

**Team Number: 68424A**

**Team Name: Choikou Team A**

**Robot Name: Baby Cherry**

**Region: Macau**

**Teammate:**

Su, Ze Sen

Chan, Io Leong

Lei, Weng Hei

Tong, Chon In

Chao, Hoi Weng



**VEXcode VR Skill Challenge - High School**

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**choikou vex**

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We build a simple robot(VRC over under)

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We use two days to update  
the simple robots (vex over...

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We build a simple robot(VRC  
over under)

Number of views: 4018 times  
· 3 months ago



VRC over under AWP 68424A  
Choikou(Macao)

Number of views: 1625 times  
· 6 months ago



VRC over under AWP 68424A  
Choikou(Macao)

Number of views: 877 times  
· 6 months ago



SHENG KUNG HUI CHOI KOU SCHOOL MACAU  
聖公會 (澳門) 蔡高中學



# Team Introduction:

Our team is called 68424A. It was established on January 21, 2023. We are from Sheng Kung Hui Choi Kou School in Macau. We also had contact with Vex VIQRC robot in the past few years. Compared to other local teams, we were established relatively late, and our qualification and experience are relatively shallow. Therefore, in the early days of its establishment, we encountered many setbacks and difficulties, but we never give up, turning failure into motivation for moving forward. We believe that as long as we persist, we will become successful.

Youtube link:

<https://www.youtube.com/@choikouvex/featured>

Instagram link:

[https://www.instagram.com/68424a\\_vrc/](https://www.instagram.com/68424a_vrc/)



# Team Introduction:

The first one is *Chan Io Leong*. He likes to write programs, make robots and play remote control racing cars. In this competition, he is responsible for writing programs and operating machines. And also he experienced the spirit of the team. His opinion on this competition is that we should strive for the top and the spirit of hard work that we will have a chance to win. During this process he can learn C++ language programming and improve himself.



# Team Introduction:

Next one is call *Su Ze Sen*.He likes to build models.He is always buys a lot of LEGO bricks but he did not follow the design diagram that he can build a better than the original design.In this competition, he took on the role of building all functional modules on the basis of the chassis.He said that although be assembled many modules he had never seen before , he still used his imagination to spell them out .Although the process was hard, he did not give up .His view of this competition is that it is full of unknowns to participate in the competitions for the first time, but he is also trying to move forward.



# Team Introduction:

Another one is *Tong Chon In*, it was his first time to come into contact with this kind of activity, but he did not show any rustiness because his interest made him learn such thing very quickly and he knew how to apply them, so he achieved a good ranking in the Macau competition.



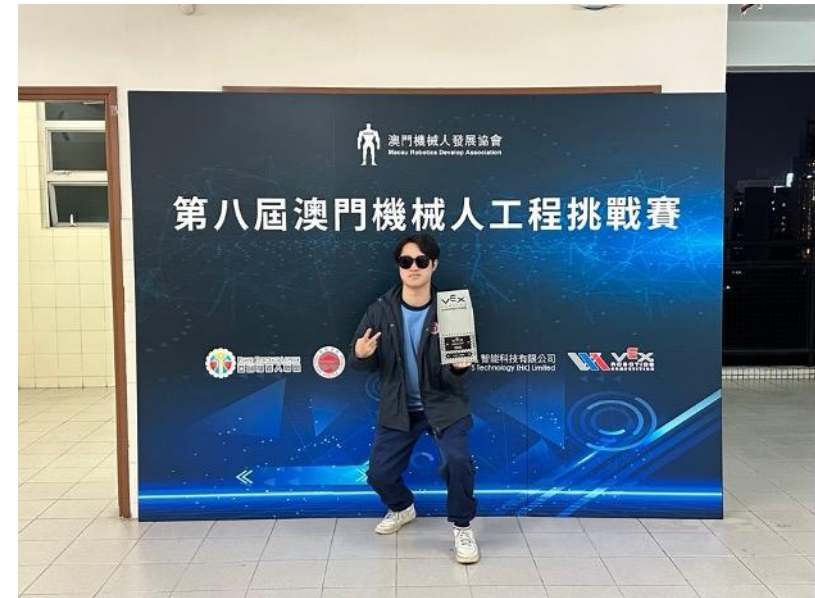
# Team Introduction:

And the next is call *Lei Weng Hei*. He likes to build Lego and good at assembling things.He also had participated in Vex IQ related competitions.In this competition,He is responsible for building robots and writing engineering notes.Although he has not been exposed to Vex VRC for a long time,he will continue to learn, grow and surpass himself and try his best on the best of his ability.



# Team Introduction:

The last one member is call *Chao Hoi Weng*.He likes to play racing games, so he knows more about chassis structure.And he also like writing.In this competition, he produced an unprecedented chassis and write engineering notes.Since it was the first time he wrote engineering note , he introduced it in detail as much as possible.He said that although there are many strong opponents in this competition, do not demean ourselves and try your best is the best.





Country / Region

All

State / Province

-- Not Available --

Grade Level

High School

Team Affiliation

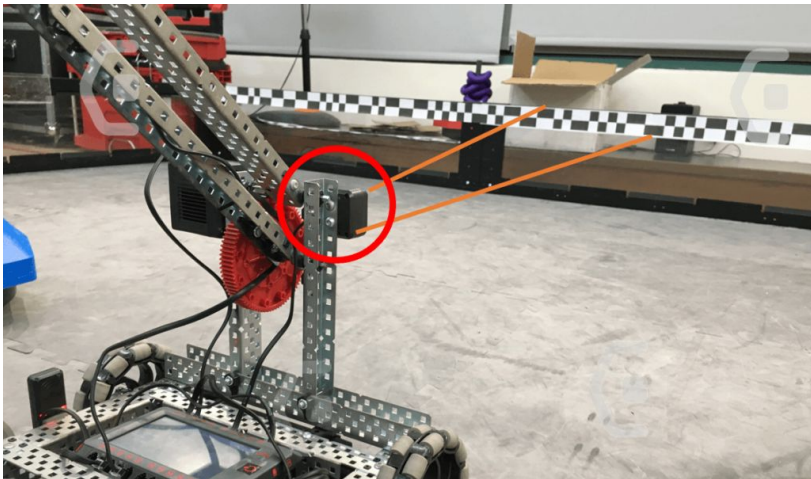


Search

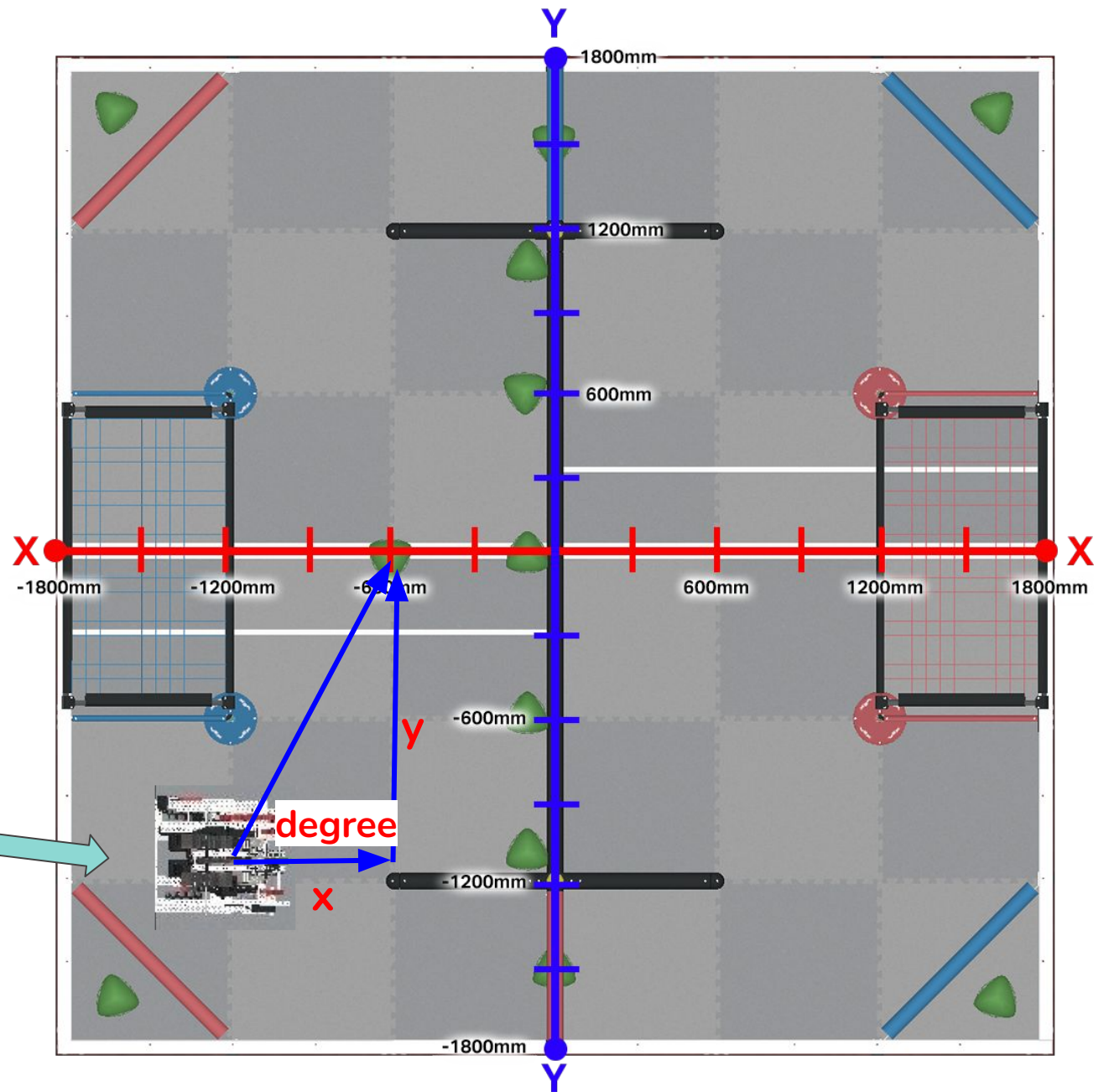
Rank	Score	Stop Time	Team Number	Team Name	Organization	Event Region	Country / Region
1	97	56	847X	Mimbotics	847X Robotics	California - Region 4	United States
2	87	2	68424A	Choikou Team A	Sheng Kung Hui Choi Kou School (Macau)	Macau	Macau
3	87	1	14683B	KCIS Robotics B	Kang Chiao International School	Chinese Taipei	Taiwan

# Use of GPS Sensor:

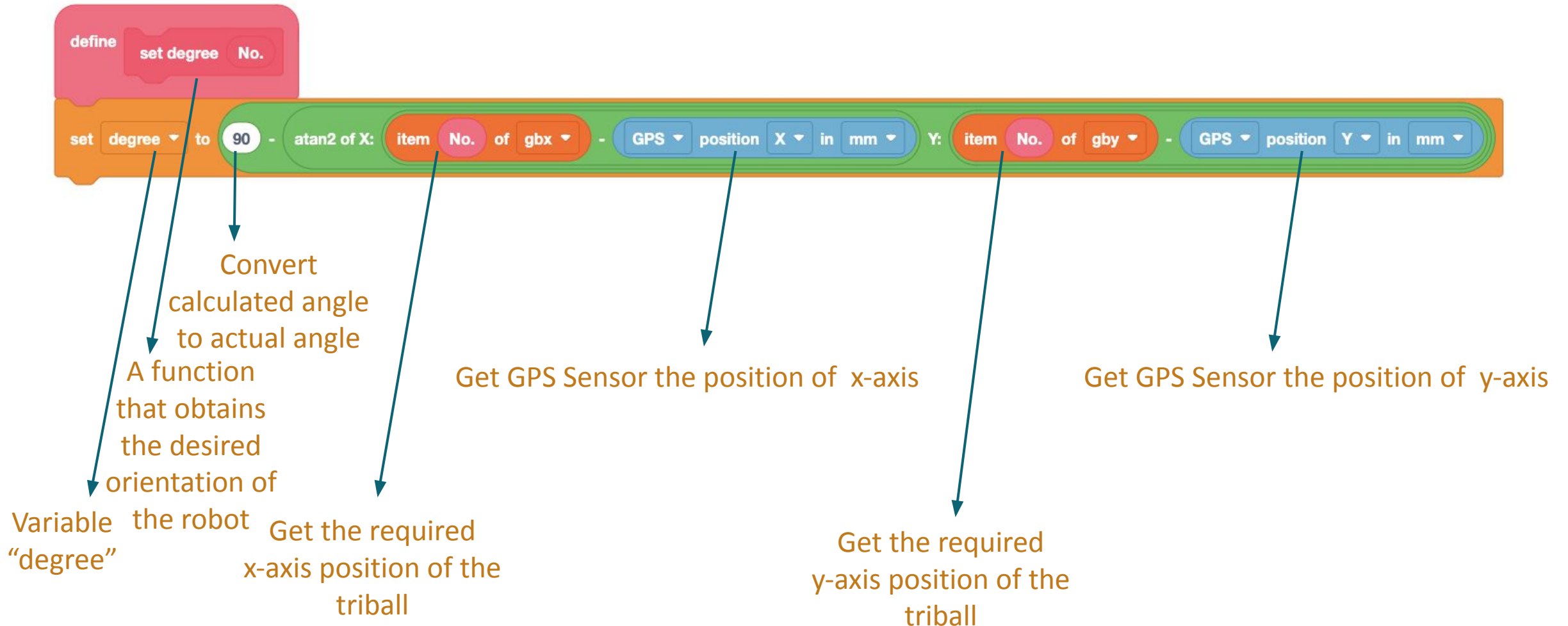
$$\text{degree} = \arctan \frac{x_1 - x_2}{y_1 - y_2}$$



According to the information of the GPS sensor to detect the **degree** of the robot.

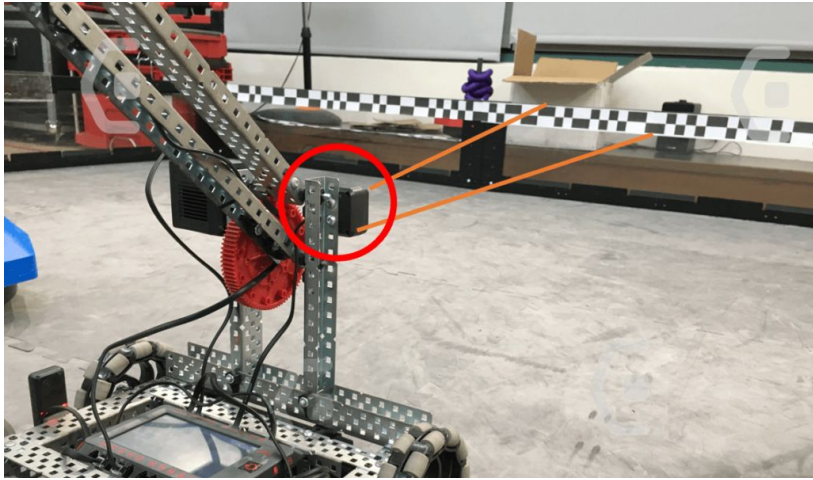


# Program introduction:

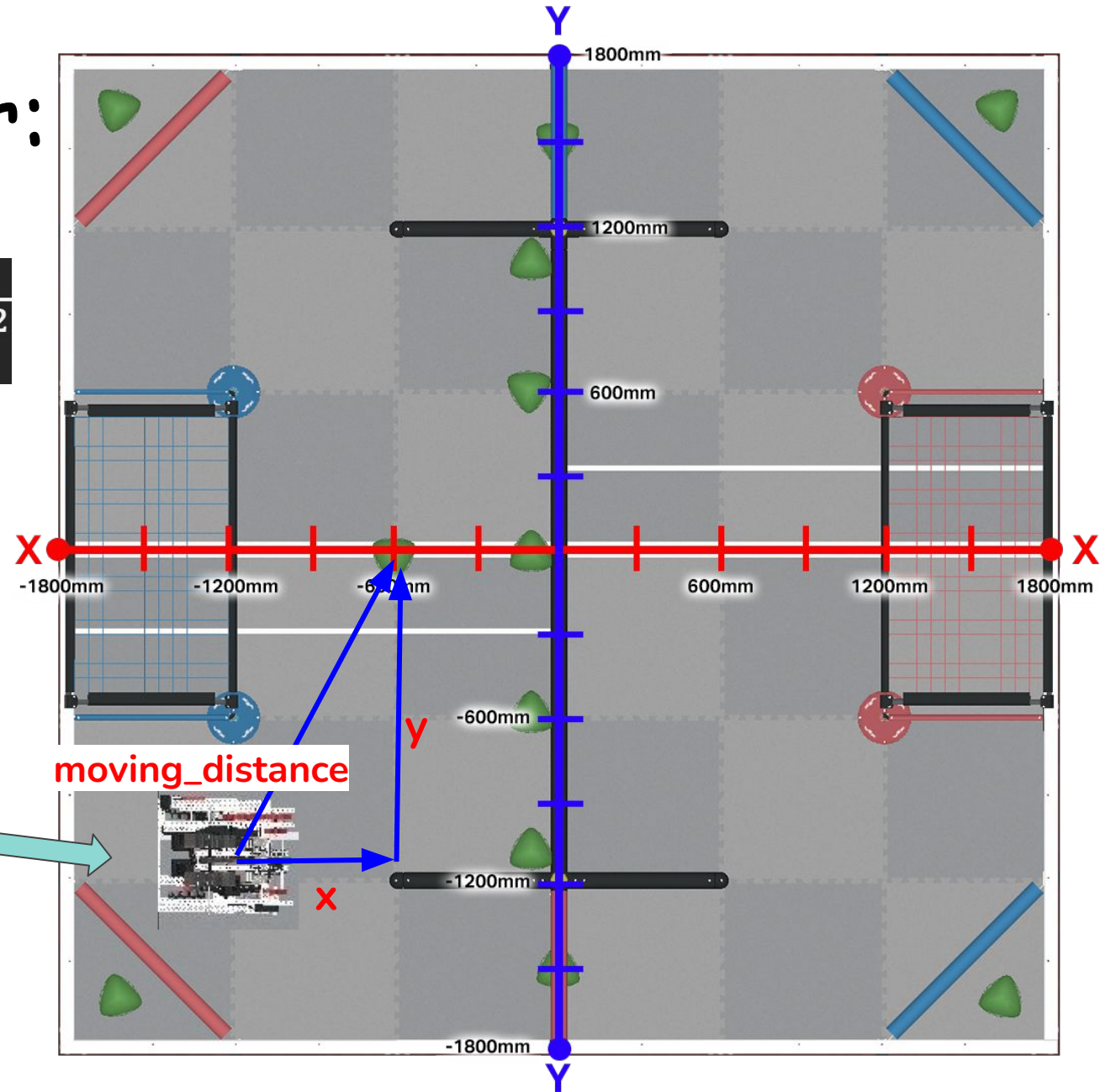


# Use of GPS Sensor:

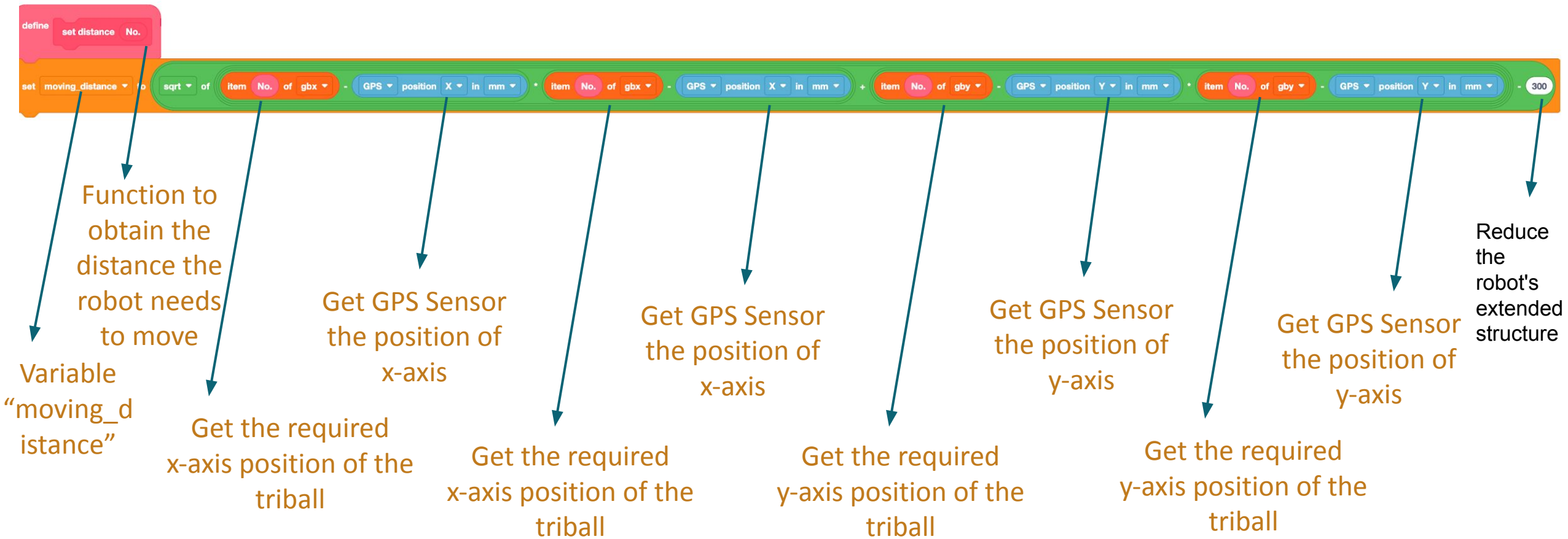
$$distance = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$



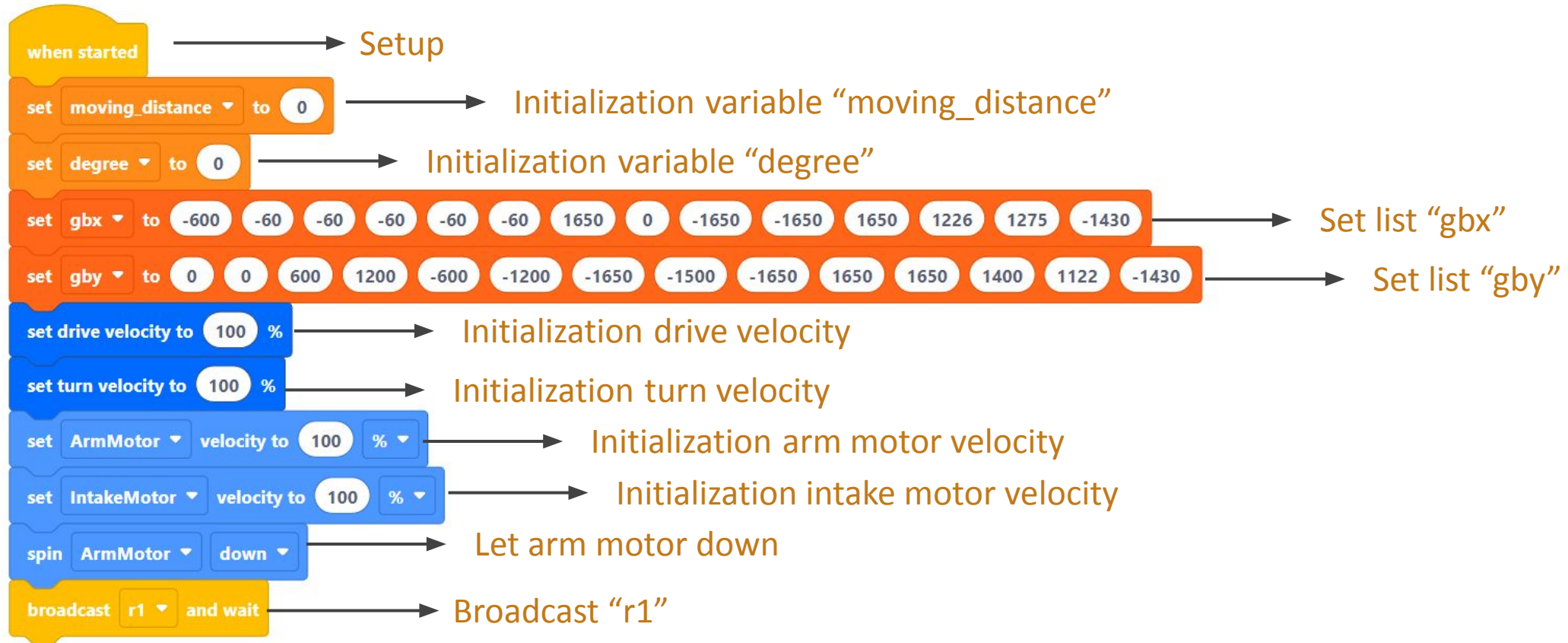
According to the information of the GPS sensor to detect the **moving distance** of the robot.



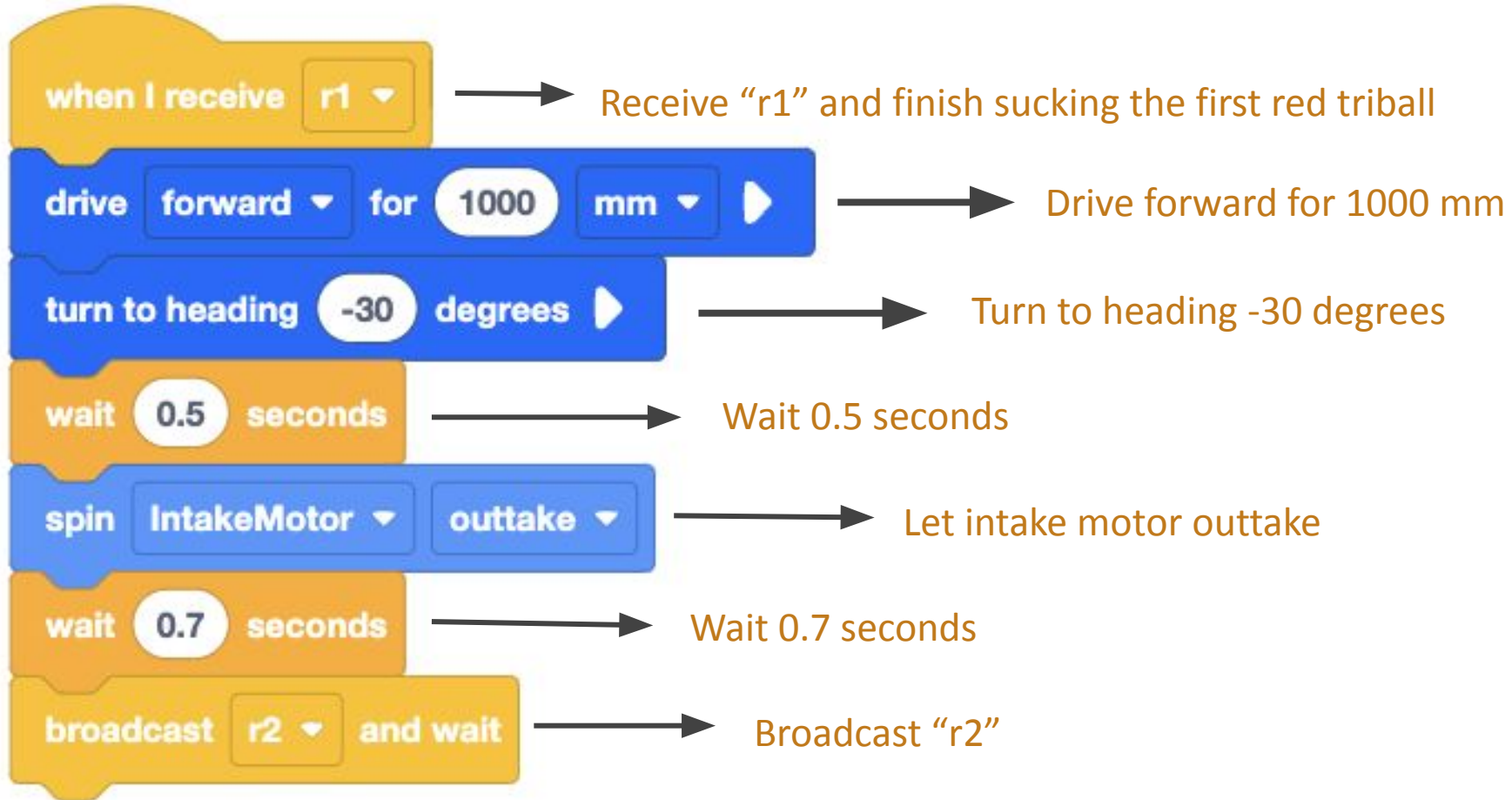
# Program introduction:



# Program introduction:



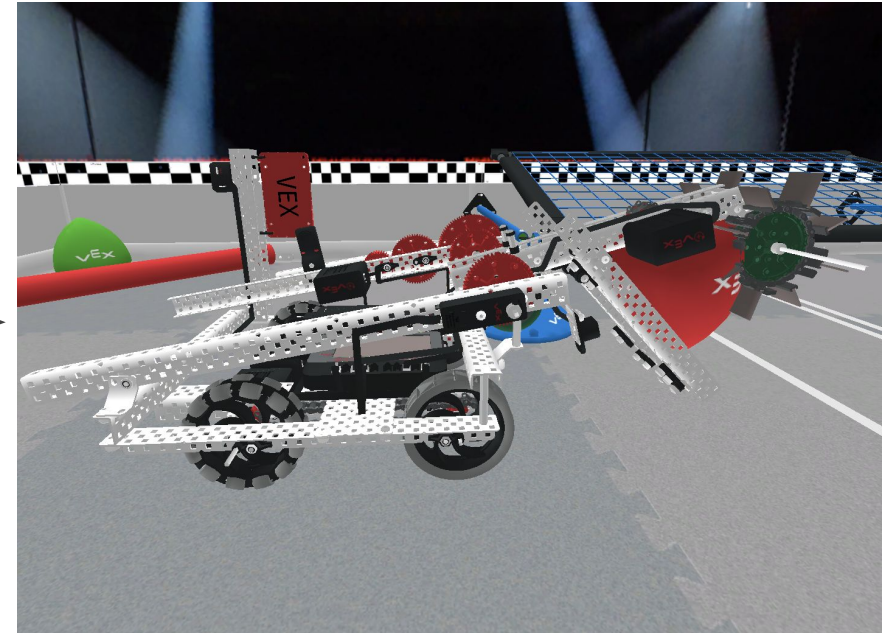
# Program introduction:



# To finish sucking the first red triball:



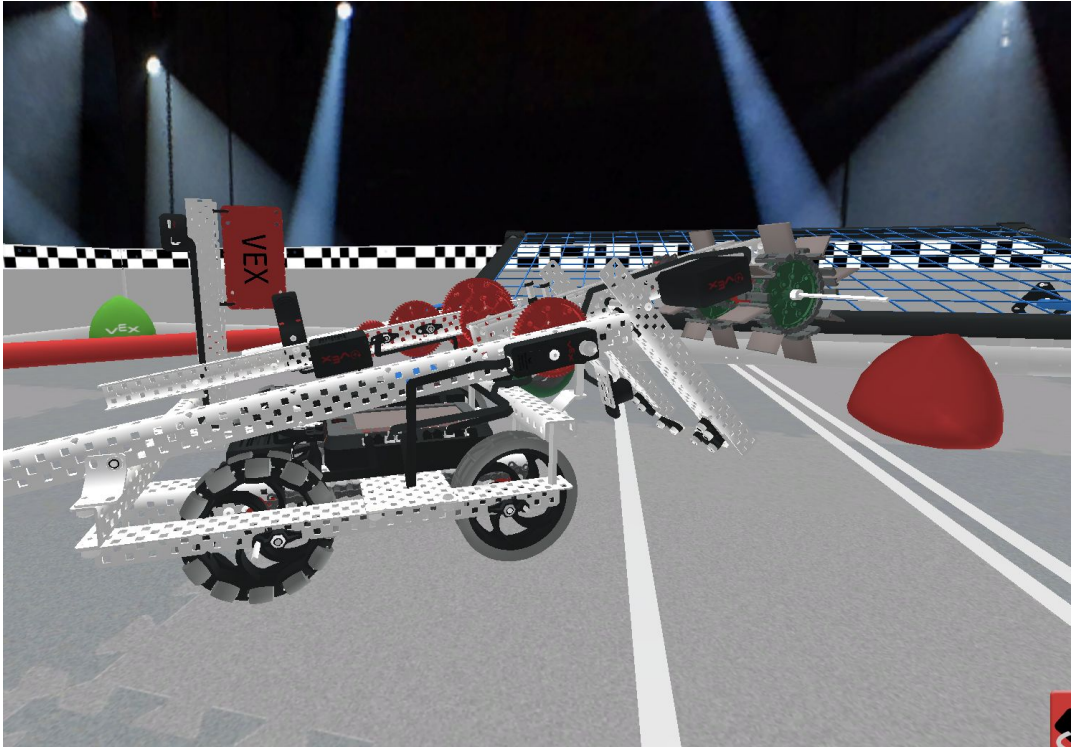
**install the preloaded triball**



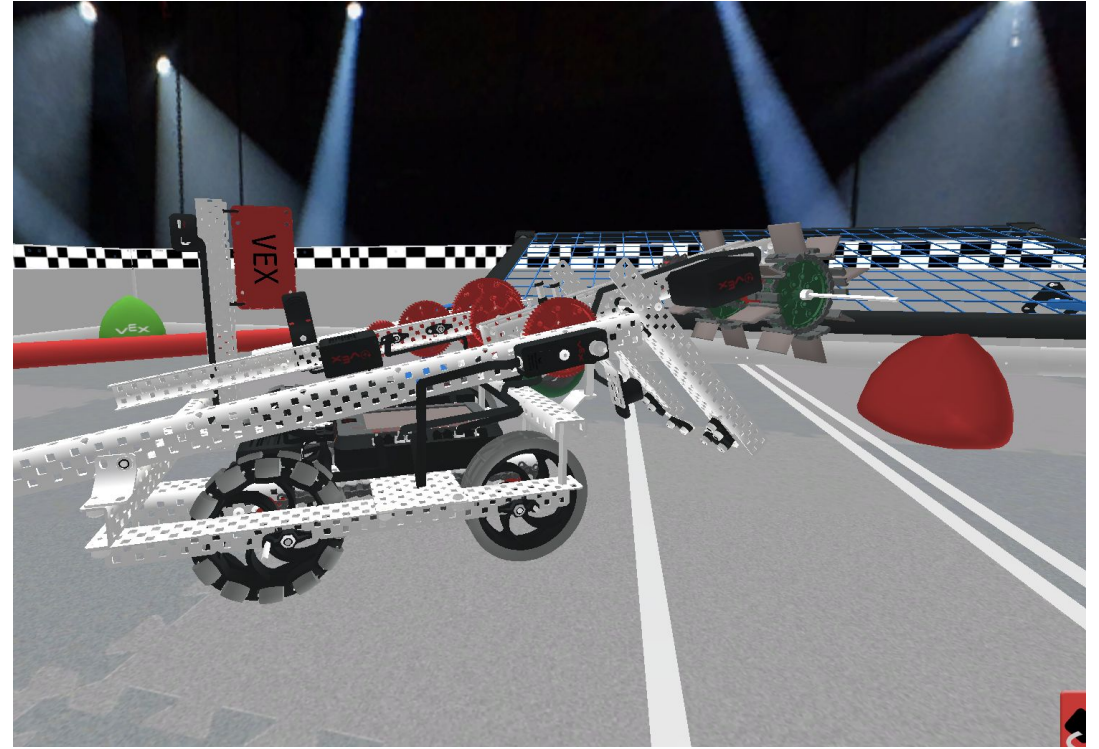
**extend the triball suction structure in front of the robot**



# To finish sucking the first red triball:

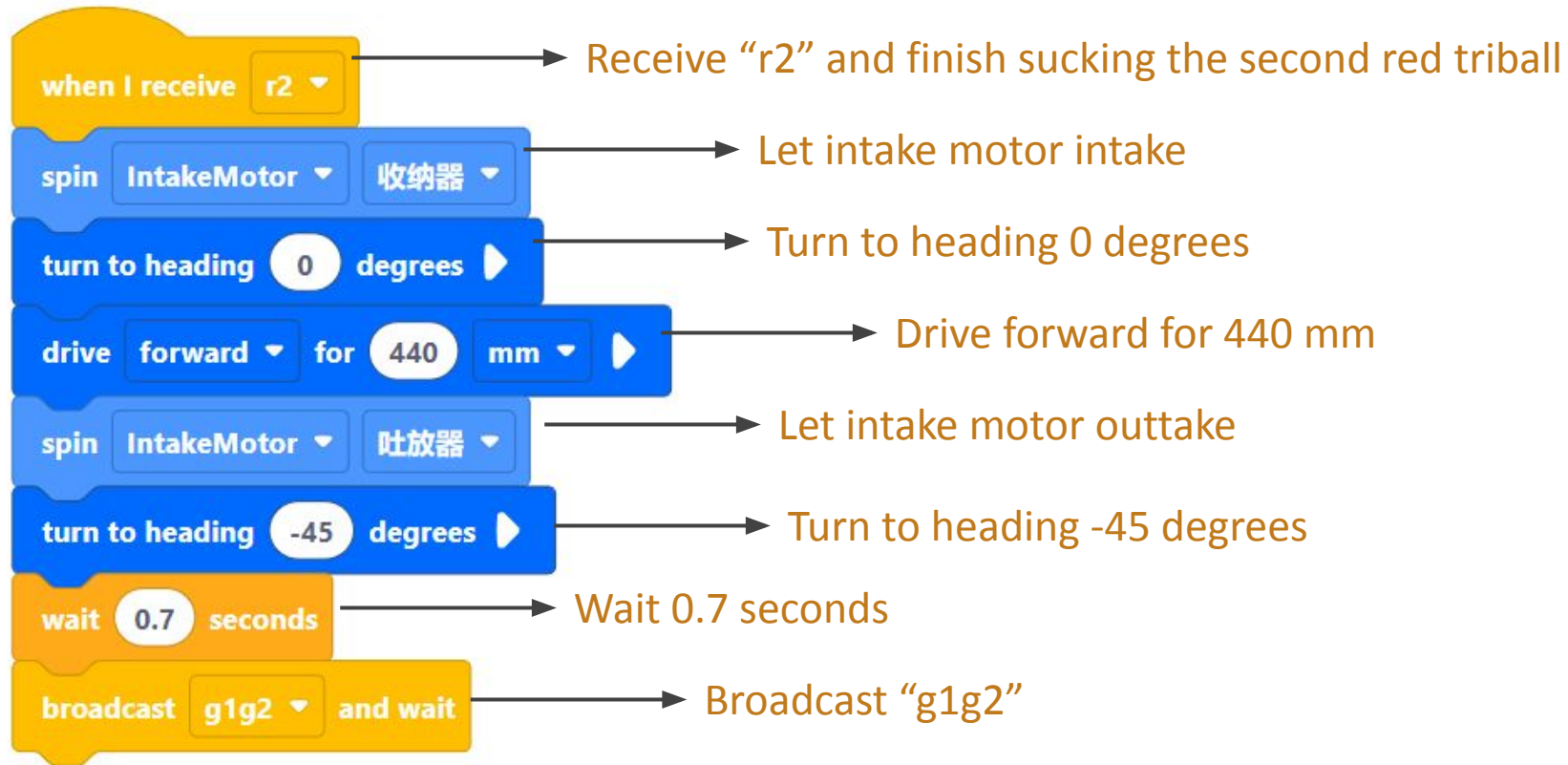


turn 30 degrees to the left

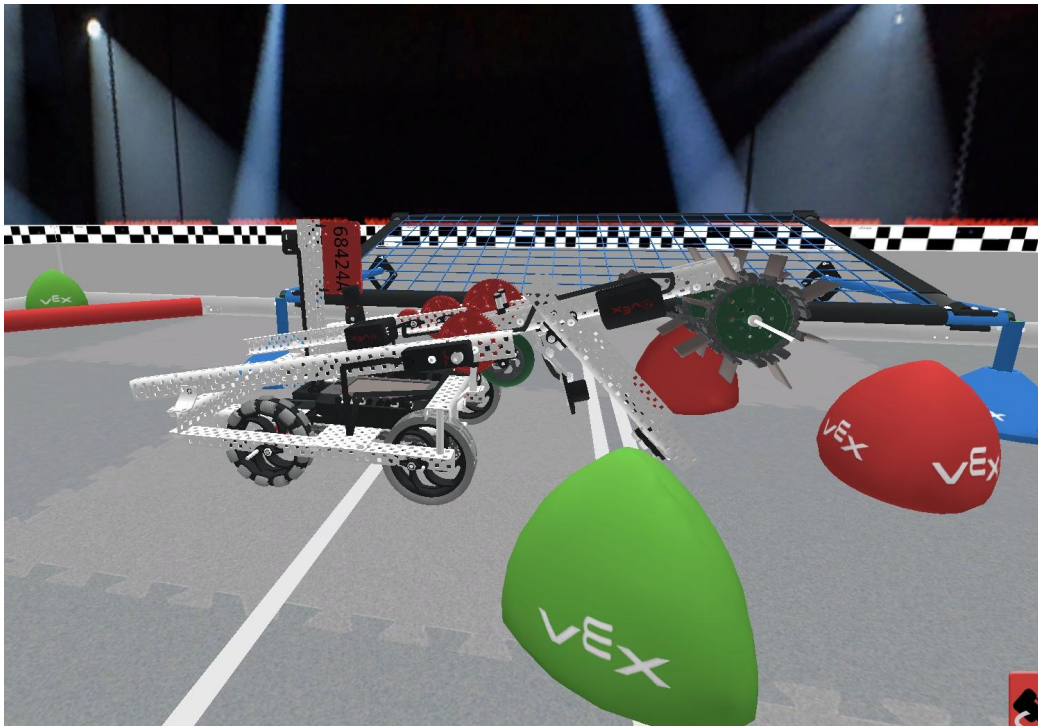


put the triball into the gantry

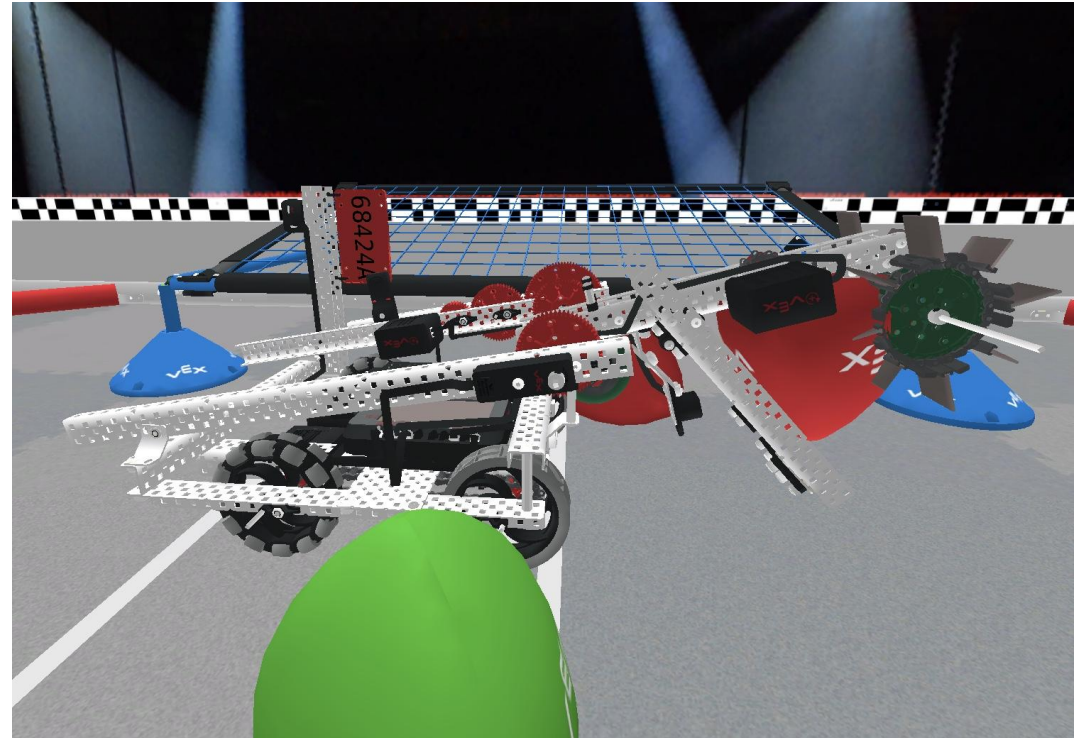
# Program introduction:



# To finish sucking the second red triball:

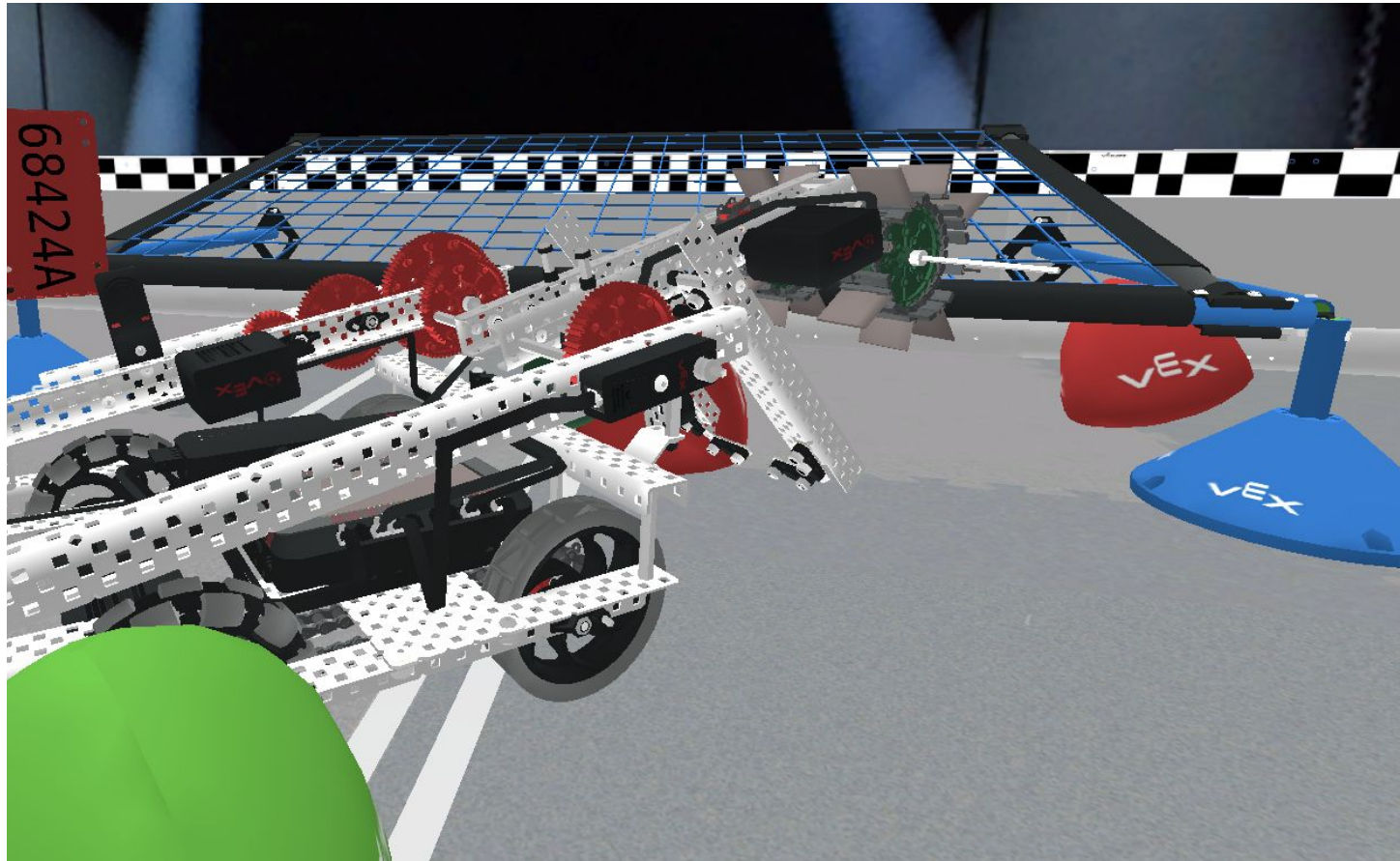


Turn to heading 0 degrees



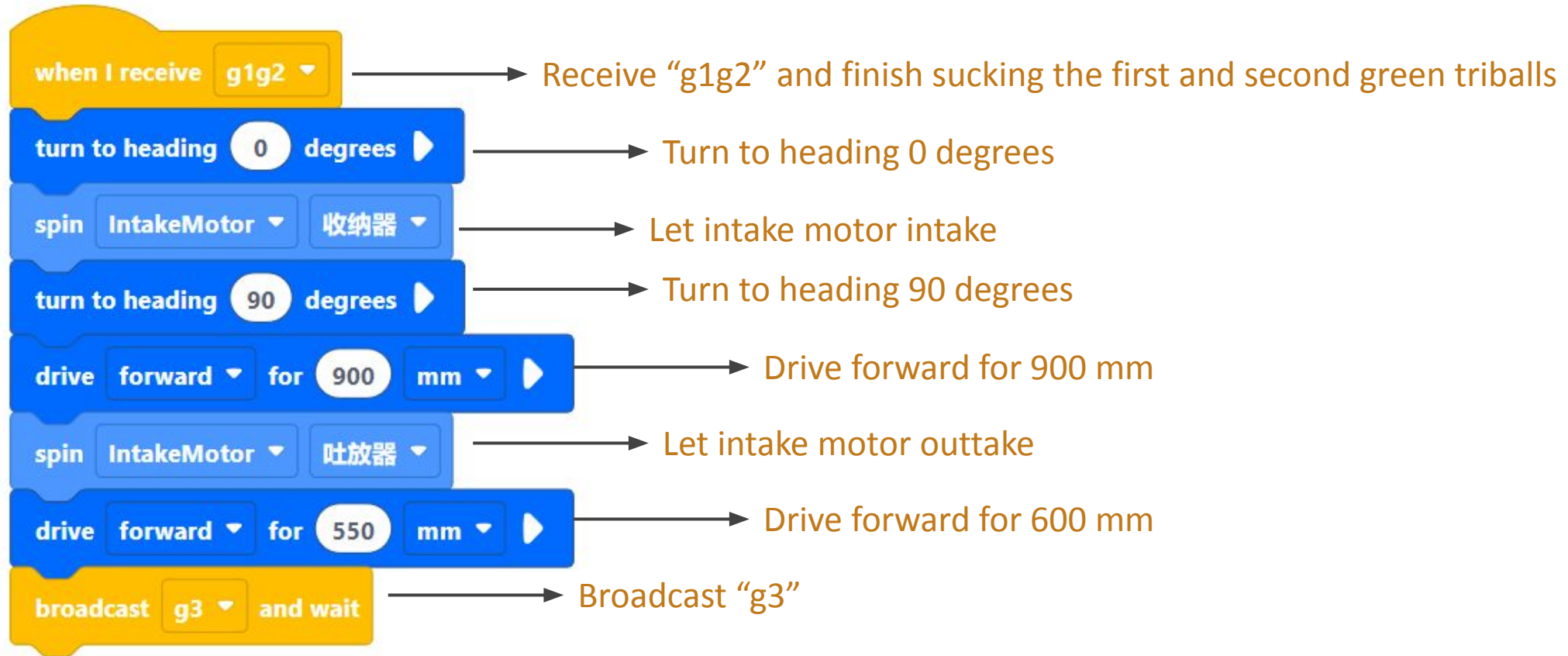
Suck the second red triball

**To finish sucking the second red triball:**

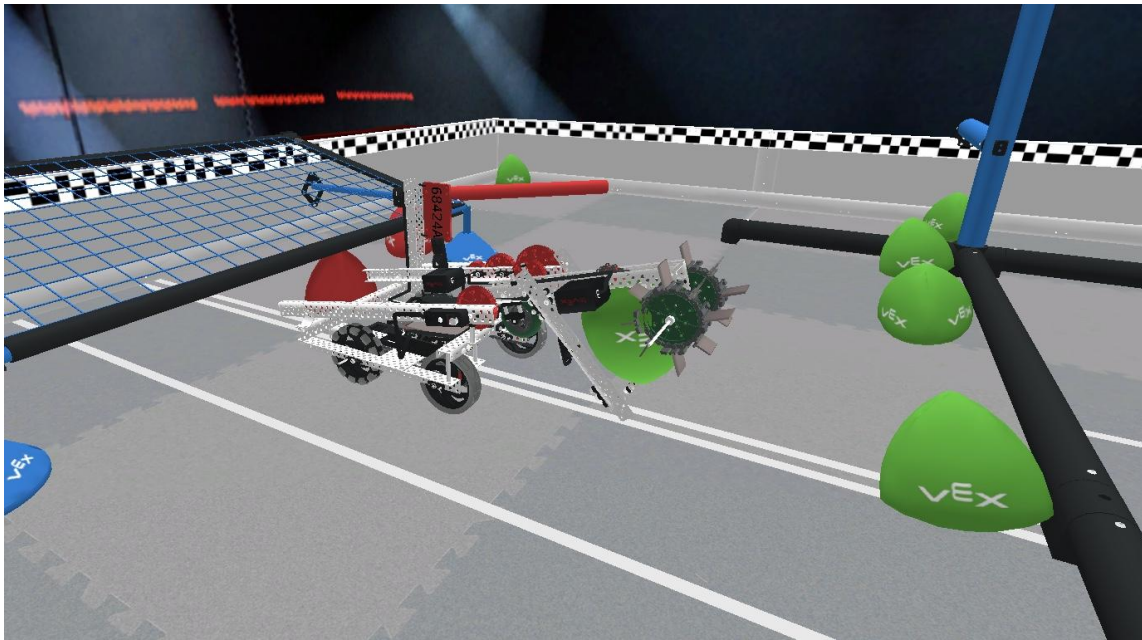


Let intake motor outtake, put the red ball into the gantry and Turn to heading -45 degrees

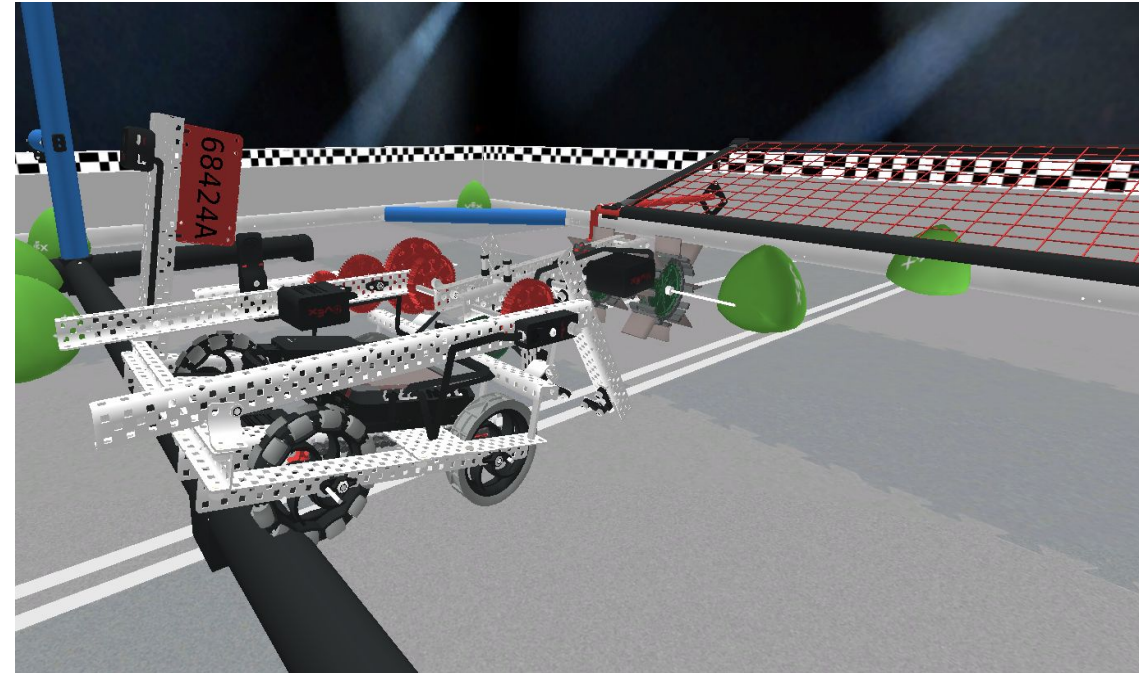
# Program introduction:



# To finish sucking the third and fourth triball:

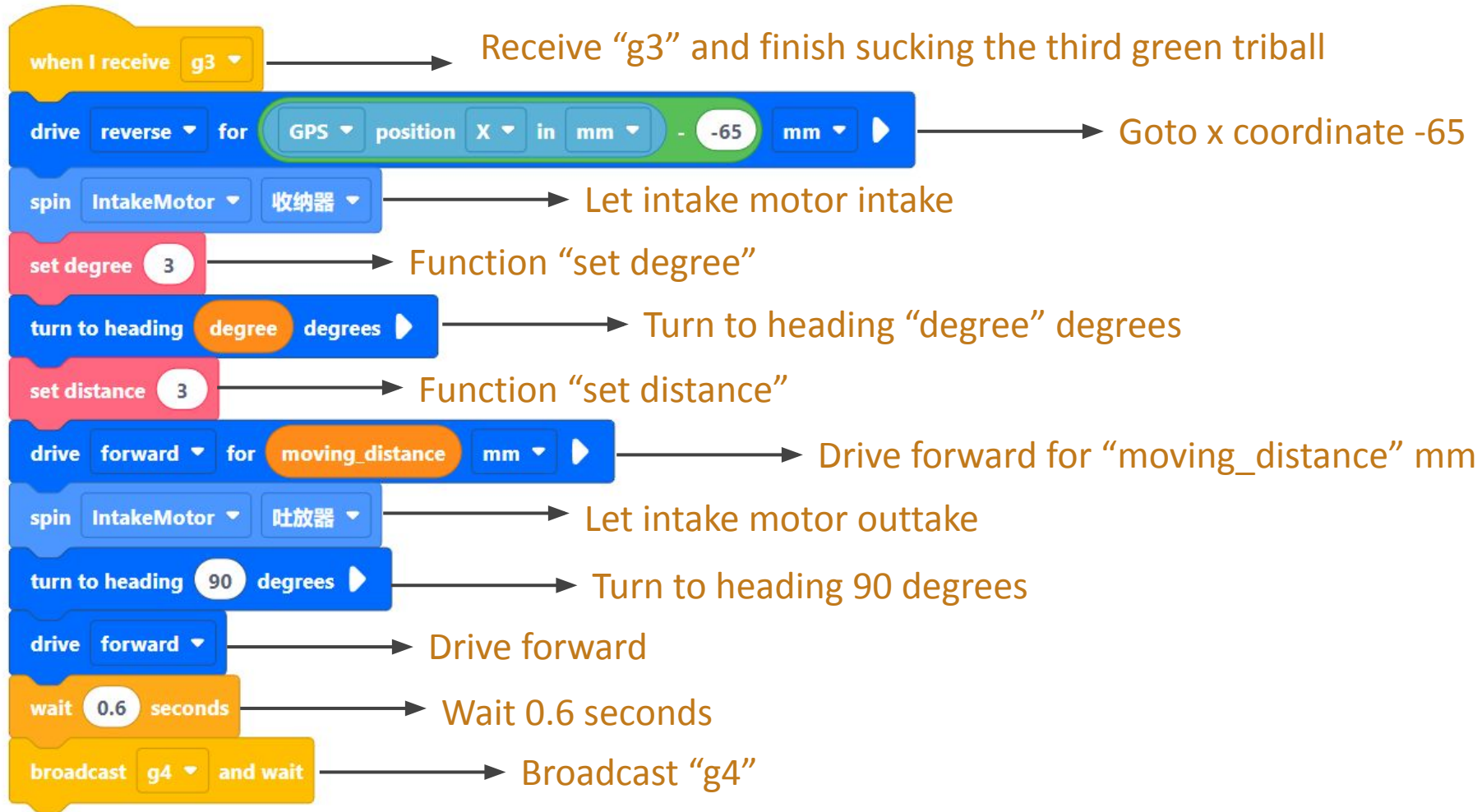


Let intake motor intake , turn to heading 90 degrees and suck the third triball

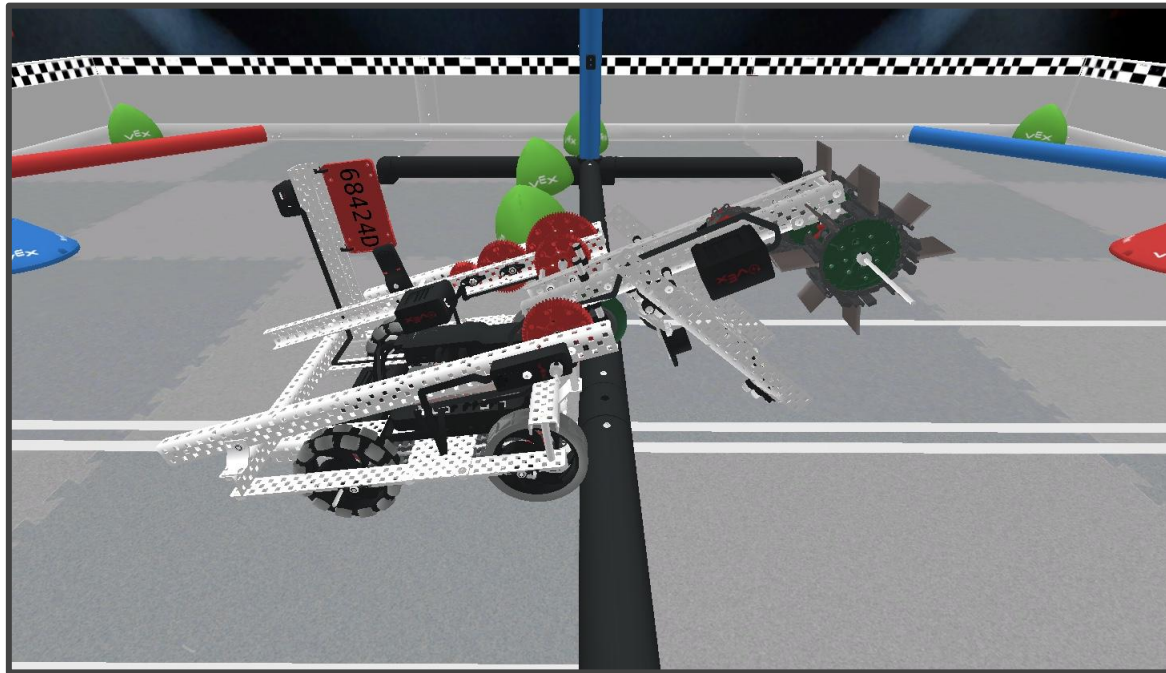


Let intake motor outtake drive forward for 600 mm and push the third and fourth triballs into the gantry respectively

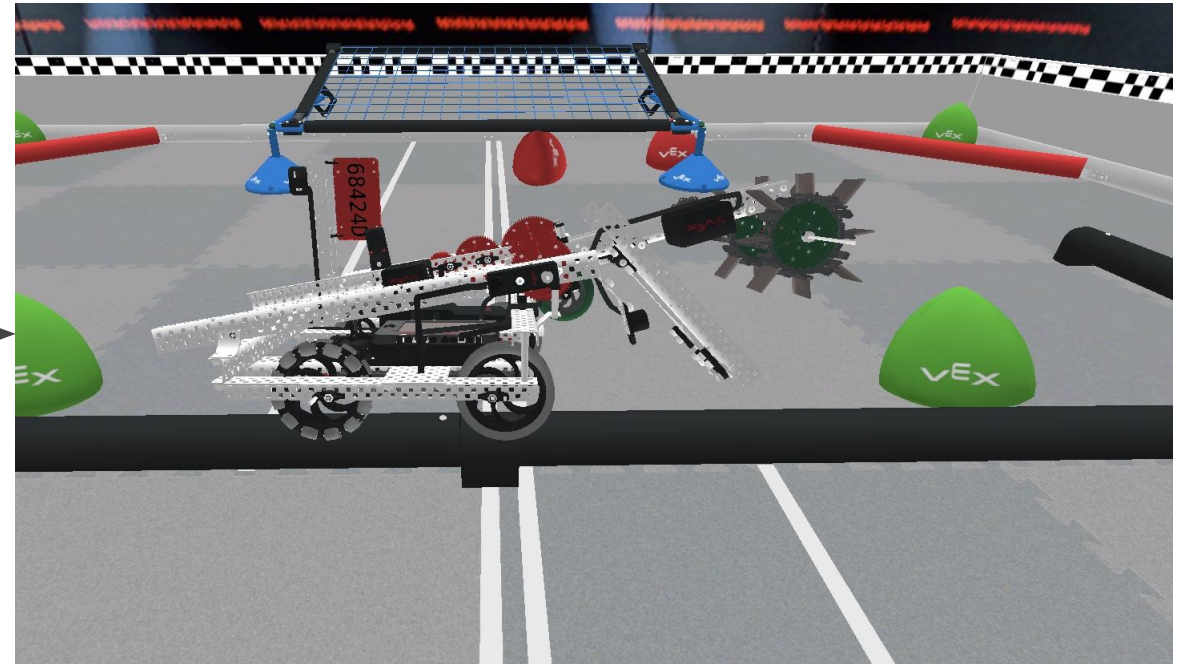
# Program introduction:



# To finish sucking the fifth triball:



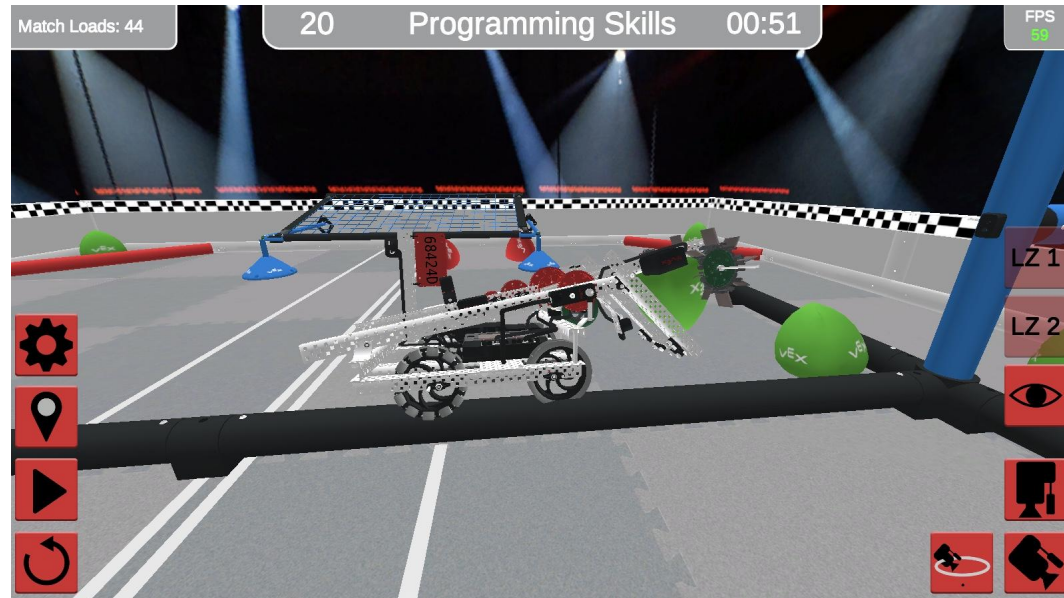
**Goto x coordinate -65mm**



**Let intake motor intake and turn to heading 0 degrees**



# To finish sucking the fifth triball:

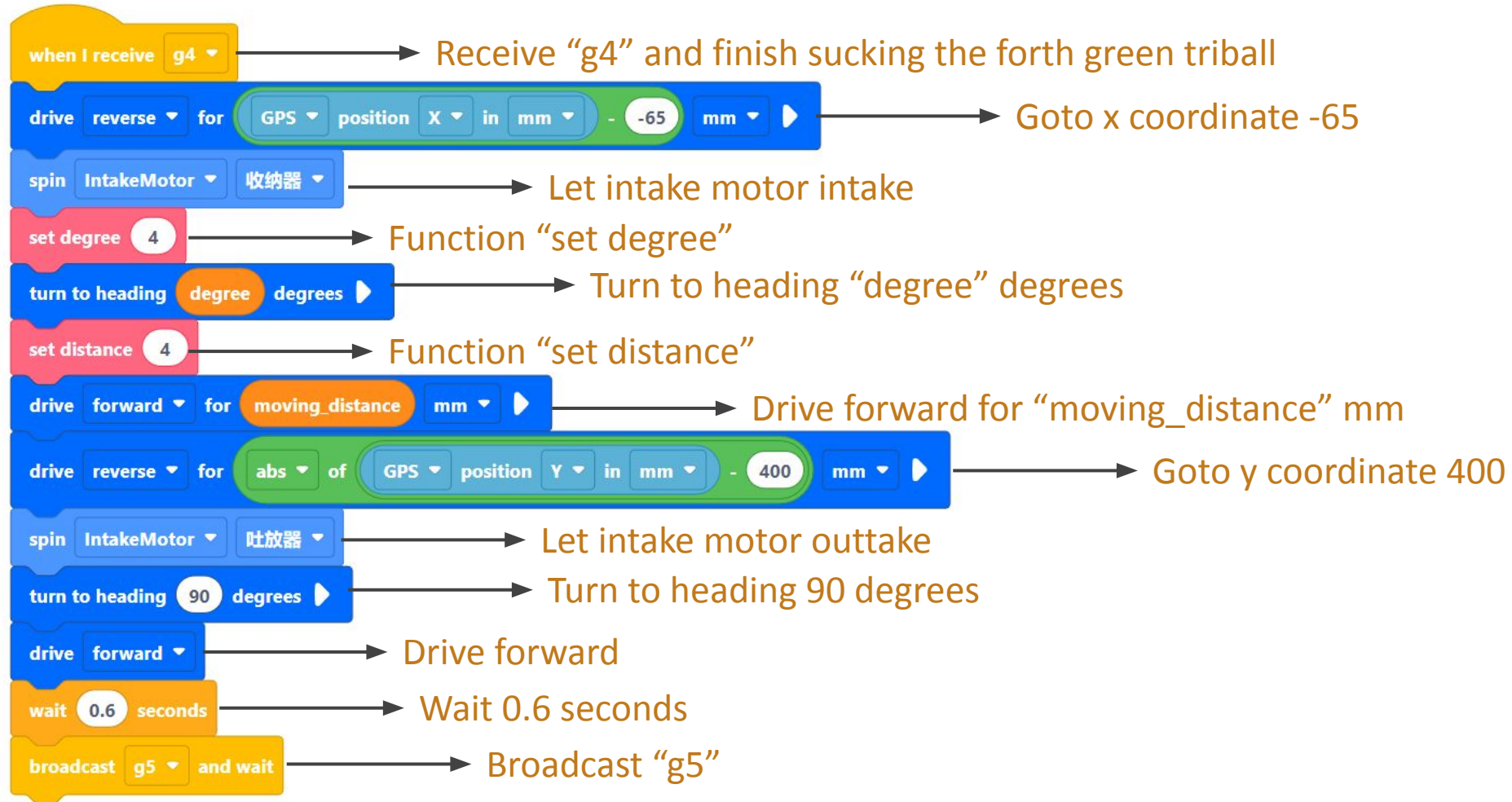


Suck the triballs

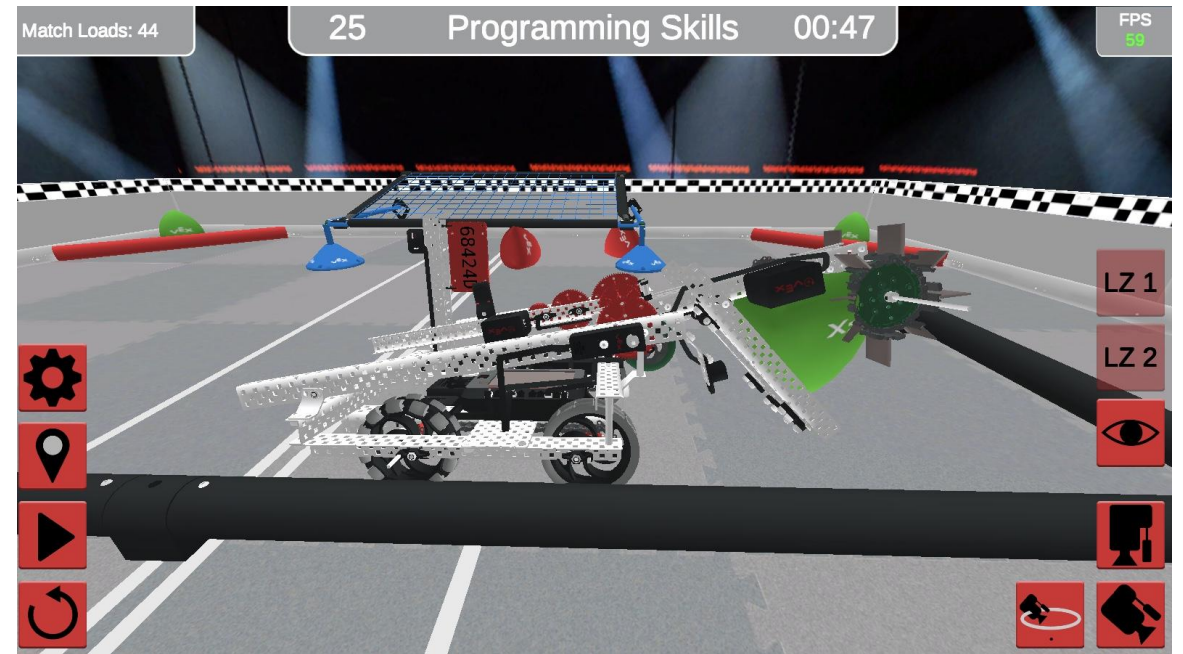
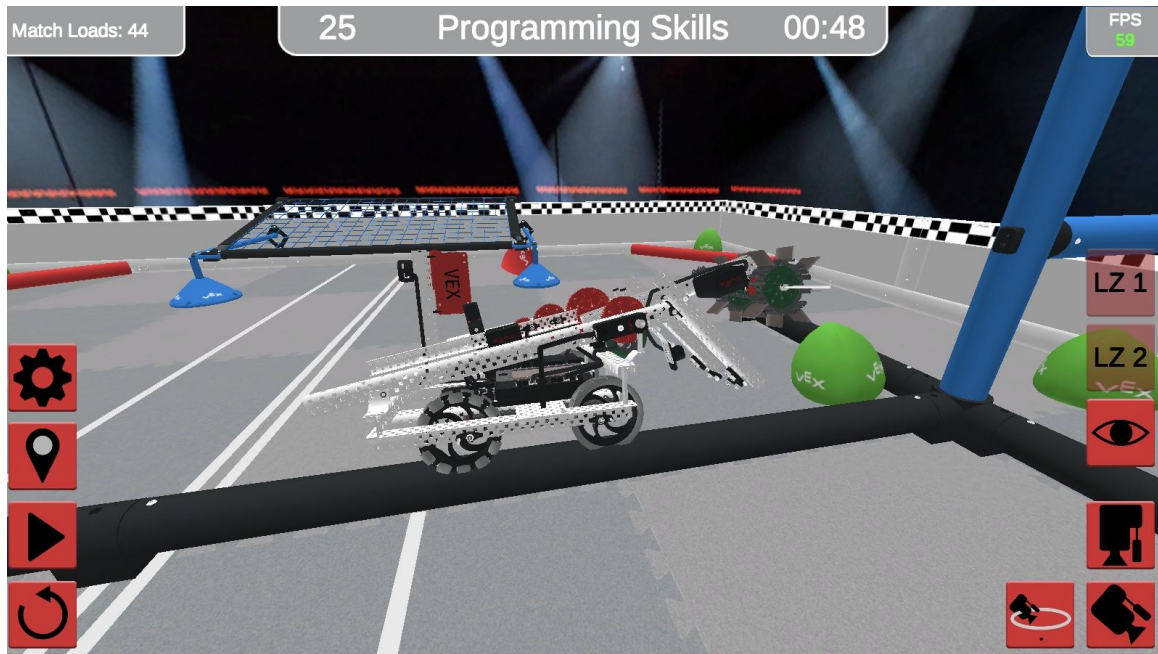


Turn ninety degrees and push the ball into the goal

# Program introduction:



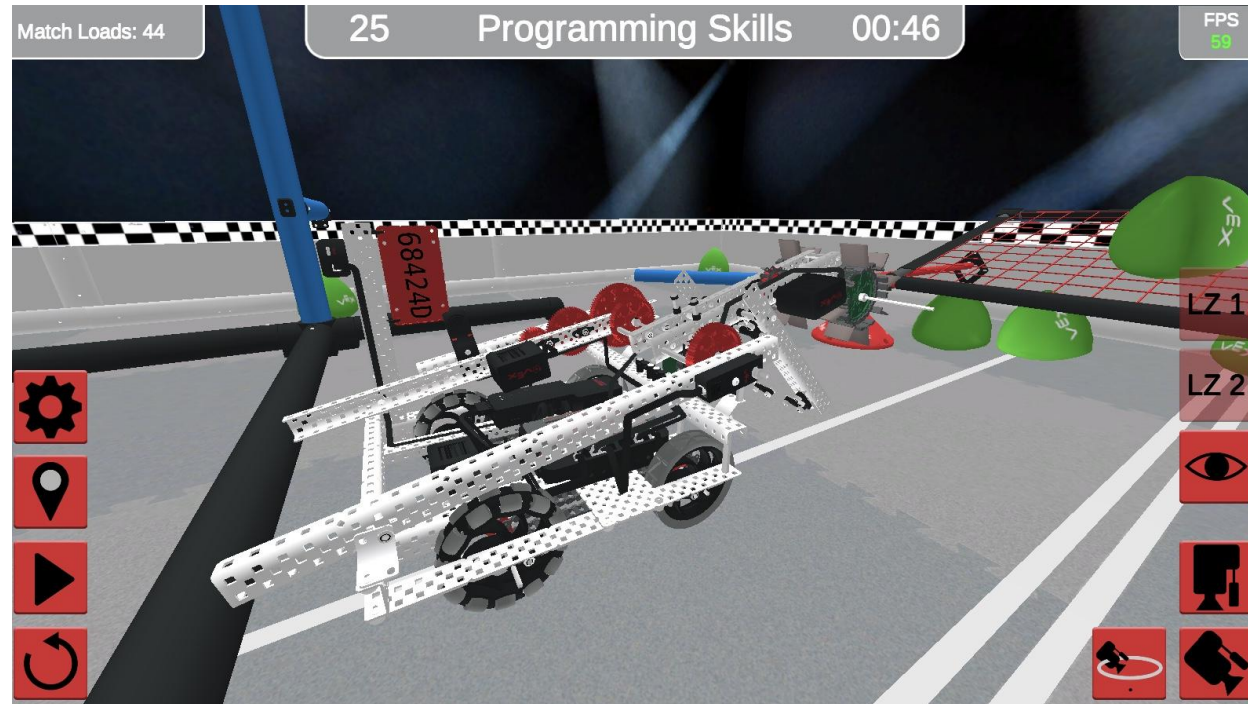
# To finish sucking the sixth triball:



After pouring again, turn back to zero degrees

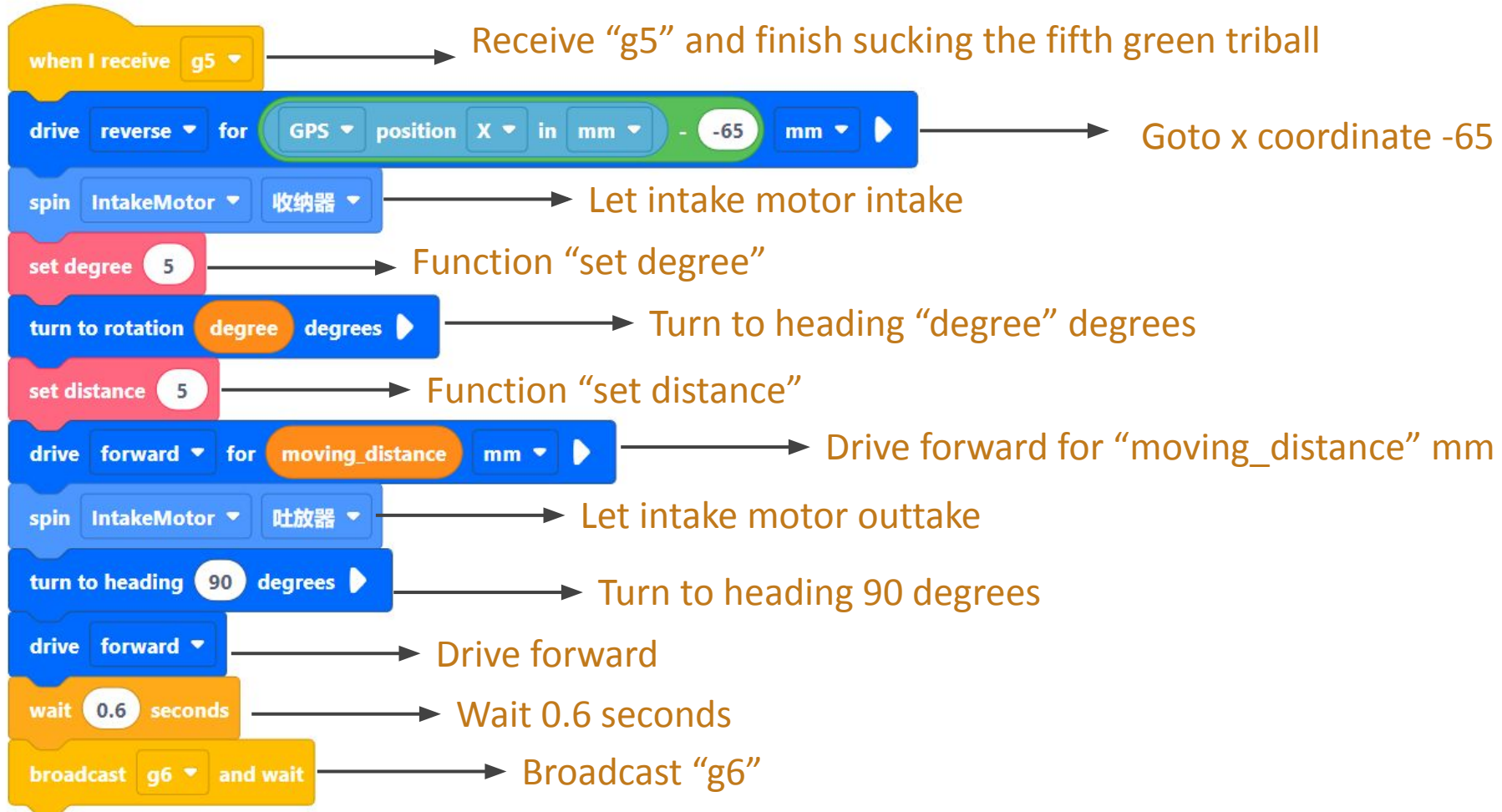
suck the ball forward

# To finish sucking the sixth triball:

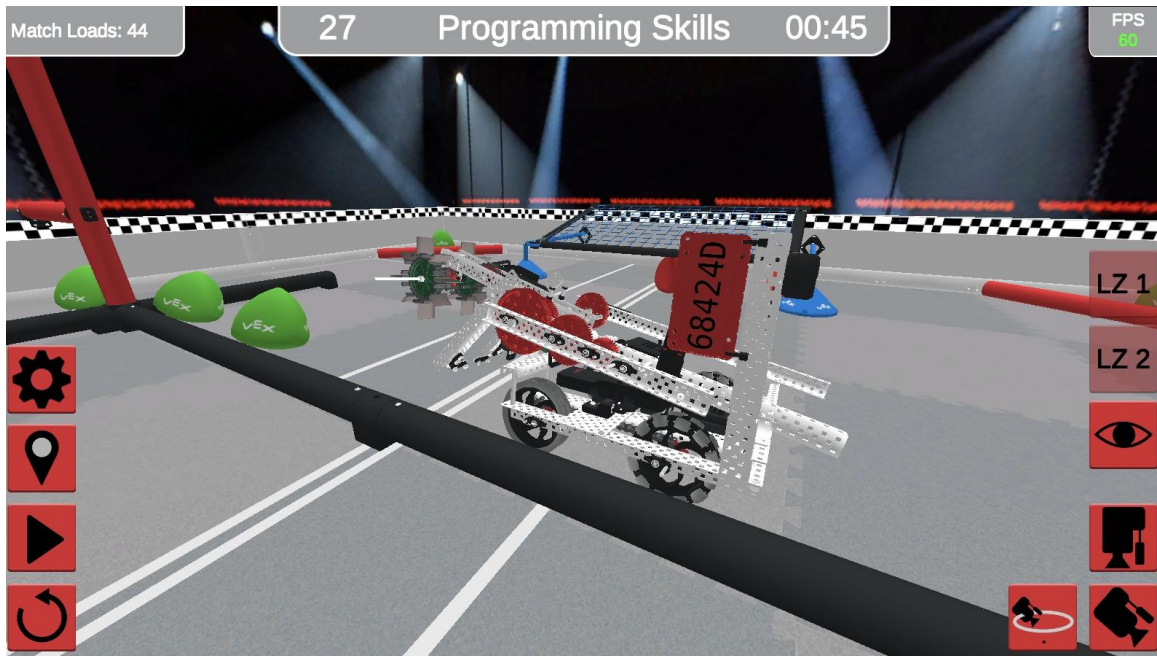


Turn to 90 degrees and push the ball forward

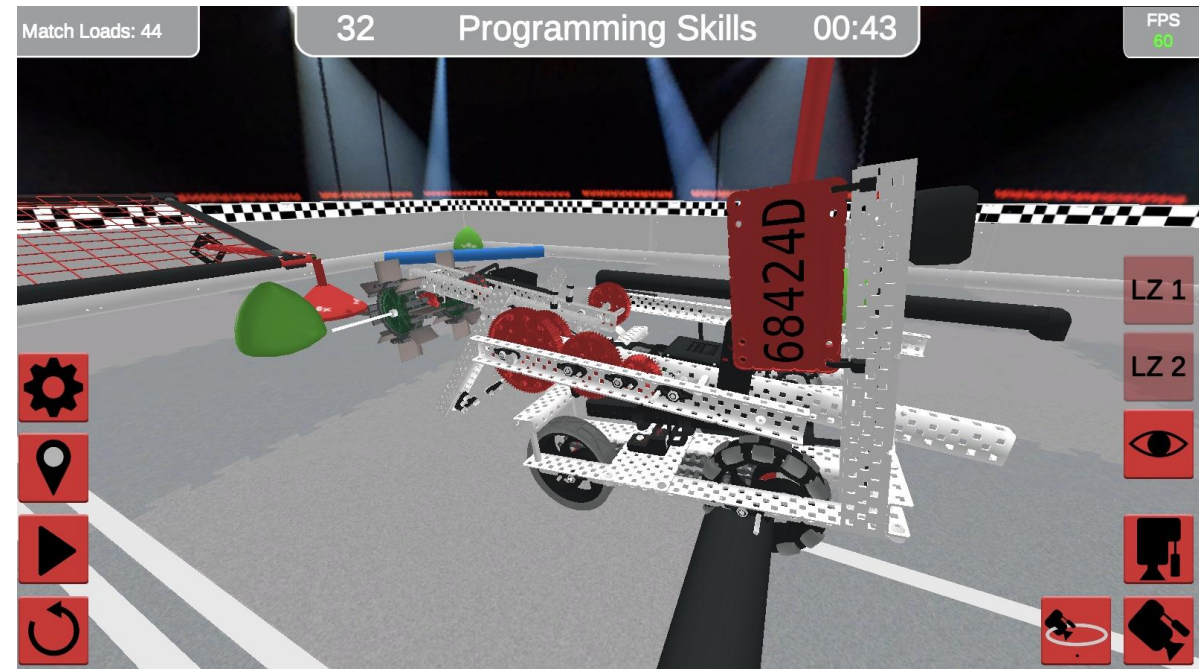
# Program introduction:



# To finish sucking the seventh triball:

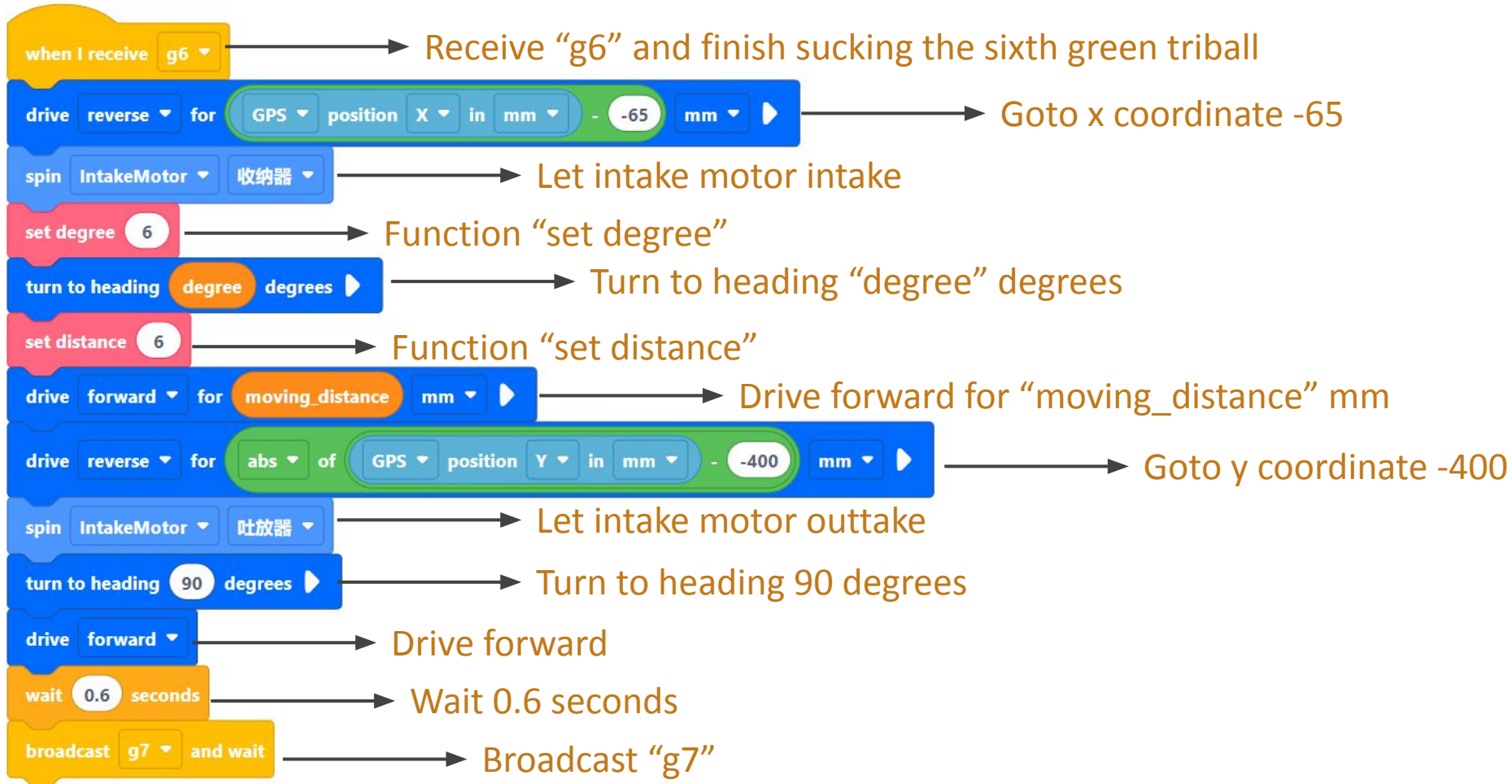


Pour it back and turn it to 180 degrees to suck the next ball

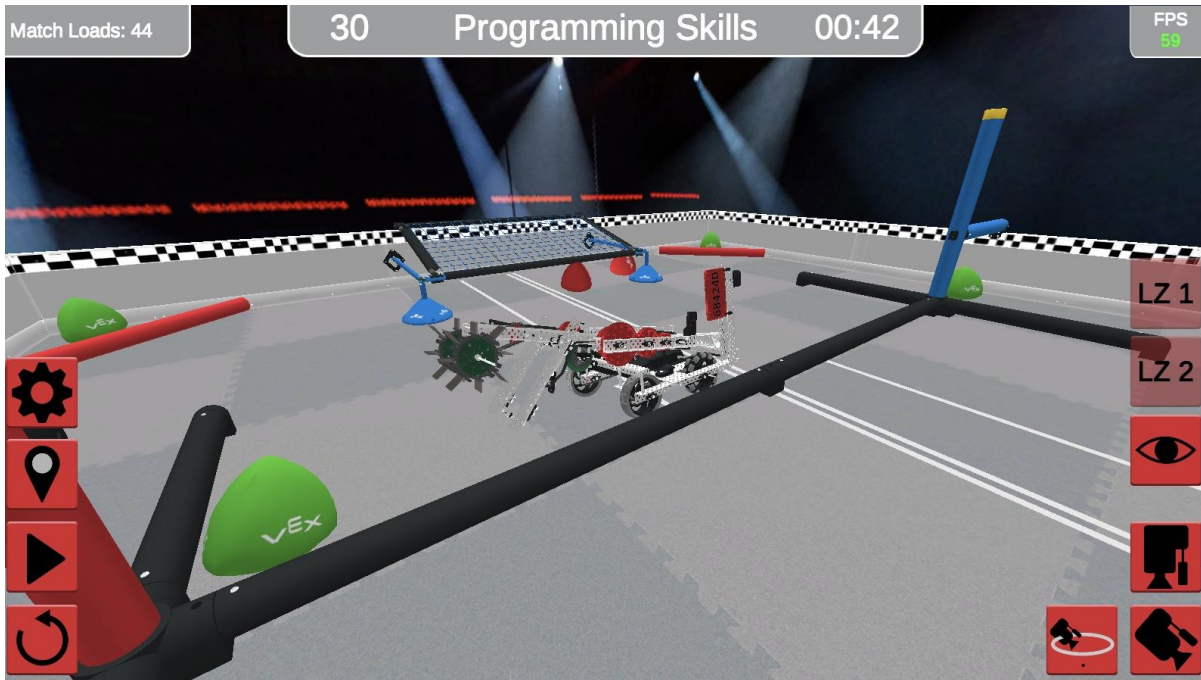


After sucking the ball, turn 90 degrees and push the ball to the goal.

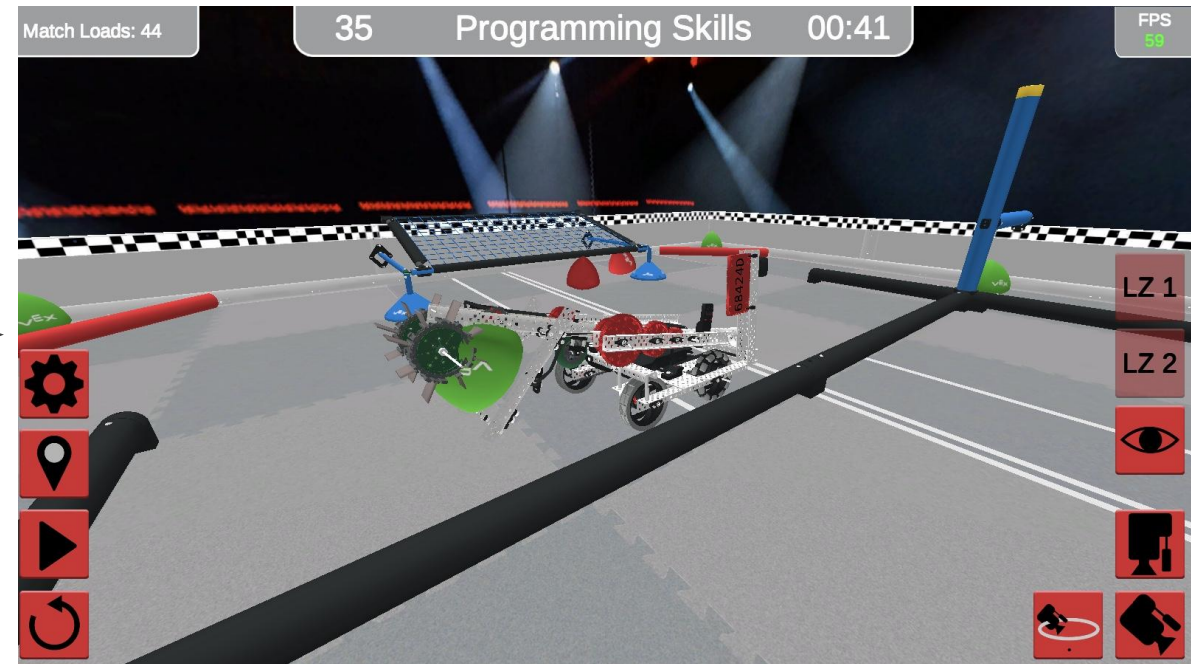
# Program introduction:



# To finish sucking the eighth triball:



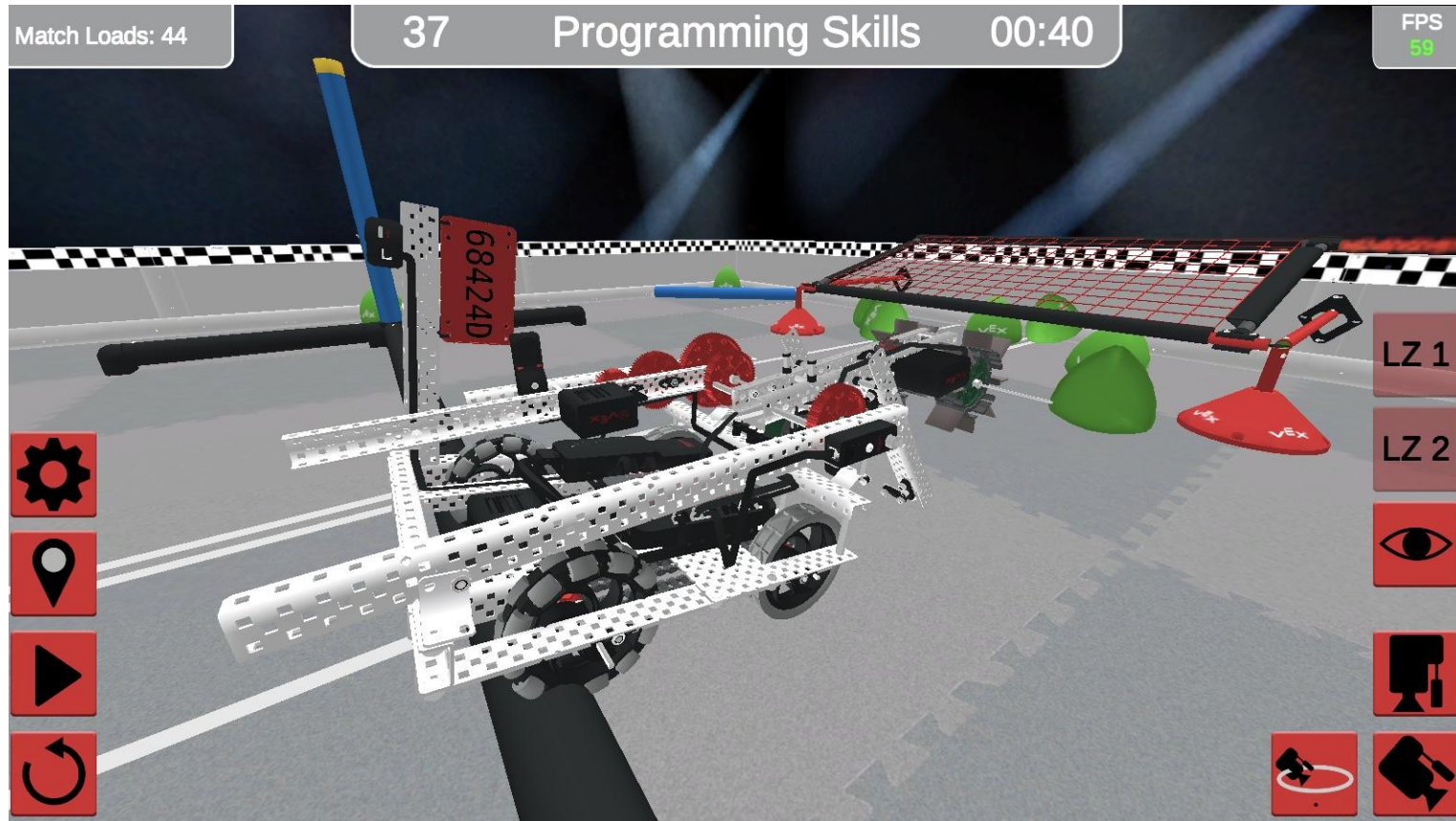
Fall back and turn 180 degrees to suck the eighth triball



After sucking the ball, step back

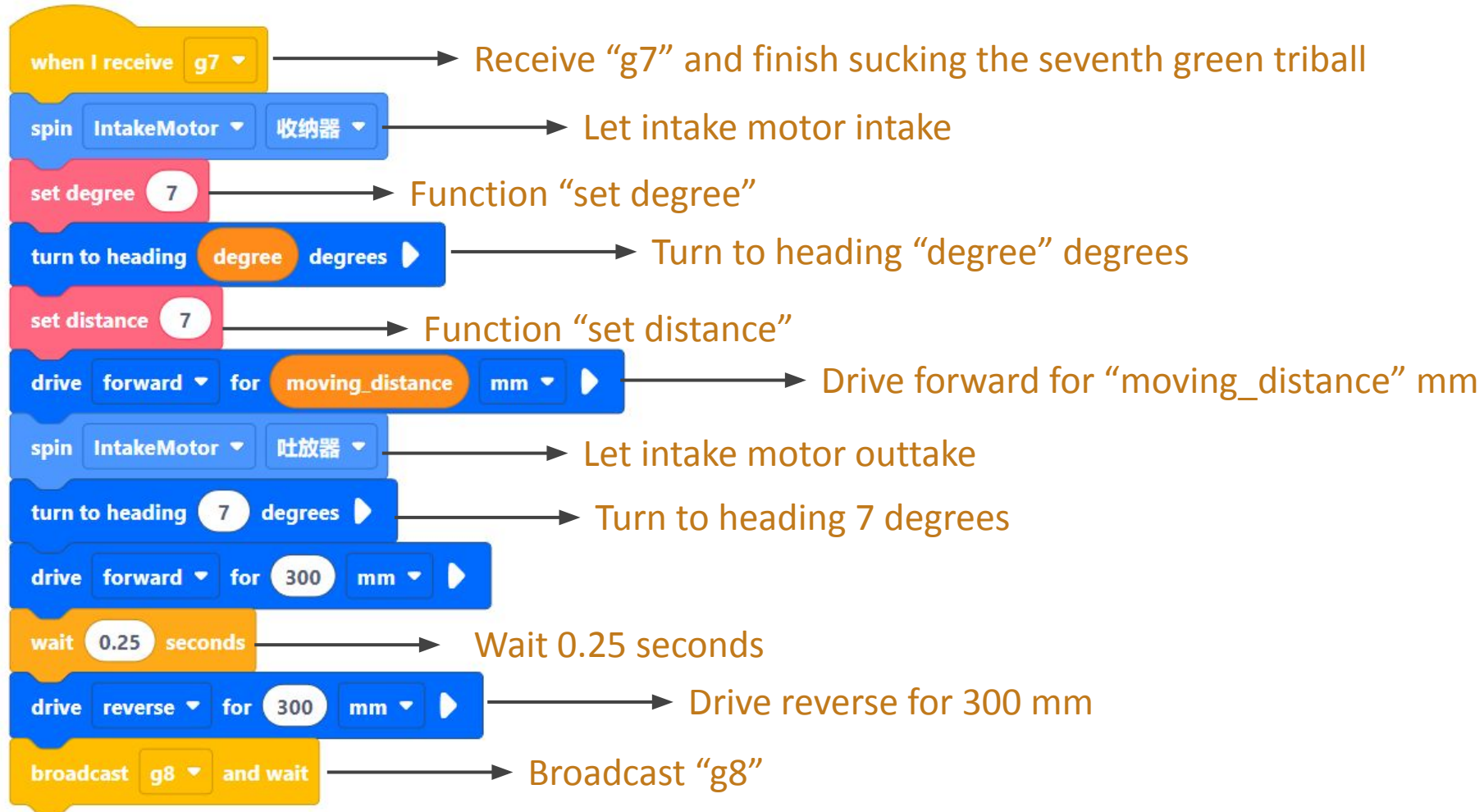


# To finish sucking the eighth triball:

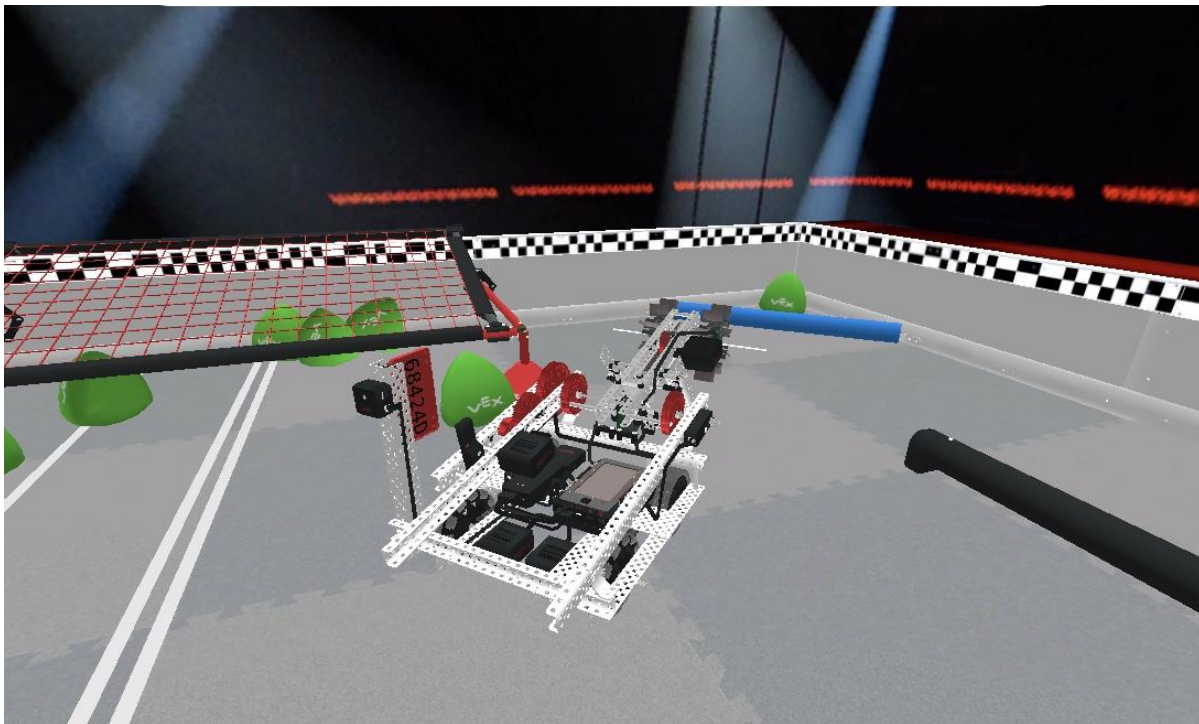


**Turn ninety degrees and put the ball into the goal**

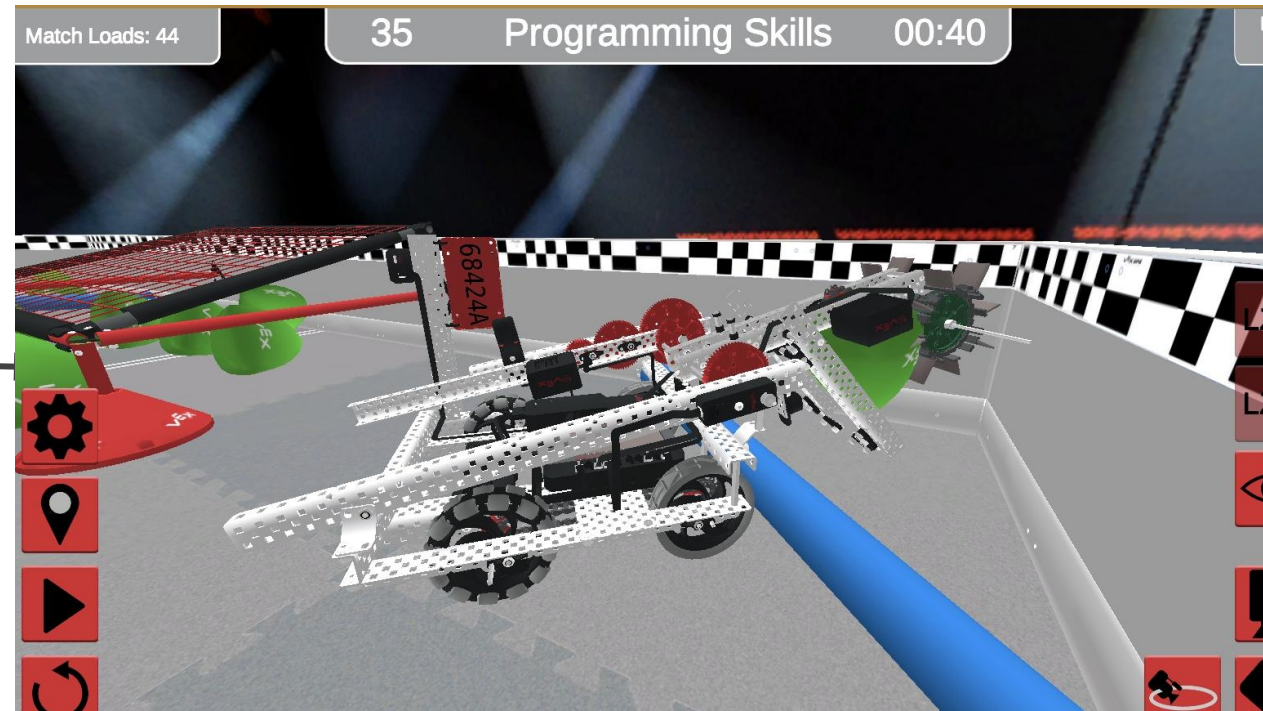
# Program introduction:



# To finish sucking the ninth triball:

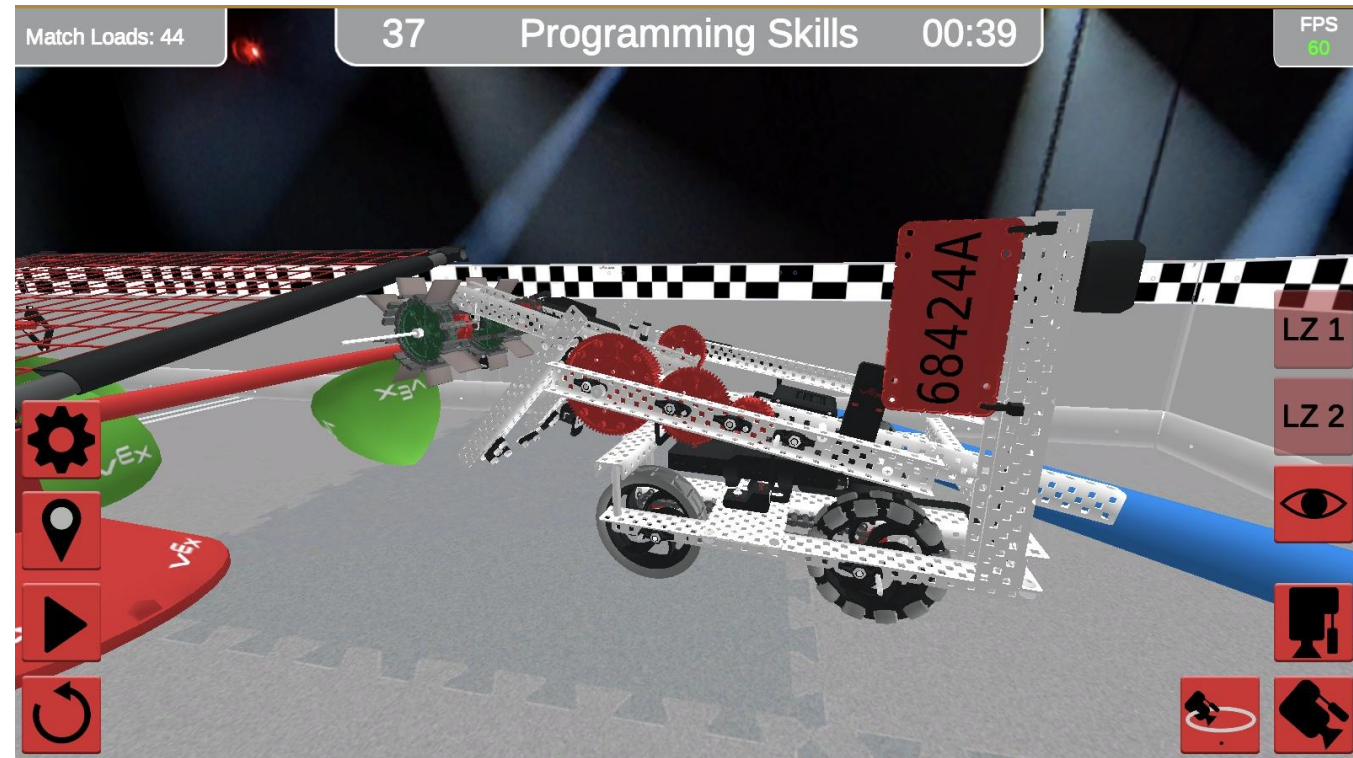


**Turn set degrees and inhale the triball in the introduction area**



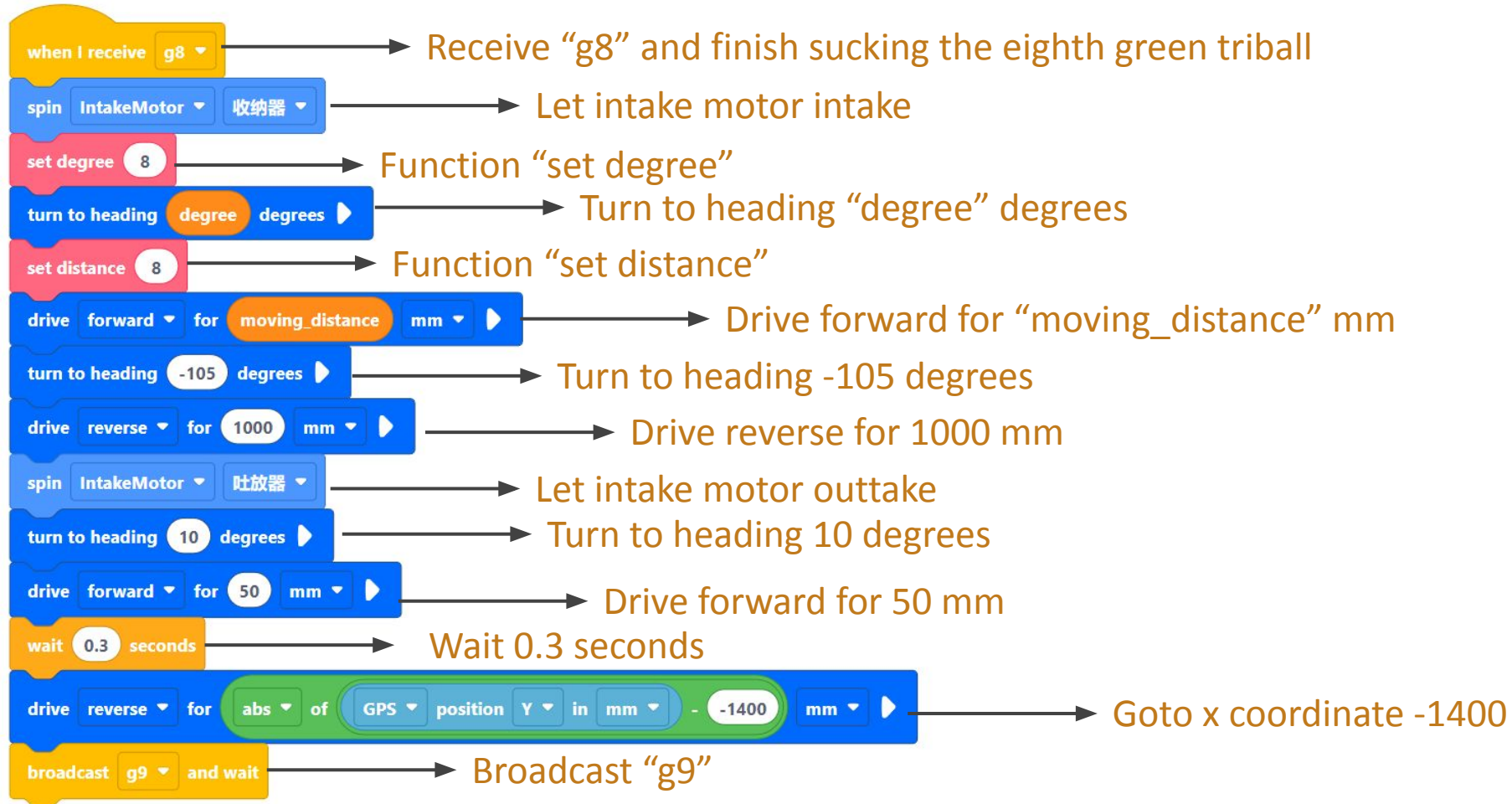
**Suction the ball in the lead-in area and turn it to the preset angle**

# To finish sucking the ninth triball:

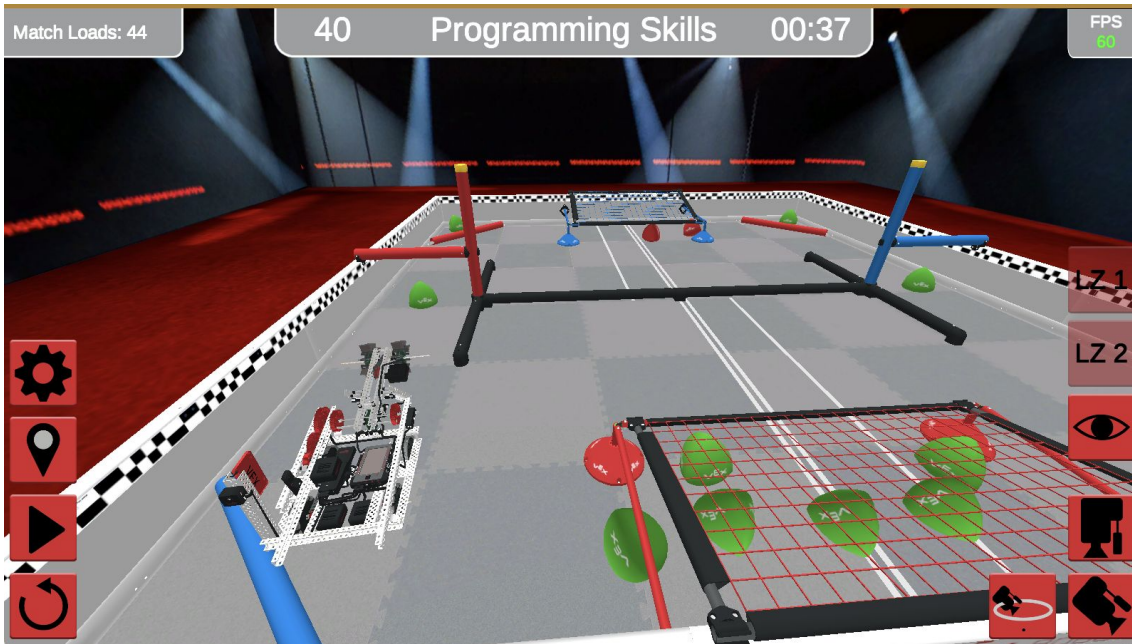


**Push the ball into the goal**

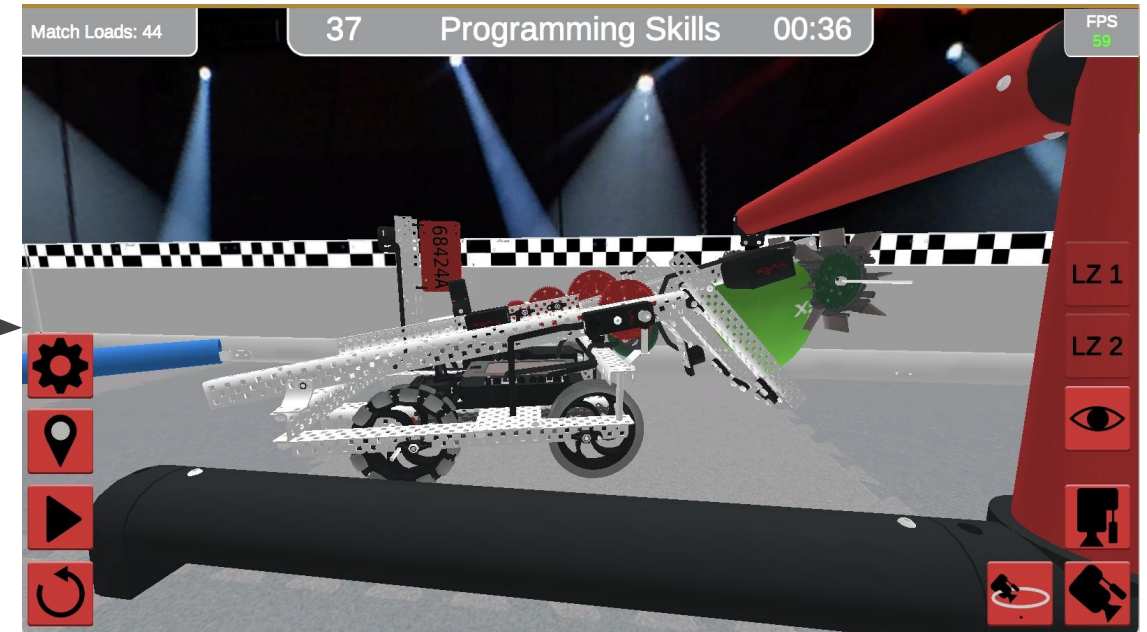
# Program introduction:



# To finish sucking the tenth triball:

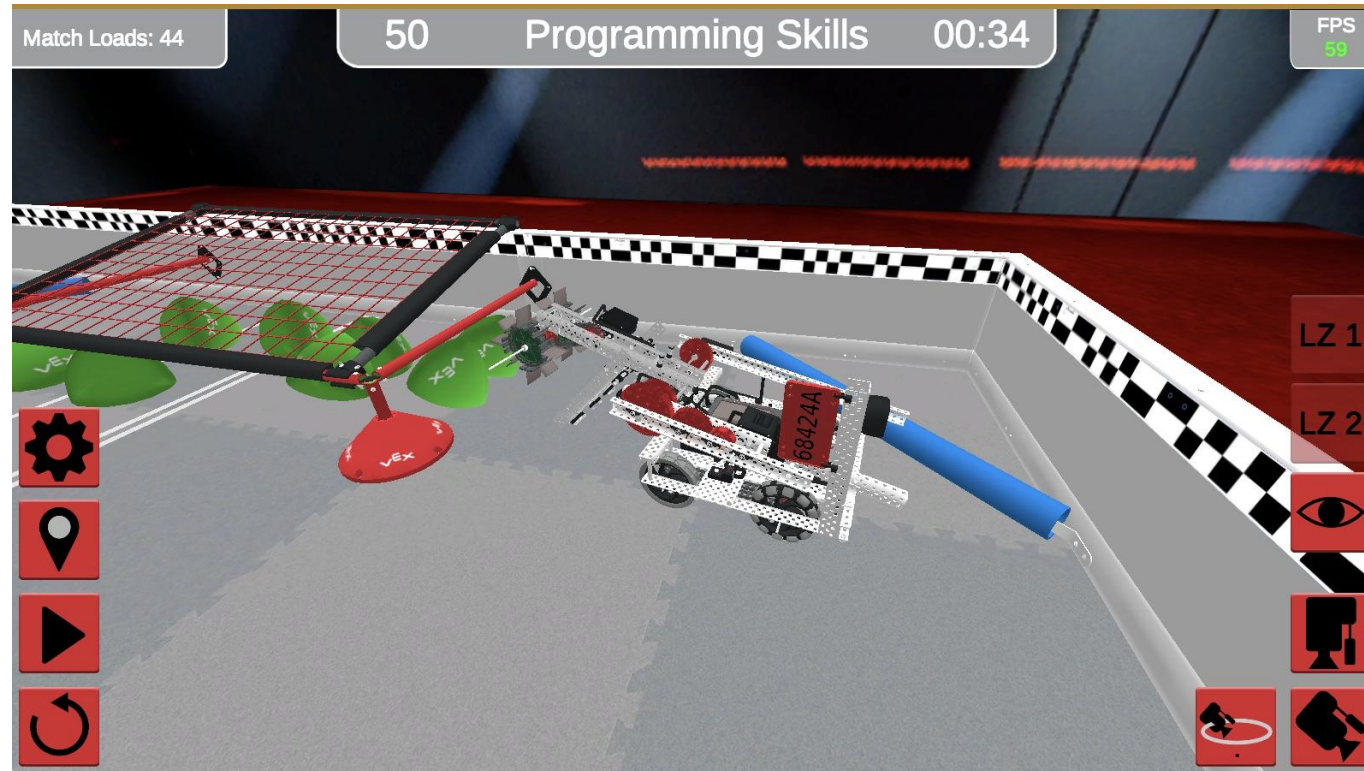


**Back up and turn to the next preset angle**



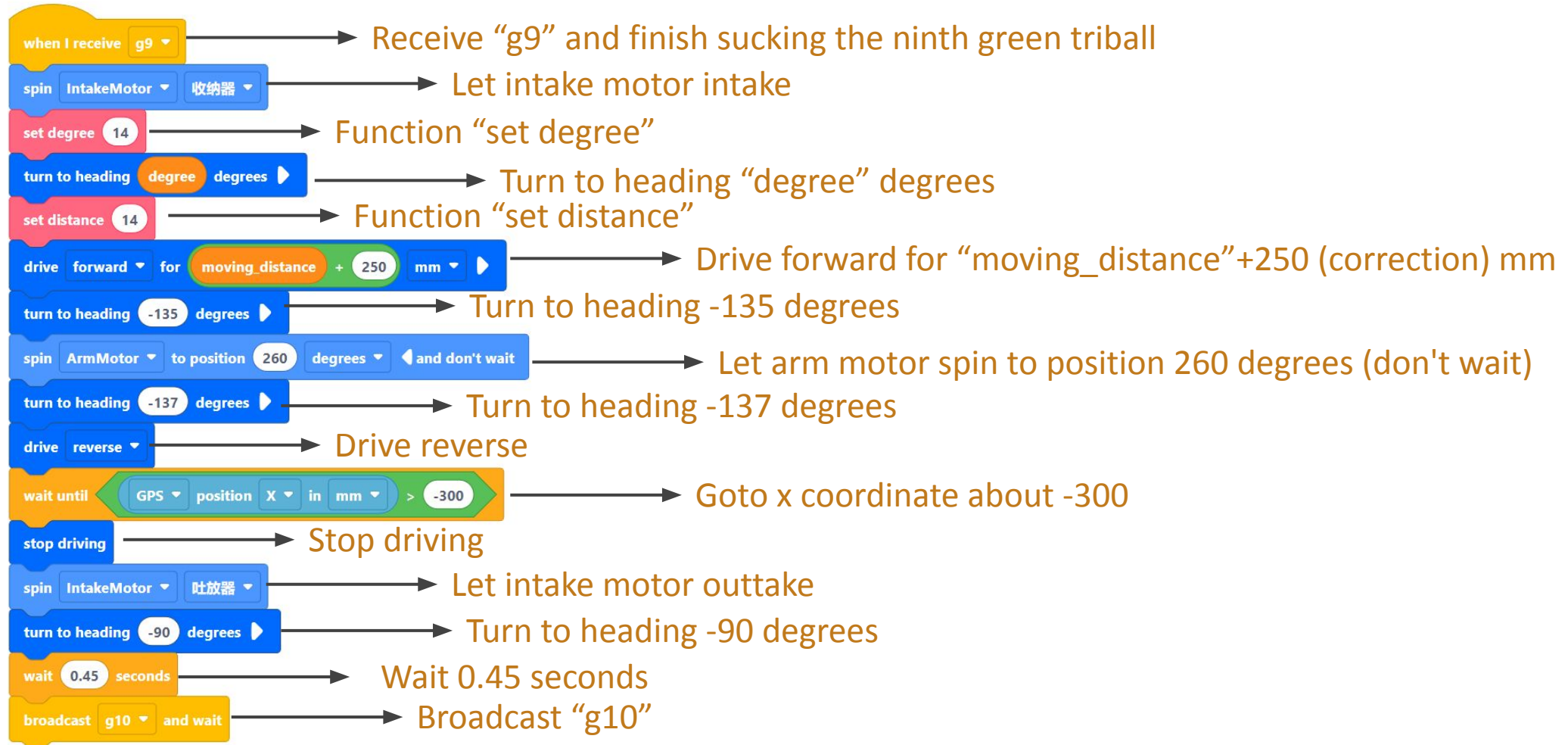
**suck the ball**

# To finish sucking the tenth triball:



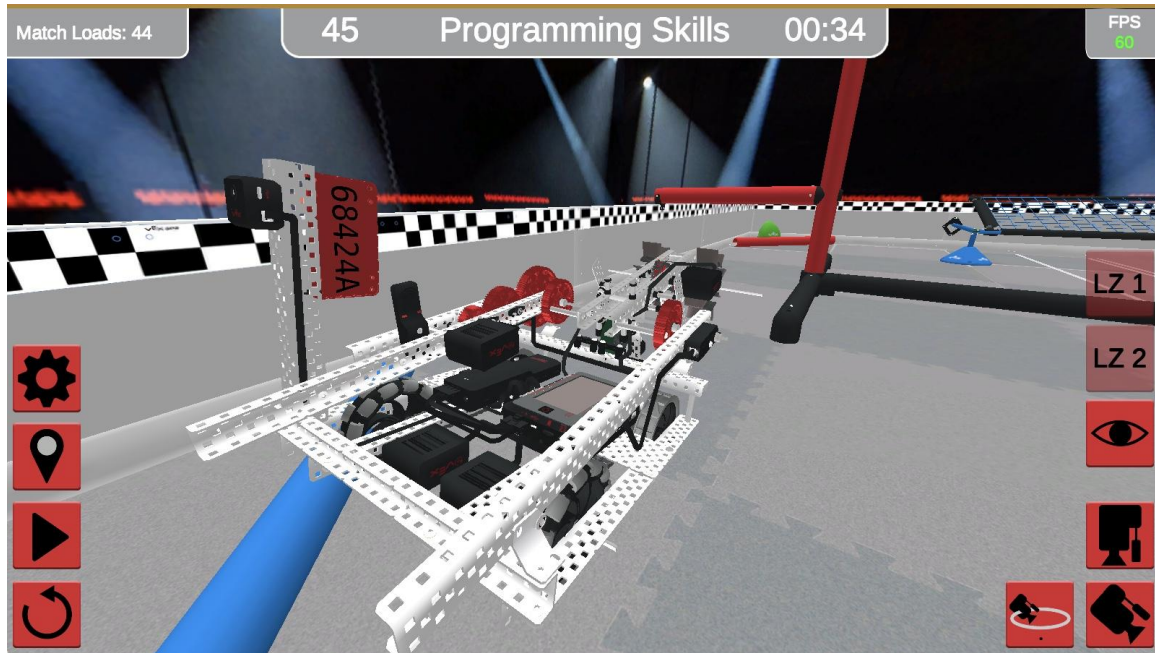
Back off and turn to the next angle to send the ball into the goal

# Program introduction:





# To finish sucking the eleventh triball:

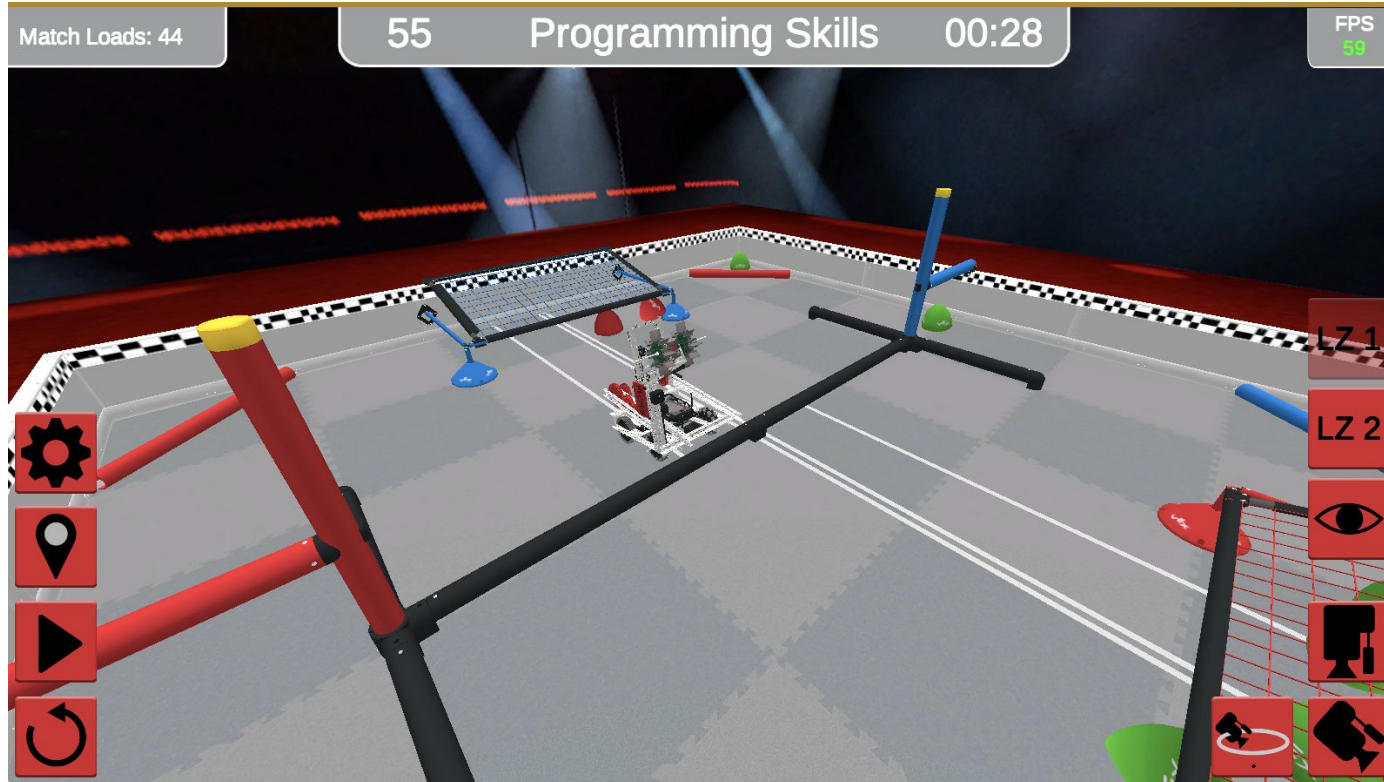


Back up and turn to the next angle



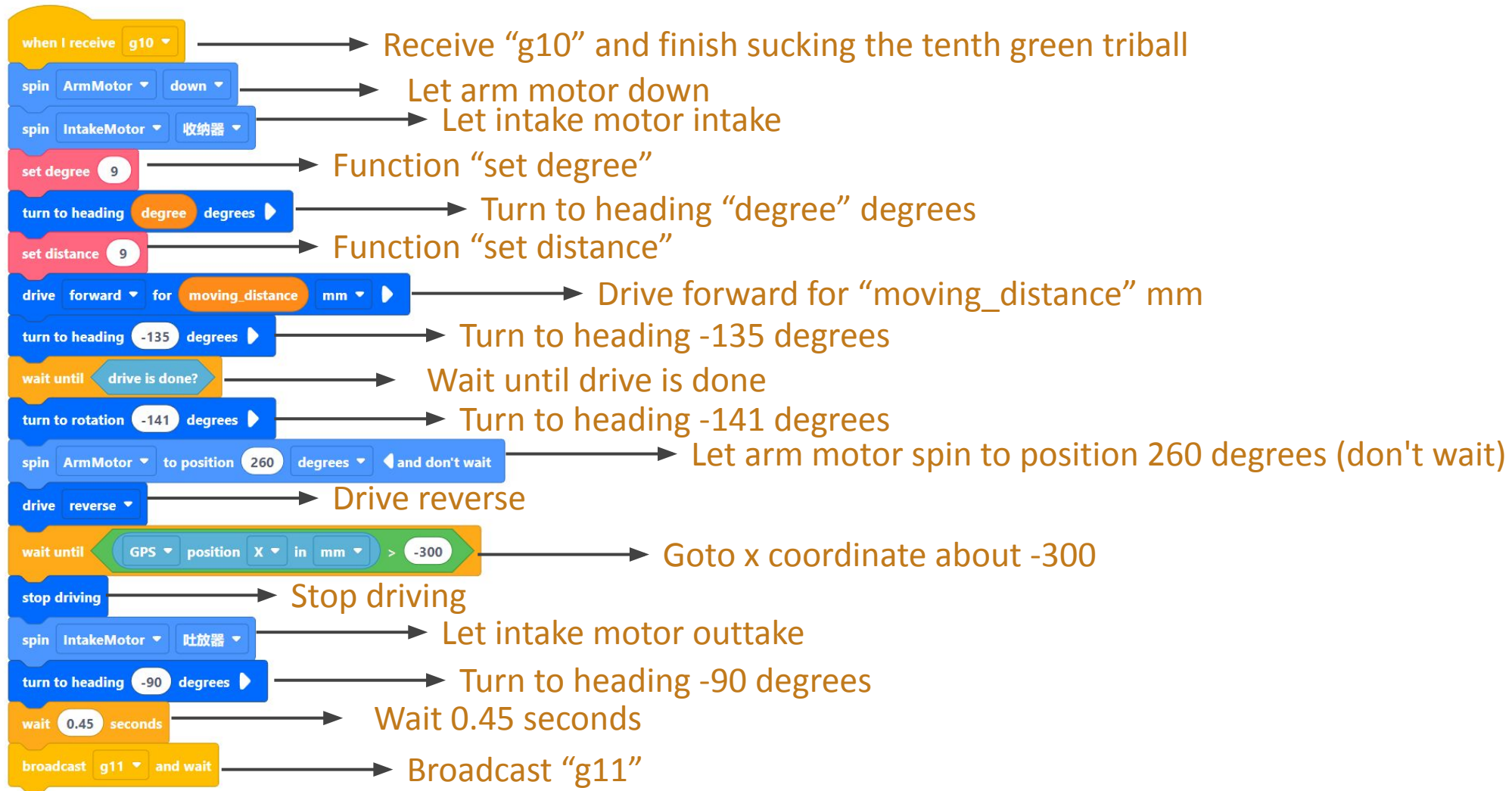
Move forward and turn to the next preset angle. After sucking the ball, turn it into ejection form.

# To finish sucking the eleventh triball:

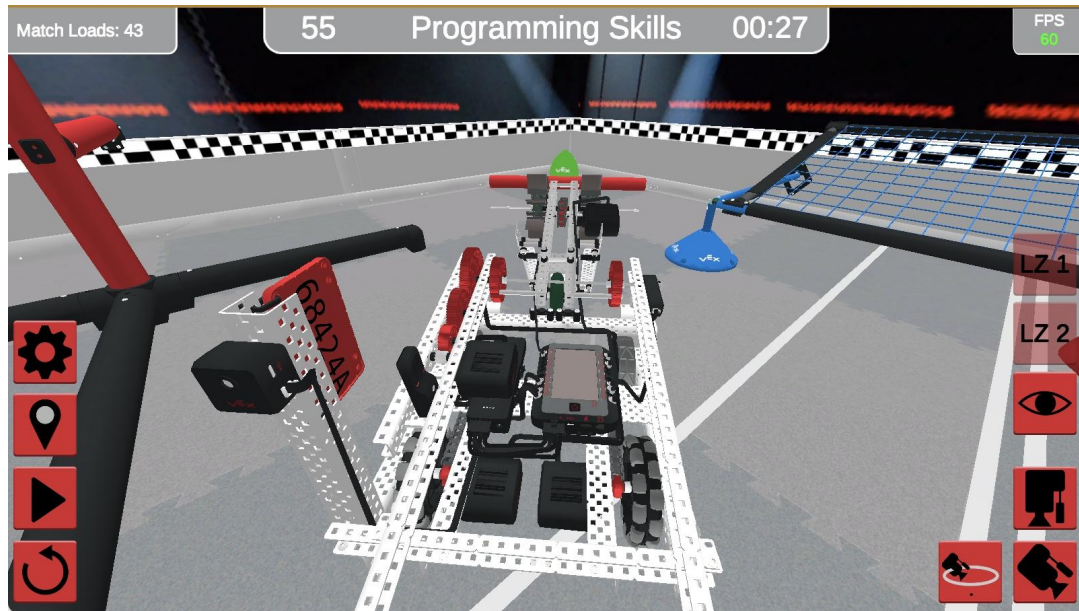


After sucking the ball, step back, turn to the next turning angle, and shoot the ball directly into the goal.

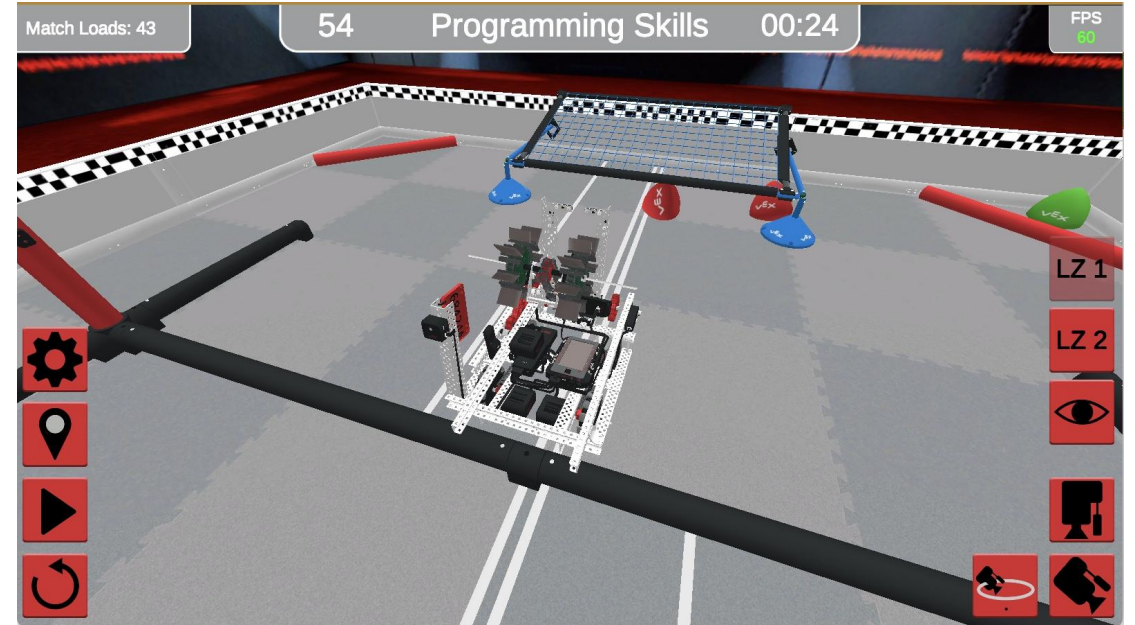
# Program introduction:



# To finish sucking the twelfth triball:

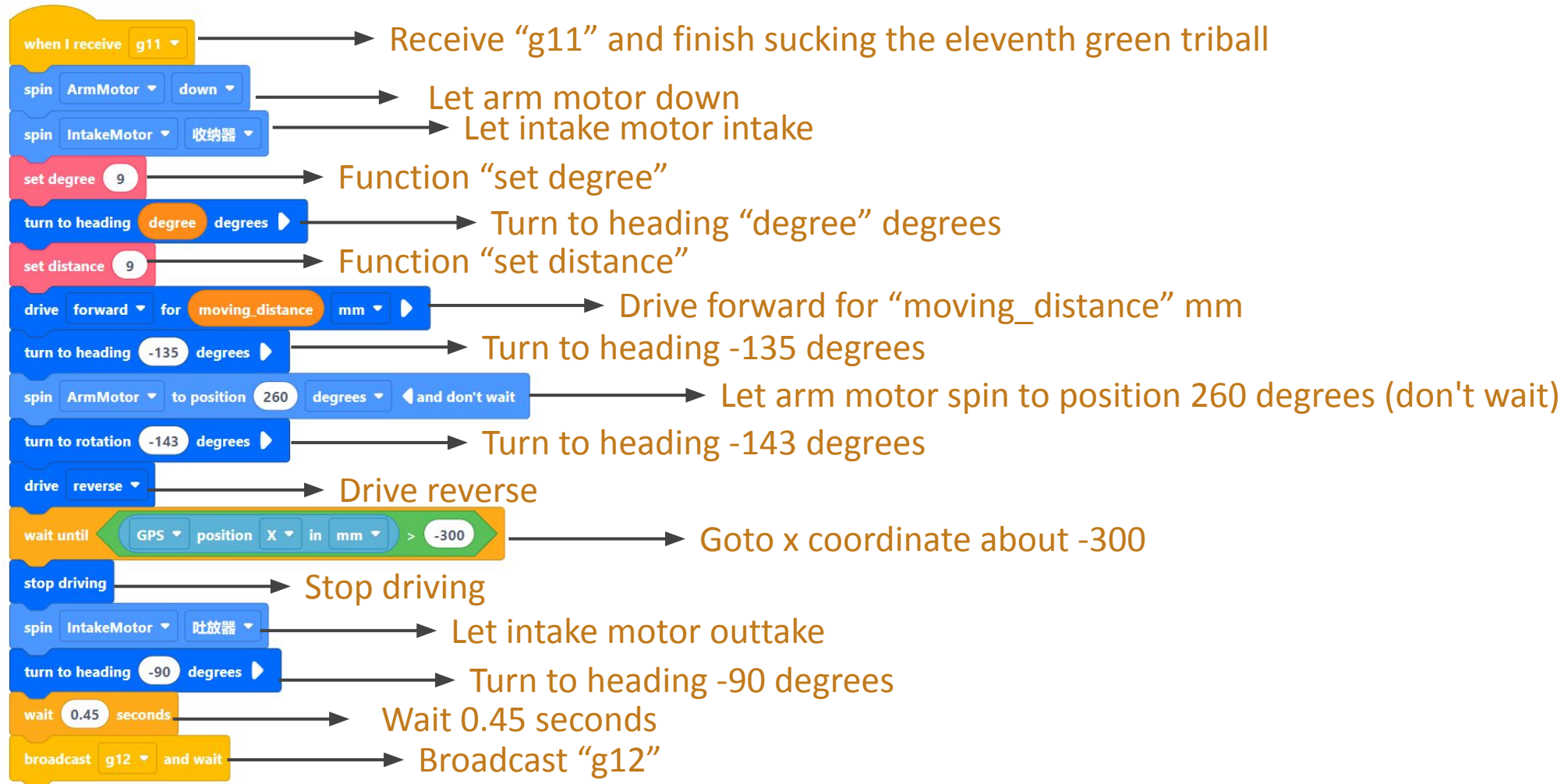


Turn to the next preset angle, return to the ball-sucking form, and prepare to suck the ball forward.

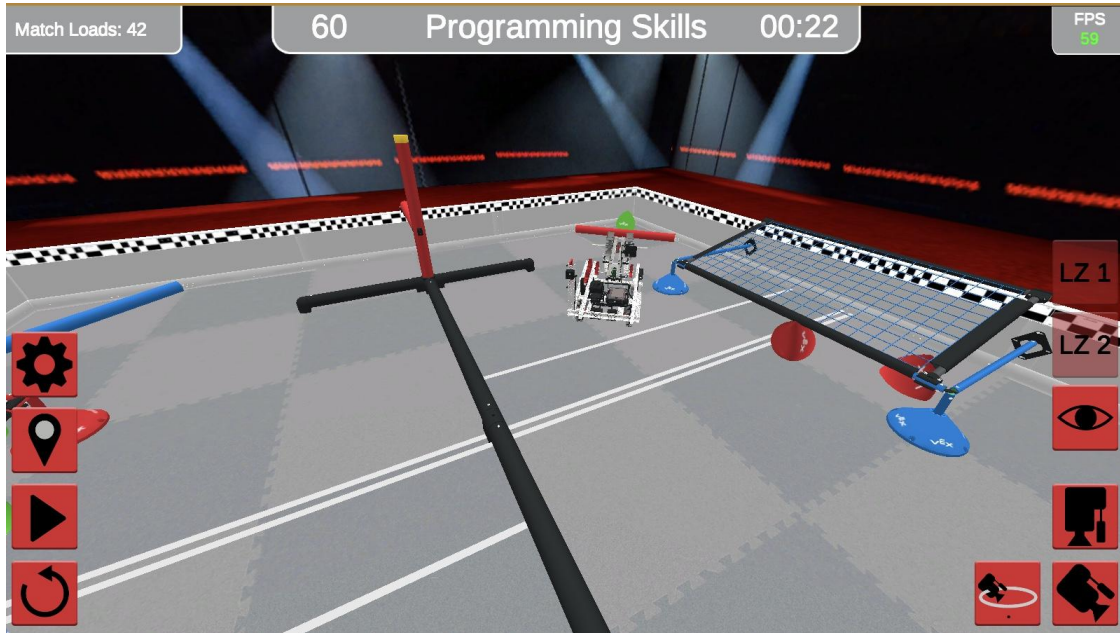


After sucking the ball, switch back to the ejection mode, step back and turn to the next corner at the preset angle, and shoot the ball into the gantry.

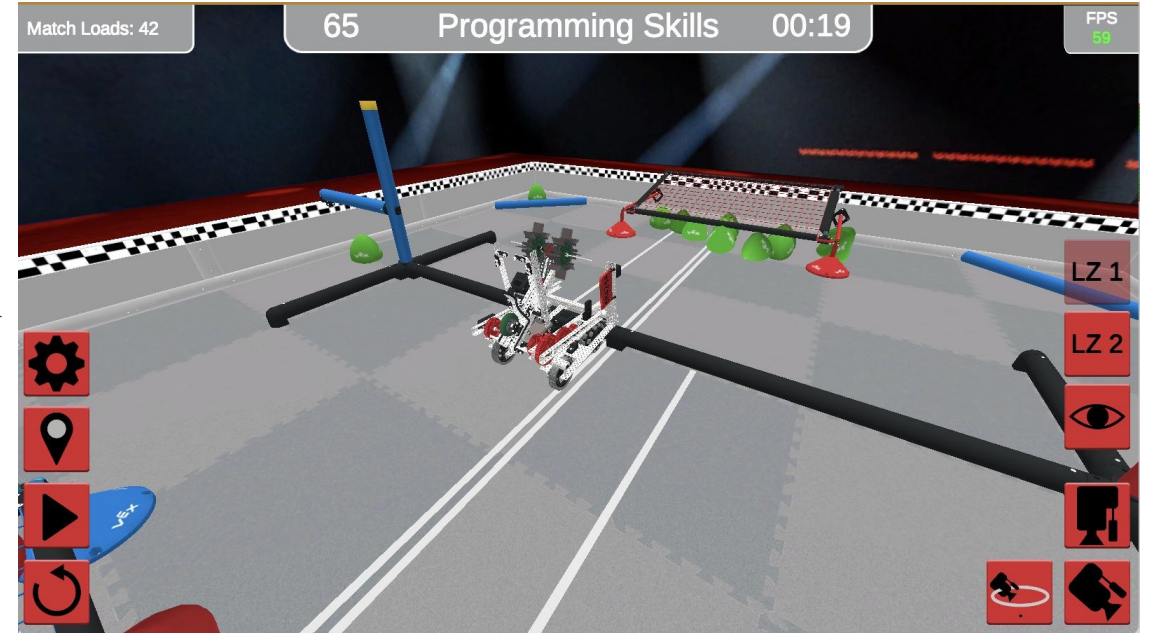
# Program introduction:



# To finish sucking the thirteenth triball:

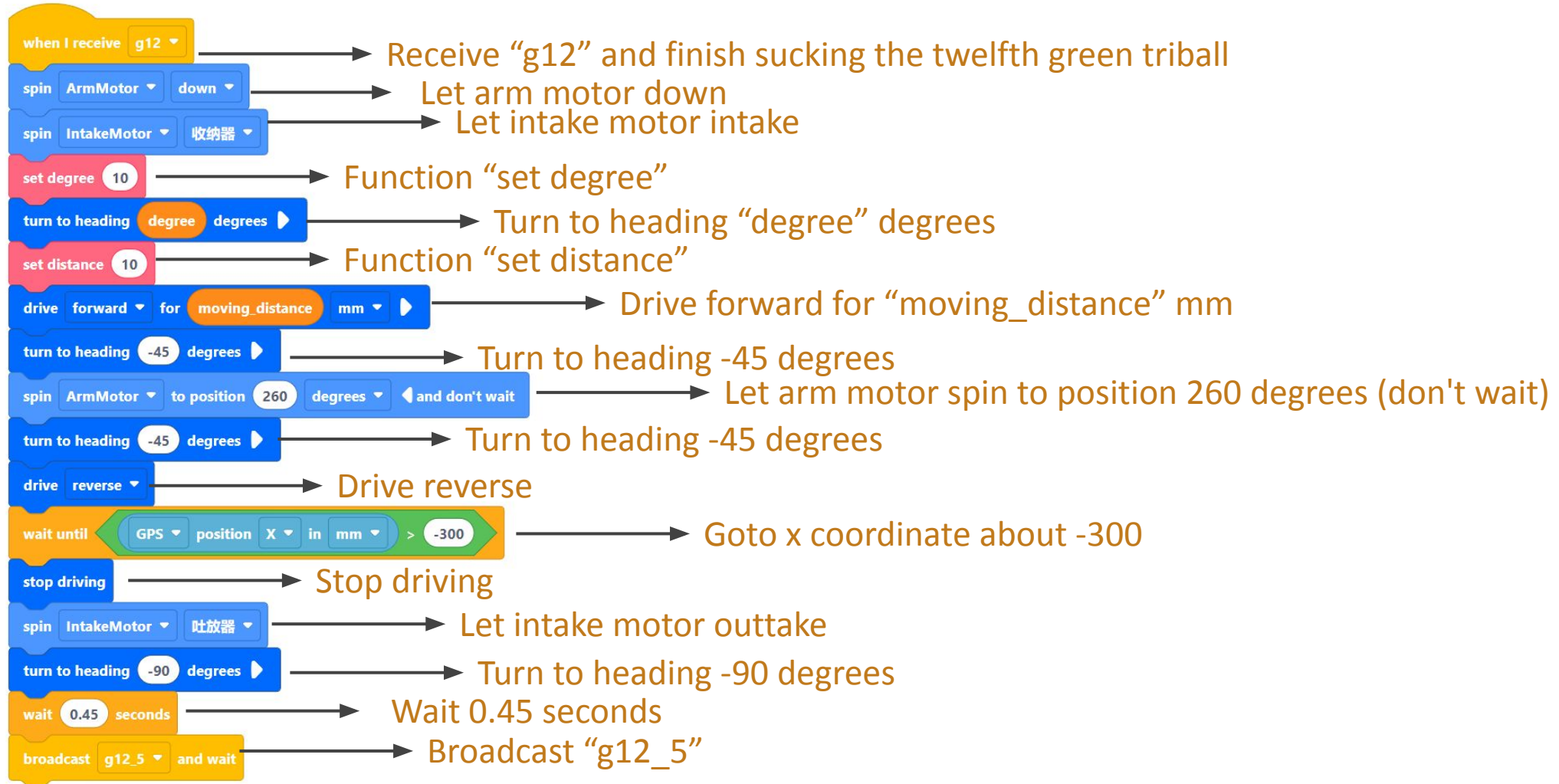


**Go to the next preset angle and go ahead and suck the ball away**

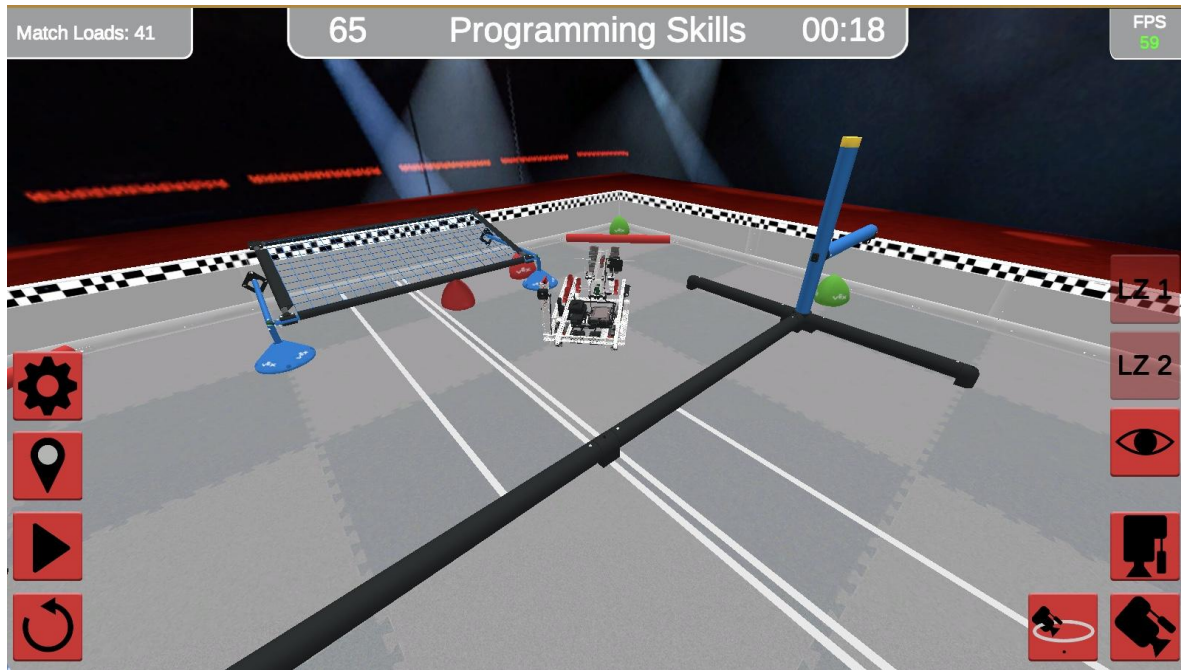


**After sucking the ball, step back and switch to projection mode and turn to the next preset angle, and shoot the ball into the goal.**

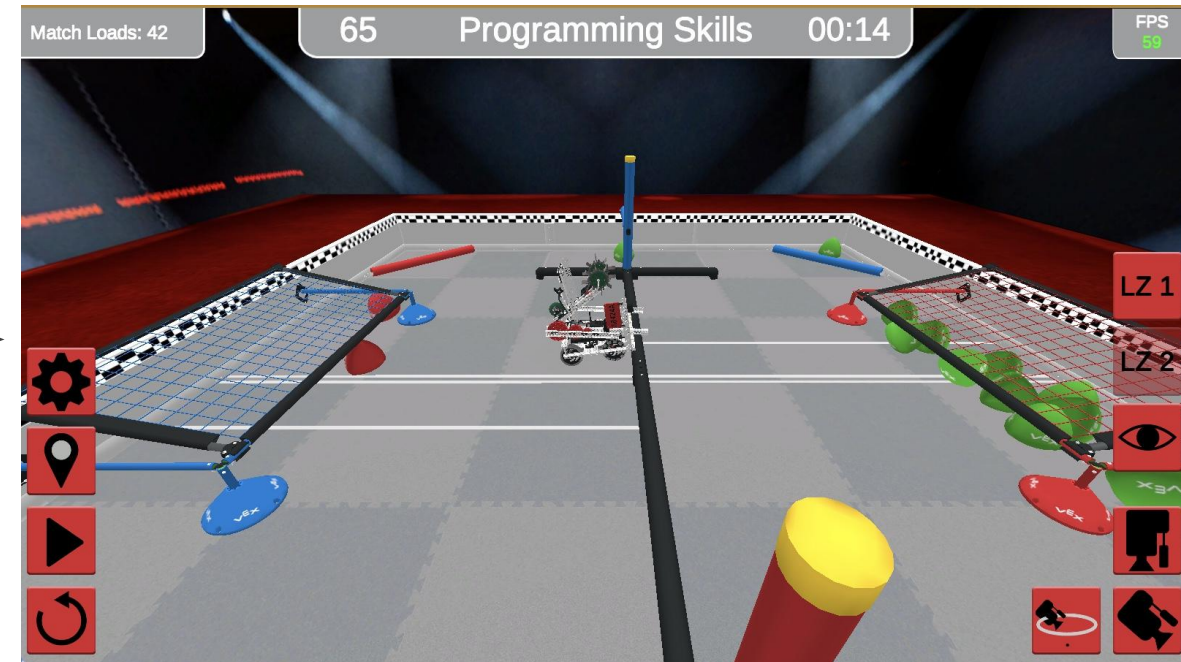
# Program introduction:



# To finish sucking the fourteenth triball:



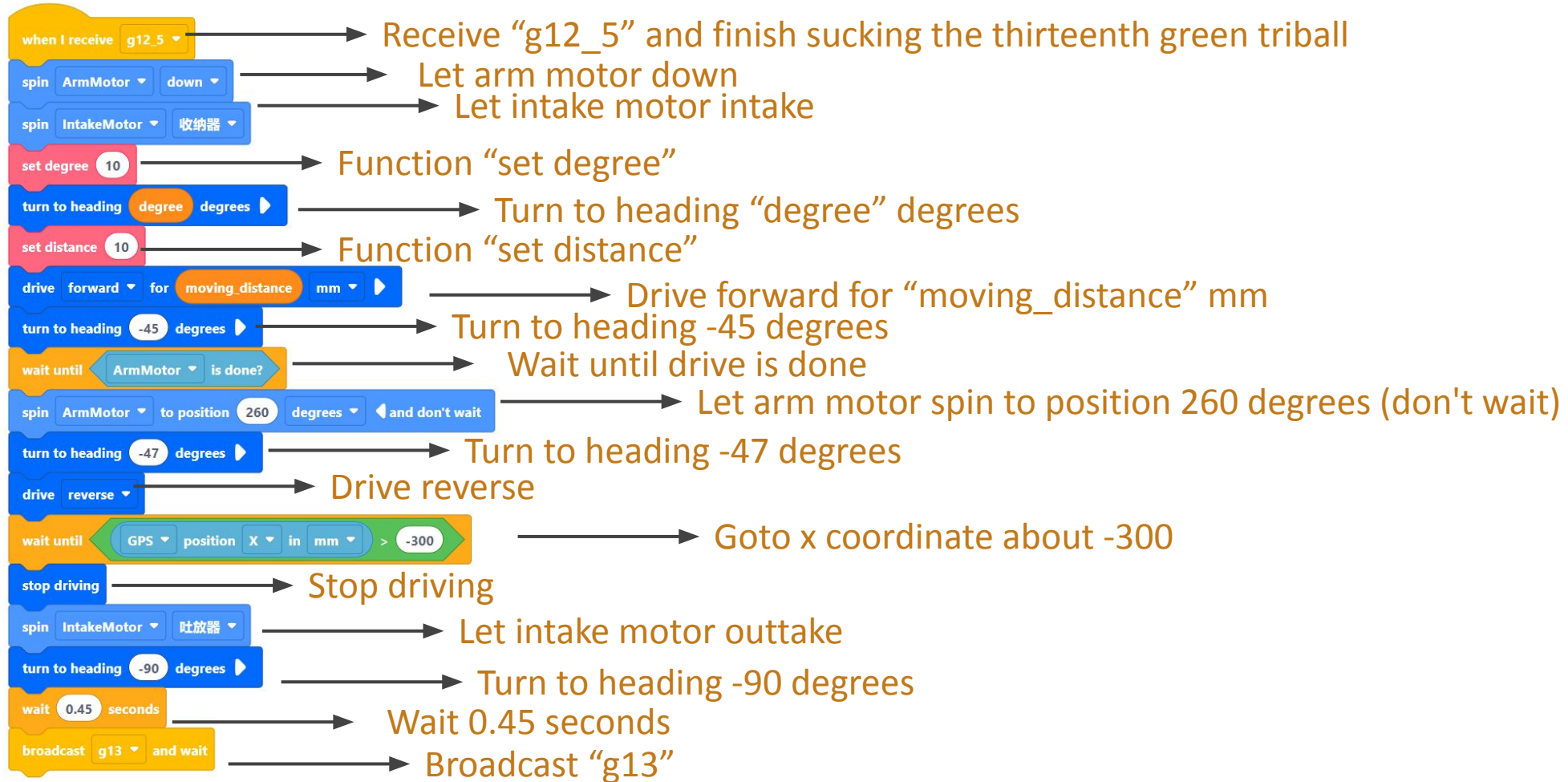
Switch to ball suction mode, turn to the next preset angle, and suck the ball away



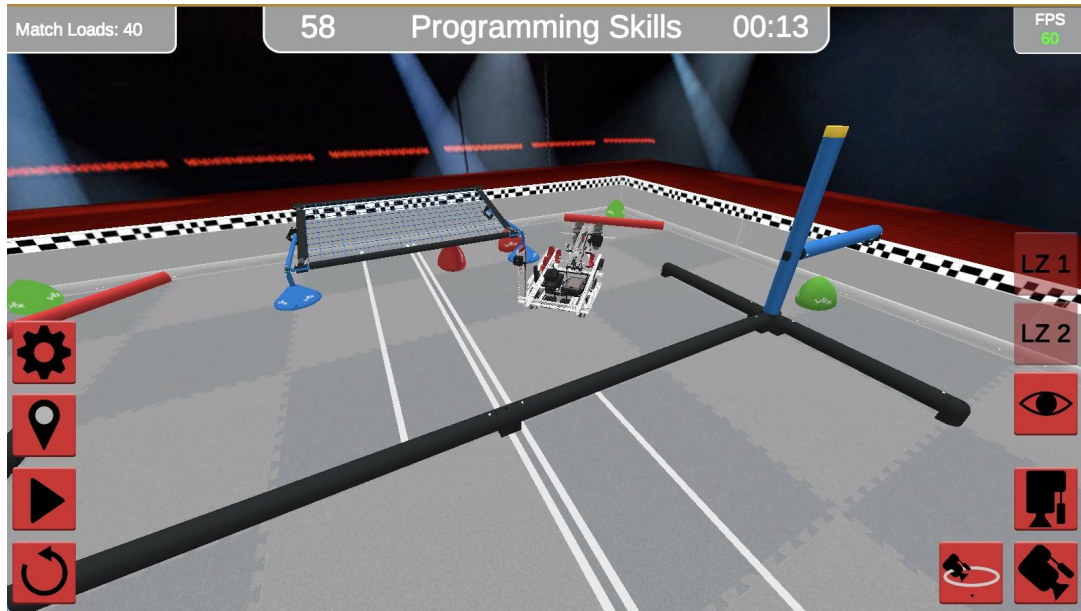
After sucking the ball, switch to shooting mode, turn to the next preset angle, and shoot the ball into the goal.



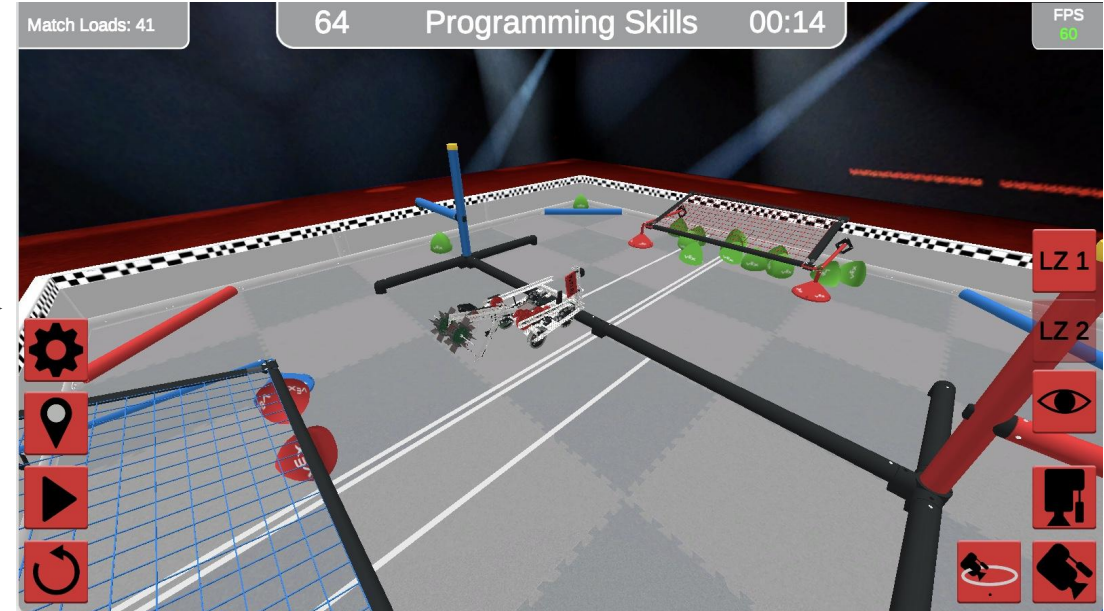
# Program introduction:



# To finish sucking the fifteenth triball:

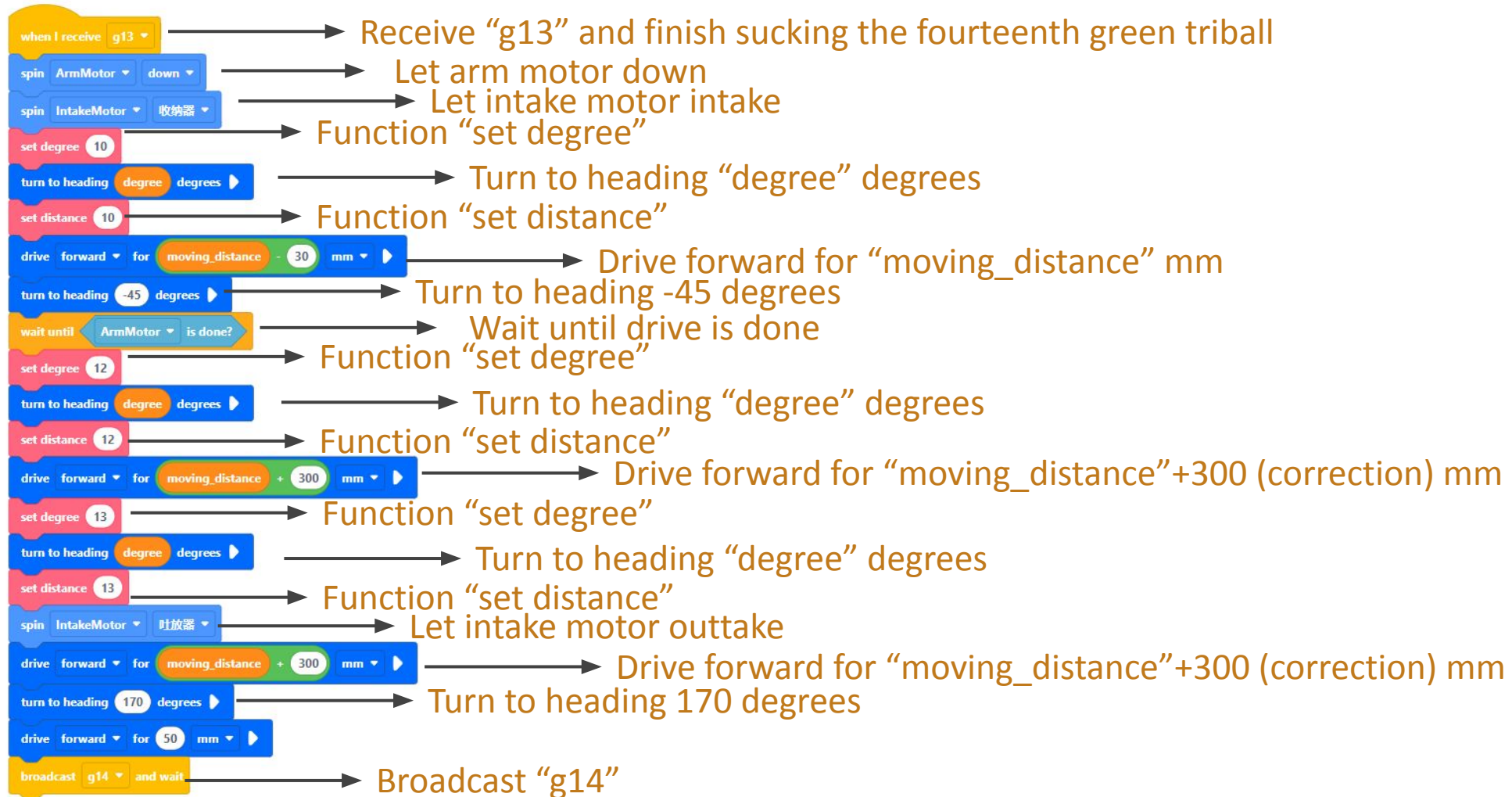


**Turn to the next preset angle, switch to ball suction mode, and suck the ball forward**



**Back up and switch to shooting mode, turn to the next preset angle and shoot the ball into the goal.**

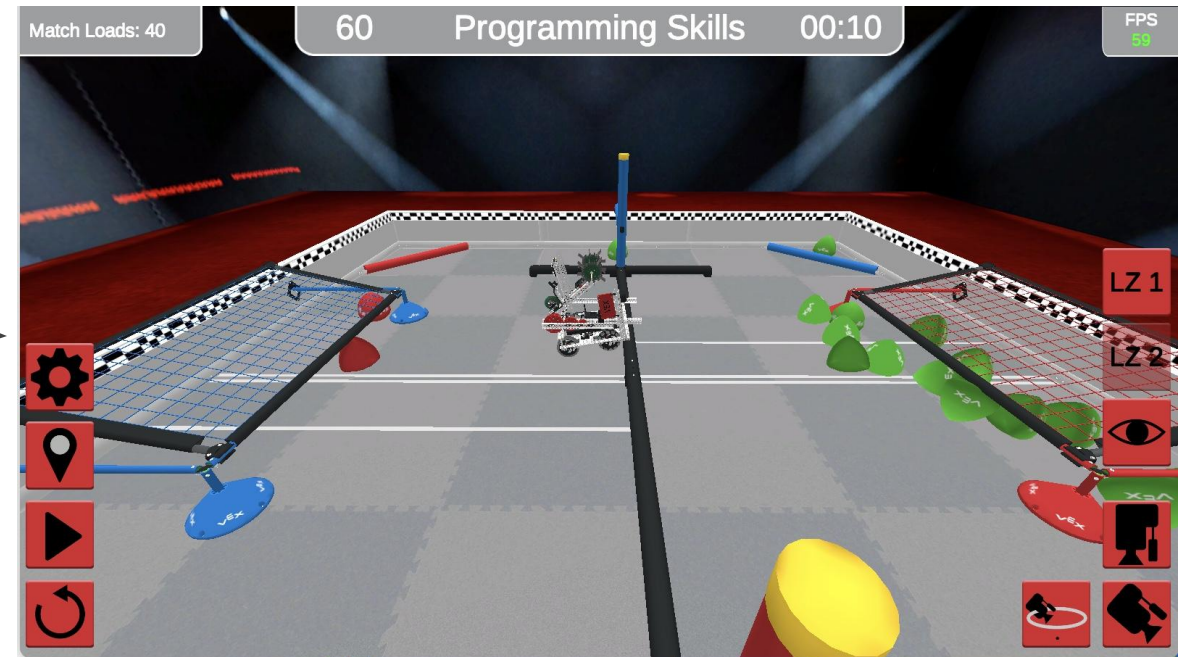
# Program introduction:



# To finish sucking the sixteenth triball:

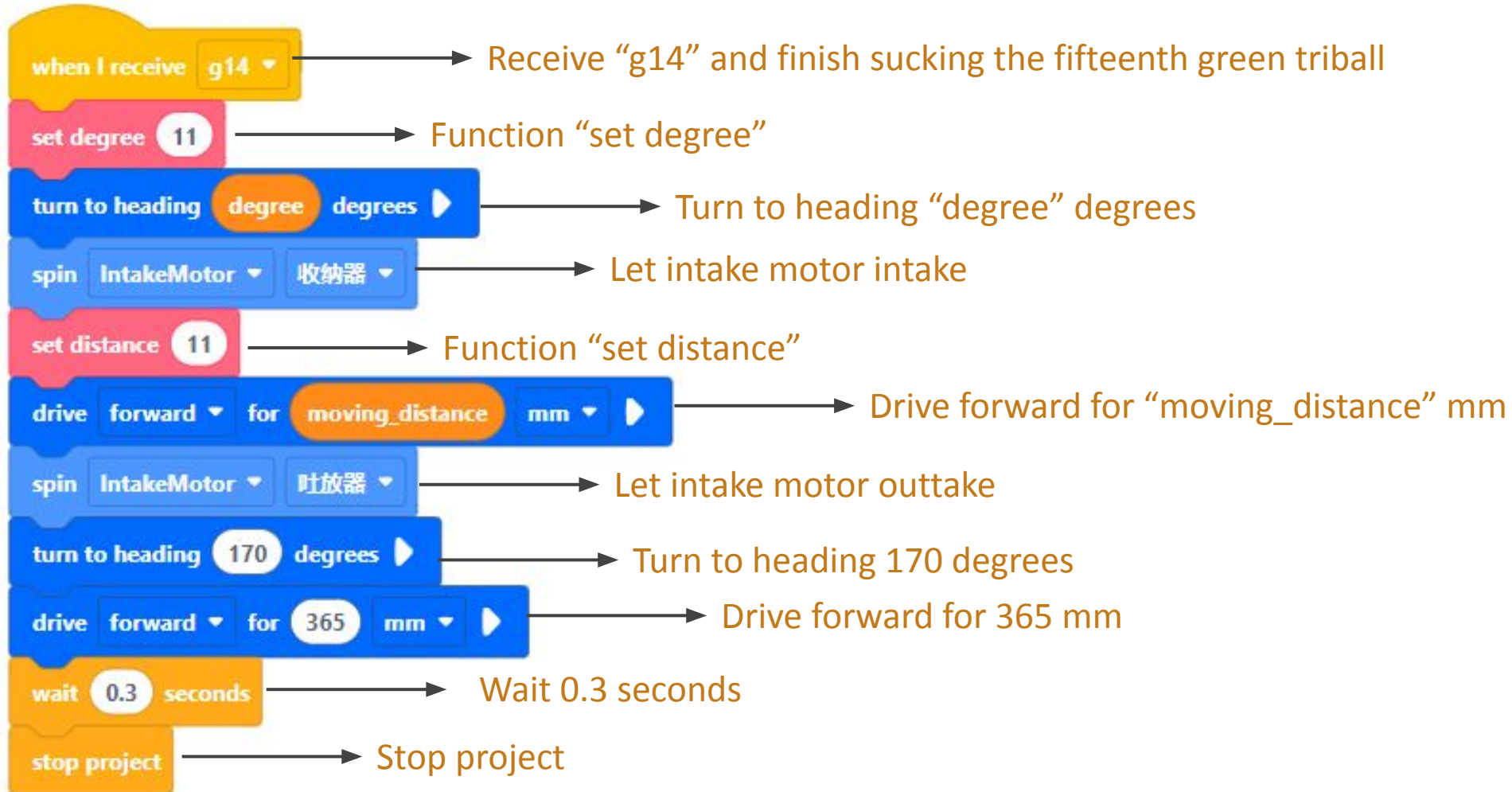


**Switch to ball suction mode, turn to the next angle, and suck the ball forward.**

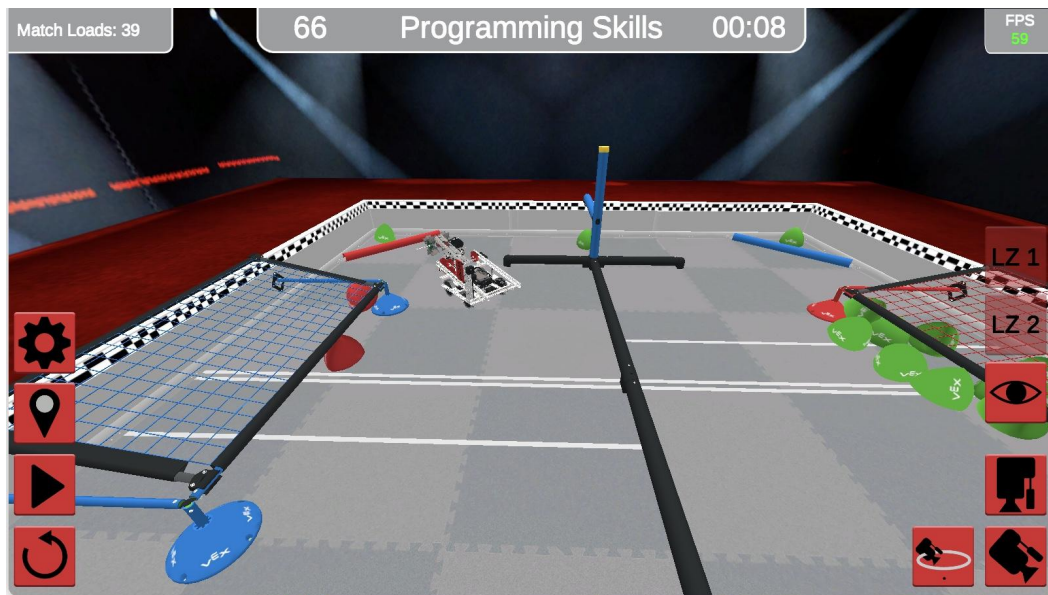


**Switch to shooting mode and turn to the next steering angle to shoot the ball into the goal.**

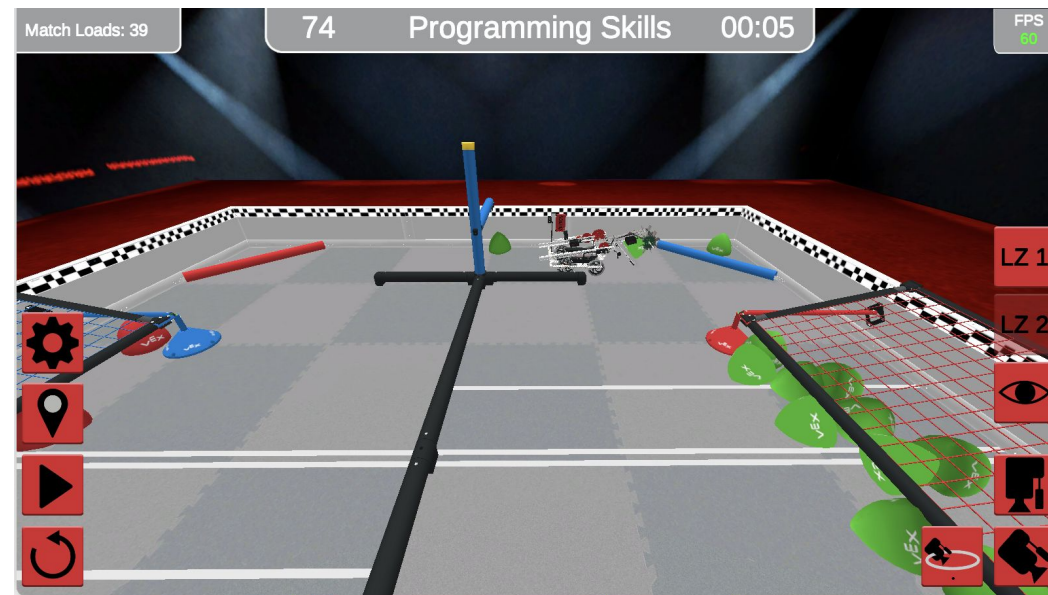
# Program introduction:



# To finish sucking the seventeenth triball:

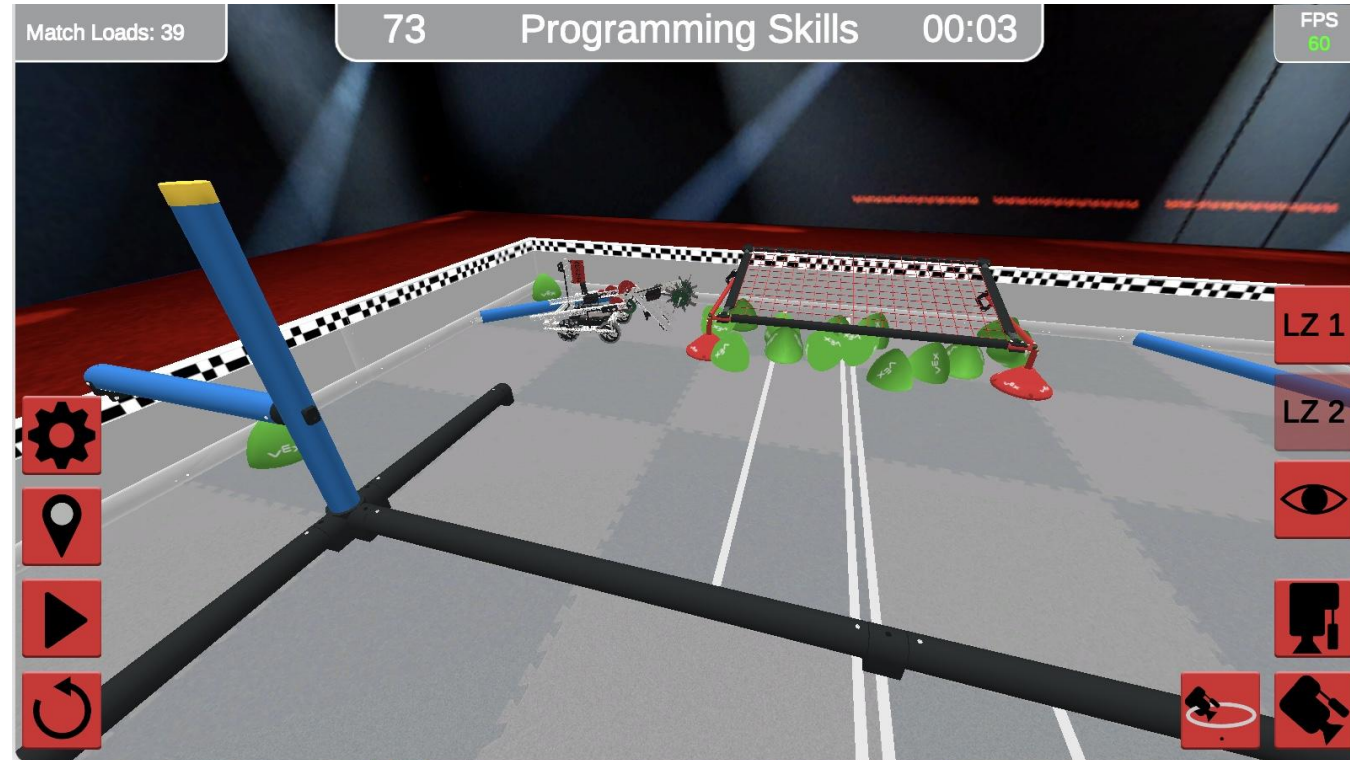


Switch to ball suction mode, turn to the next preset angle, and suck the ball forward.

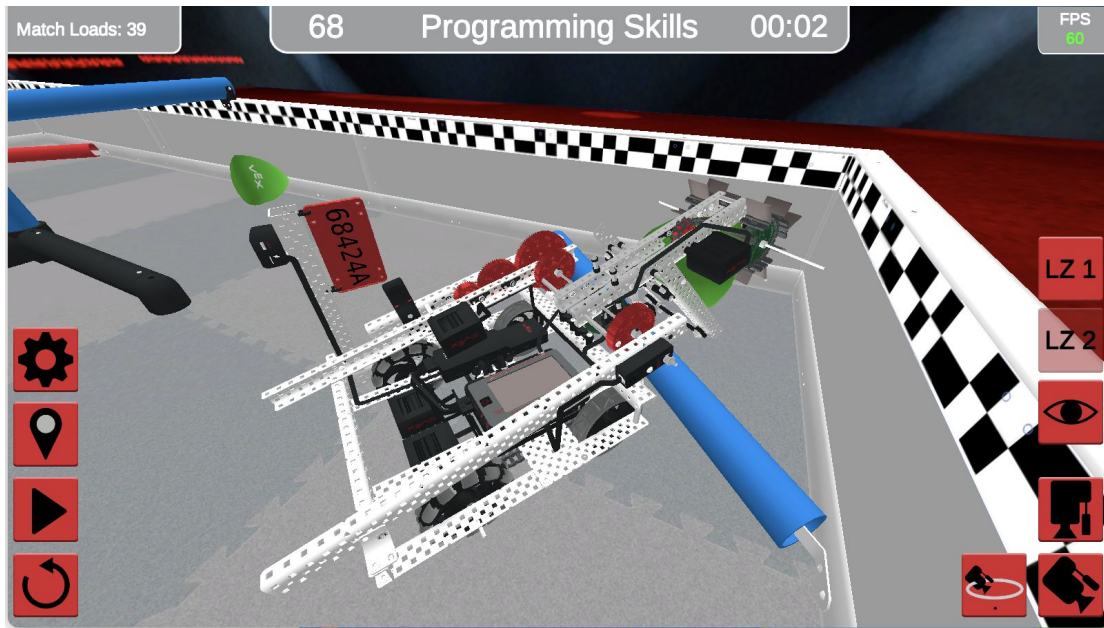


Turn to the next preset angle and move forward, pushing the ball under the hanging pole to the opposite side.

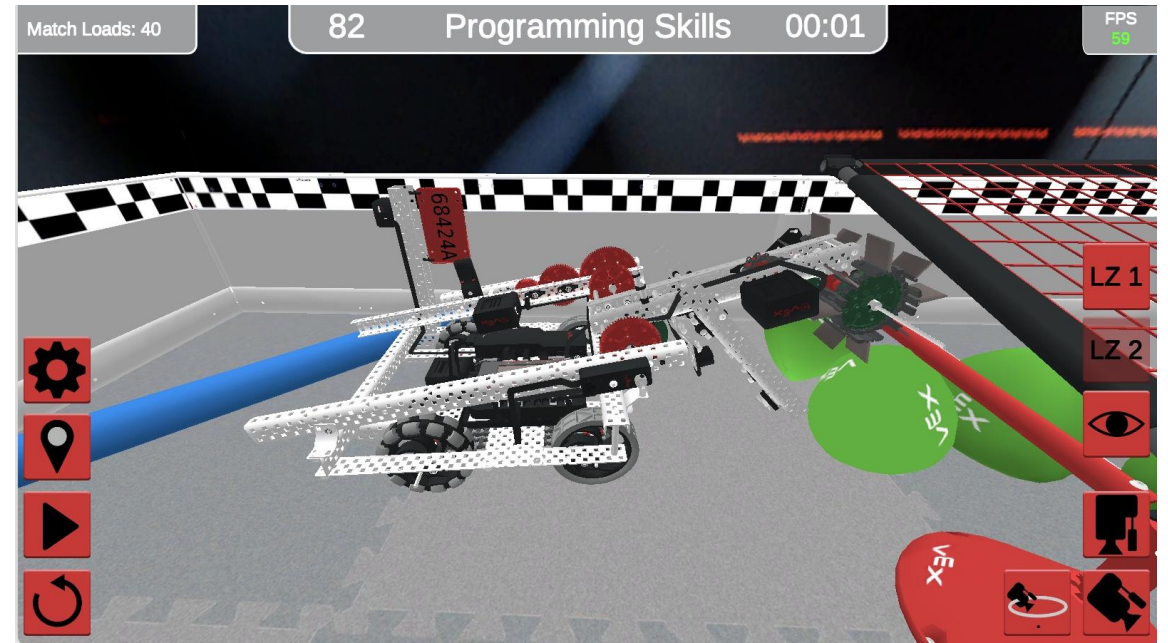
# To finish sucking the seventeenth triball:



# To finish sucking the eighteenth triball:



Turn to the next preset angle and suck away the ball in the introduction area

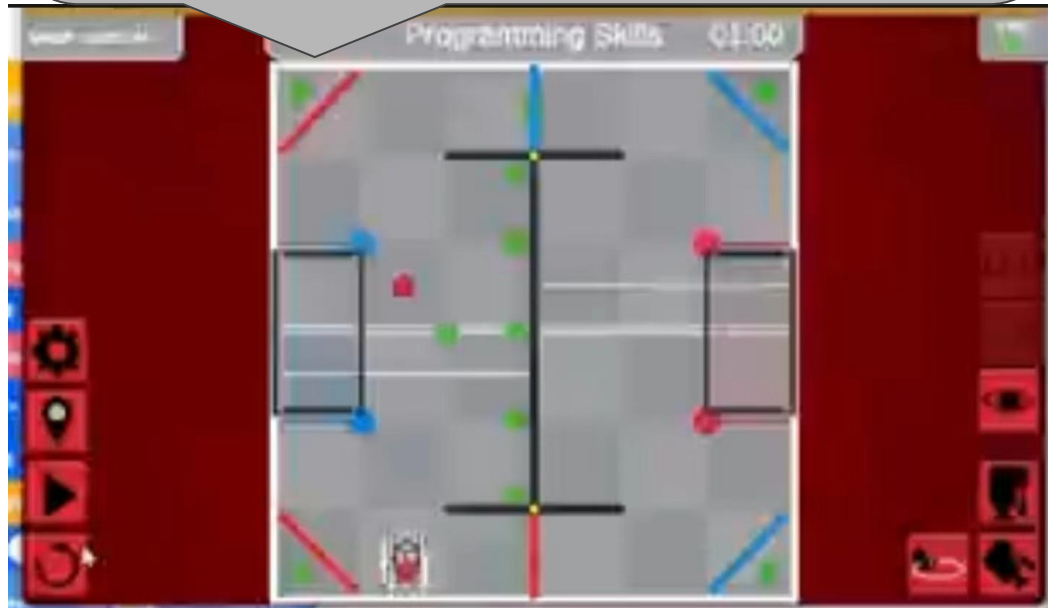


Turn to the next preset angle, push the ball into the goal and complete our mission



# Program introduction:

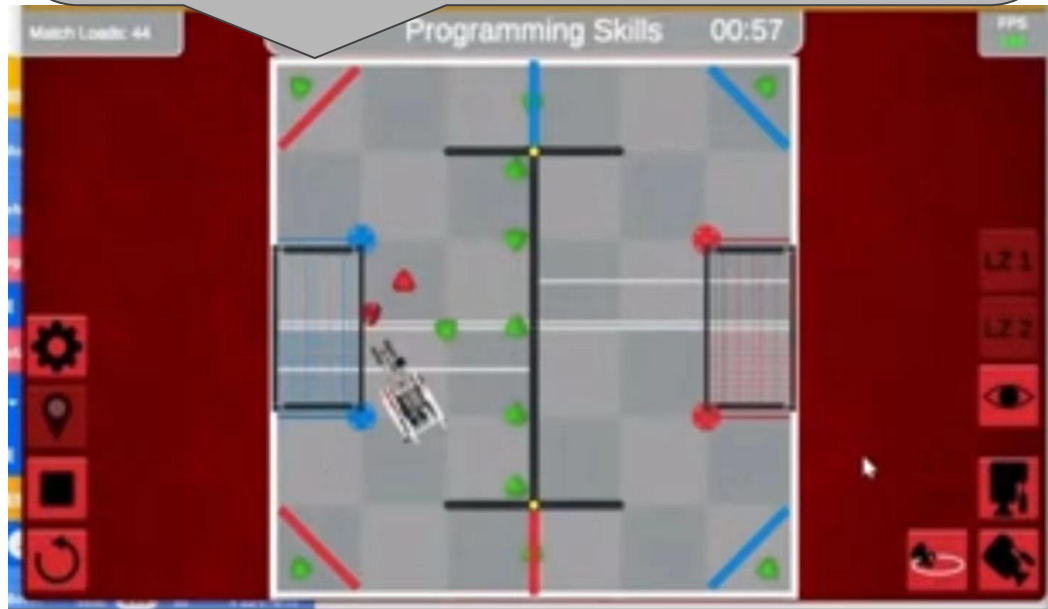
(1) Robot initial position



(2) The robot moves forward

# Program introduction:

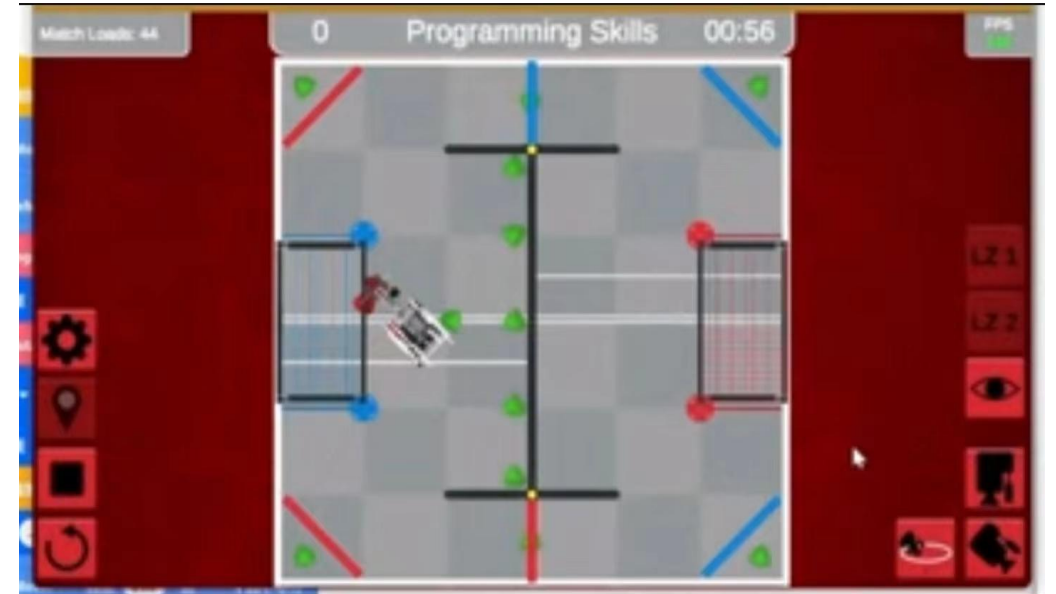
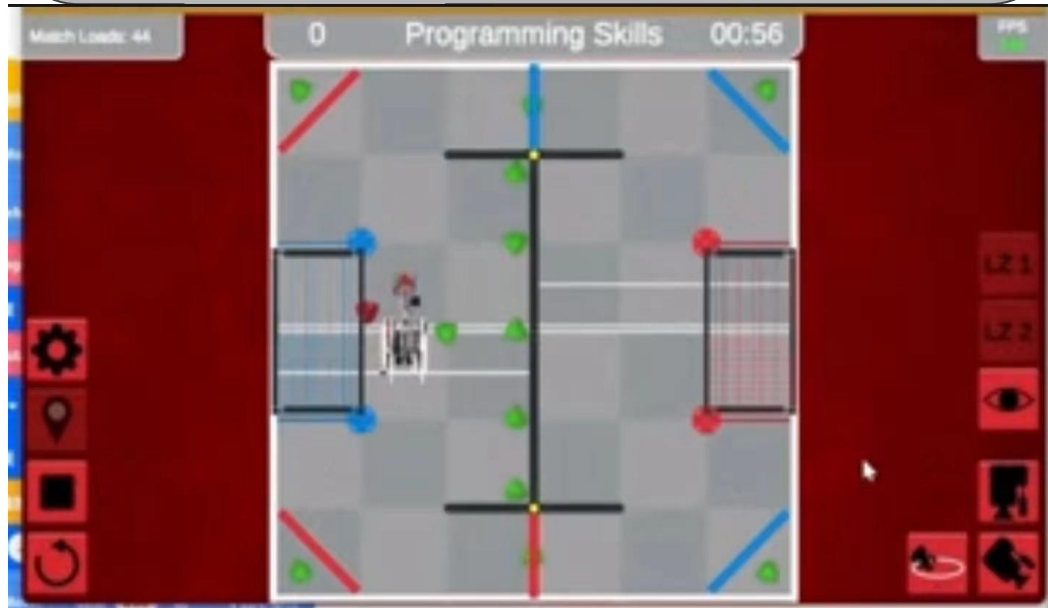
(3)The robot rotates 30 degrees to the left and shoots the triball



(4)The robot rotates 30 degrees to the right

# Program introduction:

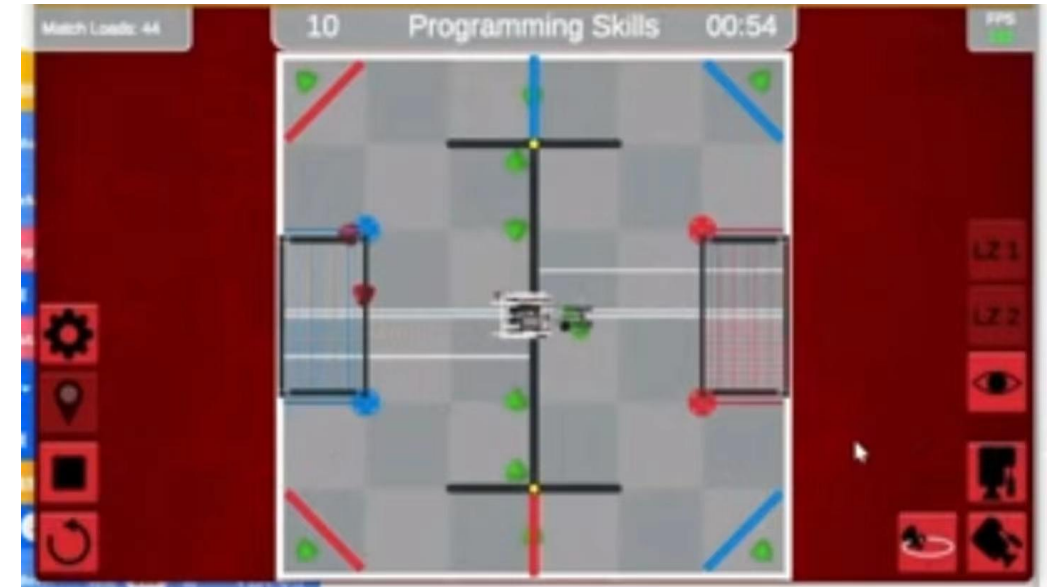
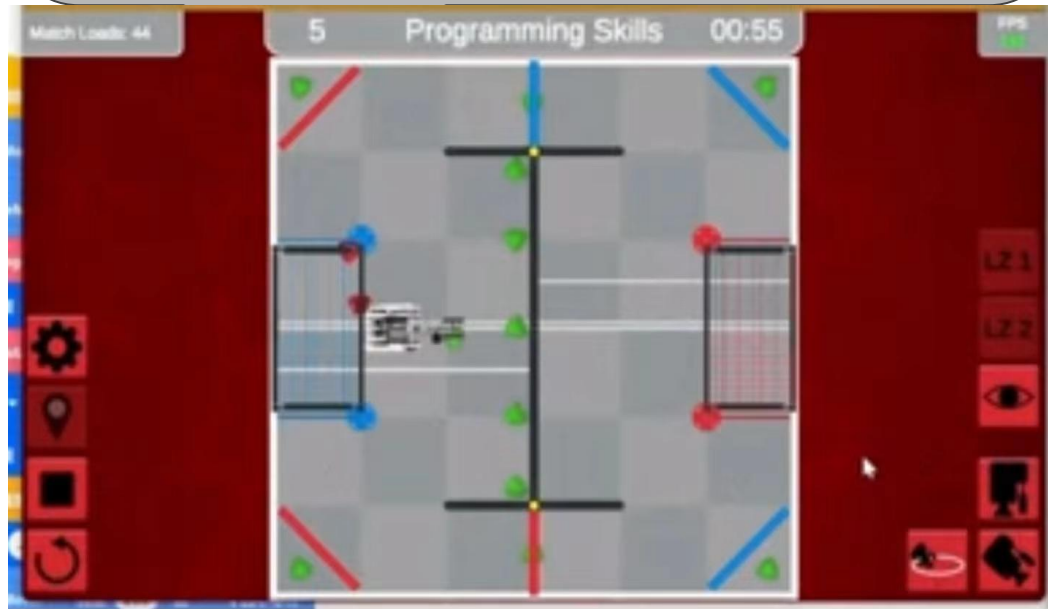
(5) The robot moves forward and sucks the ball



(6) The robot rotates 30 degrees to the left and shoots the triball to the goal

# Program introduction:

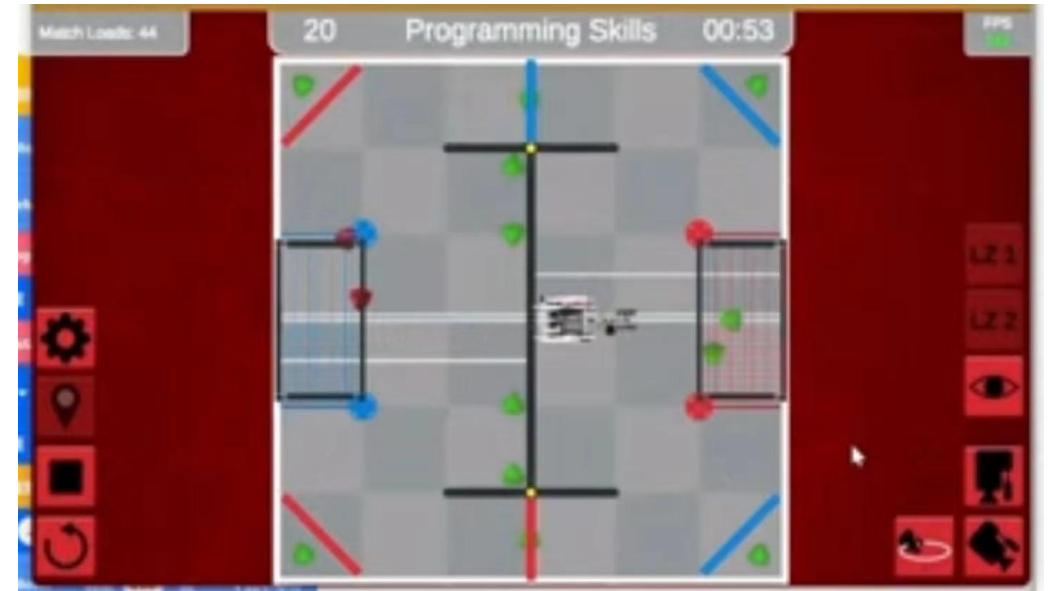
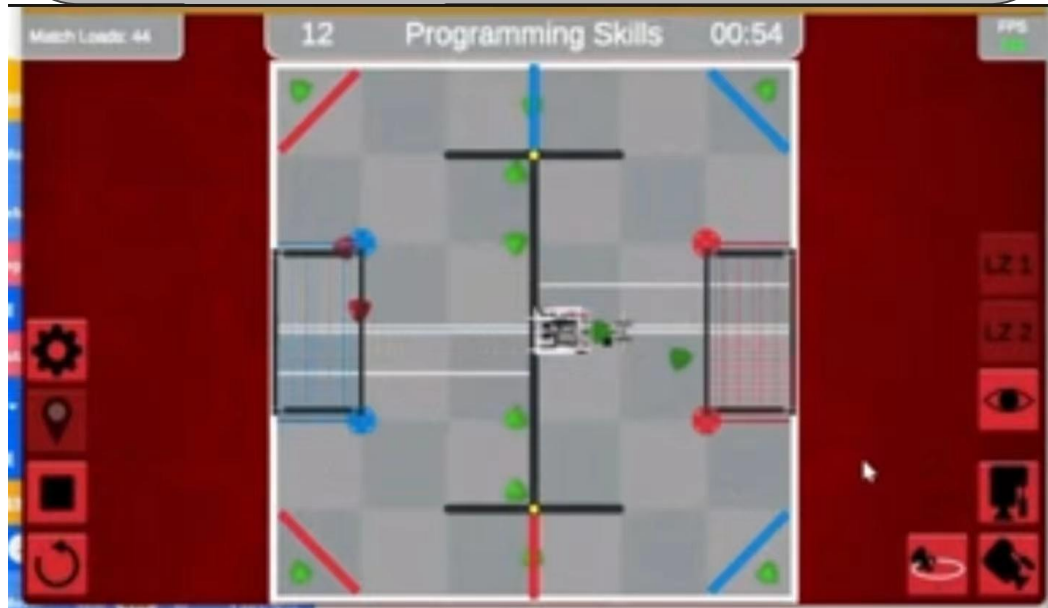
(7)The robot rotates 120 degrees to the right and sucks the triball



(8)Robot crosses obstacles

# Program introduction:

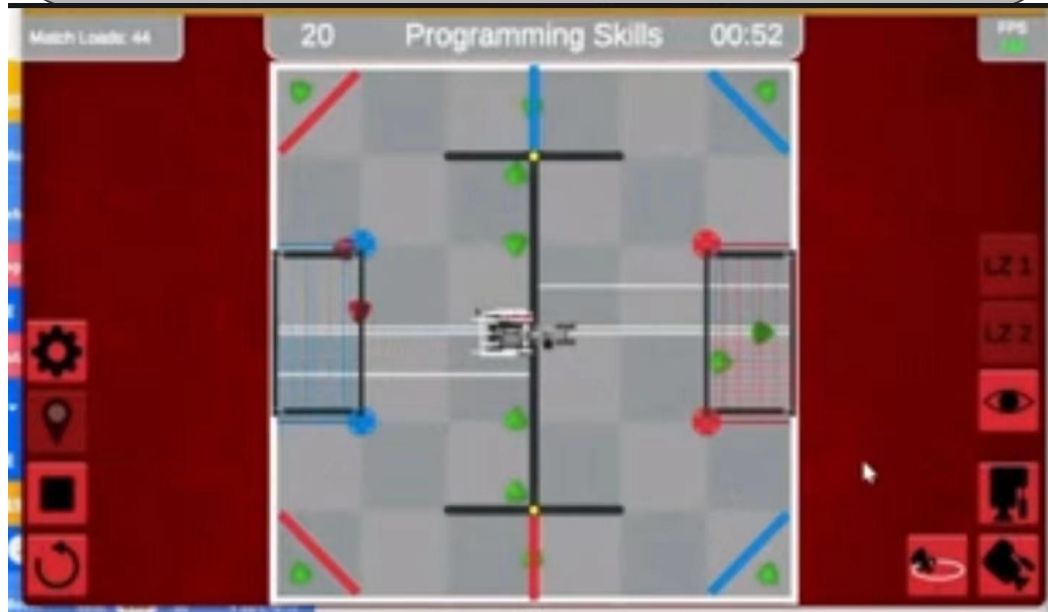
(9)The robot push the triball to the goal



(10)The robot push the triball to the goal

# Program introduction:

(11) Robot crosses obstacles



(12) The robot turns 90 degrees to the left and sucks the triball

# Program introduction:

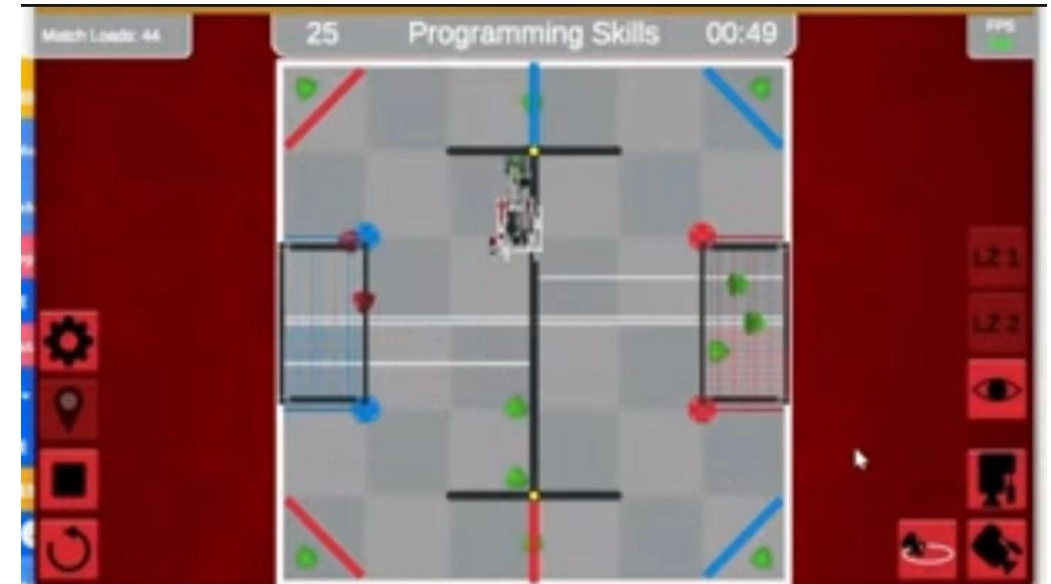
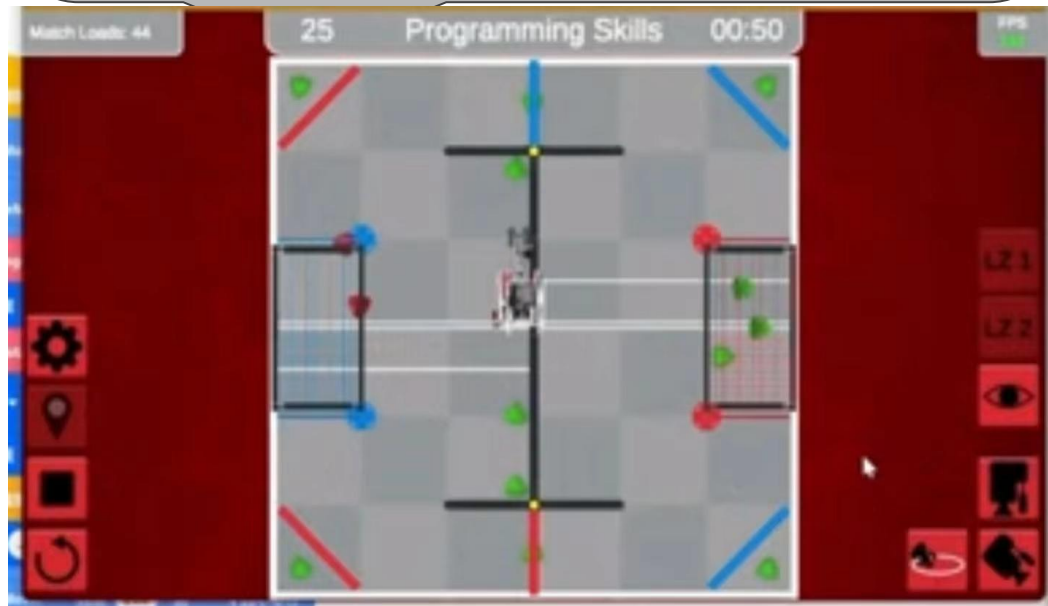
(13)he robot turns 90 degrees to the left



(14)Robot crosses obstacles and shoots the triball

# Program introduction:

(15) Robot crosses obstacles and turns 90 degrees to the left



(16) The robot moves forward and sucks the triball



# Program introduction:

(17)The robot moves backward



(18)The robot turns 90 degrees to the right, crosses the obstacle and shoots the ball

# Program introduction:

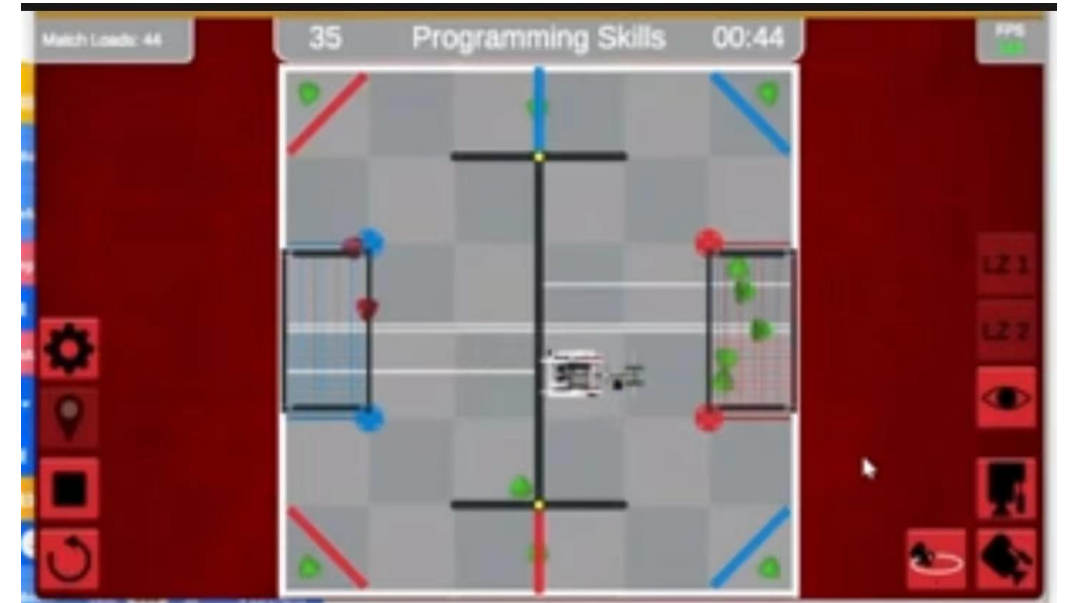
(19) The robot moves backwards and rotates 90 degrees to right



(20) The robot moves forward and sucks the triball

# Program introduction:

(21)The robot crosses the obstacle



(22)The robot shoots the triball

# Program introduction:

(23) The robot moves backwards and rotates 90 degrees to right



(24) The robot moves forward and sucks the triball

# Program introduction:

(25)The robot moves backwards and rotates 90 degrees to left



(26)Robot jumps over obstacles and shoots balls

# Program introduction:

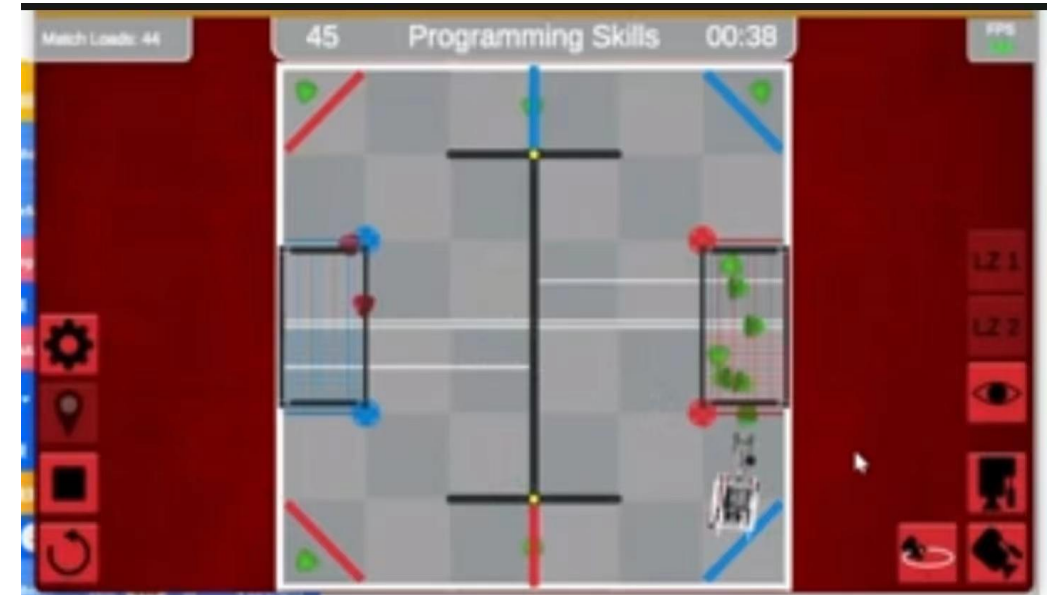
(27)The robot rotates 45 degrees to left



(28)The robot moves forward and sucks the triball

# Program introduction:

(29)The robot turns 45 degrees to the left



(30)Robot shoots the triball

# Program introduction:

(31)The robot turns 90 degrees to the left



(32)Robot go forwards  
and shoots the triball



# Program introduction:

(33) Robot go backwards



(34) The robot turns 90 degrees to right and shoots the triball

# Program introduction:

(35)The robot turns 90 degrees to left



(36)The robot go forwards

# Program introduction:

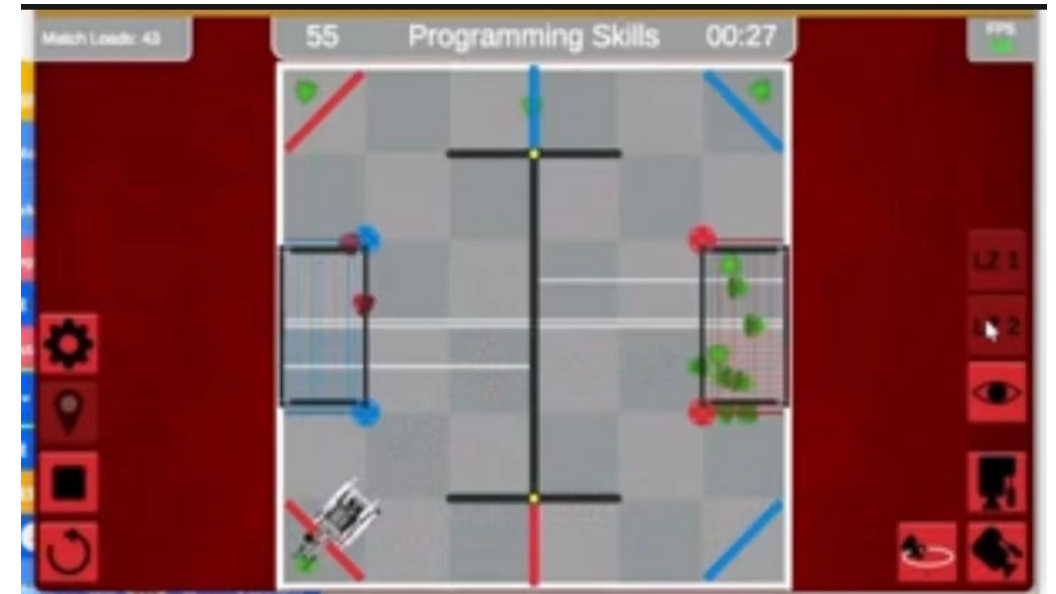
(37)the robot turns 45 degrees to left and sucks the triballs



(38)Robot go backwards

# Program introduction:

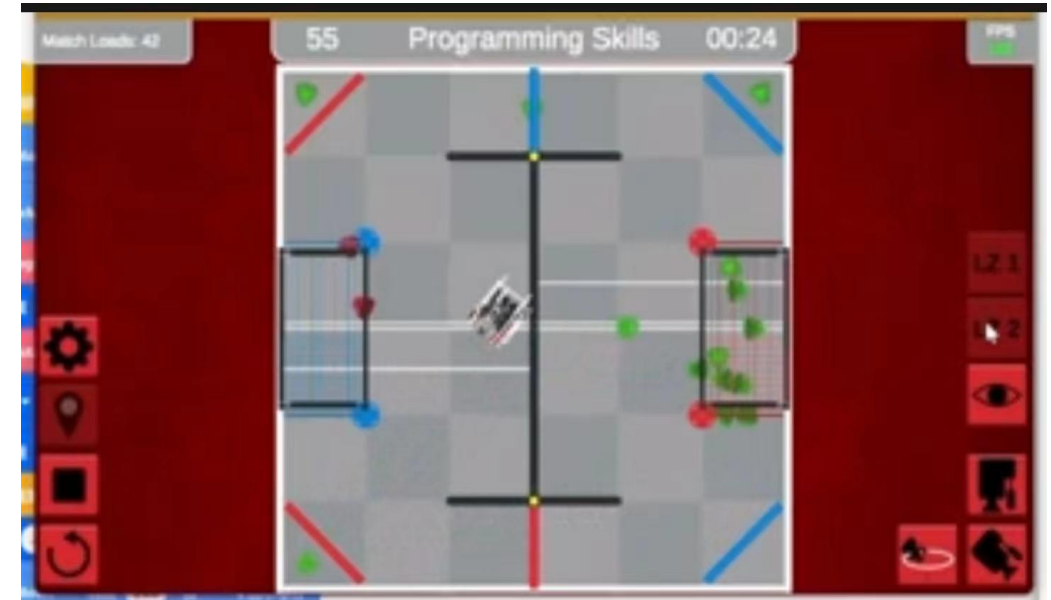
(39)the robot turns 45 degrees to right and shoots the triballs, then turns 45 degrees to left



(40)the robot go forwards and sucks the triballs

# Program introduction:

**(41) Robot go backwards**



**(42) the robot turns 45 degrees to right  
and shoots the triballs,  
then turns 45 degrees to left**

# Program introduction:

(43)the robot go forwards  
and sucks the triballs



(44)Robot go backwards

# Program introduction:

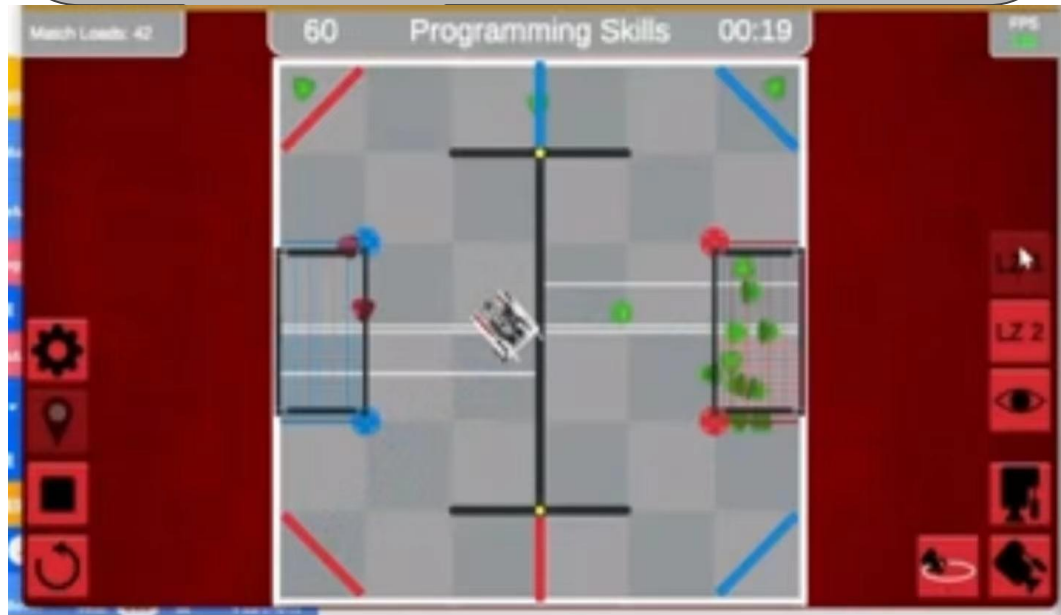
(45)the robot turns 45 degrees to right and shoots the triballs, then turns 45 degrees to right



(46)the robot go forwards and sucks the triballs

# Program introduction:

(47)the robot turns 45 degrees to right and shoots the triballs, then turns 45 degrees to right



(48)the robot go forwards and sucks the triballs



# Program introduction:

(49)The robot go backwards



(50)the robot turns 45 degrees to left  
and shoots the triballs,  
then turns 45 degrees to left

# Program introduction:

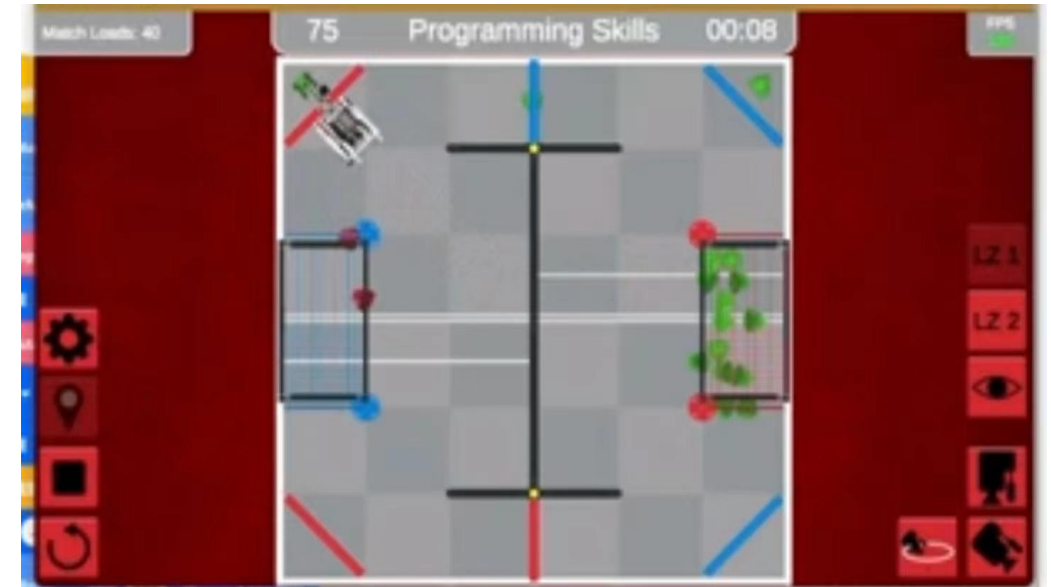
(51)the robot go forwards  
and sucks the triballs



(52)The robot go backwards

# Program introduction:

(53)the robot turns 45 degrees to left and shoots the triballs, then turns 45 degrees to left



(54)the robot go forwards and sucks the triballs

# Program introduction:

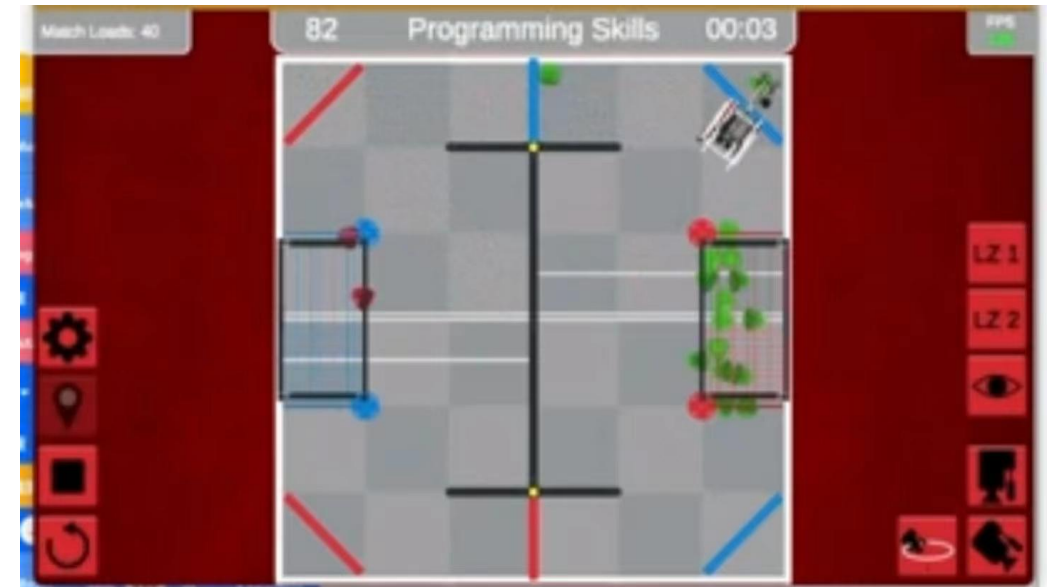
(55)the robot turns 135 degrees to right



(56)the robot go forwards

# Program introduction:

(57)the robot turns 45 degrees to right and shoots the triballs



(58)the robot turns 90 degrees to left and sucks the balls

# Program introduction:



(59)the robot turns 90 degrees to right  
and shoots the balls

**Team Number: 68424A**

**Team Name: Choikou Team A**

**Robot Name: Baby Cherry**

**Region: Macau**

**Teammate:**

Su, Ze Sen

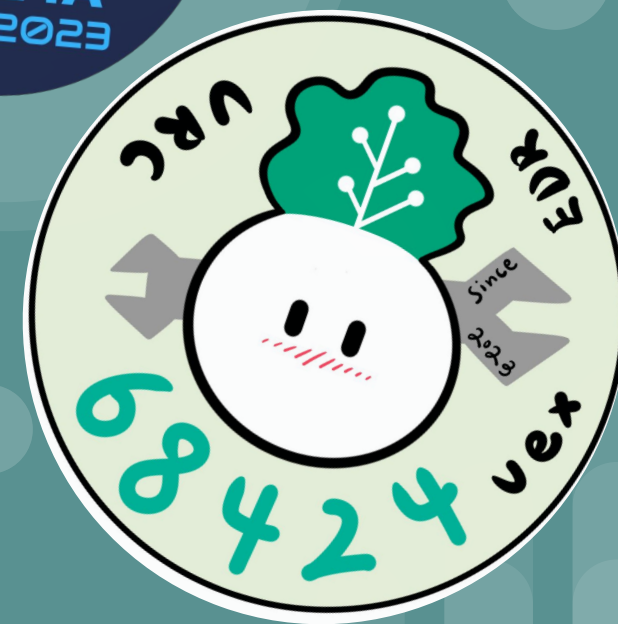
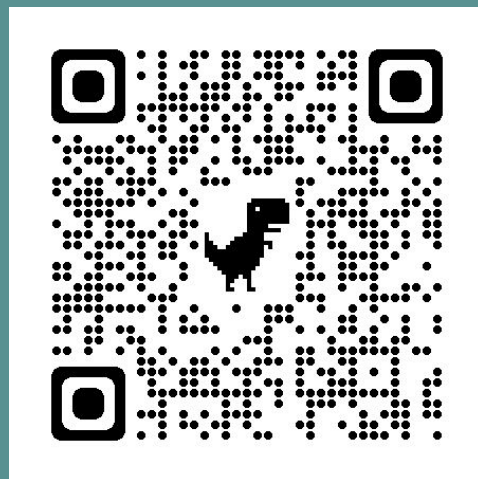
Chan, Io Leong

Lei, Weng Hei

Tong, Chon In

Chao, Hoi Weng

**Scan me~**



**Thanks for your watching!**