



Welcome to Week 4

July 26, 2021

Robotics

REMEMBER!!

Submit ALL of this week's challenges (or screen shots of them) to experience@iechamilton.ca by Sunday, August 1 at noon for your chance to win **1 of 50 \$10 Gift Cards** or the **GRAND PRIZE of up to \$300 towards an online coding &/or technology related activity, camp, course or subscription** (subject to approval).

Have you ever watched automatic machines working and wondered just how they knew what or where to move, or what to pick up? Robotics has to do with the design, construction, operation and application of robots. Basically, creating and building robots and using computer programming to make them do things that humans would otherwise be doing!

Robotics can be found in many career fields such as Advanced Manufacturing, Automotive, Biotechnology, Computer and Mechanical Engineering, and can be found in settings like factories, sports, food processing and healthcare among others.

A career in robotics can have many different job titles; some include Engineer, Technician, Scientist, and Programmer. Jobs are available in both the public and private sectors, as well as in Research & Development and include an ever-growing number of positions at up-and-coming, forward-thinking companies and organizations. Salaries for this field can vary depending on where you choose to work, but you can expect to enter the occupation with a yearly income of \$40,000+.

There are a few courses and programs at Mohawk College that can help lead you to a career in Robotics. Take a look at some of their offerings (they'll let you know which courses you should be looking for in high school too!):

[Mechanical Engineering Technology - 529](#) - 3 Year Advanced Diploma Program

[Electrical Engineering Technology - 582](#) - 3 Year Advanced Diploma Program

[Computer Engineering Technology - Mechatronic Systems - 562](#) - 3 Year Advanced Diploma Program

[Bachelor of Technology - Automotive and Vehicle Engineering Technology](#) - 4.5 year Combined Certificate, Diploma & Degree Program

[Bachelor of Technology - Automation Engineering Technology](#)—4.5 year Combined Certificate, Diploma & Degree Program

Mohawk is also home to the \$3 million [FANUC Robotics Training Laboratory](#), which introduces students to award-winning ROBOGUIDE simulation software from an international industry leader in robotics.



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Challenge!

This week, we are going to take a look at Hour of Code and Vex Robotics "[Coral Reef Cleanup](#)" as well as Hour of Code and Firia Labs "[CodeSpace Simulation](#)". You will find a few videos to watch, and a series of instructions to read, follow and practice. To be entered to win one of the prizes this week, you will need to complete the following:

Coral Reef Cleanup: <https://hoc.vexrobotics.com/>

- Watch the "Mission Briefing" video, then choose a level to start based on your own skills
- Watch the "Getting Started" video for the level you chose
- Send in Certificate PDF of your best score! Be sure to let us know which level you tried!

CodeSpace Simulation: <https://firialabs.com/pages/hour-of-codespace-sim>

- Complete Mission 1: Welcome
- Complete Mission 2: Introducing CodeBot
- Complete Mission 3: Light the Way
- Send the final screen shot of completed missions 1, 2, and 3

Tips:

- Press "Start" to show the Coral Reef Playground, when the "Getting Started" video ends.
- If wrong playground appears, click "Playgrounds" and select "Coral Reef"
- For Code Space Simulation, follow the on screen prompts to complete objectives and missions.
- You do not need to create an account to continue with the simulator, but you can (with parent permission) in order to save and come back to your work.

You can find our finished missions on the next few pages.

If you are interested in exploring Robotics further, keep completing missions in CodeSpace Simulation or here are a few other fun activities you can follow along with:

[OzoBlockly Shape Tracer 2](#), [Robomind Academy with Hour of Code](#),
[Think Fun & Hour of Code: Robot Repair](#), [Vex VR](#)

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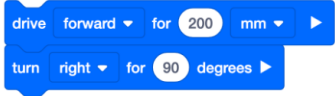

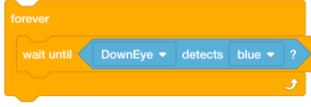
Challenge!

Coral Reef: Mission Briefing



Coral Reef: Select a Level

Choose a Level to Start the Challenge

 Level 1 This level is great for new coders or those with little coding experience. Launch Level 1 >	 Level 2 This level is great for those with some coding experience. Launch Level 2 >	 Level 3 This level is great for those with a lot of coding experience. Launch Level 3 >
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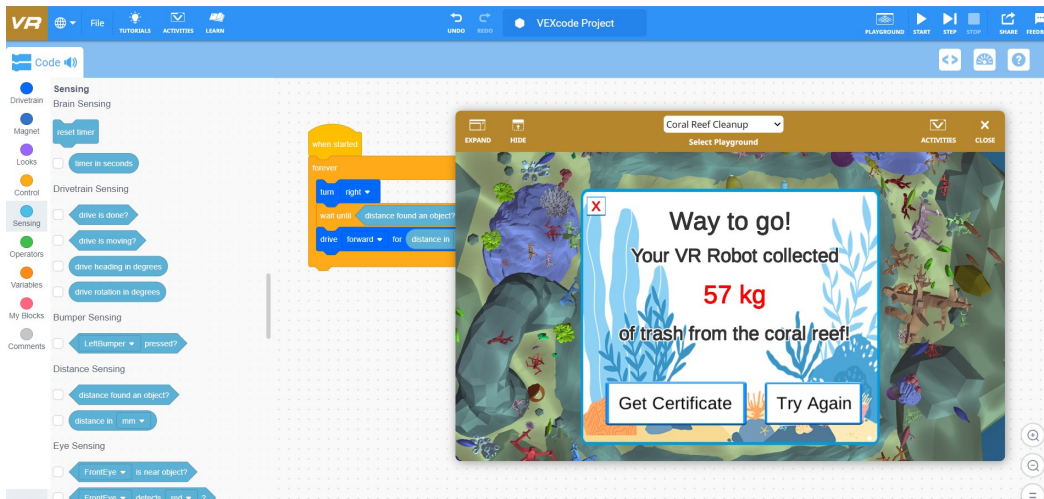
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Challenge!

Coral Reef: Try out your code. Aim for a high score!



Coral Reef: Share your Certificate



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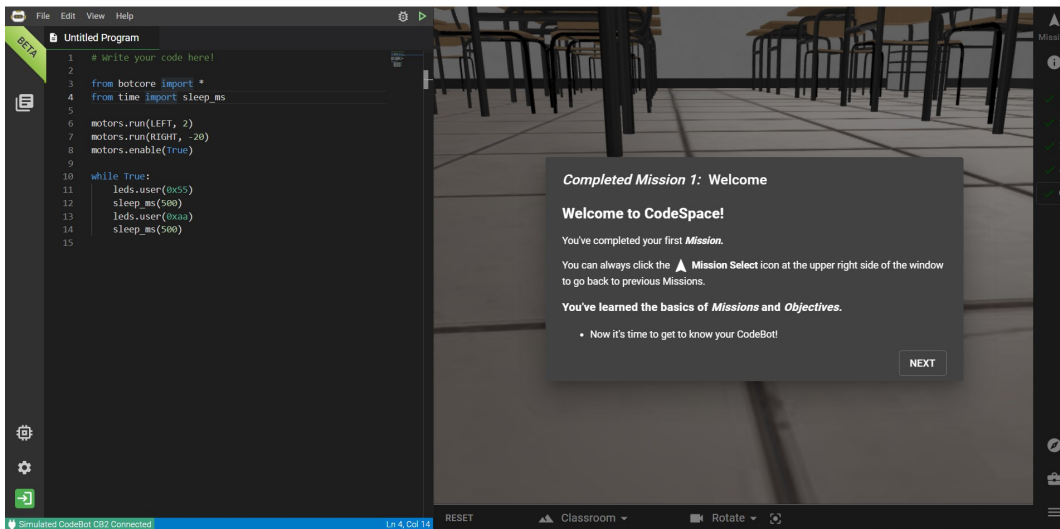
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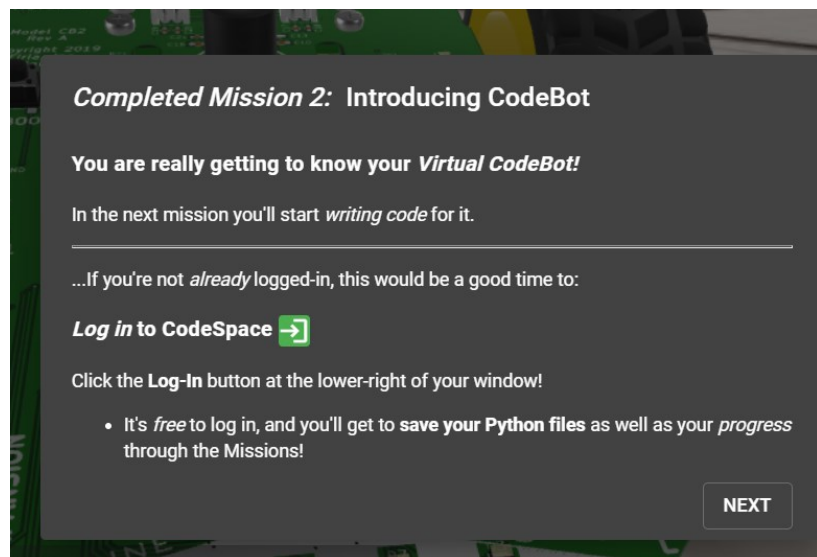
Challenge!

CodeSpace Simulation

Mission 1: Welcome Completed



Mission 2: Introducing CodeBot Completed



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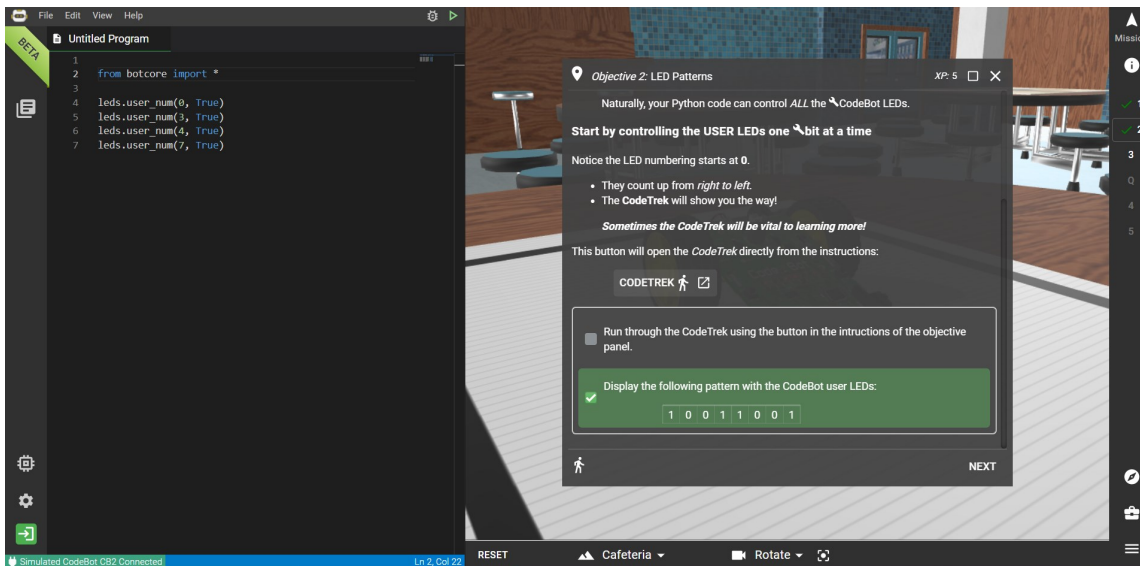
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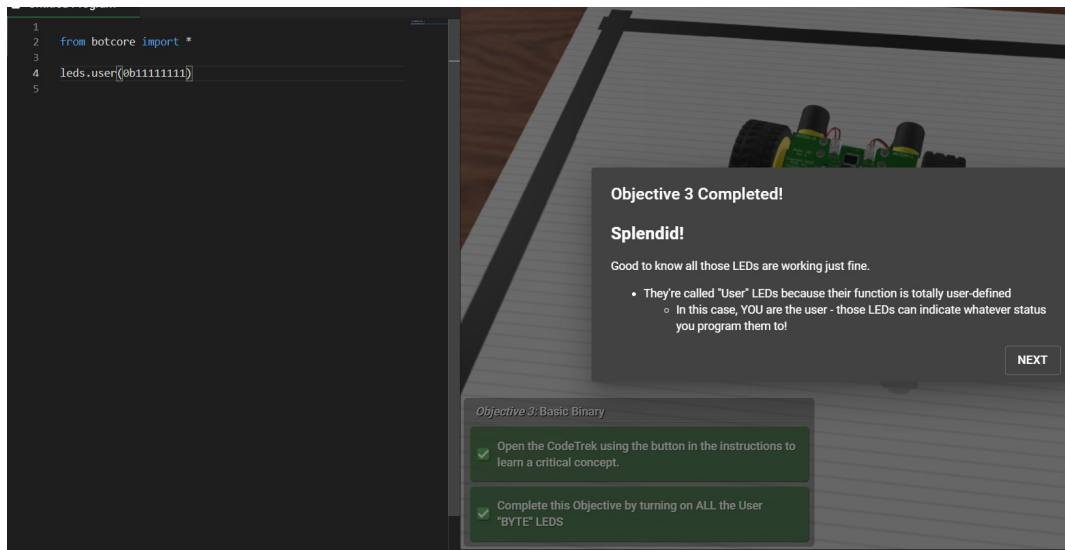
Challenge!

CodeSpace Simulation

Mission 3: Light the Way, Objective 2: LED Patterns



Mission 3: Light the Way, Objective 3: Basic Binary



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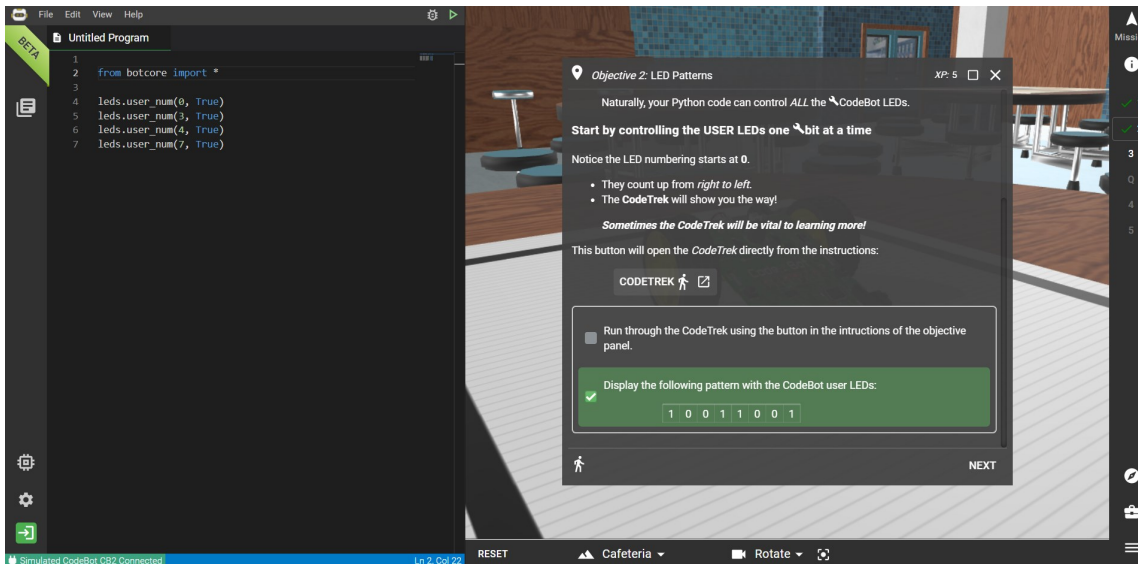
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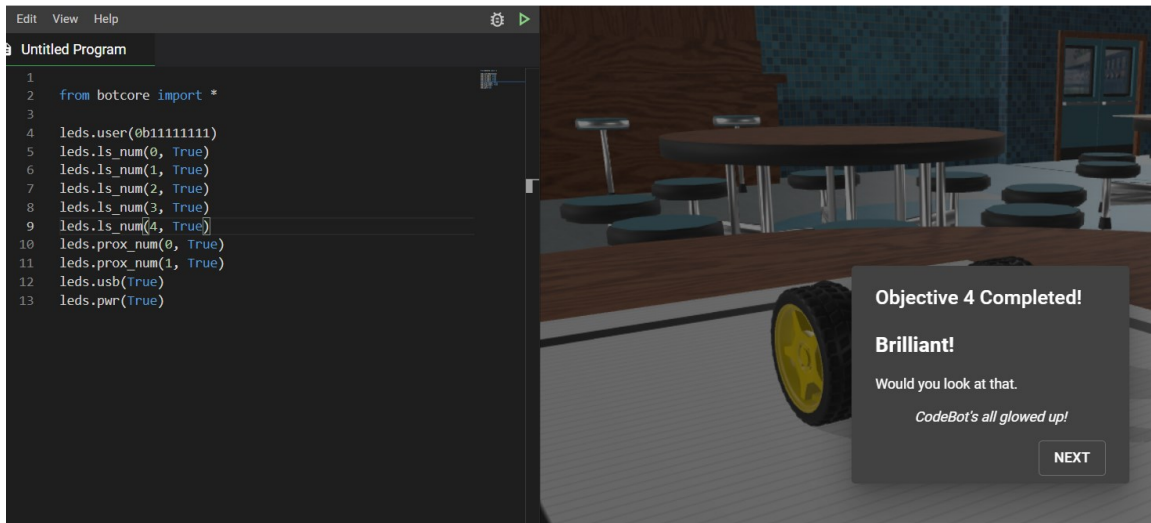
Challenge!

CodeSpace Simulation

Mission 3: Light the Way, Quiz/Enlightenment



Mission 3: Light the Way, Objective 4: All the LEDs



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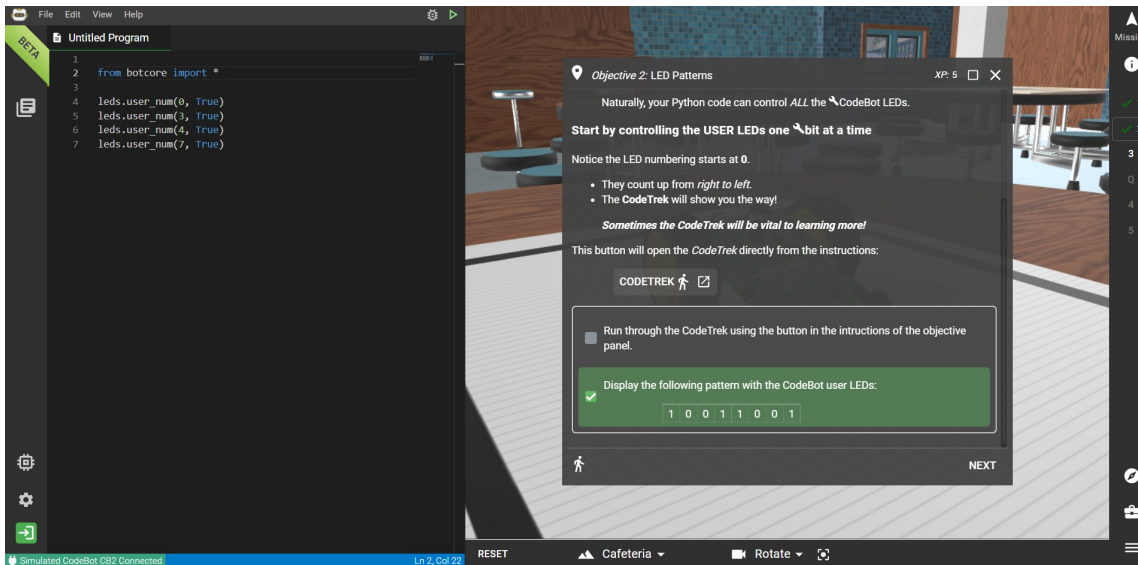
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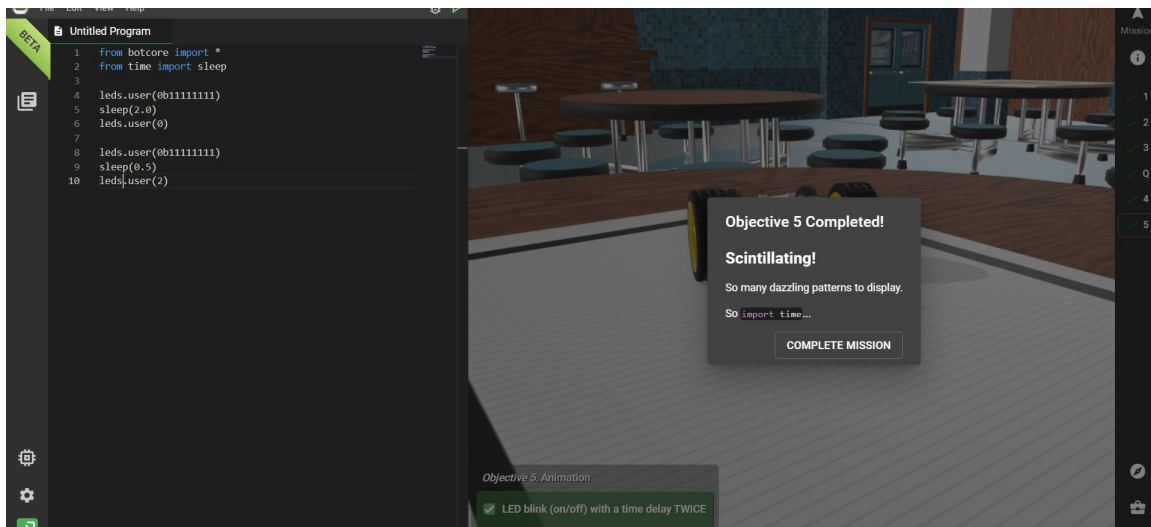
Challenge!

CodeSpace Simulation

Mission 3: Light the Way, Quiz/Enlightenment



Mission 3: Light the Way, Objective 5: Animation



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Virtual
2021

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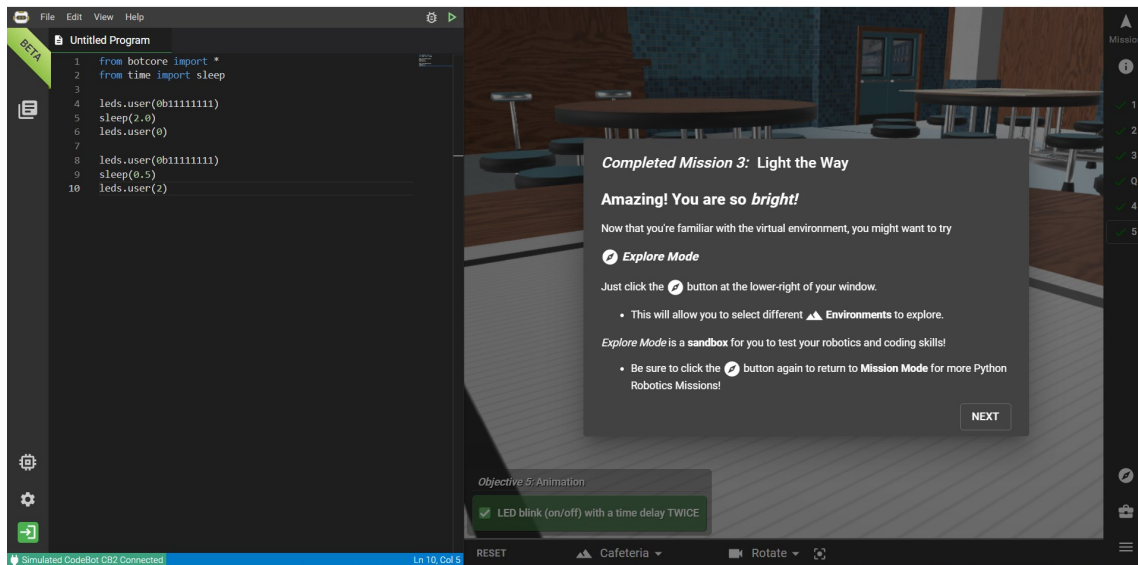
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Challenge!

CodeSpace Simulation

Mission 3: Light the Way Completed!



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