This document will have three parts; Downloading and installing Android Studio, setting up Android Studio for FTC, and downloading and installing the FTC SDK (Standard Development Kit).

Downloading and Installing Android Studio:

- 1. Go to your search engine and look up "Android Studio"
- 2. Click on "Download Android Studio and SDK Tools" (it should be the first result)



- 3. If your using Windows, click on the "Download Android Studio [version #] for Windows"
 - a. If you're using Mac/Linux, click on "Download Options" (you may have to scroll down a bit). It will bring you to the bottom of the page where you can select the appropriate version to download.



- 4. Once you click "download", a new window will pop up with the End User License Agreement. Check the box to agree and then click "download". Select where you want to save it, click OK, and Android Studio will start downloading.
- 5. Once it is finished, go to the folder where you saved it to and open the installer.

	Android Studio Setup		$\overline{}$
		Welcome to Android Studio Setup	\rightarrow
\sum		Setup will guide you through the installation of Android Studio.	
\geq	R	It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.	\leq
\rightarrow		Click Next to continue.	\prec
\prec	Android		
$ \leq$	Studio		\geq
\prec		< Back Next > Cancel	
\square			

 Follow the installer's instructions to finish installing Android Studio (just click Next -> Next -> Next, but if you're short on disk space, you can uncheck the "Android Virtual Device" option on the "Choose Components" page).

Setting Up Android Studio:

- Run Android Studio (the last panel of the installation may have started Android Studio for you). The first time you run Android Studio, it will prompt for some configuration options, but the default settings do not need to be changed.
- 2. At the "Welcome to Android Studio" screen, choose Configure -> SDK Manager.



3. Once you are on the "Default Settings" page, click "Launch Standalone SDK Manager"

👳 Default Settings					×	
Q	Appearance & Behavior	System Settings > Andr	oid SDK			
Appearance & Behavior Manager for the Android SDK and Tools used by Android Studio						
Appearance	Android SDK Location: C:\Users\Knut\AppData\Local\Android\Sdk Edit					
Menus and Toolbars	SDK Platforms CDV Tee	In CDK Undate Sites				
System Settings Dasswords	Each Android SDK Diatfor	m nachage includes the A	ndvoid platform and sources o	estaining to an ADI level by		
HTTP Proxy Undates	Each Android SUK Platform package includes the Android platform and sources pertaining to an API level by default. Once installed, Android Studio will automatically check for updates. Check "show package details" to display individual SDK components.					
Usage Statistics		Name	APILevel	Revision	Status	
Android SDK	Android 7.) (Nougat)) (Marshmallow)	24	2	Installed Partially installed	
Notifications	Android G.	(warshindlow)	25		r browny materica	
Quick Lists						
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Build, Execution, Deployment						
▼ Tools						
Web Browsers						
External Tools						
▶ Diff						
Server Certificates						
Settings Repository						
	Looking for updates	hê 🔽			Snow Package Details	
	Launch Standalone SDK M	anager				
				ок	Cancel Apply Help	

- 4. Click "Deselect All", then click the checkboxes to add these items:
 - a. Tools -> Android SDK Build-tools, revision 21.1.2

LI7 ·····	
🖂 🥓 Android SDK Build-tools	21.1.2 📄 Not installed
🗔 🎤 Android SDK Build-toolt	20 C Not installed

b. Android 4.4.2 (API 19) -> SDK Platform 19, revision 4

🗸 🔲 🔁 Android 4.4.2 (API 19)			
🗹 🖷 SDK Platform	19	4	Not installed
🕅 💵 ARM EABI v7a System Image	19	3	🗍 Not installed

c. Android 4.4.2 (API 19) -> Google APIs (ARM system image) 19, revision 15

🔄 💵 intel xao Atom System image	19	د	ivot installea
🗹 🌆 Google APIs ARM EABI v7a System Image	19	23	Not installed

d. Extras -> Google USB Driver, revision 11 (not needed or selectable on Mac OS)

📖 🖬 Kolazola Klatovili Kolonalatolo	
🗹 💼 Google USB Driver	11 📄 Not installed
	A 11 (2) (1) (2)

- e. NOTE: If you don't see the items, exit and re-launch the SDK Manager.
- f. IMPORTANT: make sure you put a checkmark in the boxes for "API 19", not a higher or lower version. Android Studio may install other versions by default (which won't cause any problems), but it will NOT install the API 19 versions unless you put a checkmark in these boxes.

5. Click the "Install 4 packages" button, click the "Accept License" button, and then click Install.



revision 11	License Terms and Conditions				
	This is the Android Software Development Kit License Agreement				
	1. Introduction				
	1.1 The Android Software Development Kit (referred to in the License Agreement as the "SDK" and specifically including the Android syste files, packaged APIs, and Google APIs add-ons) is licensed to you subject to the terms of the License Treement. The License April 1997				
]	○ Accept ○ Reject <u>Copy to clip</u> rd <u>Print</u>				
ckage	Install Cancel				

6. After the installation has finished, exit Android Studio.

Downloading and Installing the FTC SDK:

 Go to the FTC SDK GitHub page here: <u>https://github.com/ftctechnh/ftc_app</u> and click the green "Clone or Download" button and select "Download zip"

© 1	🟷 18 releases			💵 3 co tributors		
	Create new file	Upload files	Find file	Clone or download 🕶		
			Latest con	nmit f 437382 on Jul 8		
er Android Studio 2.1.x environ				2 months ago		
				5 months and		

- 2. Select a place to save, click save, and it will begin downloading.
- 3. Once it is done downloading, find the folder, open it, and unzip it to a location that will be easily accessible (all you programs will be stored in here).
- 4. Run Android Studio again and choose "Import project (Eclipse ADT, Gradle, etc)".
- 5. Find the "ftc_app-master" directory where you unzipped the FTC SDK, then select the "build.gradle" file and click OK.
- 6. Android Studio will compile. This will take a while, and it will require network access to get some additional files which aren't included in the SDK. When it's done, click the "Gradle Console" button on the bottom right and you should see a line at the end which says, "BUILD SUCCESSFUL".
- 7. You may need to wait a few minutes before the next two steps will become available; Android Studio indexes the FTC SDK and may not allow you to do any more builds until the indexing is completed. Once the indexing has completed (the status bar line that says "Indexing" will disappear), select the Gradle Scripts node and choose Build -> Make Project.
- Expand the FtcRobotController node, then browse to the java com.qualcomm.ftcrobotcontroller - opmodes folder. This has the sample opmodes you can try out if you have a robot built. It also has the FtcOpModeRegister class, which you will need to modify to create your own op modes.
- To create your own program, go to "file" (top left) and select New -> Java Class. Then name your file, and you're ready to program! (if the Java Class option isn't there, you may need to open one of the sample programs first. Just double click one to open)