Internet of Things Education
Outside the Computer Science Lab

Wyliodrin STUDIO
Who we are

Alexandru Radovici
Assistant Professor
Politehnica University of Bucharest
15+ years of experience in Software Engineering

Alexandru Vochescu
Senior Year Student
Politehnica Bucurest
Undergraduate TA
6+ years Linux and development experience
Software (and connected devices) will be allover
Everybody will need some kind of CS knowledge

Software for devices
- Minimal programming skills
Everybody will need some kind of CS knowledge
Why Arduino?

Easy to connect
no special programmer, no special cable, just USB

Easy to program
very simple programming library

Limitation: not suitable for connected things
no IoT
What about connected devices?
Raspberry Pi

Easy to use
as a computer, screen and keyboard

Many programming
languages to choose from
What about connected devices?
Raspberry Pi Robots

For building a device
- ssh knowledge
- linux CLI knowledge
- deploying code is non trivial
It is easy for CS engineers

Difficult for non CS
Wyliodrin STUDIO

- Simple IDE
- Used mostly for the Raspberry Pi
- One-button click run
Required Knowledge

Software for devices
- Minimal programming skills

Connectivity
- Physical connection
- Network connection

Security issues
- Understanding the security risks
- Understanding how to apply simple security measure
Lab Layout

Student Workstation

Teacher / Administrator

Boot Server
Raspberry Pi Images
Student Workspaces

Wyliodрин STUDIO

Wyliodрин KIT
Laboratory setup for Power Engineering Students

The goal to introduce CS into their curricula

- before they used C and microcontrollers
- now they can use Visual and Python

Students selected the class as one of their favorite
The new Wyliodrin STUDIO platform

Easy to use IDE for non CS students

Focused on IoT

Easy to extend
boards are very different in the way they are programmed

Raspberry Pi
beaglebone
NXP
Rapid IoT
Wyliodrin STUDIO platform

**Desktop Application**
- Local computer storage
- Local connection to the boards

**Web Application**
- Local browser storage
- Websocket connections (via studio servers)
- GDPR compliant (no account needed, no name stored, no data stored)
Wyliodrin STUDIO platform

Open source

Written in JavaScript

electron

Apache 2.0 License
Looking for

Contributors

Translators

Sponsors
- Hardware manufacturers
- Schools / Universities
Thank you

https://wyliodrin.studio

https://github.com/WyliodrinSTUDIO

@ 5:45 PM - Technical Showcase in Sapphire Ballroom