



Special Olympics
Washington
Unified Robotics

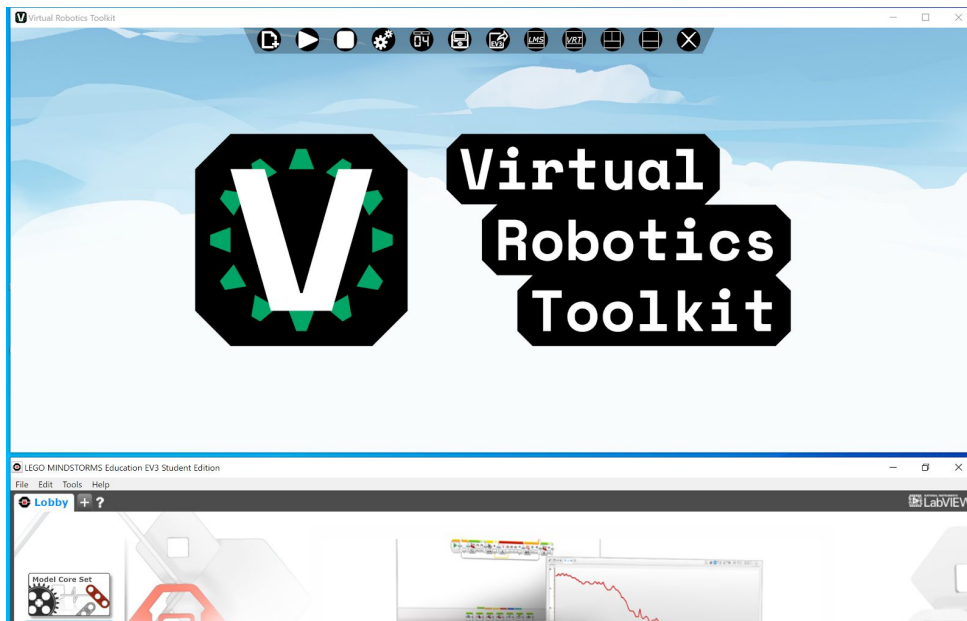
VIRTUAL UNIFIED ROBOTICS

Virtual Robotics Toolkit

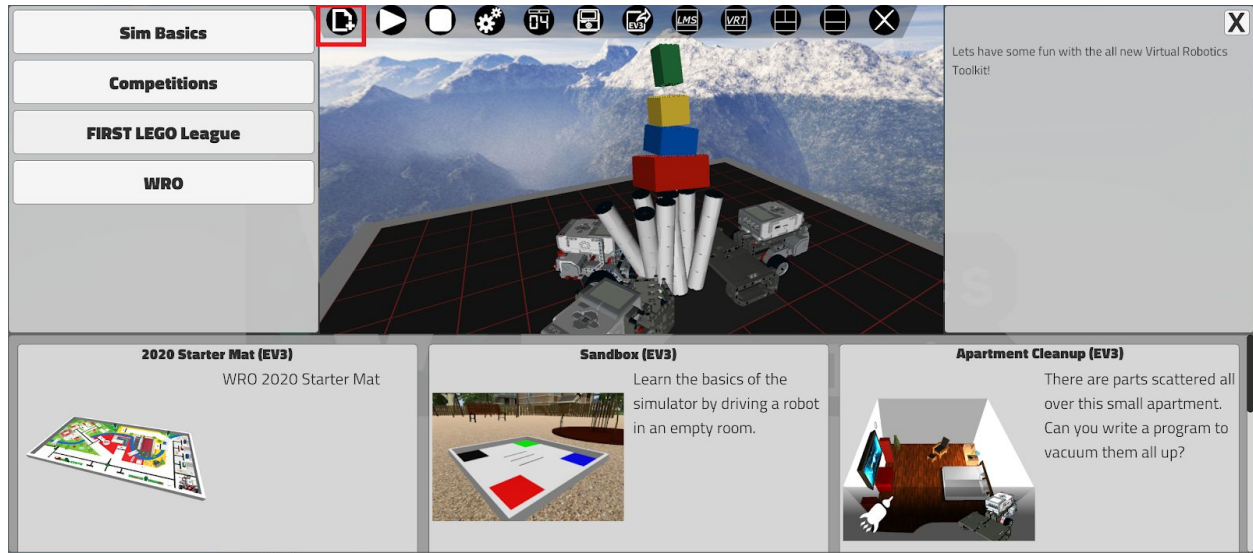
Robot and Software Import

This guide will show teams how to import their robots and software into Virtual Robotics Toolkit. This will allow teams to test their robot and software, and to ensure referees are able to load their robot and software to compete in the Championship.

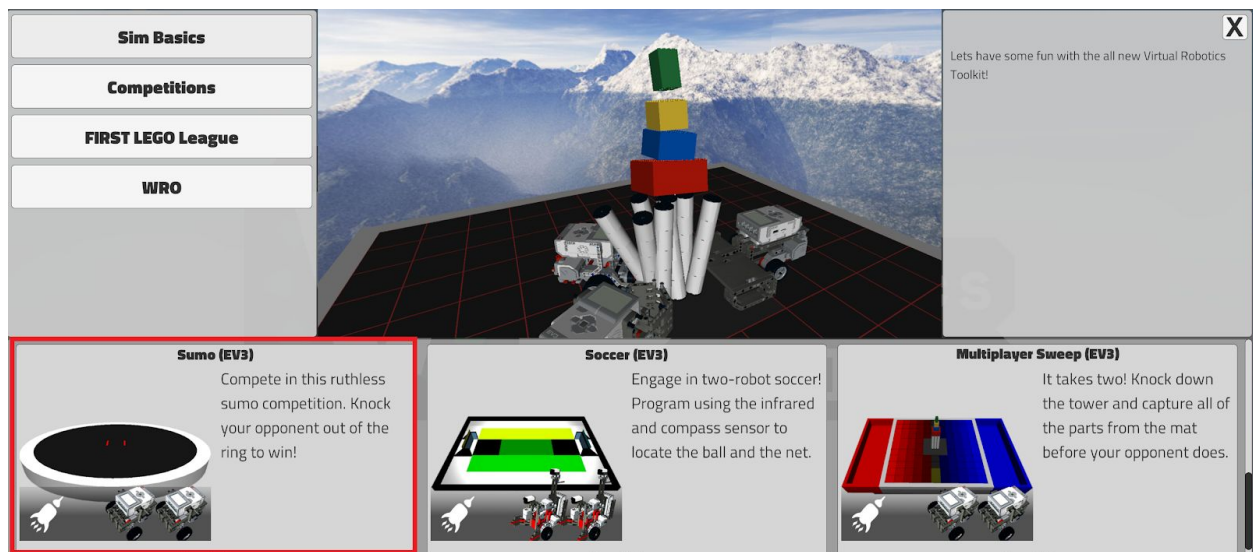
1. Open Virtual Robotics Toolkit. This will also open Lego MINDSTORMS EV3.



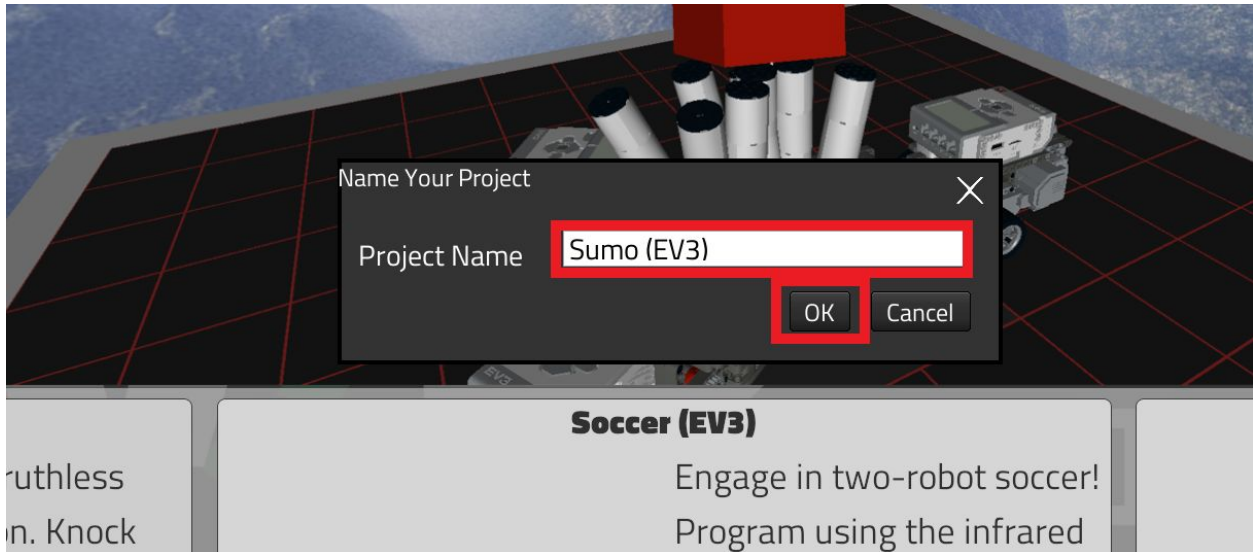
2. In the VRT menu, click the “New” icon (looks like a blank page with a +). This will bring up a number of pre-set scenarios.



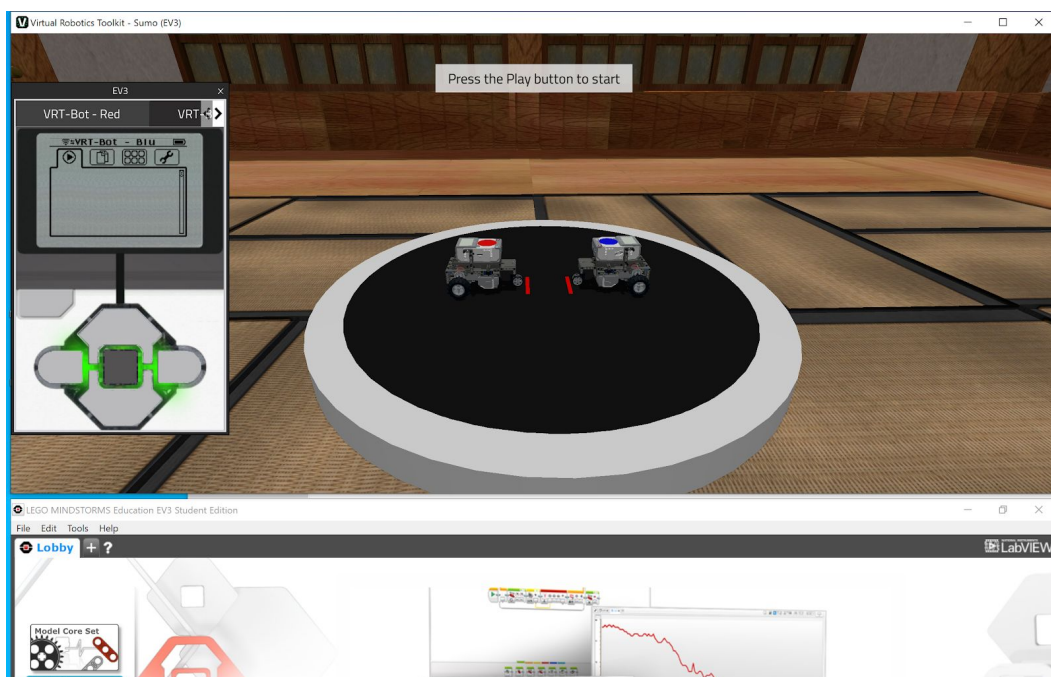
3. Scroll down and select “Sumo (EV3)” (Not to be confused with “Sumo 2018”)



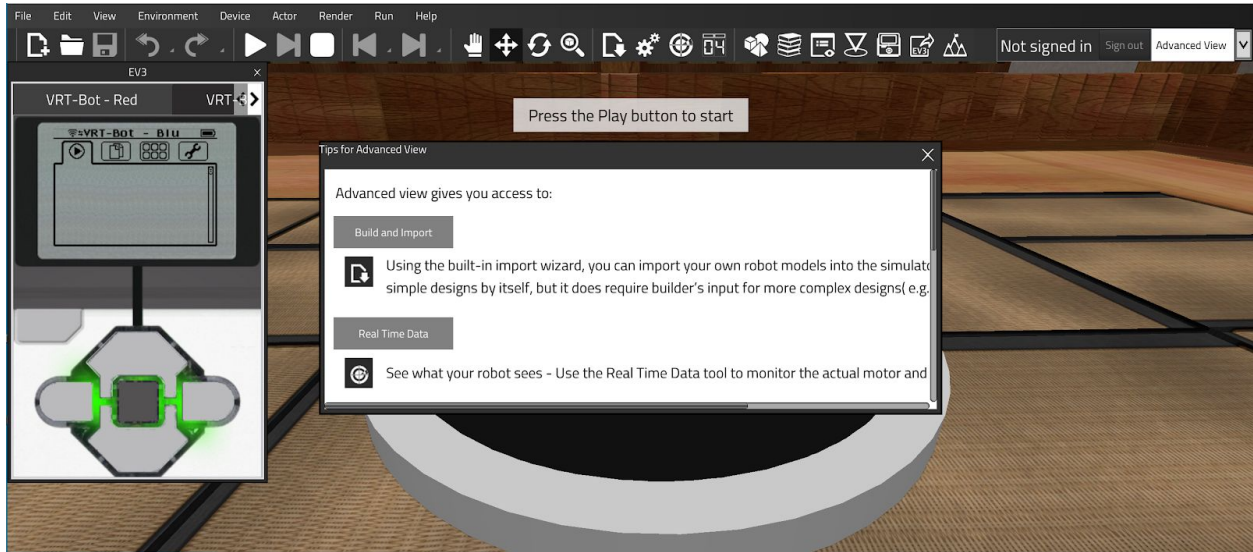
4. Name your project, then click “OK”.



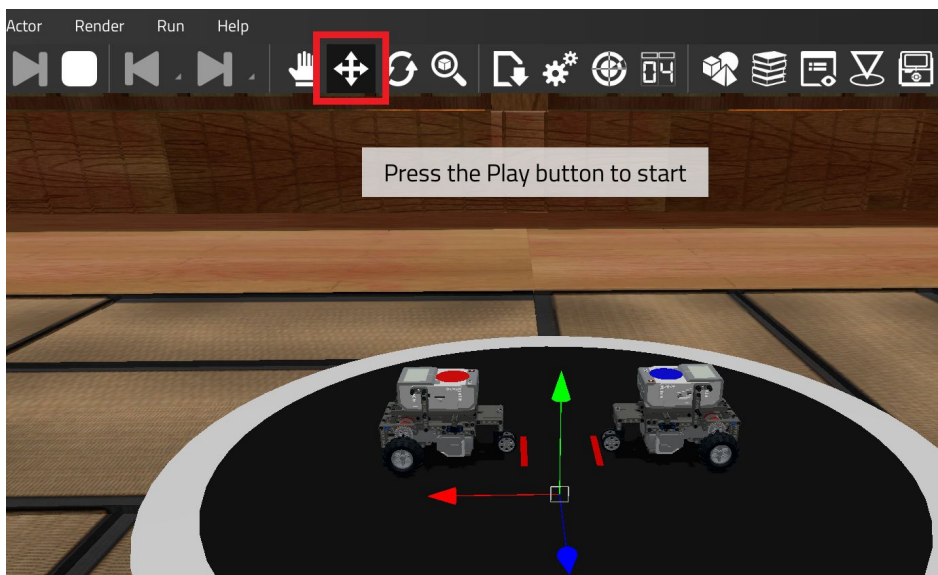
5. A sumo ring with two robots and an EV3 controller will appear.



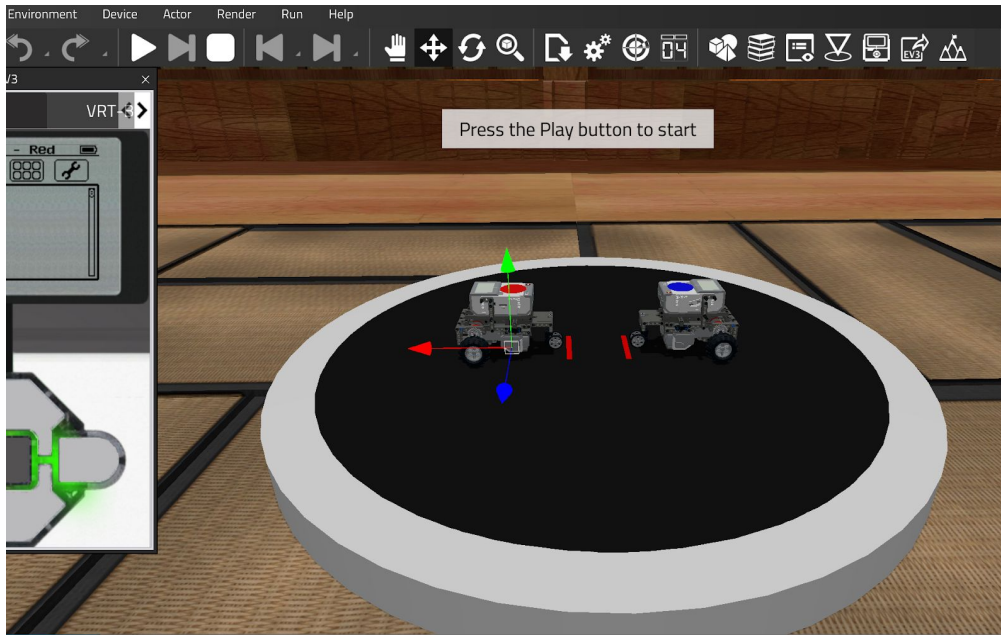
6. Press F12 on your keyboard to view the advanced view. Close the “Tips” pop-up.



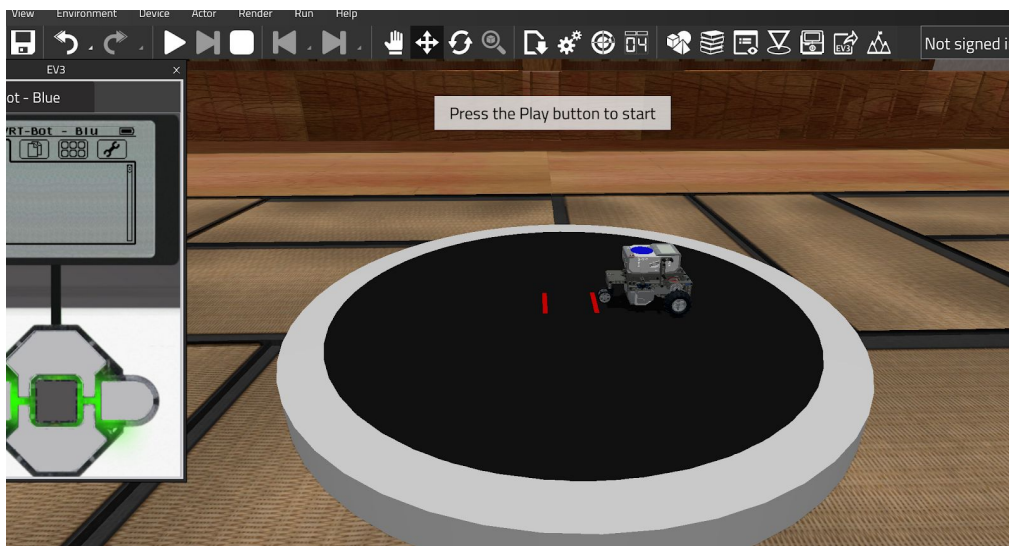
7. To clear the field, start by selecting the Translation tool. This looks like crossed lines, and will place the translation tool in the middle of the sumo ring.



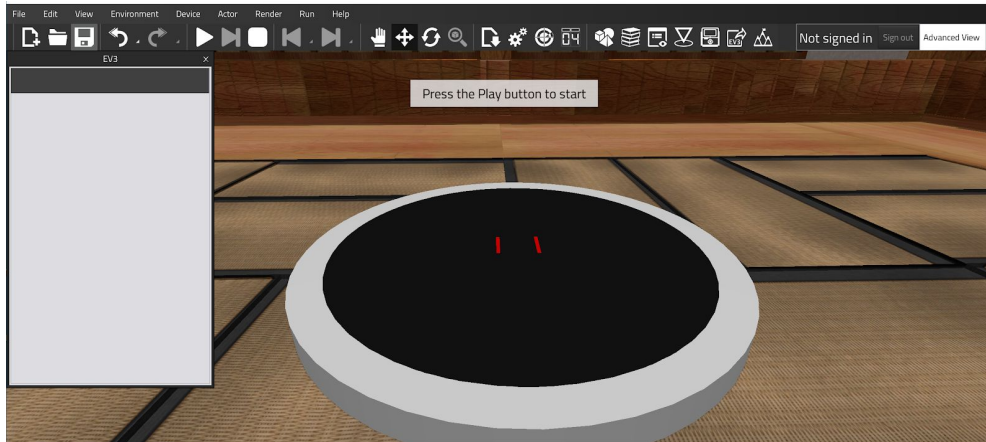
8. Select one of the robots. The translation tool will appear in the middle of the robot.



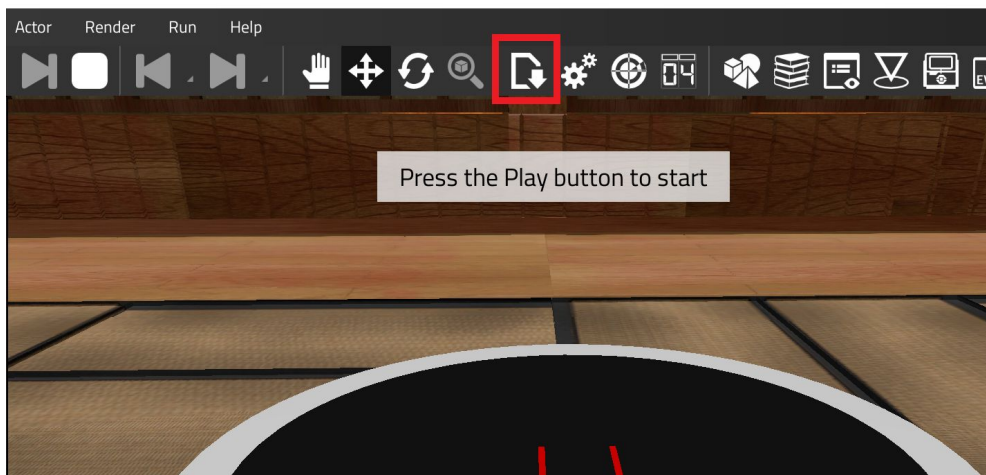
9. Press the Delete key to remove the robot from the field.



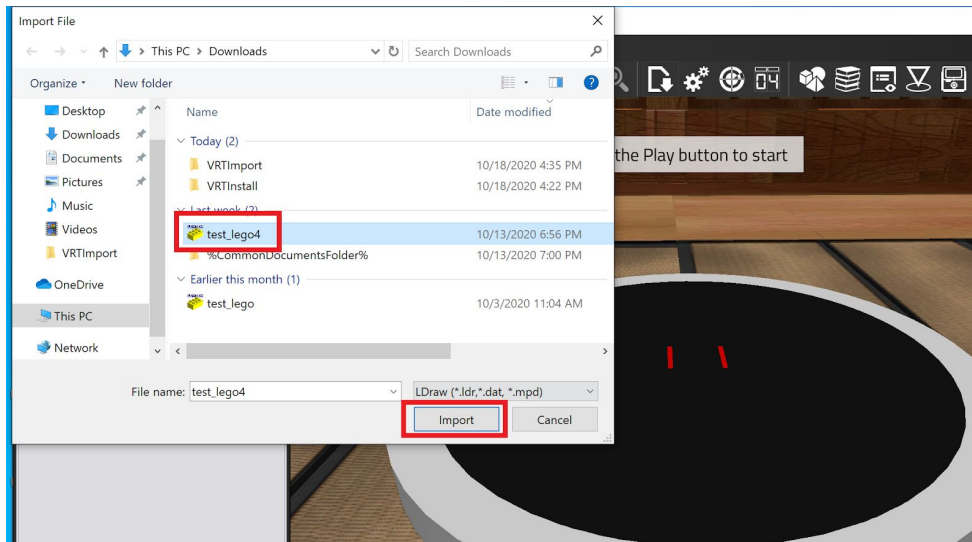
10. You can repeat steps 8 and 9 to remove the second robot.



11. Press the “Import” button. (This looks like a blank page with a down arrow on it.)



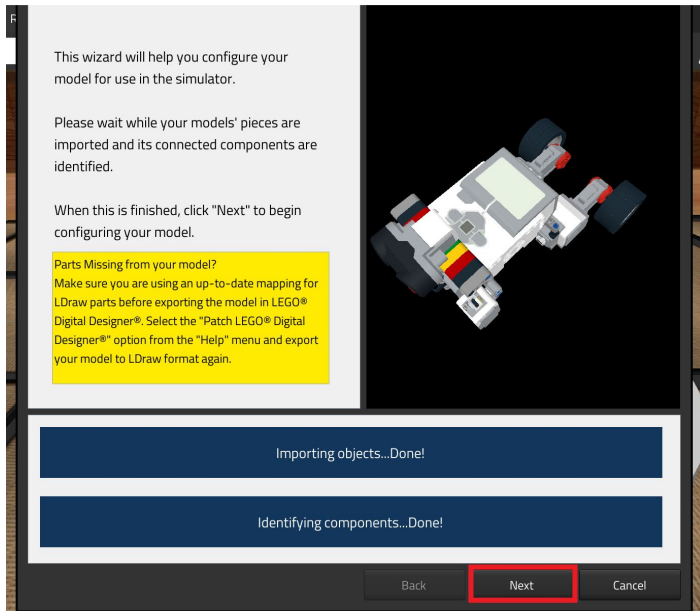
12. This will open a browser window. Find the folder where your robot LDraw file is located. Select this file and click “Import”



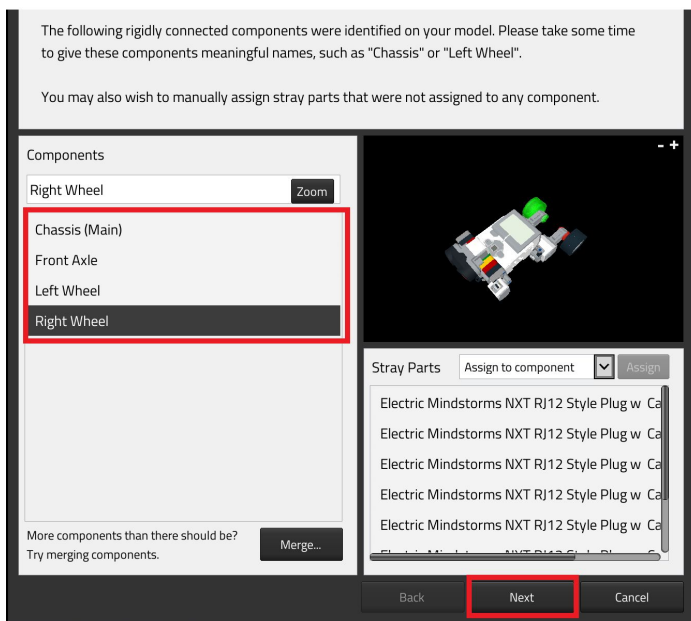
13. Your robot will be imported into VRT. Click “Next”.

NOTE: You may get warnings for import failures. If that happens, please see the VRT Install Guide for information on the latest LDraw installation, and the link to install the latest LDraw Conversion files.

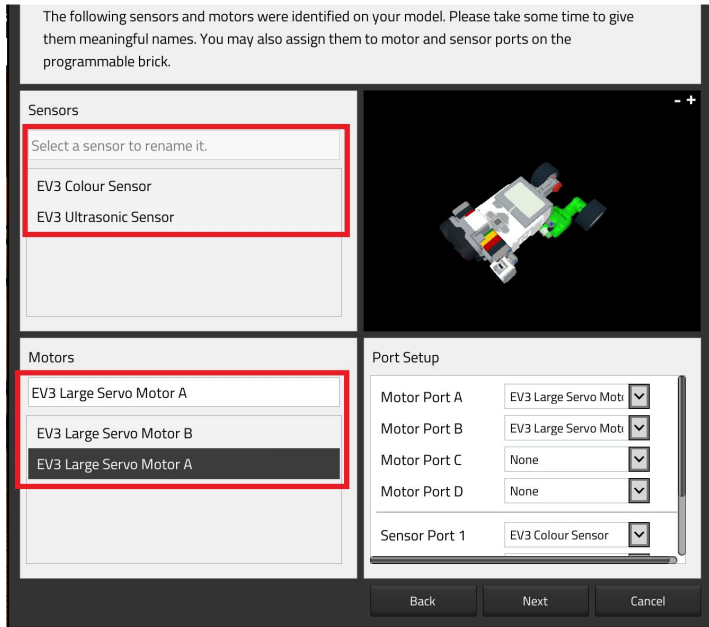
ADDITIONAL NOTE: Alternatively, your robot may successfully import, however some pieces may be missing. This can also happen if you do not have the latest LDraw installation. Please see the VRT Install Guide for information.



14. You may choose to give your components specific names. Click "Next".

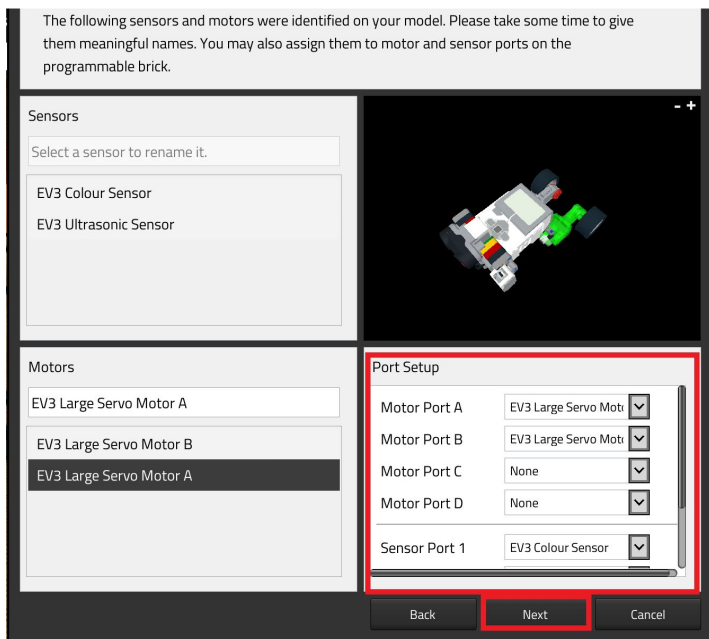


15. You may choose to give your sensors and motors specific names.

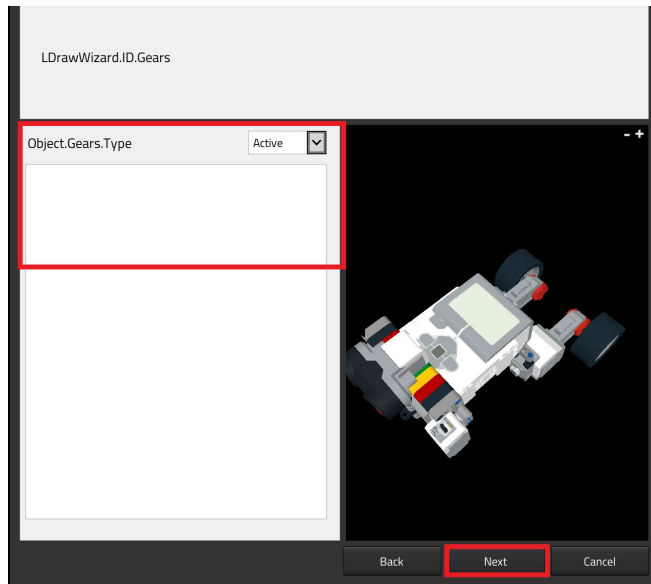


16. Select which motors and sensors are used by which ports. Press “Next”.

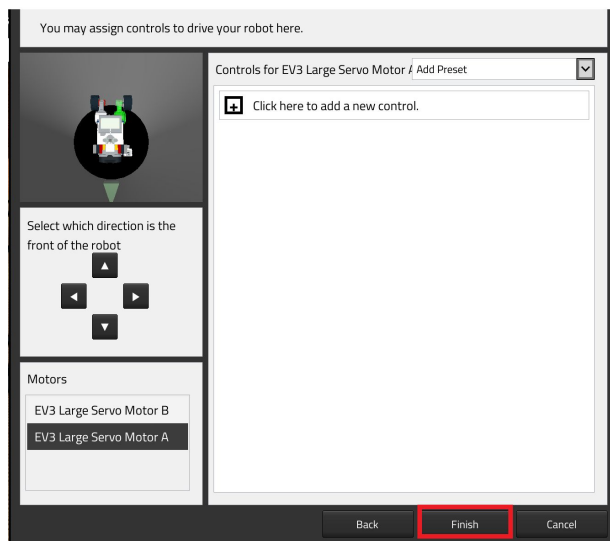
Note: the EV3 software will use this configuration, so verify these settings are correct!



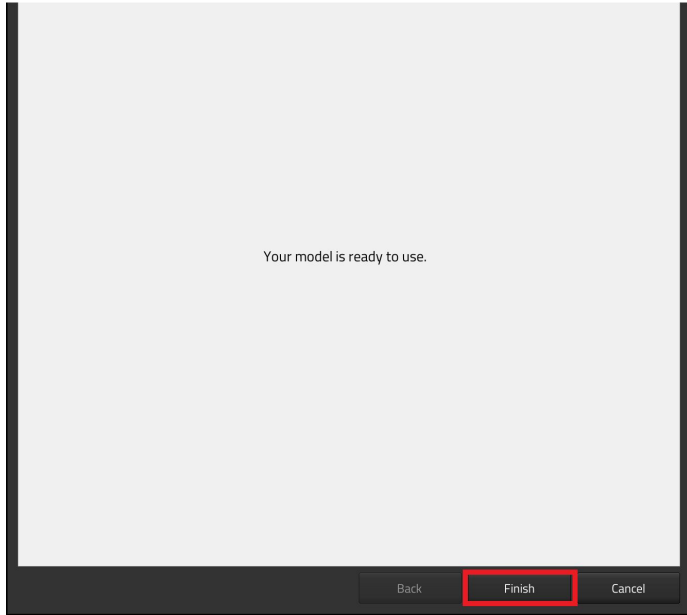
17. If your robot uses Gears, you can configure them here. (Not shown on this demo robot)



18. You do not need to set robot controls as your EV3 software will be controlling your robot actions. Click "Finish".

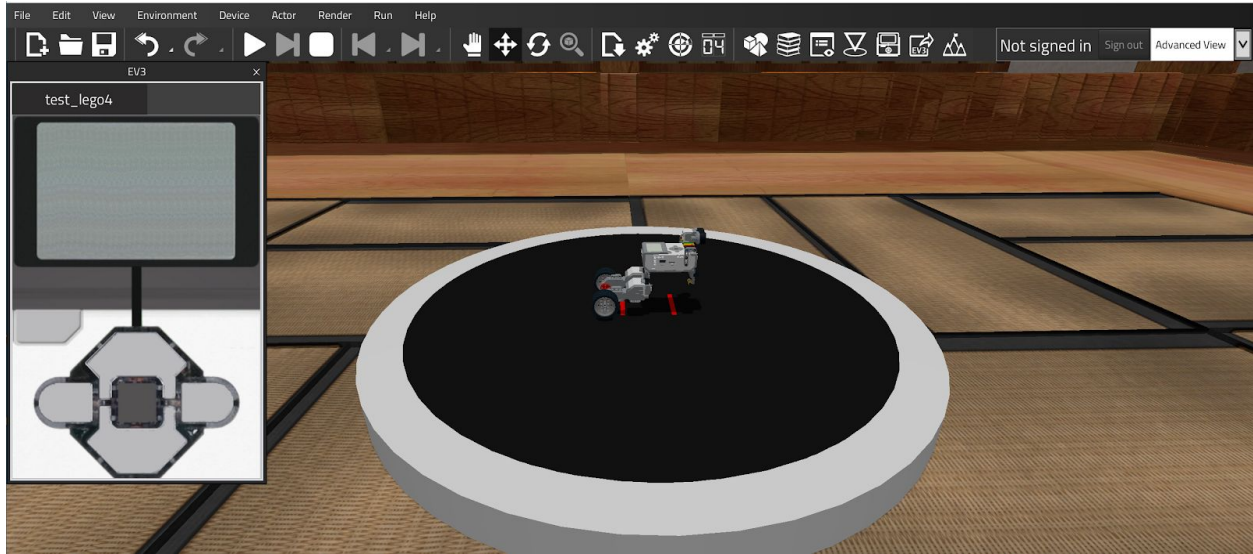


19. When ready, press “Finish”.

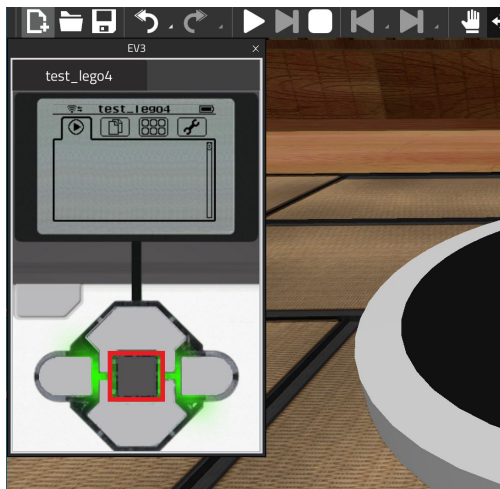


20. You can now see your robot in the ring!

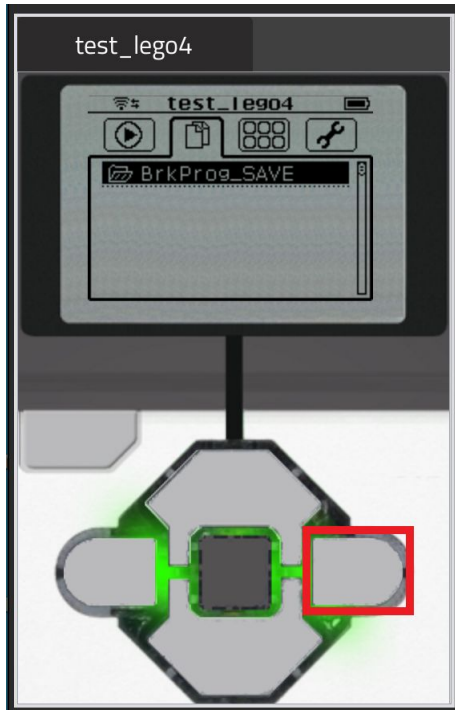
NOTE: Again, check that all your pieces are loaded!



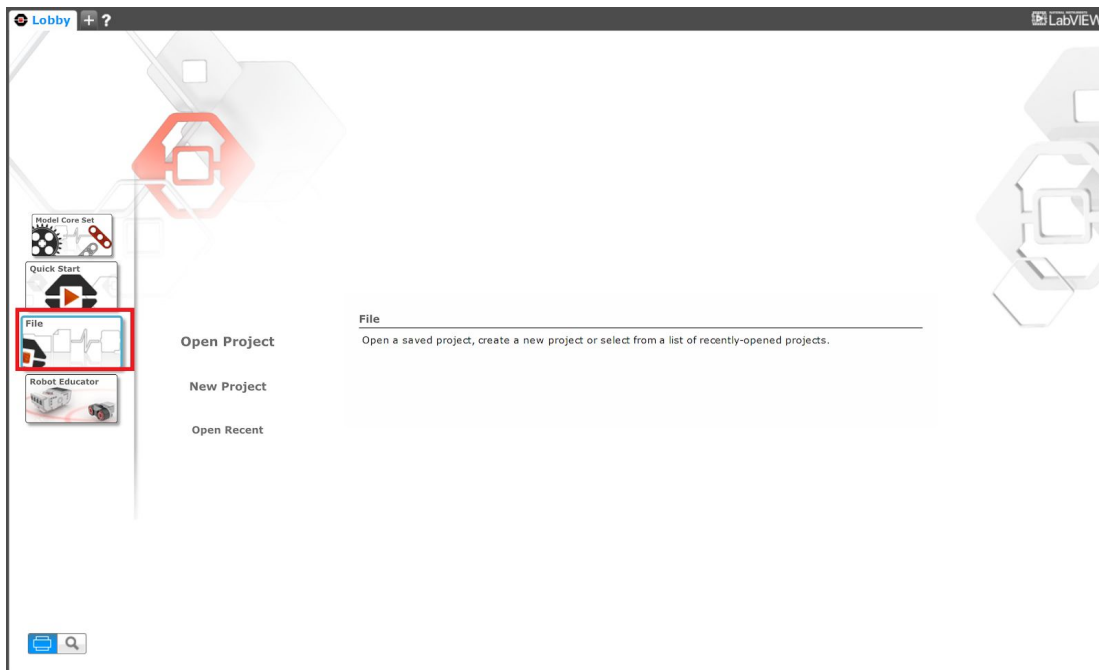
21. For EV3 software, start by turning on the EV3 brick. Press the middle button.



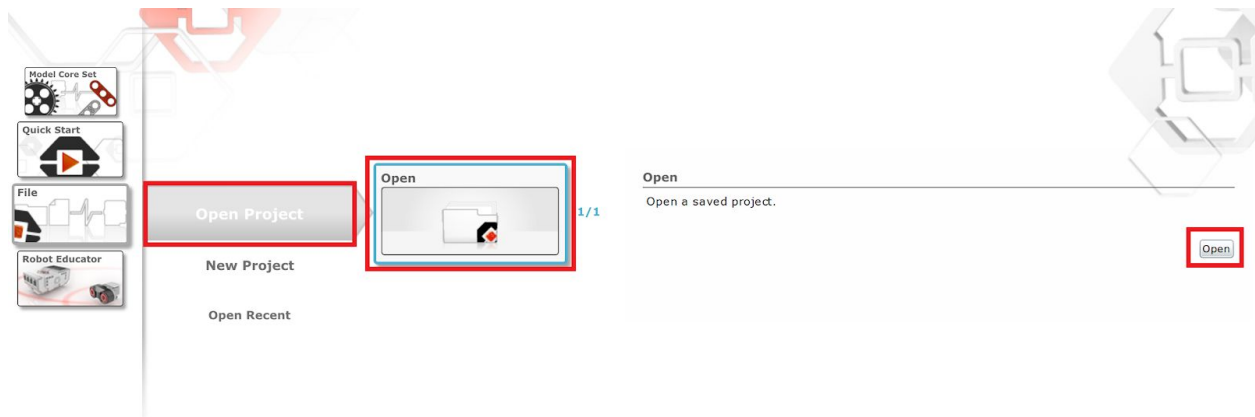
22. Press the Right button to scroll to programs. You should see only the default.



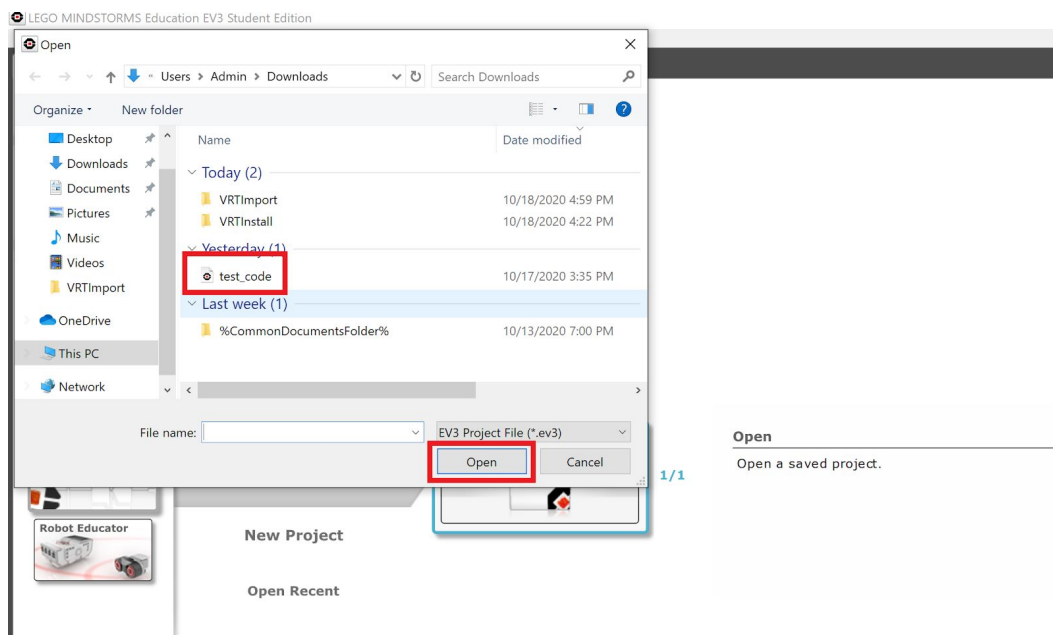
23. Open the LEGO MINDSTORMS EV3 software. From the main screen click “File”. (Don’t close VRT!)



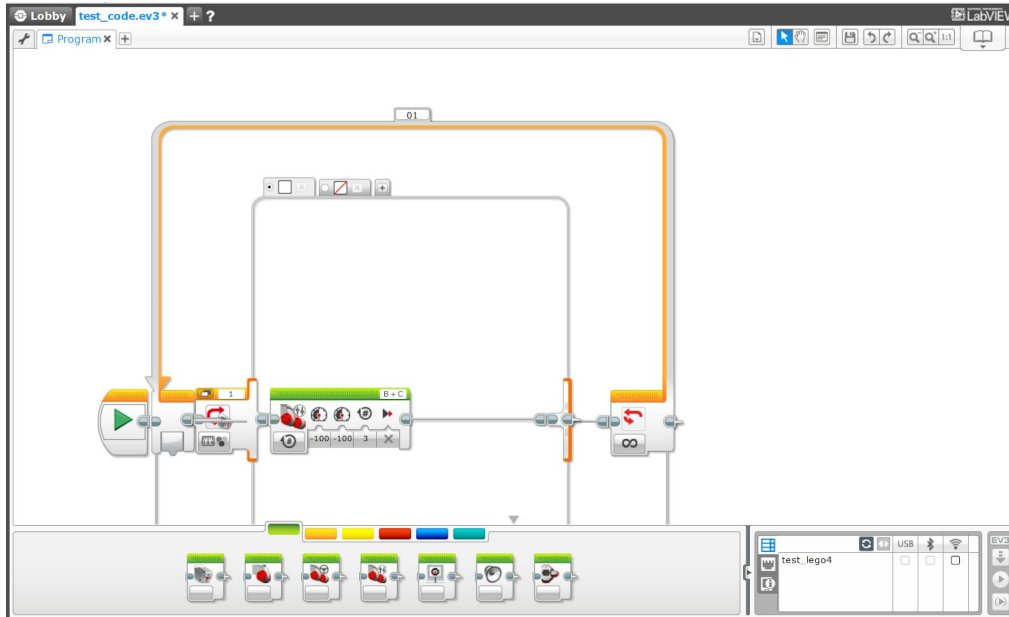
24. Click “Open Project”, then “Open”, and finally the “Open” button.



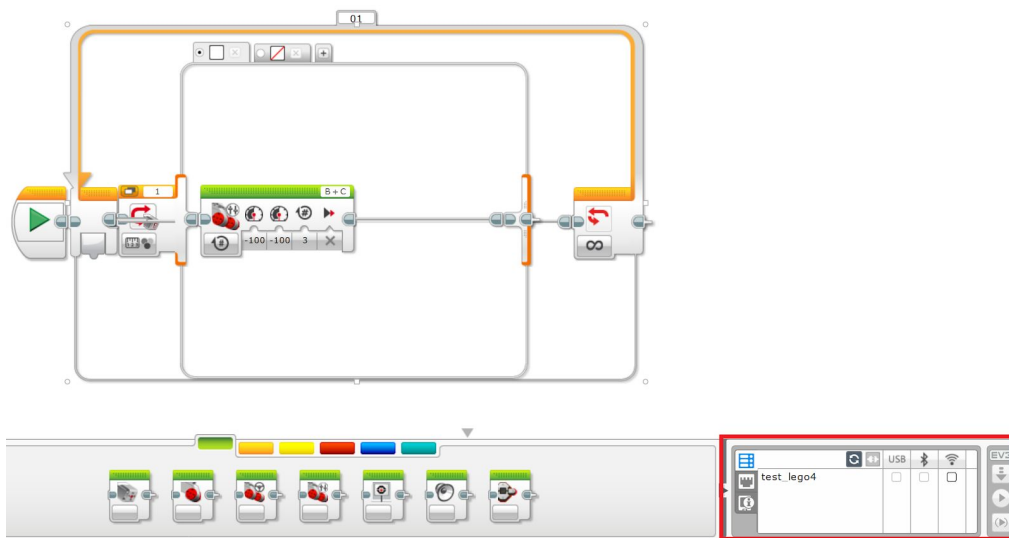
25. This will open a browser window. Find the folder where your robot ev3 file is located. Select this file and click “Open”



26. You should see your robot code.



27. In the lower right corner, find the list of available EV3 devices and select the one for your robot currently loaded in VRT.

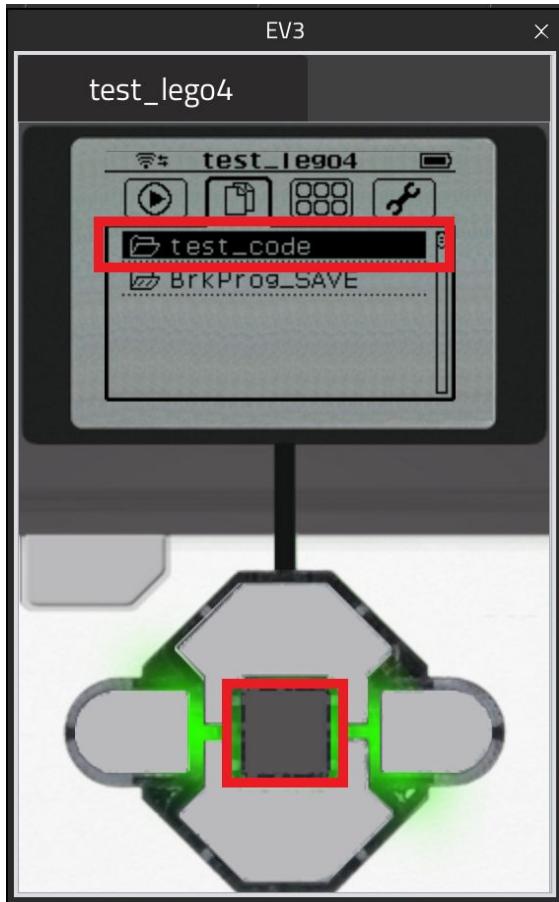


28. Click the “Download” button (It looks like an arrow pointing down)

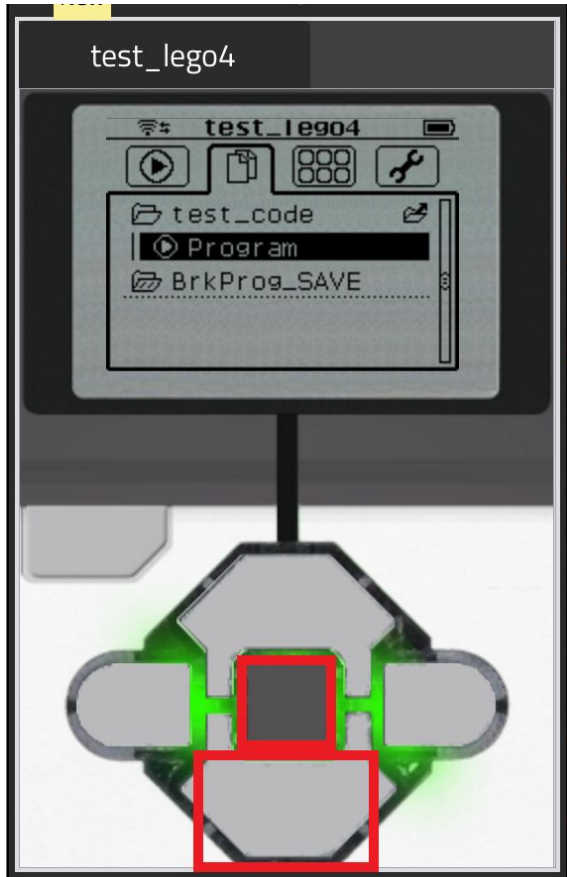
Note: When selected, the EV3 device will display as a Wi-fi device, however it is not.



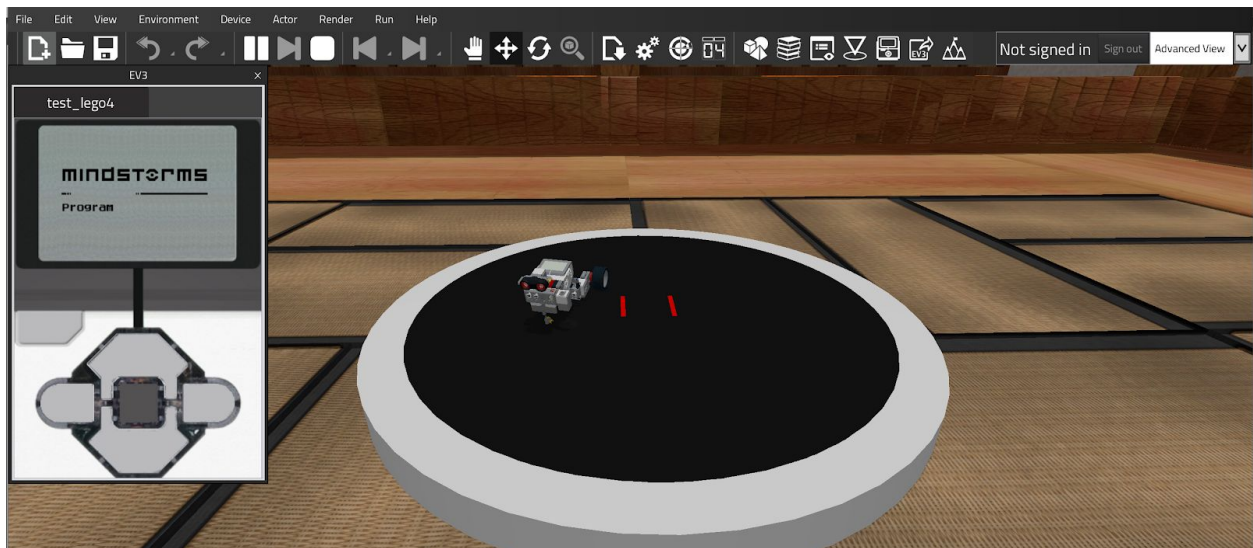
29. Return to your VRT window and notice that the EV3 device now shows the new program that you downloaded to it. Press the middle button to open the folder.



30. Press the down button to highlight the code file, then press the middle button to run the code.

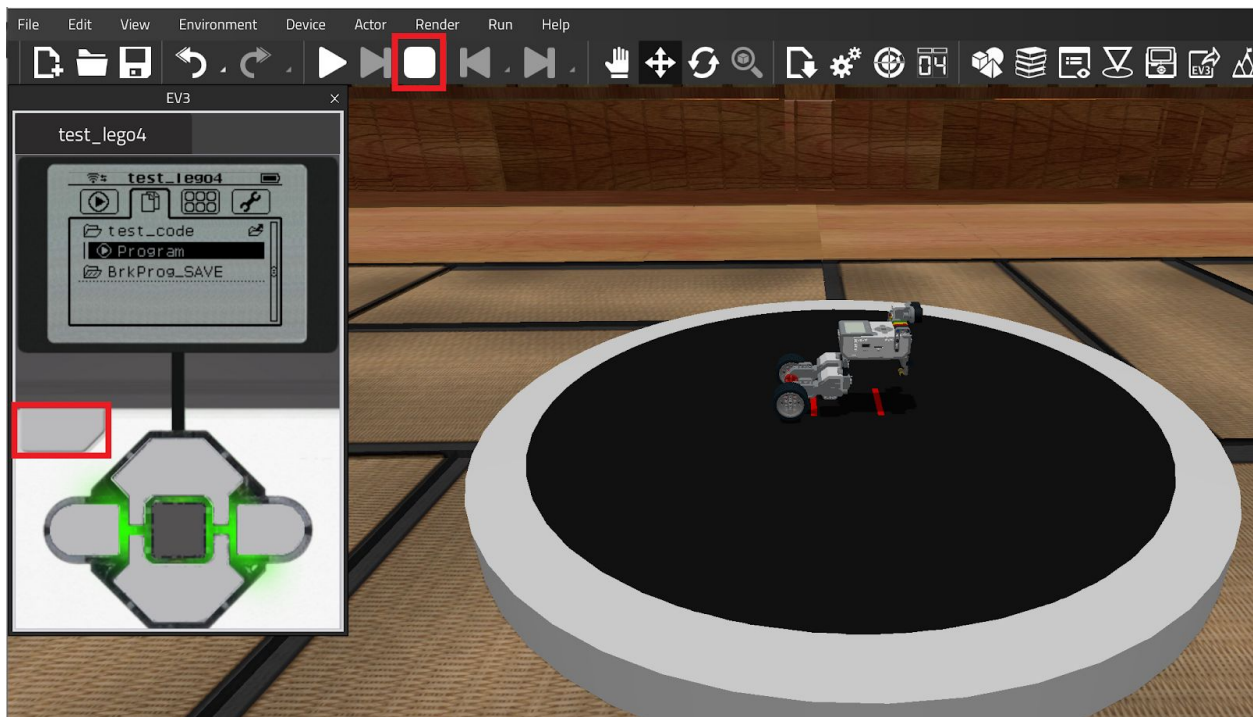


31. You should see your robot start to move!



32. To stop the robot code, press the “back” button on the EV3 device. If you want to stop and reset the simulation, press the “stop” button on the menu bar.

Note: Stopping the EV3 code will not automatically reset the Simulation. You may leave the simulation running, and stop or start your code multiple times.



33. If you want to import a second robot, repeat steps 11 to 29, making sure which robot Ldraw files and Software EV3 files are selected, and which robot is selected in the EV3 device in VRT.