

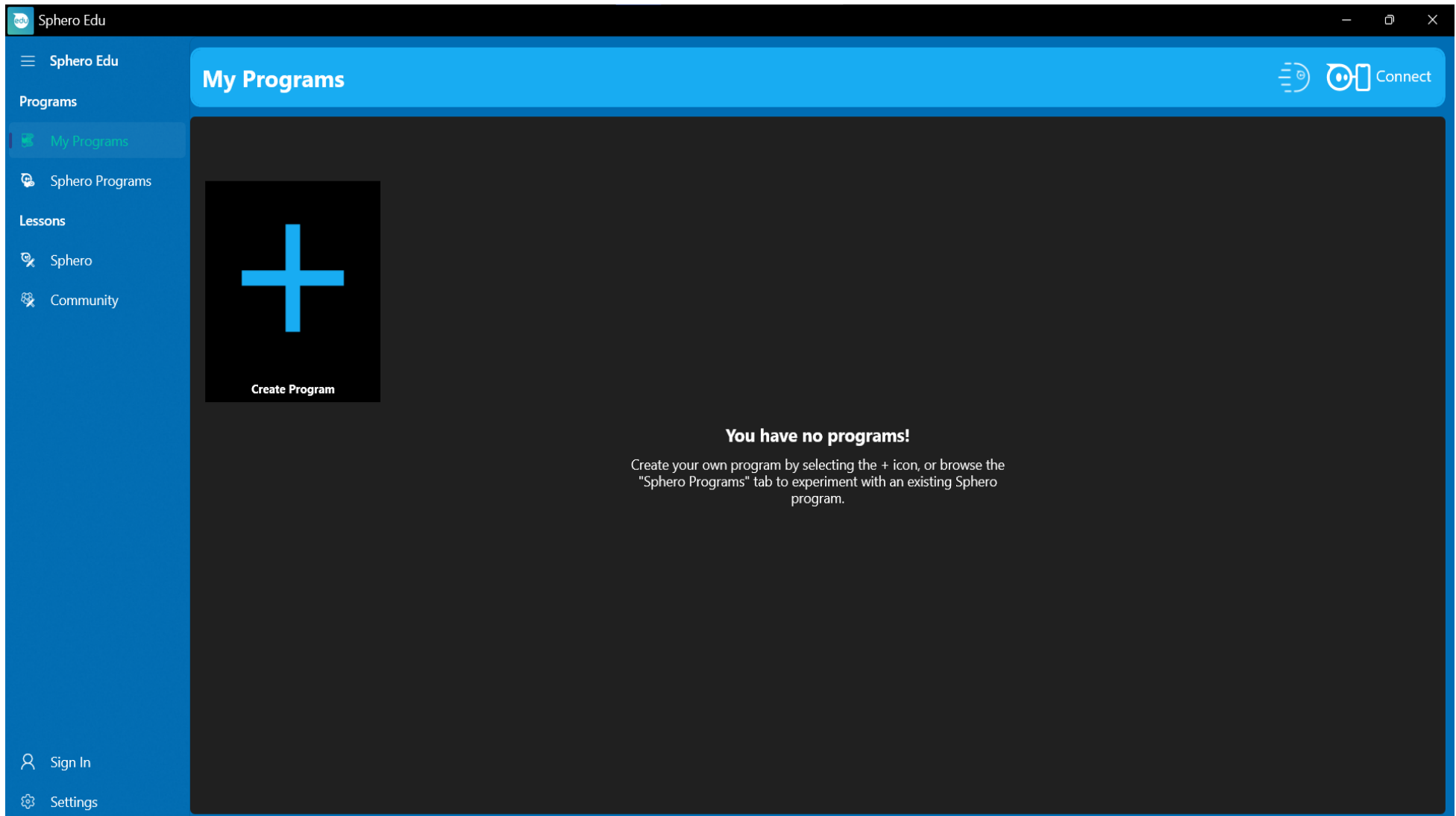
Using Sphero to Teach Programming Fundamentals (Ball is Life) Step-By-Step Guide

Using Sphero to Teach Programming Fundamentals (Ball is Life) – Step-by-Step Guide

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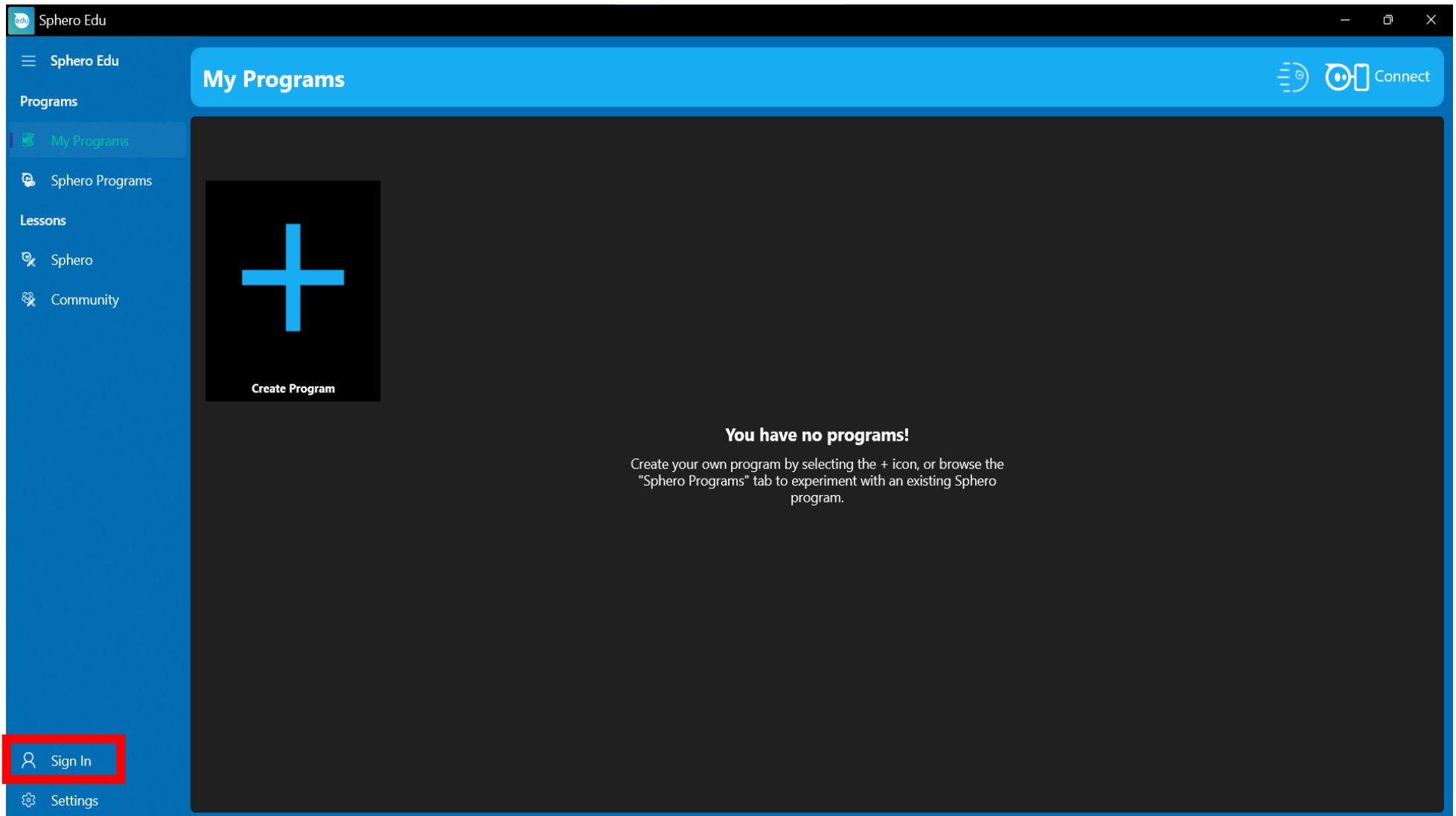


1) This section will cover how to enter a Sphero class and create a new program. Open SpheroEDU.

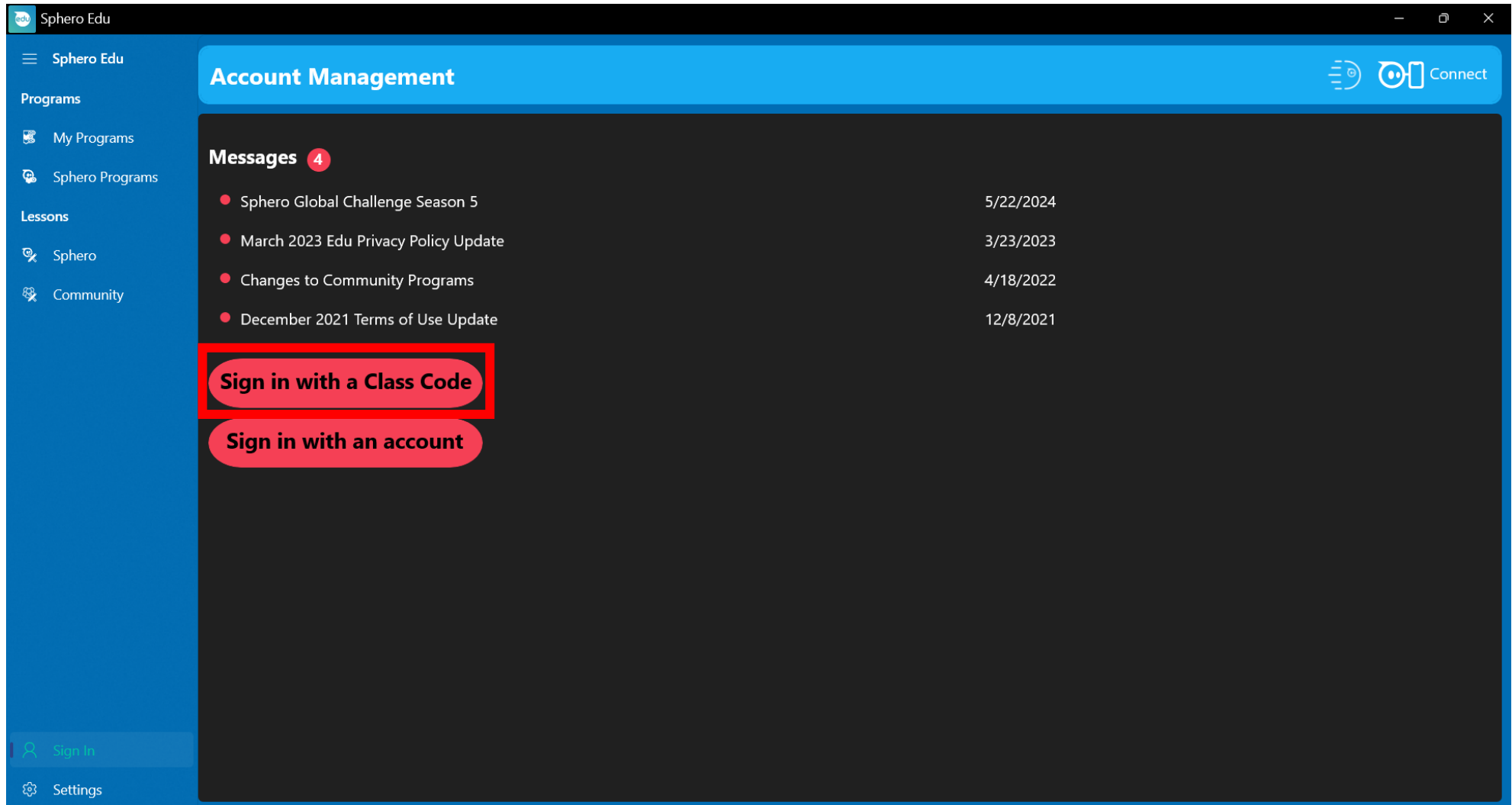


<https://tapggc.org/>

2) Click Sign In



3) Click sign in with class code and enter class code 8BP06K



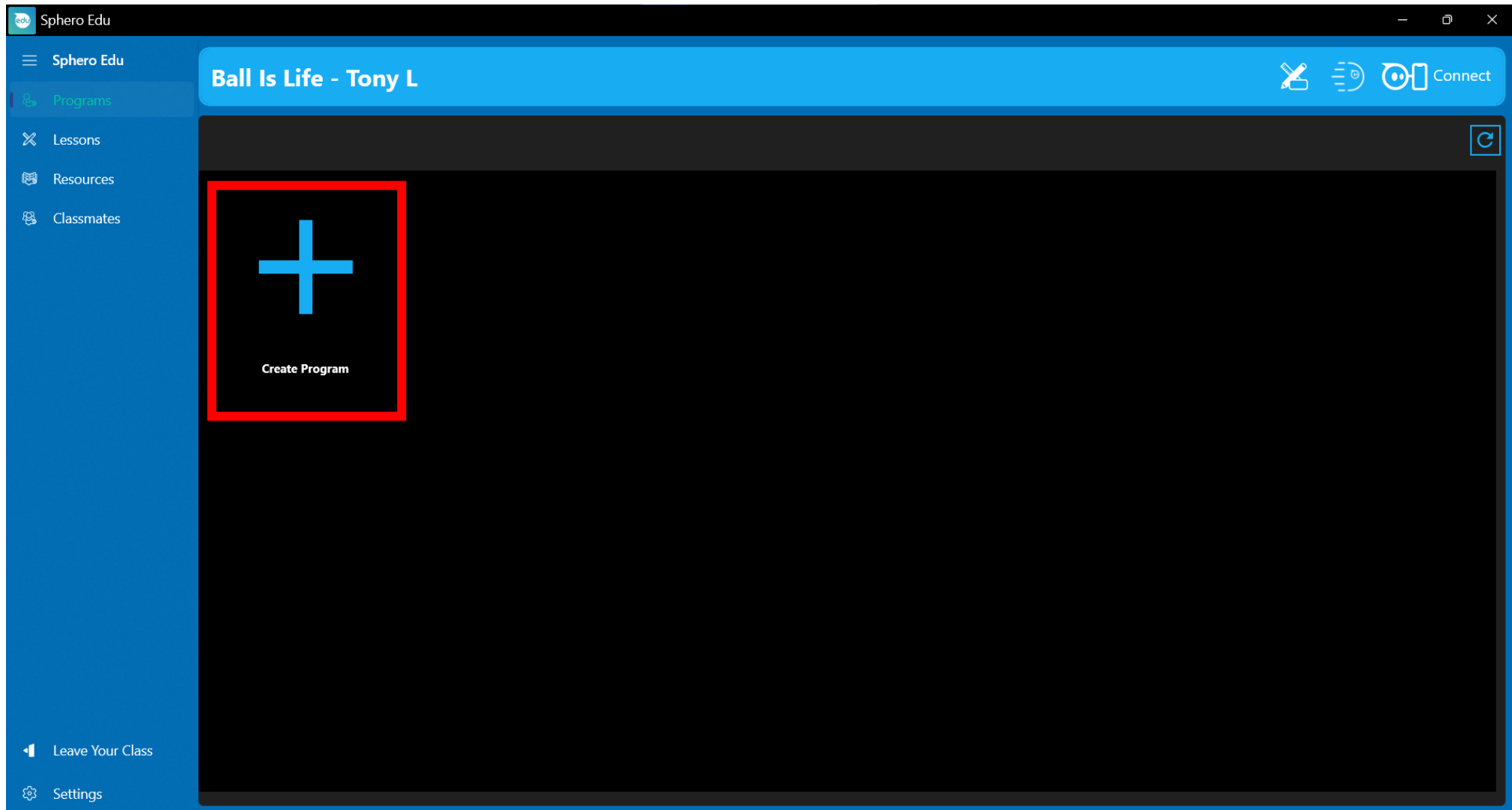
The screenshot shows the Sphero Edu web interface. On the left is a blue sidebar with navigation links: Sphero Edu, Programs (My Programs, Sphero Programs), Lessons (Sphero, Community), Sign In, and Settings. The main content area has a blue header with 'Account Management' and a 'Connect' button. Below the header is a 'Messages' section with a red circle containing the number '4'. It lists four messages with their dates: 'Sphero Global Challenge Season 5' (5/22/2024), 'March 2023 Edu Privacy Policy Update' (3/23/2023), 'Changes to Community Programs' (4/18/2022), and 'December 2021 Terms of Use Update' (12/8/2021). Below the messages are two red buttons: 'Sign in with a Class Code' (highlighted with a red box) and 'Sign in with an account'.



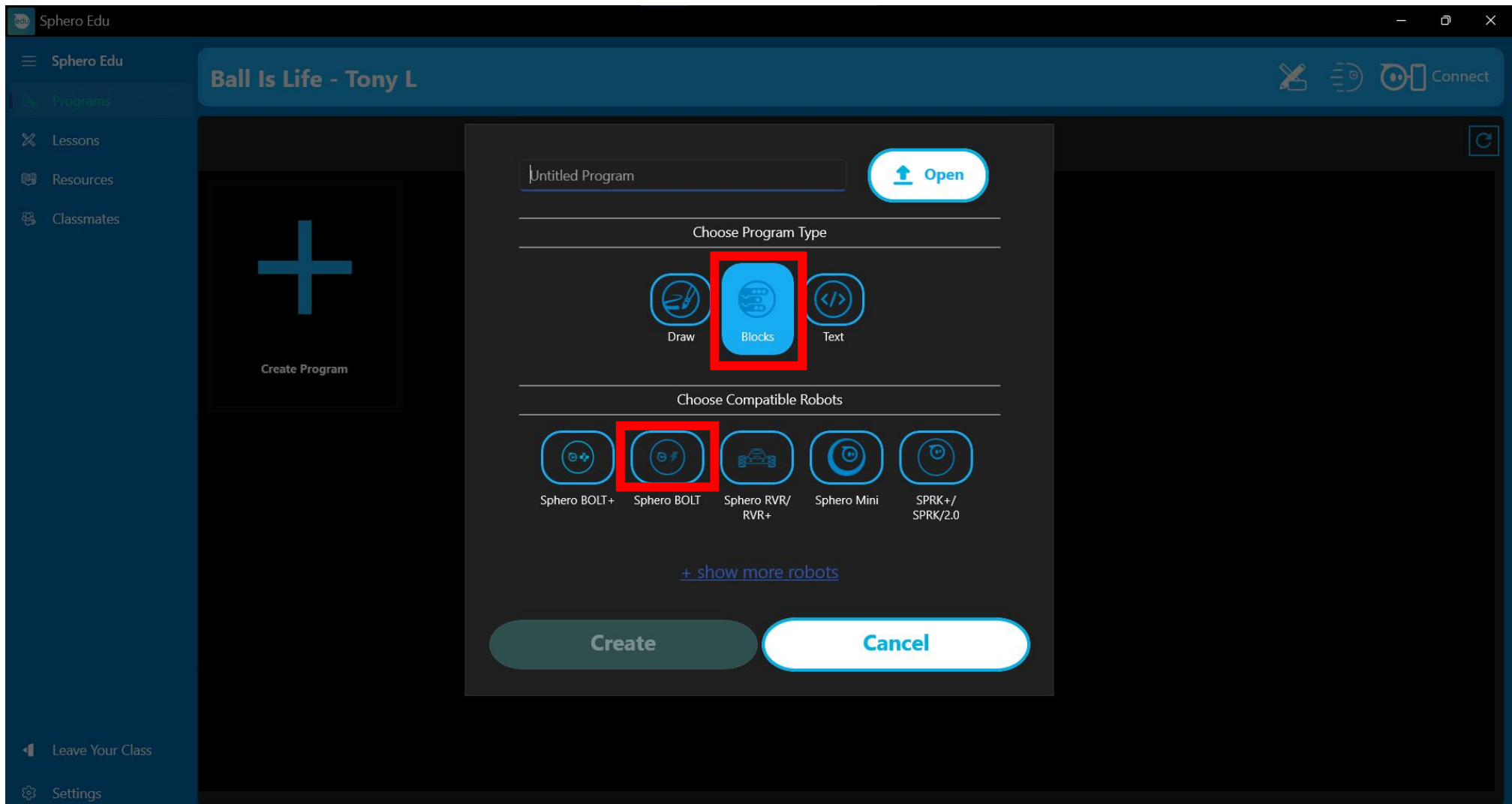
4) Enter your First Name and Last Initial and press Enter

The screenshot shows the Sphero Edu web interface. On the left is a dark blue sidebar with navigation links: 'Sphero Edu', 'Programs' (with sub-links 'My Programs' and 'Sphero Programs'), 'Lessons' (with sub-links 'Sphero' and 'Community'), 'Sign In', and 'Settings'. The main content area has a dark blue header with 'Account Management' and a 'Connect' button. Below the header, there's a 'Messages' section with a red circle containing the number '4'. The messages list includes 'Sphero Global Challenge Season 5' (dated 5/22/2024), 'March 2023 Edu Privacy Policy Update' (dated 23/2023), 'Changes to Community Programs' (dated 18/2022), and 'December 2021 Terms of Use Update' (dated 18/2021). Below the messages are two buttons: 'Sign in with a Class Code' and 'Sign in with an account'. Overlaid on the center of the page is a modal window titled 'Ball Is Life' with a close button (X) in the top right. The modal contains a dropdown menu labeled 'Select your name' with a downward arrow, the word 'or' in the center, two input fields labeled 'First Name' and 'Last Initial', and a large pink button labeled 'Enter' at the bottom.

5) Click Create Program



6) Select Blocks and Sphero Bolt and then click Create

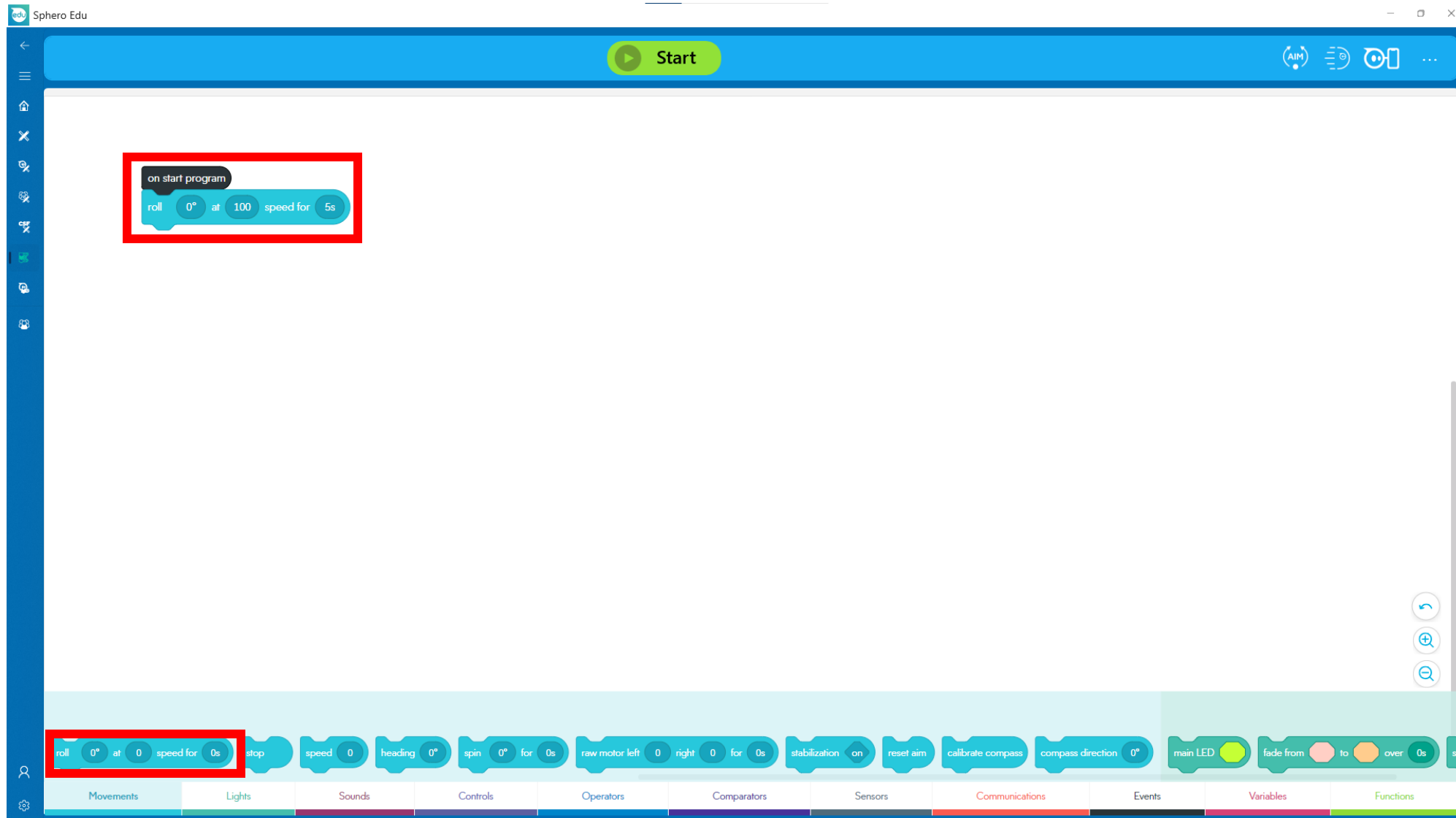


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- 1) This section will cover the square code. Go to the Movement tab and grab the function indicated below. Then drag it under “on start program” to attach the code block. Set the speed to 100 and time for 5 seconds.



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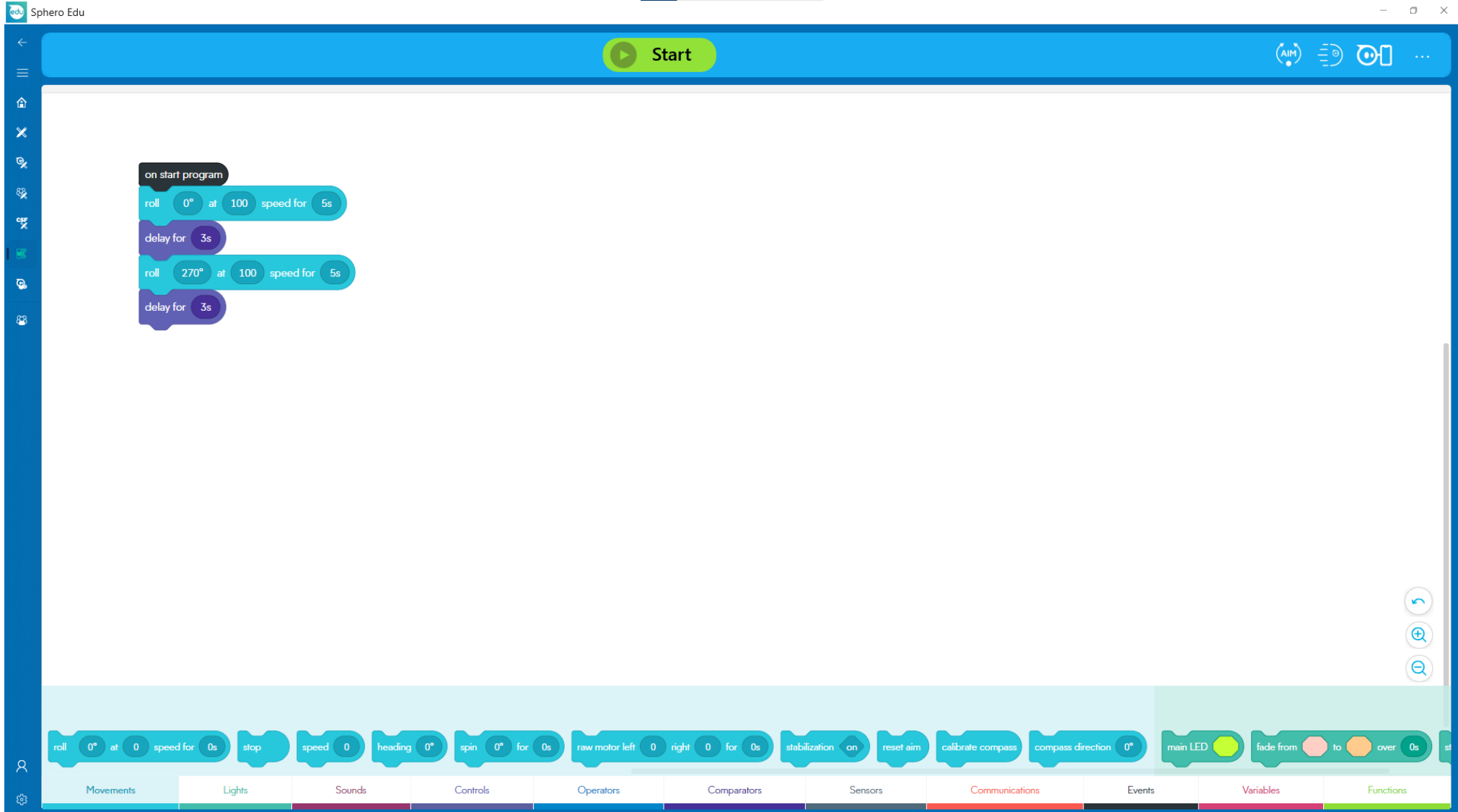


2) Go to the Controls tab and grab the “delay” block. Attach it to the code block and set the delay for 3 seconds.

The screenshot shows the Sphero Edu programming environment. The main workspace contains a code block with the following sequence: 'on start program' (black), 'roll 0° at 100 speed for 5s' (blue), and 'delay for 3s' (purple). A red rectangle highlights the entire code block. The bottom menu shows the 'Controls' tab selected, and the 'delay for 0s' block is highlighted with a red rectangle in the palette. The 'delay for 3s' block in the workspace is also highlighted with a red rectangle.

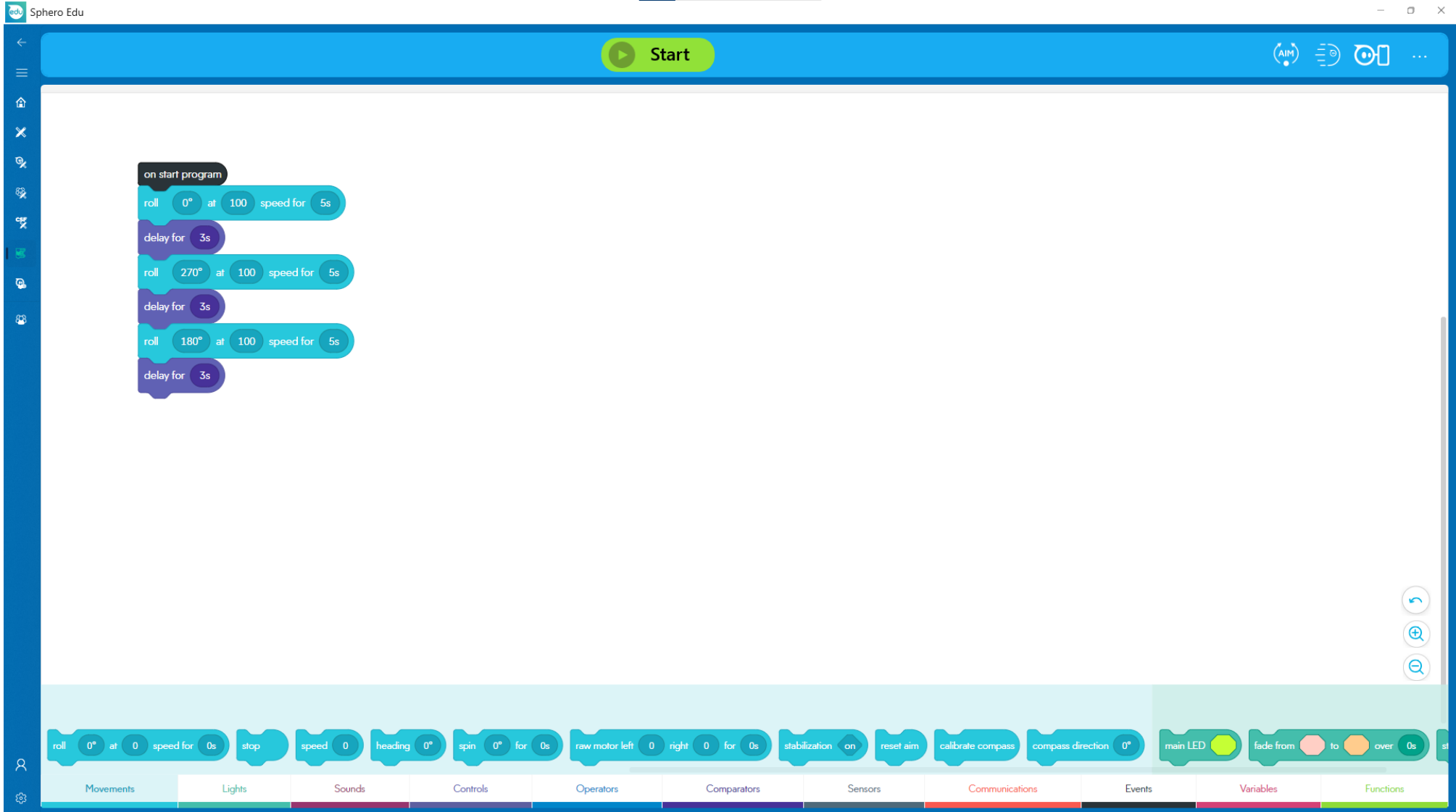
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- 3) Grab another movement block and set the roll to 270 degrees, the speed to 100, and the time to 5 seconds. Also attach a copy of the delay previous delay.



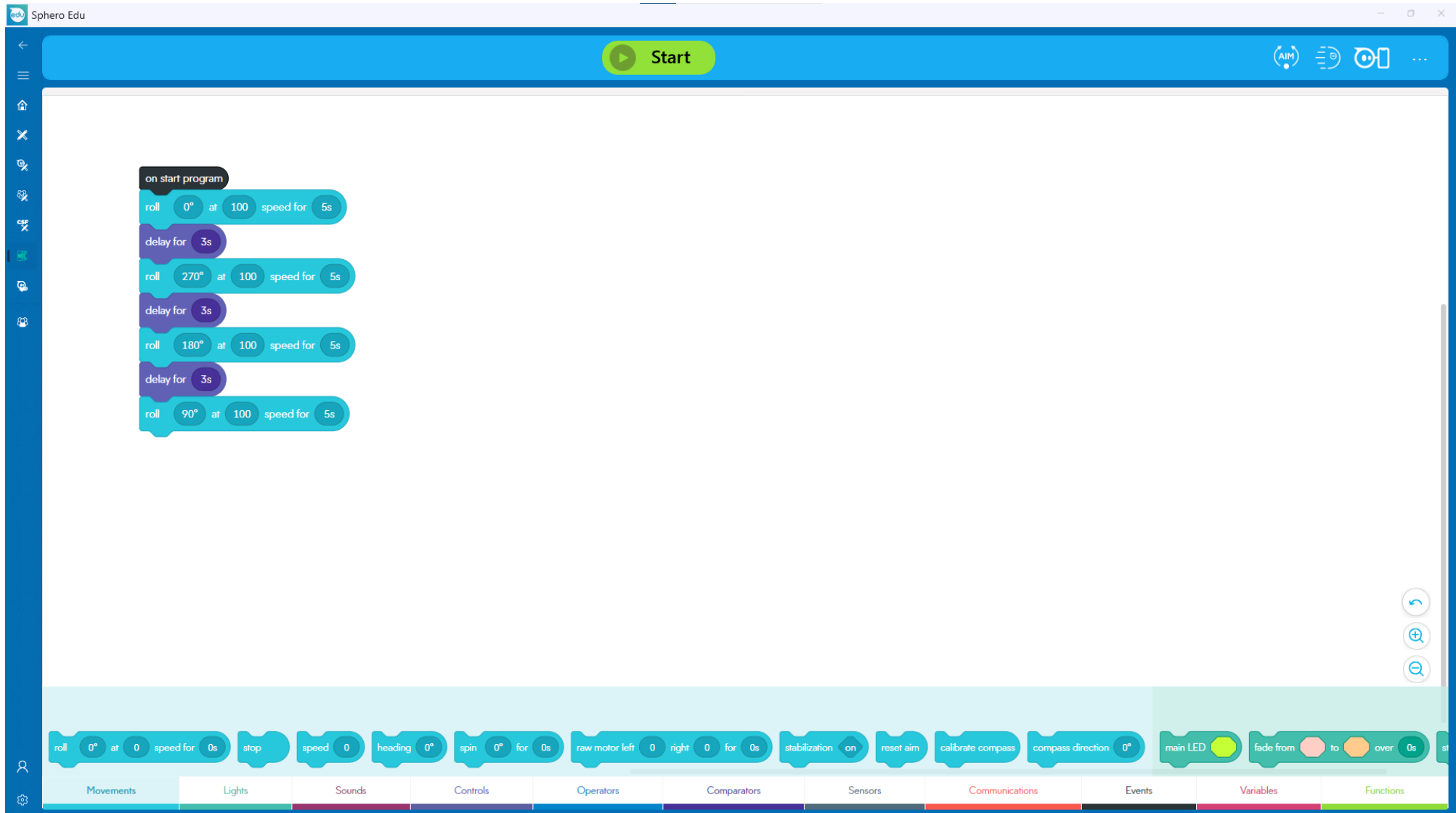
The screenshot displays the Sphero Edu web interface. At the top, there is a blue header bar with a 'Start' button. Below this, the main workspace shows a sequence of programming blocks for a Sphero robot. The sequence begins with an 'on start program' block, followed by a 'roll' block set to 0° at 100 speed for 5s. This is followed by a 'delay for' block set to 3s. The sequence continues with another 'roll' block set to 270° at 100 speed for 5s, and finally another 'delay for' block set to 3s. The bottom of the interface features a palette of various block categories: Movements, Lights, Sounds, Controls, Operators, Comparators, Sensors, Communications, Events, Variables, and Functions. The 'Movements' category is currently selected, showing a variety of movement-related blocks like 'roll', 'speed', 'heading', 'spin', 'raw motor left', 'raw motor right', 'stabilization', 'reset aim', 'calibrate compass', 'compass direction', 'main LED', and 'fade from'.

- 4) Grab another movement block and set the roll to 180 degrees. Keep the speed and time the same as the previous movement block.



The screenshot displays the Sphero Edu web interface. At the top, there is a blue header bar with a 'Start' button and icons for AIM, a menu, a chat bubble, and a settings gear. On the left, a vertical toolbar contains icons for home, undo, redo, and various sensor and actuator blocks. The main workspace shows a sequence of blocks: 'on start program', 'roll 0° at 100 speed for 5s', 'delay for 3s', 'roll 270° at 100 speed for 5s', 'delay for 3s', 'roll 180° at 100 speed for 5s', and 'delay for 3s'. At the bottom, a palette of block categories is visible, including Movements, Lights, Sounds, Controls, Operators, Comparators, Sensors, Communications, Events, Variables, and Functions. The 'Movements' category is currently selected, showing various movement-related blocks like 'roll', 'stop', 'speed', 'heading', 'spin', 'raw motor left', 'raw motor right', 'stabilization', 'reset aim', 'calibrate compass', 'compass direction', 'main LED', and 'fade from'.

- 5) Grab another movement block and set the roll to 90 degrees. Keep the speed and time the same. A delay block is not needed for the last block.

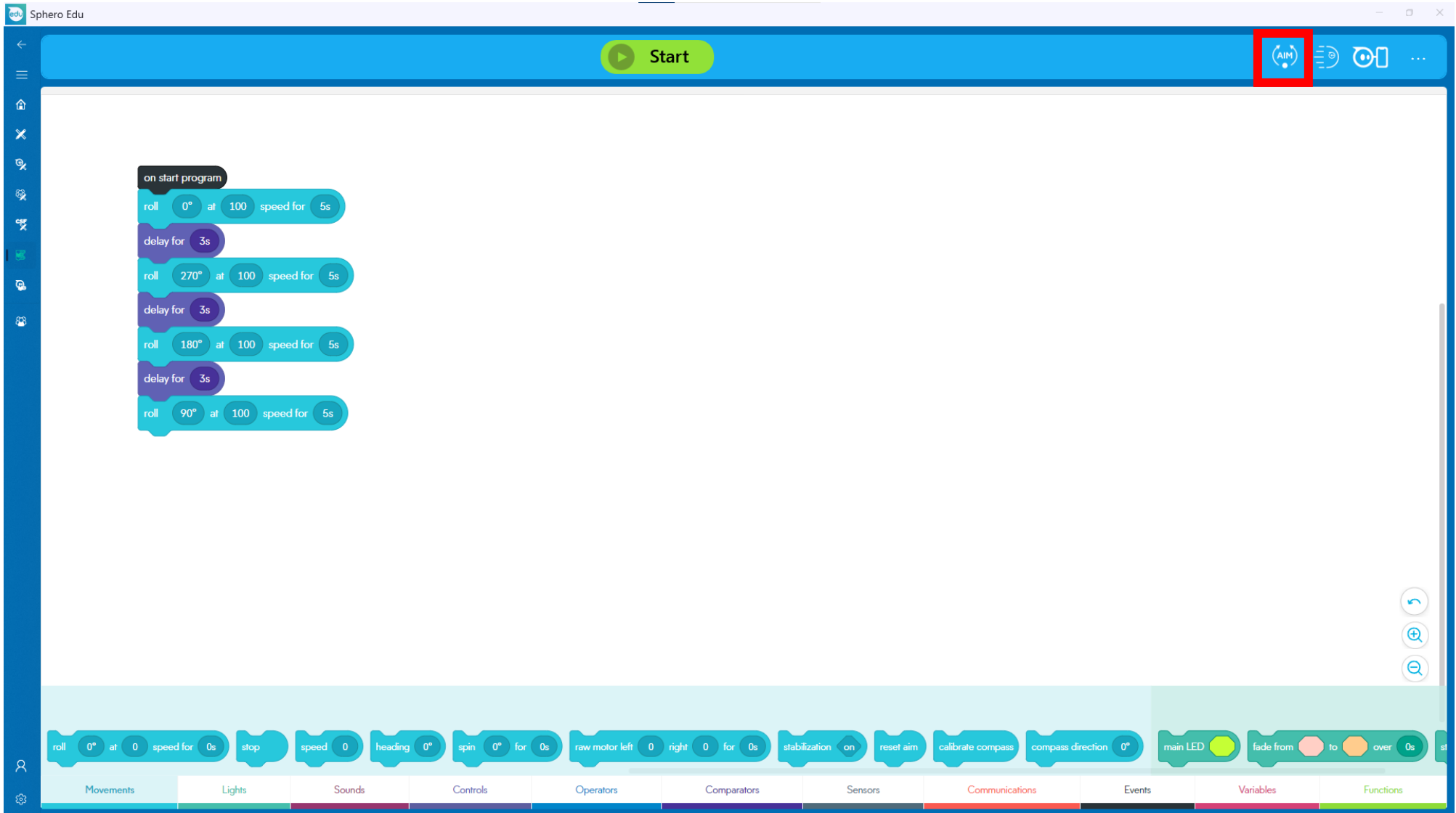


The screenshot shows the Sphero Edu web interface. At the top, there's a blue header with a 'Start' button and icons for aim, menu, and camera. The main workspace contains a script starting with 'on start program'. The script consists of the following blocks in sequence:

- roll 0° at 100 speed for 5s
- delay for 3s
- roll 270° at 100 speed for 5s
- delay for 3s
- roll 180° at 100 speed for 5s
- delay for 3s
- roll 90° at 100 speed for 5s

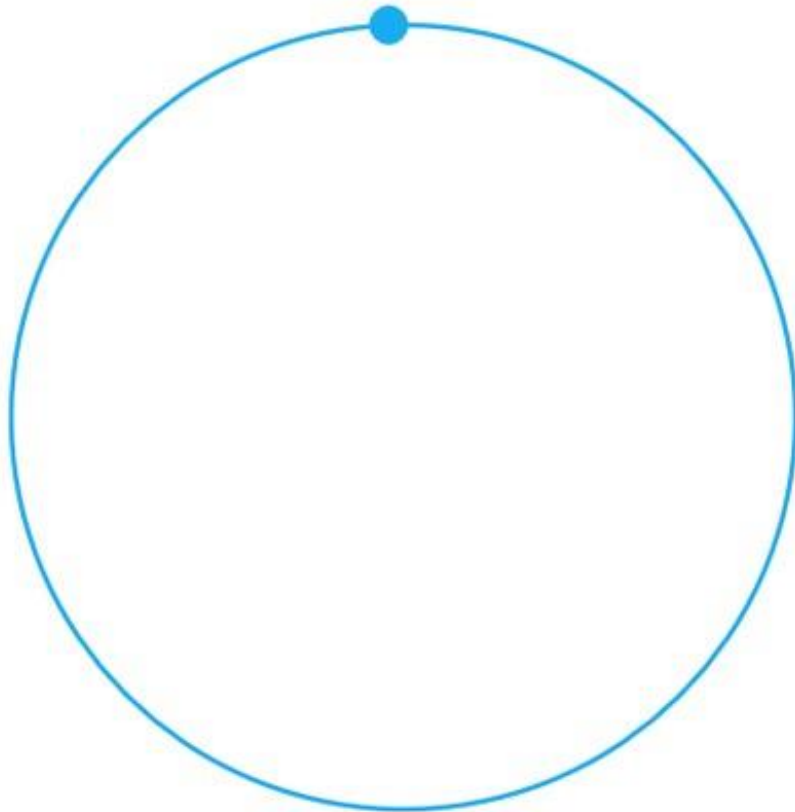
At the bottom, there's a palette of blocks categorized into: Movements, Lights, Sounds, Controls, Operators, Comparators, Sensors, Communications, Events, Variables, and Functions. The 'Movements' category is currently selected, showing various movement-related blocks like 'roll', 'stop', 'speed', 'heading', 'spin', 'raw motor left', 'raw motor right', 'stabilization', 'reset aim', 'calibrate compass', 'compass direction', 'main LED', 'fade from', and 'fade to'.

6) Click on the AIM button to calibrate the Sphero



The screenshot shows the Sphero Edu web interface. At the top, there is a blue header bar with a 'Start' button. On the right side of this bar, the 'AIM' button is highlighted with a red rectangle. The main workspace contains a Scratch-style script with the following blocks: 'on start program', 'roll 0° at 100 speed for 5s', 'delay for 3s', 'roll 270° at 100 speed for 5s', 'delay for 3s', 'roll 180° at 100 speed for 5s', 'delay for 3s', and 'roll 90° at 100 speed for 5s'. The bottom of the interface features a toolbar with various function blocks categorized into: Movements, Lights, Sounds, Controls, Operators, Comparators, Sensors, Communications, Events, Variables, and Functions. The 'AIM' button is located in the 'Sensors' category.

- 7) Adjust the light so the blue light on the Sphero is pointed towards you. You can click on the arrows or the arrows key on the keyboard can be used as well.



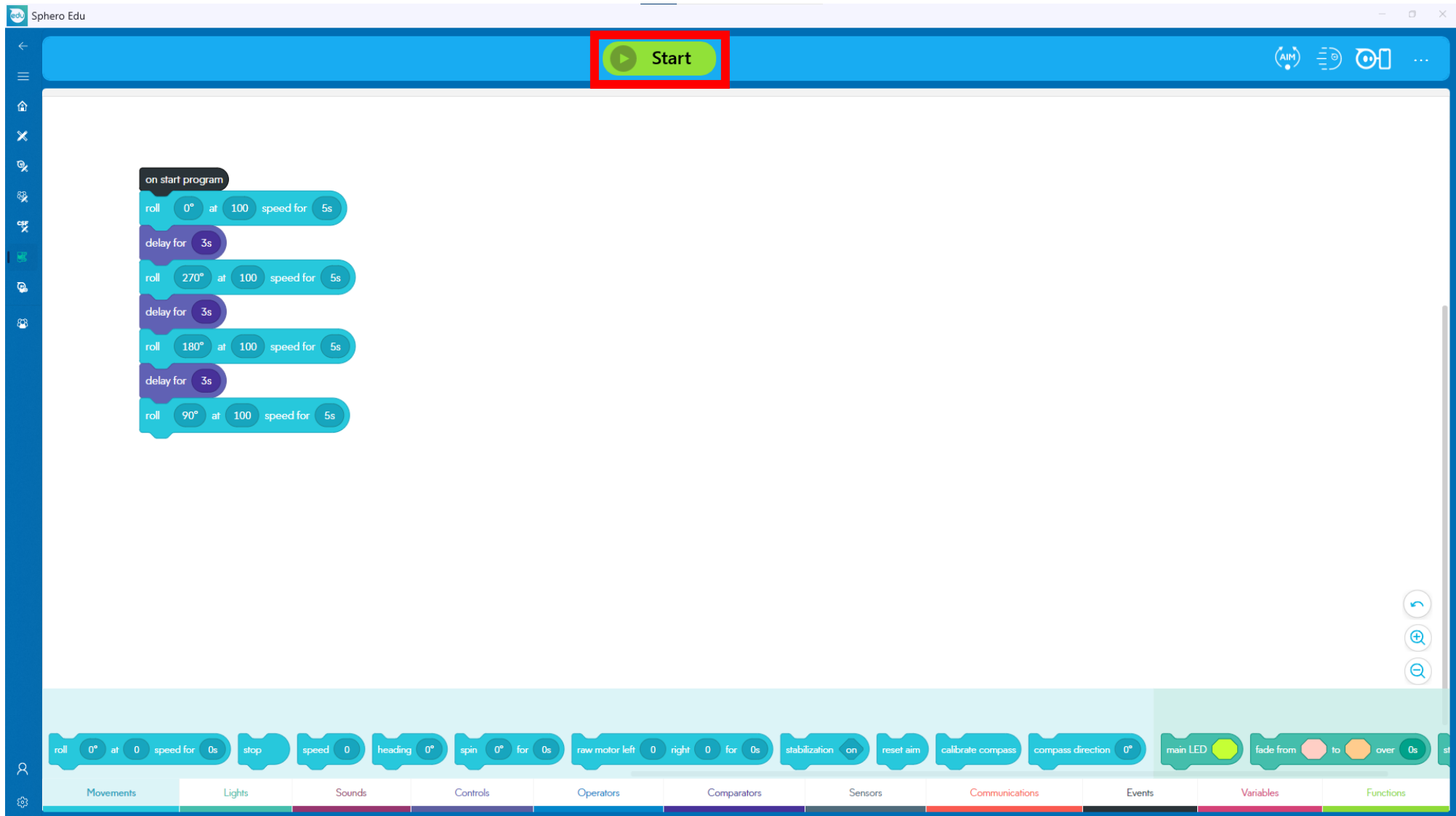
1. Place Sphero Mini on the ground.



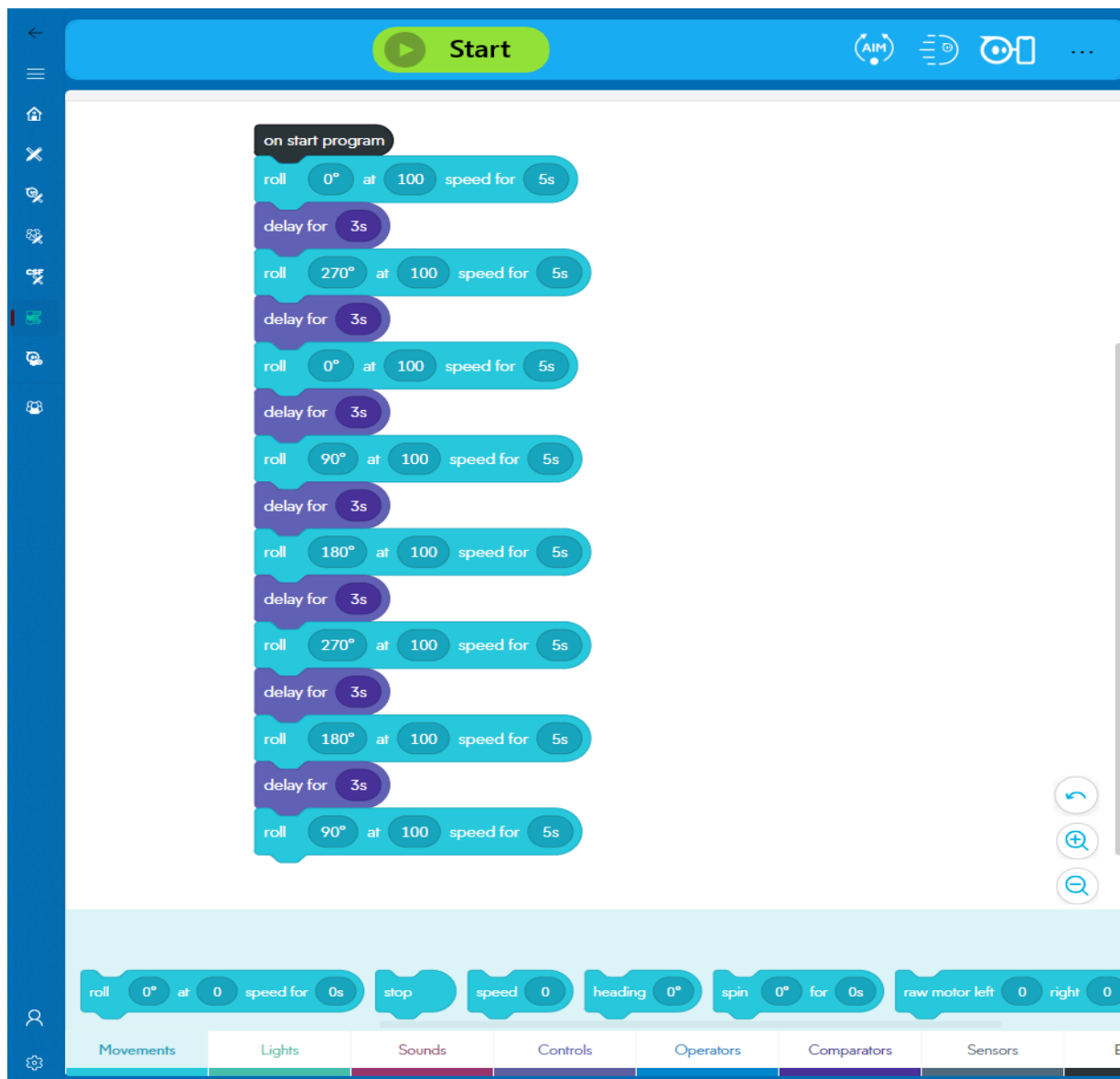
2. Drag the aim ring until Sphero Mini's blue tail light faces you.



8) Click the Start button to have the Sphero perform the program



1) This section will cover the figure 8 code. The solution for the code is given below.



- 2) Click the Start button to have the Sphero perform the program

