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
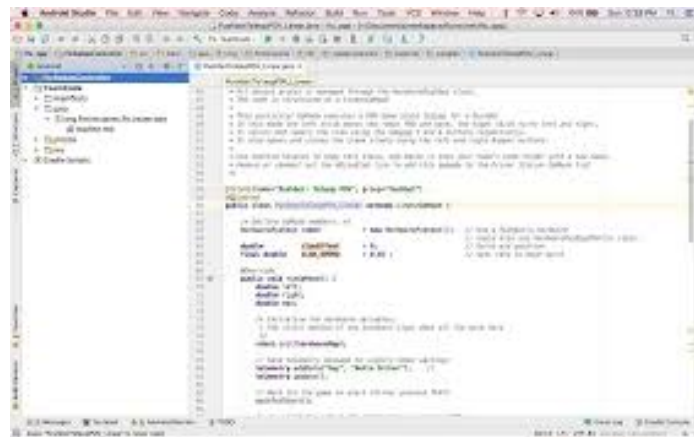
Pros and Cons

- 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 web-based tool that allows for editing, creating, and saving Java Op Modes
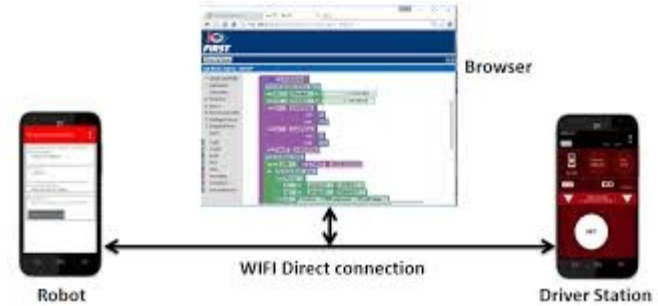
- Easy to use and requires no set-up
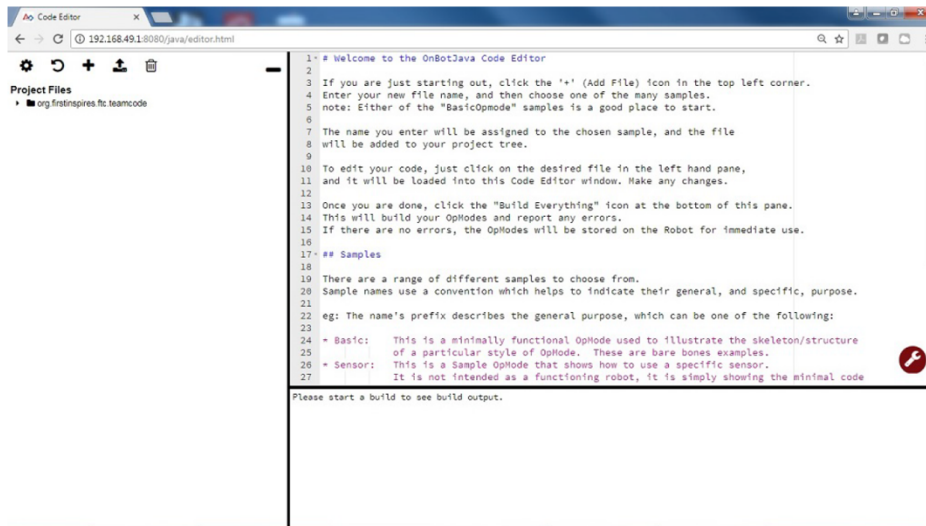
How To Access

- 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 jigsaw-shaped 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.
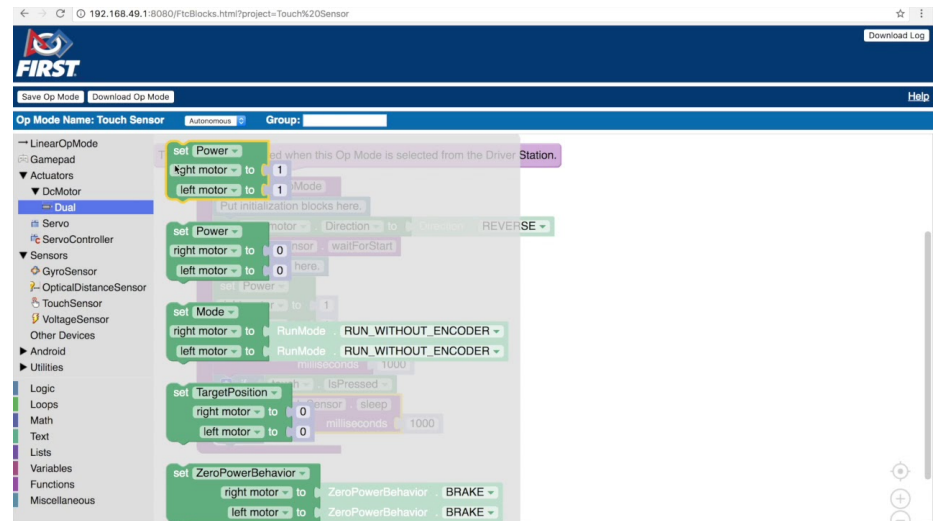
Set Up

- 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**
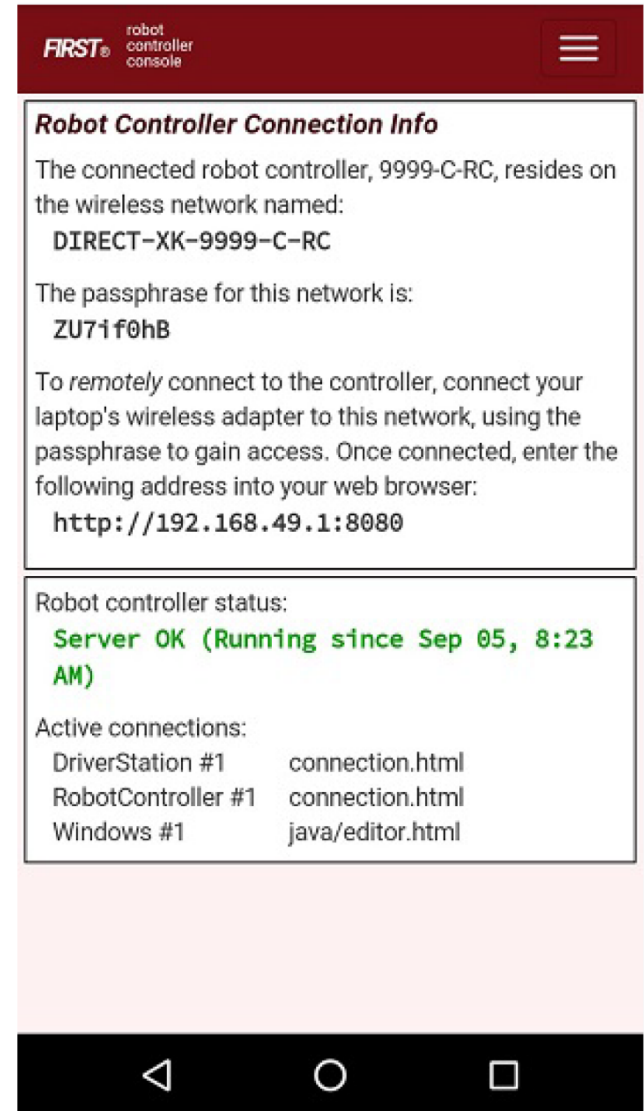
Pros and Cons

- 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
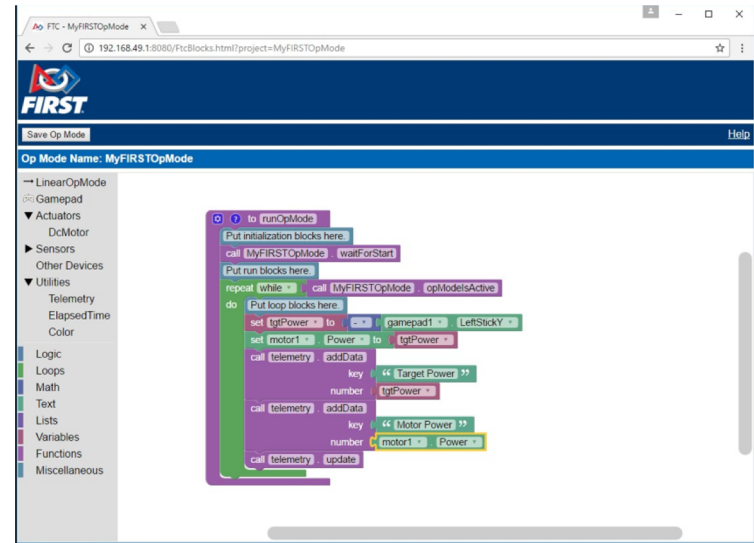
Credits

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- More lessons for FIRST Tech Challenge are available at www.FTCtutorials.com