Arduino MEGA microcontroller system and 240 RGB "smart" LEDs of the WS2812B type.





TEHNIČKA ŠKOLA NIKOLE TESLE VUKOVAR



CENTRALNI BEŽIČNI SUSTAV ZA OTKLUČAVANJE ORMARA

Tehnička škola Nikole Tesle Vukovar opremila je novi kabinet elektronike i robotike. Nabavljena oprema nalazi se smještena iza 32 vrata. U tu svrhu, u školi je razvijen sustav centralnog otključavanja i zaključavanja vrata ormara upravljan mikroupravljačem Atmega2560. Otključavanje vrata se izvodi preko Android mobilne aplikacije ili Nextion LCD pokazivača. LCD pokazivač vezan je s Master elektroničkom pločicom, dok Android mobilna aplikacija komunicira s Master pločicom bluetooth komunikacijom. Master i Slave elektroničke pločice međusobno komuniciraju bežičnom radio vezom pomoću NRF24L01 modula koji radi na frekvenciji od 2,4GHz.

Central wireless
system
for unlocking
and locking
cabinets doors
controlled by
Atmega2560
microcontroller.

LED strip display – Arduino Uno



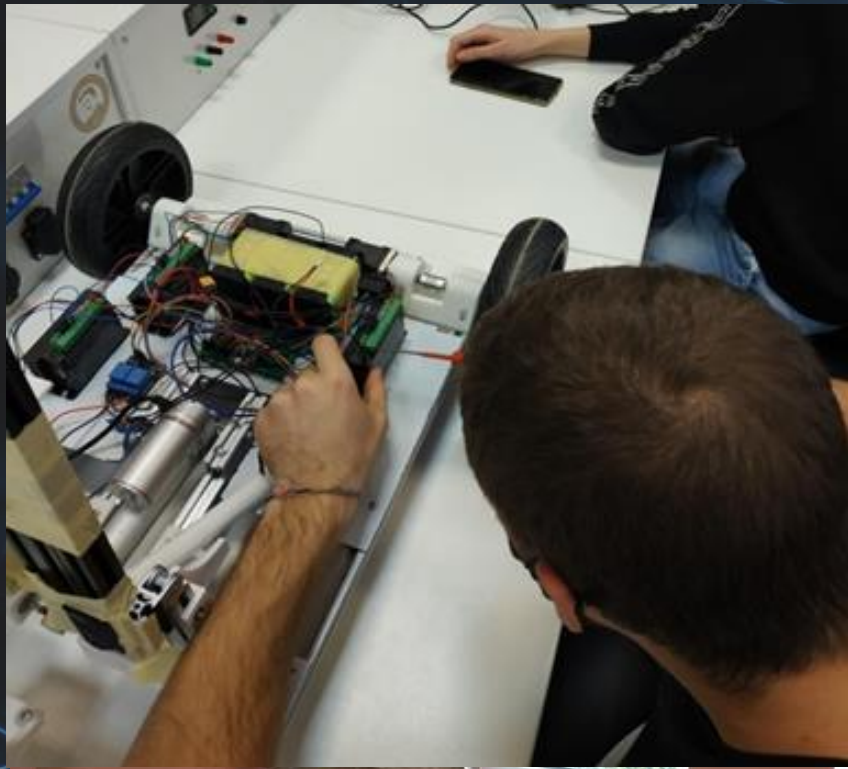
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A special project

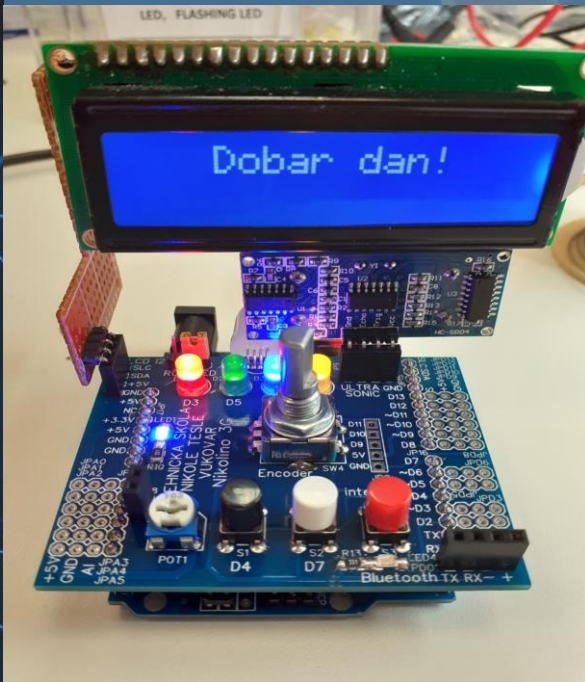
It is remotely controlled robot that allow monitoring of distance learning.

The robot enables two-way communication, and the student can control it and move around the classroom and school as if he were in class.



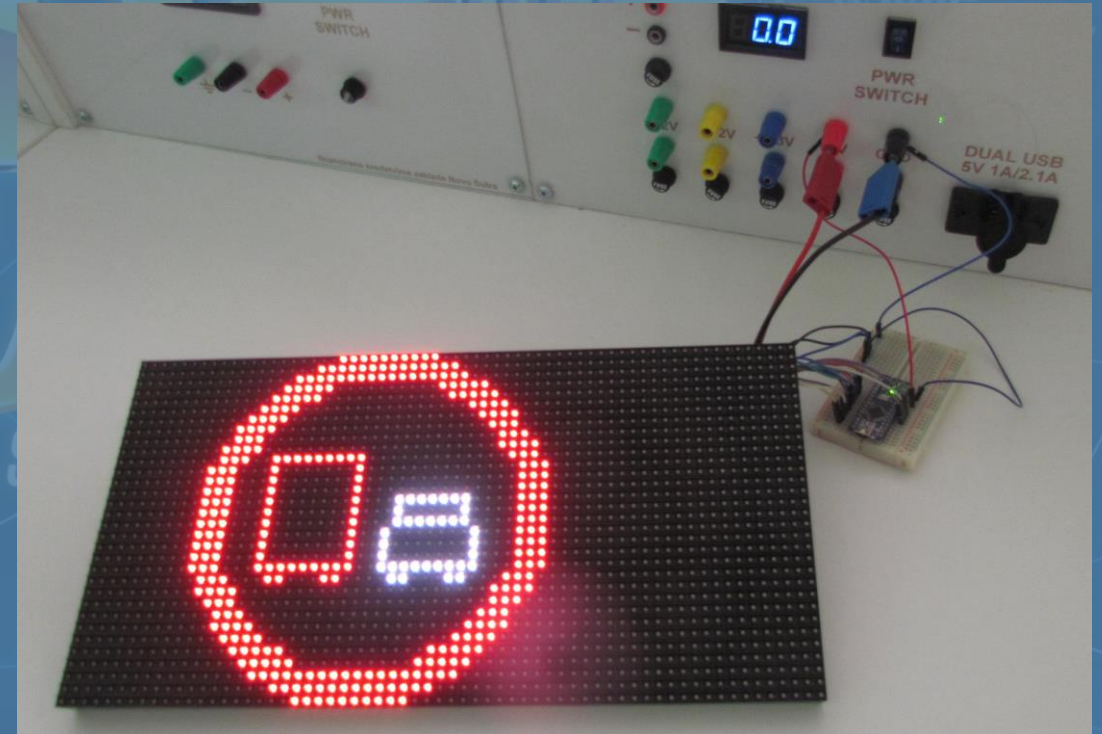
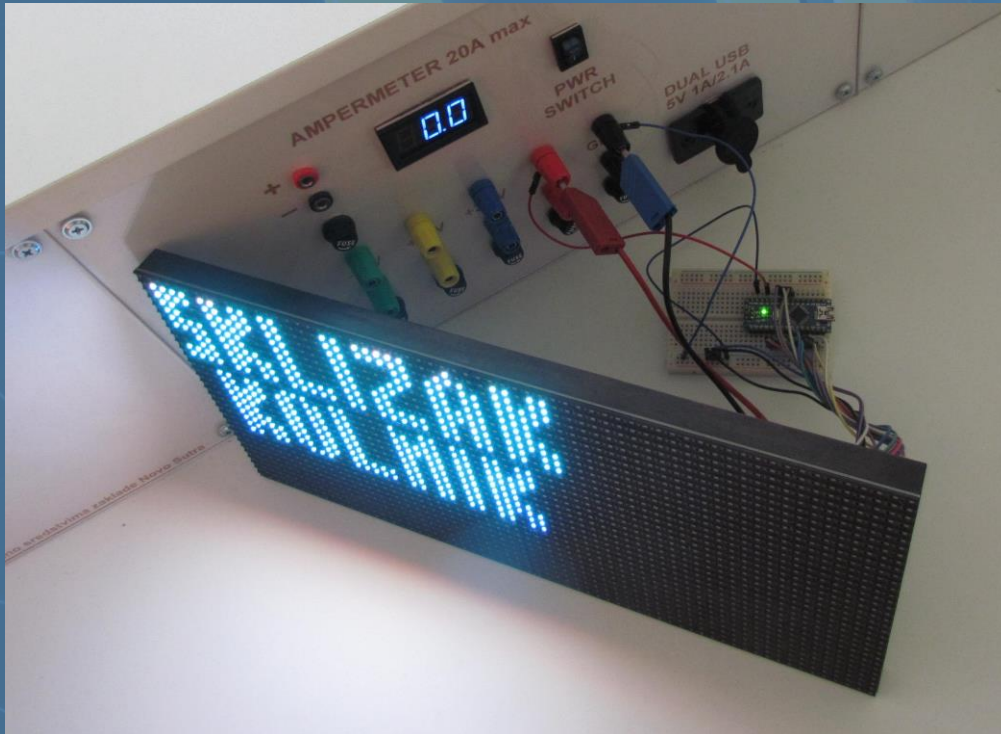


NIKODUINO



Our version of
Arduino
"NIKODUINO"
made by our teachers
and pupils.

Traffic signs based on Arduino and LED diodes



ESP32 and ARDUNO IDE

Building Web Servers with the ESP32

Our students improving their knowledge of HTML and CSS by coding for ESP32 server in Arduino IDE.

ESP32 Web Server – HTML and CSS Basics in Arduino IDE



The LED Clock



Code the Future

Tehnicka skola Nikole Tesle

LED Clock / ESP32 Web Server / Arduino IDE

HOUR

+

-

MINUTE

+

-

SECOND

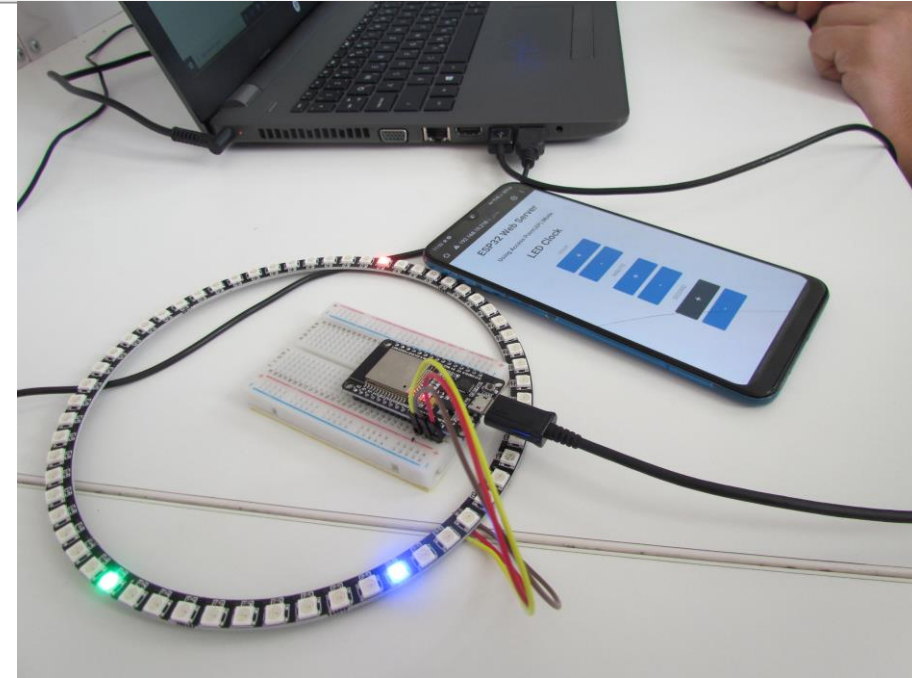
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Connecting to  
aco i ana  
.....  
WiFi connected..!  
Got IP: 192.168.1.8  
HTTP server started  
Connecting to  
aco i ana  
.....  
WiFi connected..!  
Got IP: 192.168.1.8  
HTTP server started  
Connecting to  
aco i ana  
.....  
WiFi connected..!  
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Autoscroll Show timestamp

Both NL & CR ▾



C#DDE THE FUTURE

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