






Case Study Title:

Arduino - Web-Based Two-Player Game

Problem Background

Most of the students find the STEM subjects as boring and difficult classes. Educational approaches do not appeal to a child's natural sense of curiosity

STEM Topics Involved

	Physics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Maths	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Biology	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Chemistry	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Technology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drag and use shape fill

Pedagogic Methods Suggested

<input type="checkbox"/> Lecture	<input type="checkbox"/> Story Telling
<input checked="" type="checkbox"/> Problem Based Learning	<input checked="" type="checkbox"/> Peer Instruction
<input checked="" type="checkbox"/> Inquiry Based Learning	<input checked="" type="checkbox"/> Simulation
<input checked="" type="checkbox"/> Project Based Learning	<input type="checkbox"/> Role Playing
<input checked="" type="checkbox"/> Direct Instruction	<input type="checkbox"/> Debate
<input checked="" type="checkbox"/> Collaborative Based Learning	<input type="checkbox"/> Flipped Classroom Approach
<input checked="" type="checkbox"/> Game Based Learning	

Drag and use shape fill

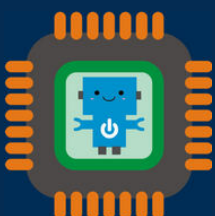
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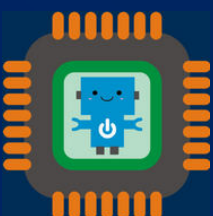


Solution

This study case is for beginners, to show them, that STEM is easy and fun. Thanks to this study case, the student's can play with each other using two buttons to control the position of the goalkeepers.

Equipment & Materials Required

Arduino UNO & Genuino UNO
PHPoC WiFi Shield for Arduino
Button
Breadboard (generic)
Resistor 10k ohm



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Assembly Instructions

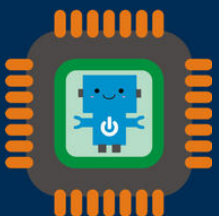
Step 1: Get All the Parts

Step 2: Set WiFi information for PHPoC shield (SSID and password)

Step 3: Upload new UI to PHPoC shield

Step 4: Write Arduino code

Step 5: Final Thoughts and Improvements



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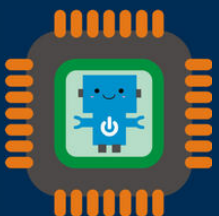
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