Programming Options

TEAM 13380
QUANTUM STINGERS

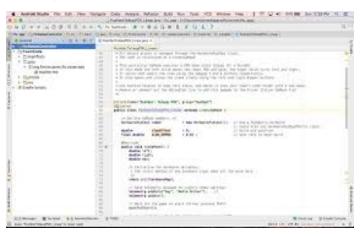


Introduction

- FIRST offers many options on how to program your FTC robot
- These options include
 - Android Studio
 - OnBot Java
 - Blocks Coding
- Each of these options comes with their own advantages and disadvantages

Android Studio

- Android Studio is an integrated development Environment (IDE) for writing code in a collaborative environment
- This tool is the same tool that professional Android app developers use.
- Android Studio is recommended for users who have some Java programming experience.
- For more information on Android Studio and how to set it up, look at FTC tutorial: http://ftctutorials.com/translations/en-us/Robot/ProgrammingEnvironmentSetup.pdf

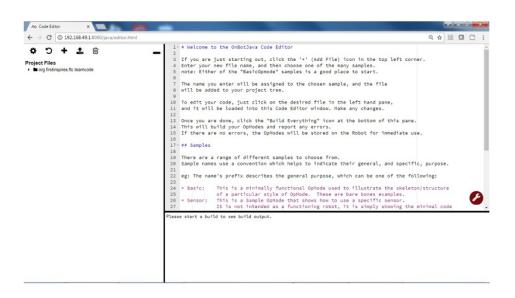


Pros and Cons

- Debugs in real time
- Information can be logged
- Easy integration of libraries
- Work can be done from anywhere
- Pairs up well with github
- Most collaborative of the platforms
- Complicated to connect phone and computer
- Set up is more complicated

OnBot Java

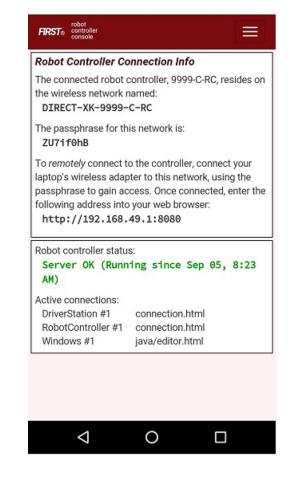
- FTC OnBot Java is an online webbased tool that allows for editing, creating, and saving Java Op Modes
- Easy to use and requires no set-up





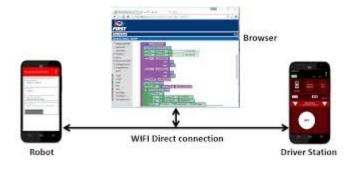
How To Access

- On your Driver Control App go to Program and Manage by clicking the 3 dots on the top right
- Connect to the Wifi starting under Robot Controller Connection Info using the passphrase on your computer
- Go to your browser and enter the link http://192.168.49.1:8080
- Select Onbot Java on the top left



Pros and Cons

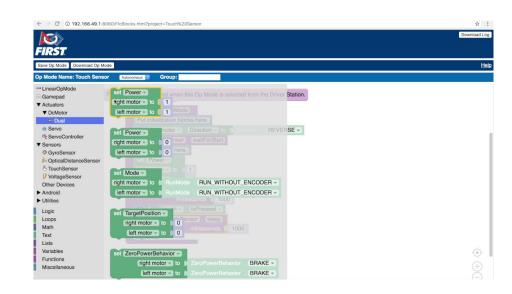
- No Software install Required
- Easy to set-up and very basic to use
- Wireless



- Extremely basic, limited functionality
- No version control
- Computer has to be connected to phone wifi during programing and testing (You can only code when you have the RC phone)
- Only one person can code at once

Blocks

- The FTC Blocks
 Programming Tool is a user-friendly programming tool.
- Drag and drop jigsawshaped programming blocks onto a design "canvas" and arrange these blocks to create the program logic for their op mode.
- Powered by Google's Blockly software and was developed with support from Google.



Set Up

- On your Driver Control App go to Program and Manage by clicking the 3 dots on the top right
- Connect to the Wifi starting under Robot Controller Connection Info using the passphrase on your computer
- Go to your browser and enter the link http://192.168.49.1:8080
- Result is main blocks programming webpage



Robot Controller Connection Info

The connected robot controller, 9999-C-RC, resides on the wireless network named:

DIRECT-XK-9999-C-RC

The passphrase for this network is:

ZU7if0hB

To remotely connect to the controller, connect your laptop's wireless adapter to this network, using the passphrase to gain access. Once connected, enter the following address into your web browser:

http://192.168.49.1:8080

Robot controller status:

Server OK (Running since Sep 05, 8:23 AM)

Active connections:

DriverStation #1 connection.html RobotController #1 connection.html Windows #1 java/editor.html

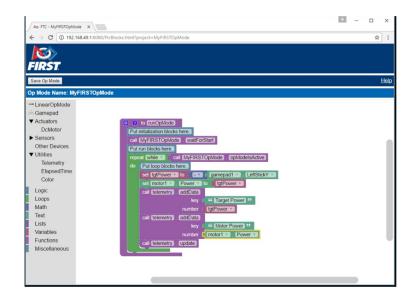






Pros and Cons

- Easy to learn and useful for beginners
- Wireless and easy to send code to robot
- No Version Control
- Not as powerful as either of the other two systems
- Computer has to be connected to phone wifi during programing and testing
- Only one person can code at once



Credits

- This lesson was written by Aaryan Rustagi and Akshaj Gupta from Quantum Stingers for FTCTutorials.com
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