Ionic Framework Beginners Guide

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About

This Readme is for setting up a basic hybrid mobile application using the Ionic framework. The setup will be shown for both Mac and PC computers using a virtual Android device.

Step 1: NodeJS

The first step requires us to download and install NodeJS. These steps differ on a Mac and PC. Here is how we install NodeJS on both machine types:

Mac requirements:

> Download and install Xcode (https://itunes.apple.com/us/app/xcode/id497799835?mt=12). Xcode is used for testing, running, and deploying IOS apps. Xcode can only be used on a Mac.
>
> Next, we need to download and install Homebrew. Open a terminal and type:

```
ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

> This will automatically install Homebrew. Homebrew will help us install NodeJS, which helps us install Ionic's dependencies.
>
> Next, we need to install NodeJS. Type

```
brew install node
```

> at the command line and hit enter.

PC requirements:

> Go to NodeJS's website (https://nodejs.org/en/) and download the version of NodeJS that best fits your machine (32 or 64 bit).
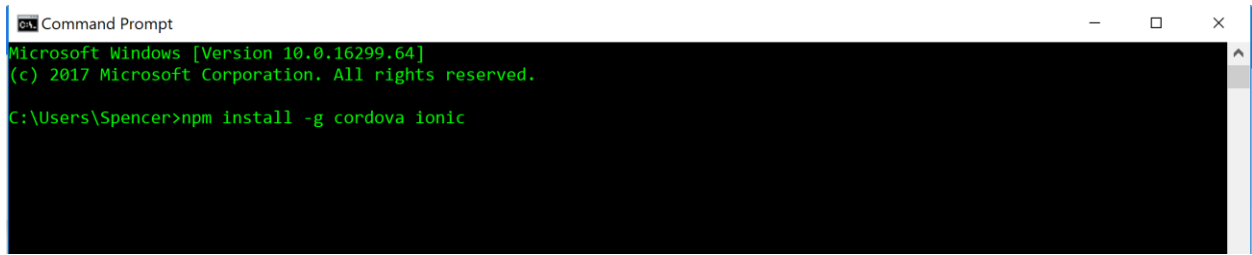
This will download an installer. Open the installer and use the default settings
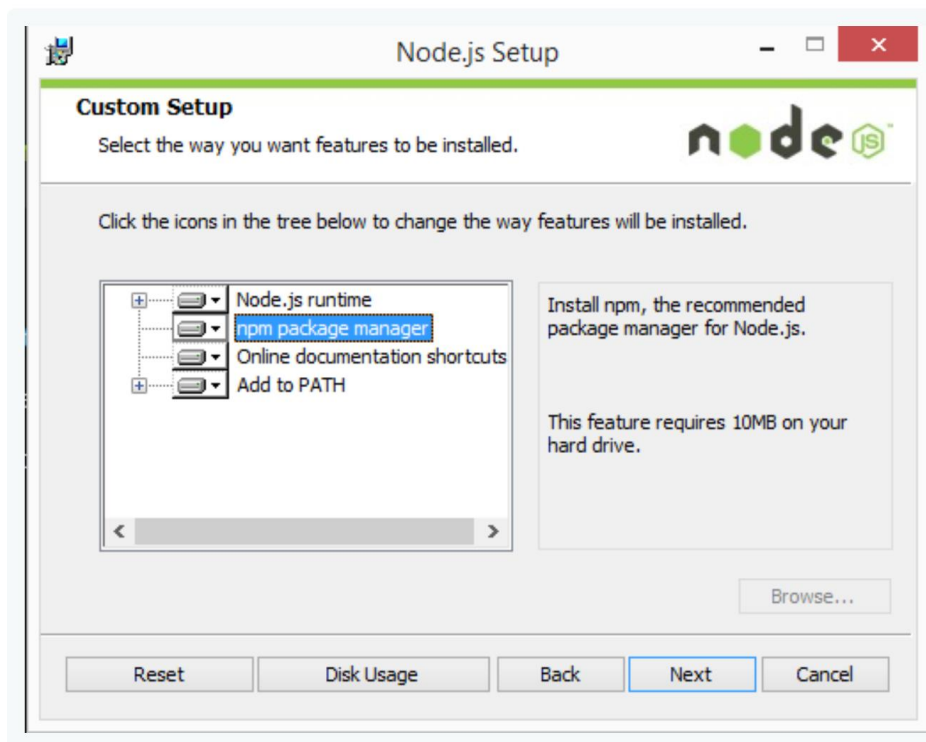
Step 2: Ionic-Cordova

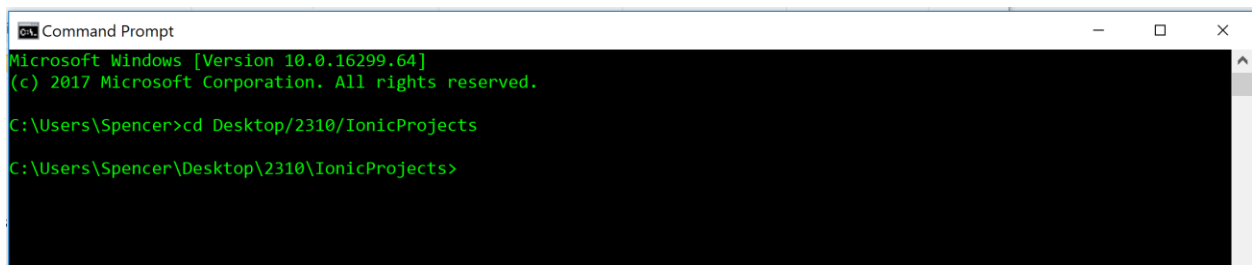Open up a terminal. Type npm install -g cordova ionic and hit enter.

This uses NodeJS's package manager to install all the dependencies that Ionic needs to run. It also installs all of Cordova's dependencies. Cordova builds the application from your JavaScript source code into IOS, Android, or Windows phone applications.

Step 3: Create an App from a template

Create a new folder somewhere on your computer called IonicProjects. This directory is just to hold any and all of your IonicProjects as you develop. Open a terminal in this new directory.

We now have 3 options. We can create a blank app from no template, create an app with 3 tabs at the bottom for different pages, or an app with a side menu with 3 sample pages. For our example, we will use the tabs template. At your terminal, type "ionic start walkthroughApp tabs". When prompted, type

"y" so we can build for IOS and Android with Cordova:

It will take some time for this command to run. When it is done, it will have generated a new folder called "walkthroughApp", which you should change directory into:
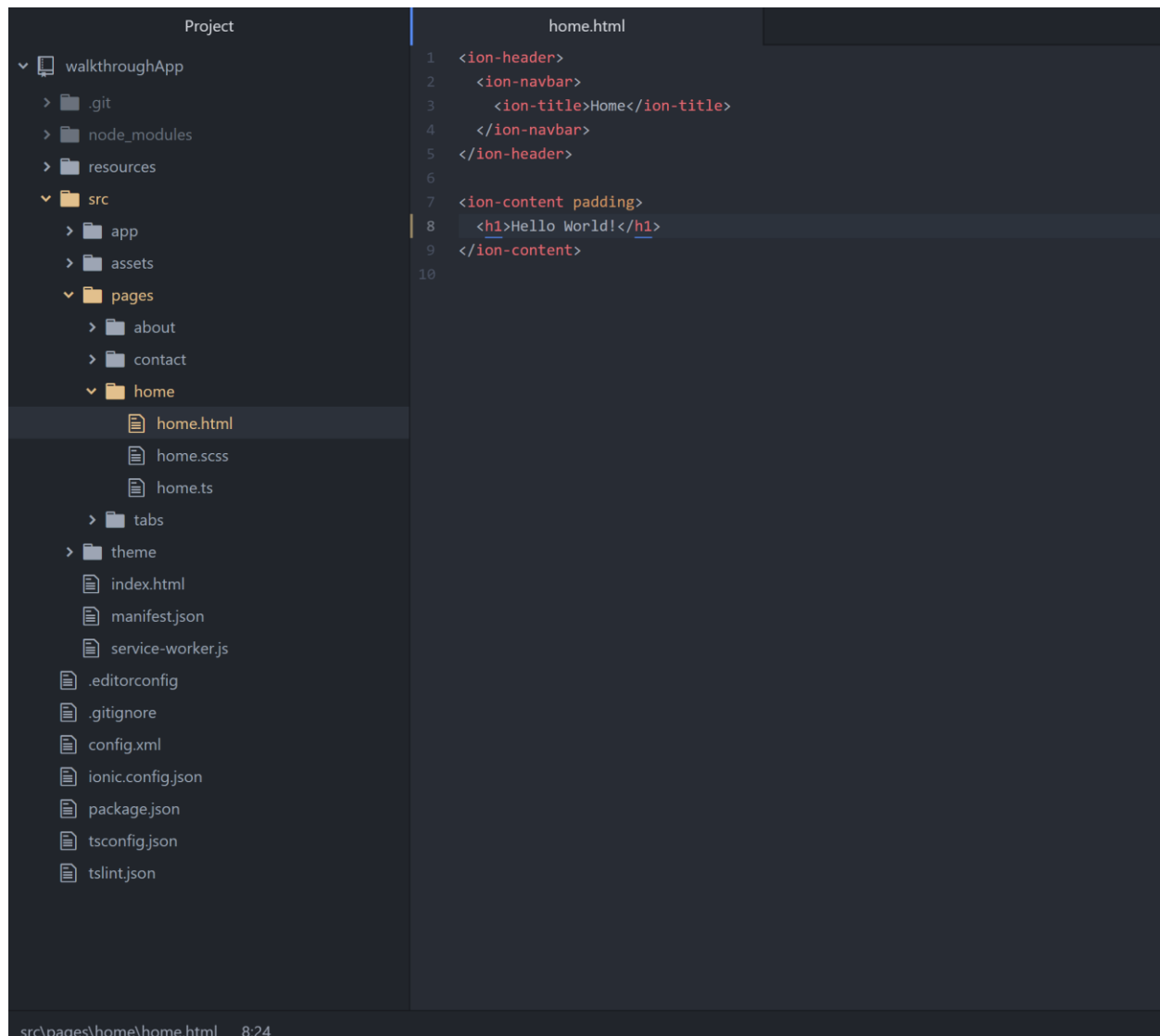

Pick your favorite text editor or IDE to open the project folder "walkthroughApp". For this tutorial, I will be using Atom, which can be downloaded at https://atom.io/. Whichever text editor you use, open the file src/pages/home/home.html:

```
Project                           home.html

∨ 🖳 walkthroughApp       1    <ion-header>
  › 📁 .git               2      <ion-navbar>
  › 📁 node_modules       3        <ion-title>Home</ion-title>
  › 📁 resources          4      </ion-navbar>
  ∨ 📁 src                5    </ion-header>
    › 📁 app              6
    › 📁 assets           7    <ion-content padding>
    ∨ 📁 pages            8      <h2>Welcome to Ionic!</h2>
      › 📁 about          9      <p>
      › 📁 contact       10        This starter project comes with simple tabs-based layout for apps
      ∨ 📁 home          11        that are going to primarily use a Tabbed UI.
          📄 home.html   12      </p>
          📄 home.scss   13      <p>
          📄 home.ts     14        Take a look at the <code>src/pages/</code> directory to add or change tabs,
      › 📁 tabs          15        update any existing page or create new pages.
    › 📁 theme           16      </p>
      📄 index.html      17    </ion-content>
      📄 manifest.json   18
      📄 service-worker.js
    📄 .editorconfig
    📄 .gitignore
    📄 config.xml
    📄 ionic.config.json
    📄 package.json
    📄 tsconfig.json
    📄 tslint.json
```

Change the contents of the home page to simply say "Hello World!"

```
Project                          home.html

walkthroughApp              1   <ion-header>
  .git                      2     <ion-navbar>
  node_modules              3       <ion-title>Home</ion-title>
  resources                 4     </ion-navbar>
  src                       5   </ion-header>
    app                     6
    assets                  7   <ion-content padding>
    pages                   8     <h1>Hello World!</h1>
      about                 9   </ion-content>
      contact              10
      home
        home.html
        home.scss
        home.ts
      tabs
    theme
    index.html
    manifest.json
    service-worker.js
  .editorconfig
  .gitignore
  config.xml
  ionic.config.json
  package.json
  tsconfig.json
  tslint.json

src\pages\home\home.html    8:24
```
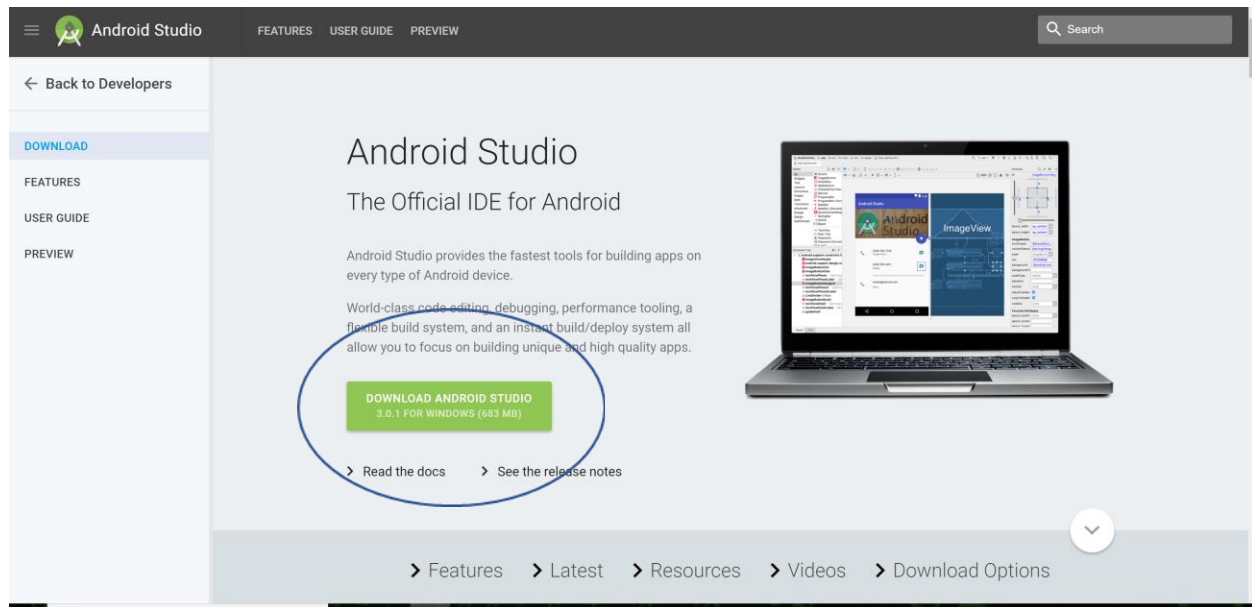
Next, I will show you how to run the app we created.

Step 4: Set up Android Studios and Virtual Device

In order to run your app, we need a device. If you are using a Mac and have an Iphone, you can deploy it on your actual phone using Xcode. If you have an Android device, you can deploy it on your actual phone with Android Studios on both Mac and PC. For this tutorial, we will use a virtual Android device on a PC. Details on the other deployment methods can be found here: https://ionicframework.com/docs/intro/deploying/.
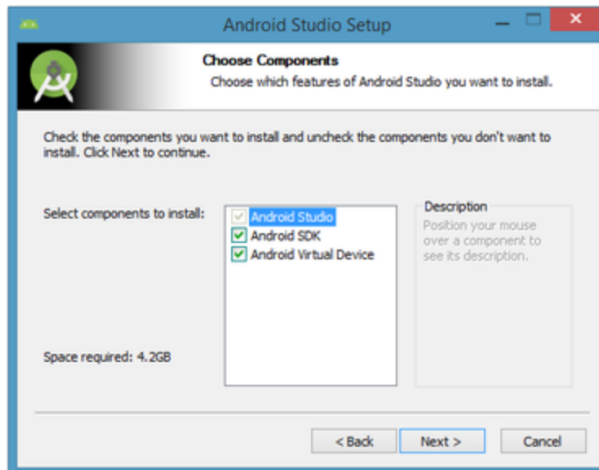
To start, let's download Android Studios (https://developer.android.com/studio/index.html):
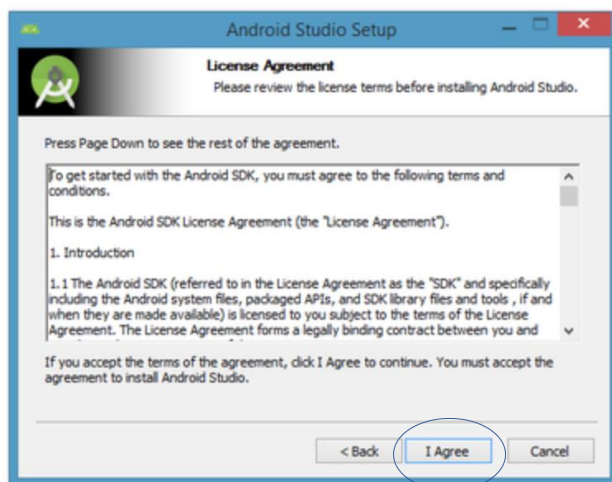
The screen for Mac will look slightly different, but the process is similar. Download the file and then run the Installer.
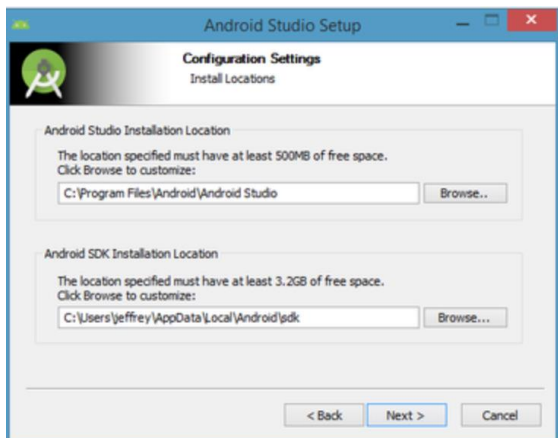

Click through the Installer

Use the default settings. Note: Android Studio will take up a lot of space on your machine.
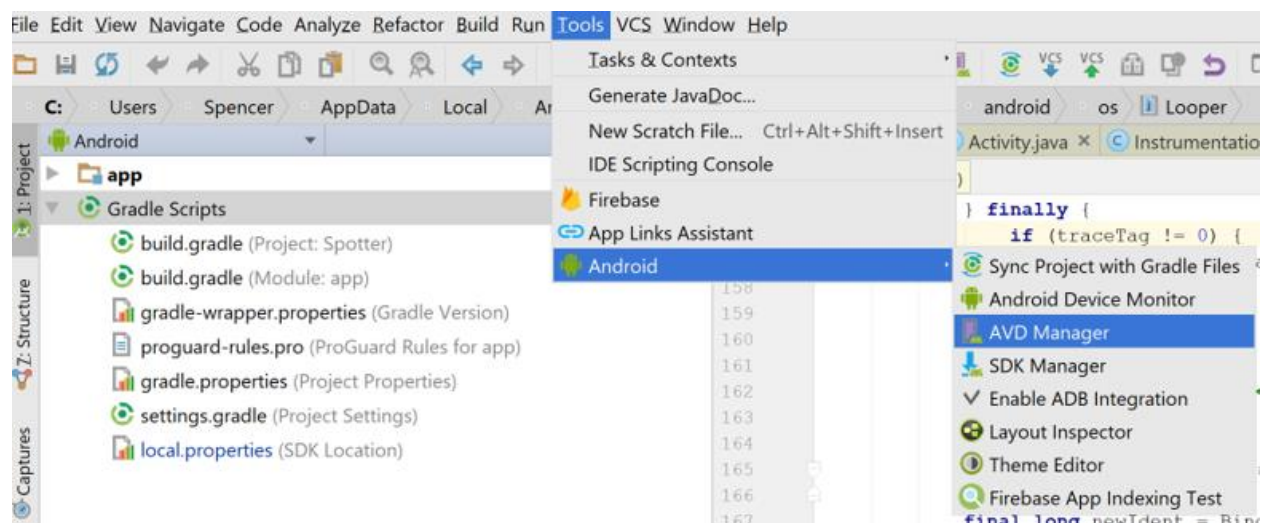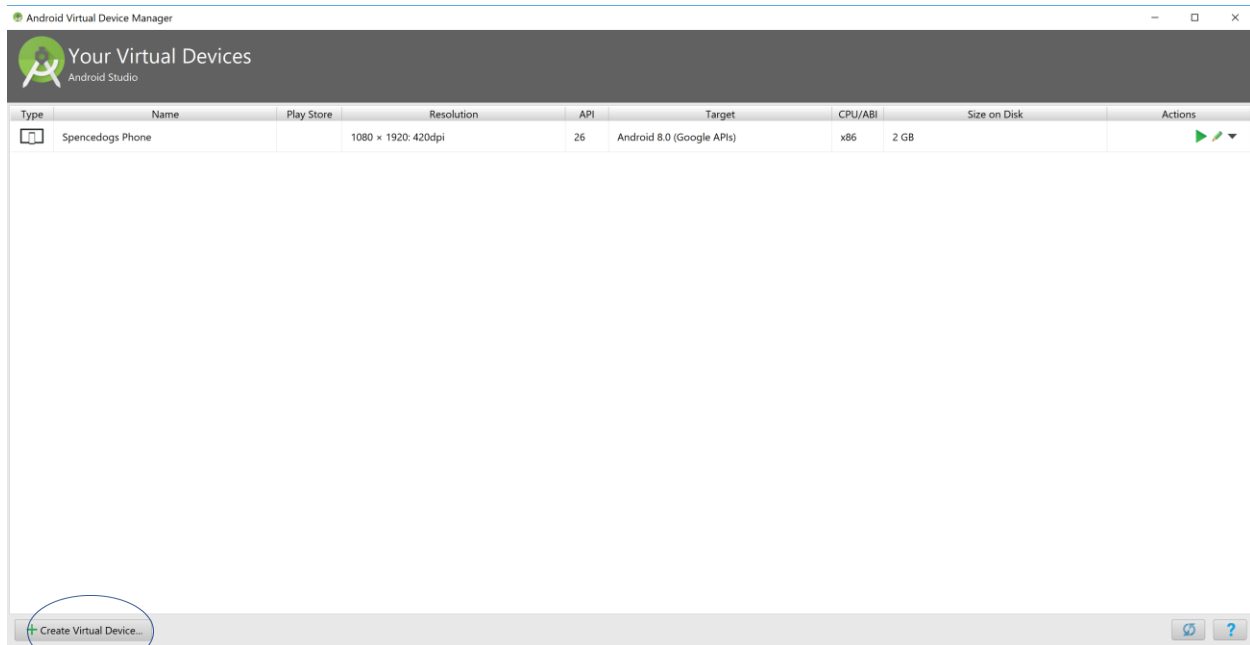

Agree to the terms.
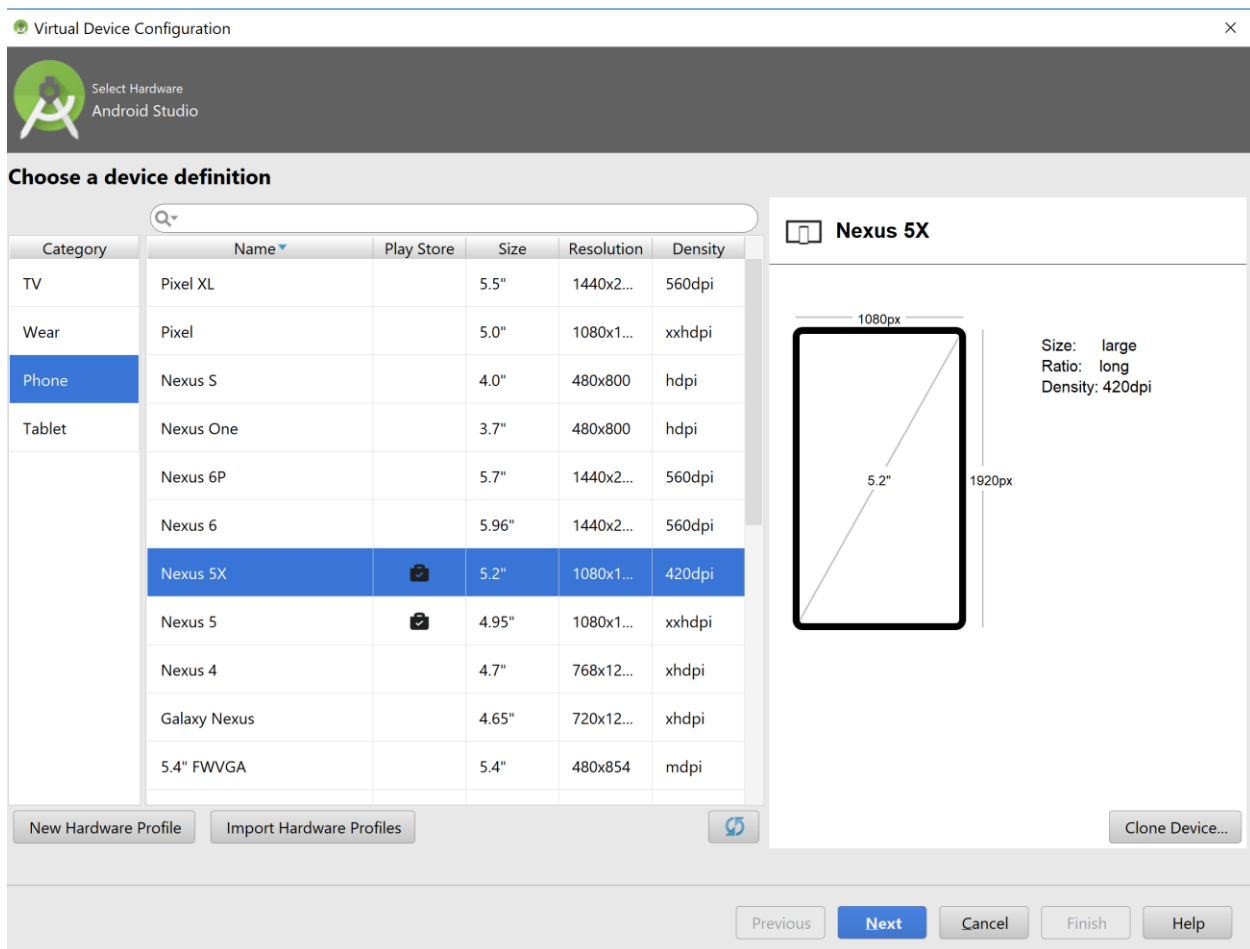

Use the default locations for the program files.

Next, we need to create a virtual device. Open Android Studio and on the top bar select Tools -> Android->AVD Manager

Next, select the Create Virtual Device Button

Next, select the Nexus 5X

Select the newest version and download it

Select a system image

Recommended | x86 Images | Other Images

Release Name	API Level	ABI	Target
null Download	27	x86	Android API 27 (Google Play)
O Download	26	x86	Android 8.0 (Google Play)
Nougat Download	25	x86	Android 7.1.1 (Google Play)
Nougat Download	24	x86	Android 7.0 (Google Play)

It will take a minute or two to download
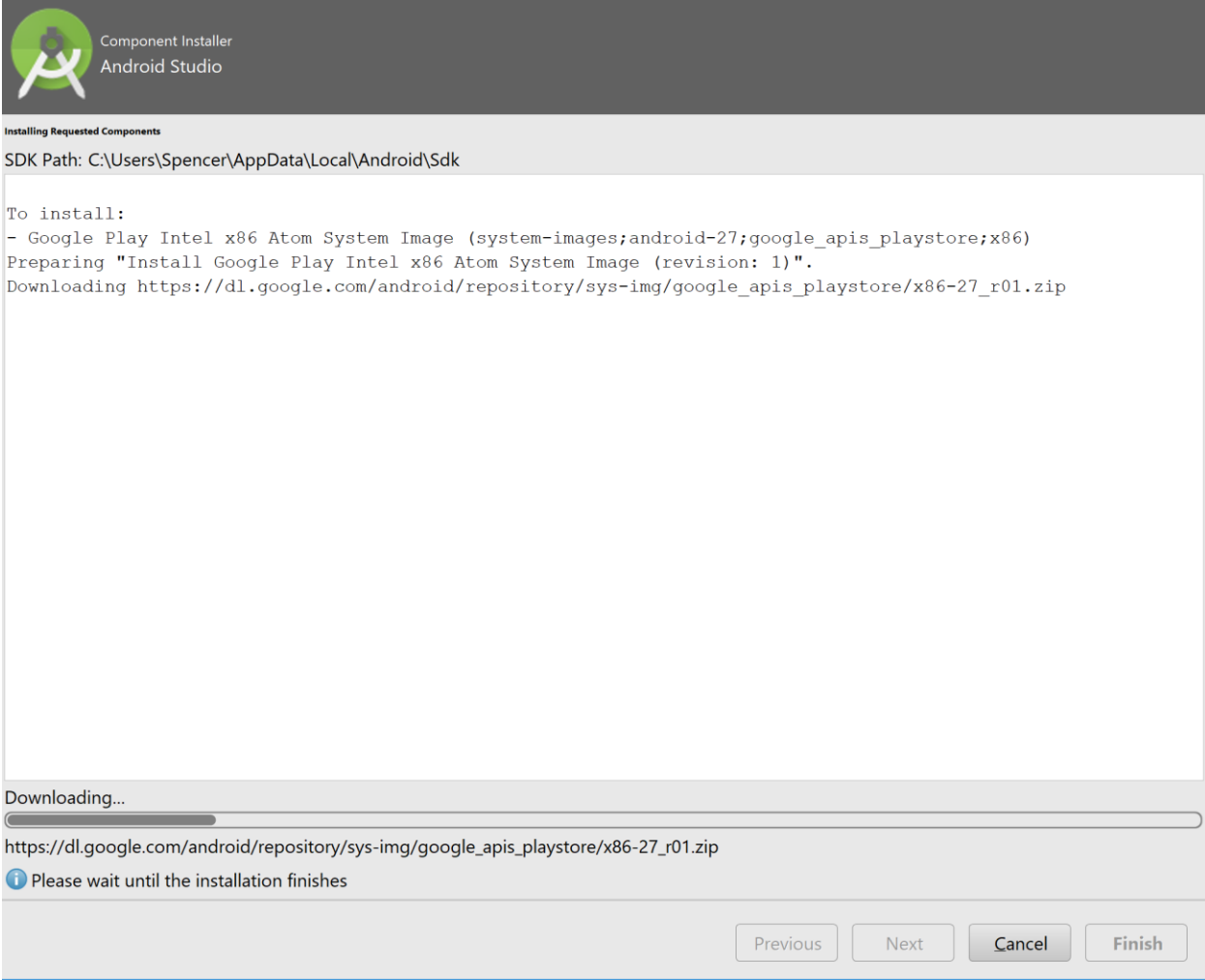
When the download is complete, click Finish. Click on the Image you just downloaded and use the default settings. Don't forget to give your Device a name before clicking finish again.
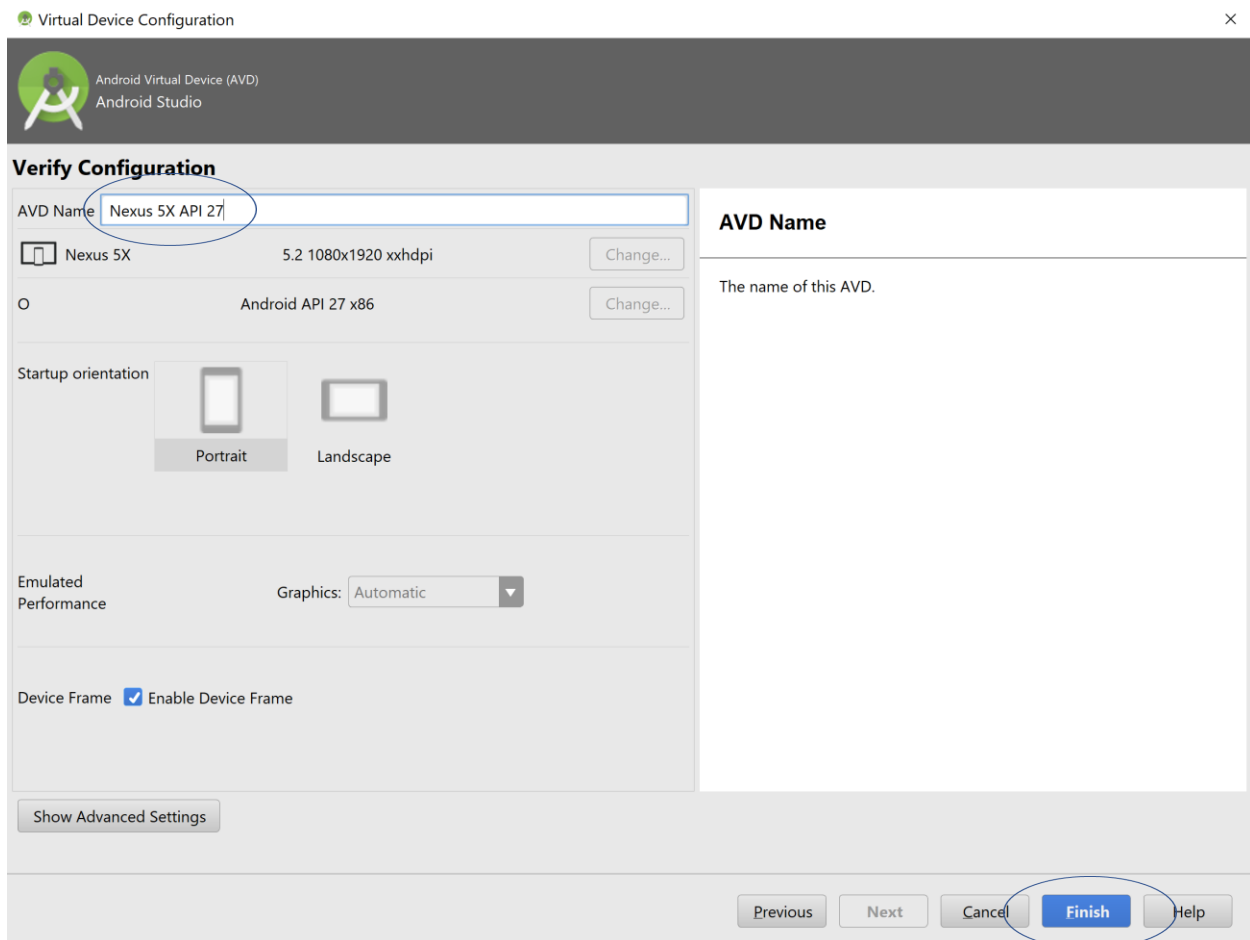
Step 6: Run the App

Finally! We are able to build and run the app. Open a terminal in your IonicProjects/walkThroughApp/ directory. At the terminal, type "ionic cordova emulate android -c -l -s". This command builds your app and deploys it to the virtual device that you just created. The options are as follows
-c = console logs. Anything your print in your app will show up on the screen

-l = enables live reload. Anytime you save changes to your code, it will reload your app with the changes

-s = will print stack traces for your errors to your terminal

This command will take some time. After it executes, your emulator should start and our Hello World homepage should be visible:

Android Emulator - Spencedogs_Phone:5584
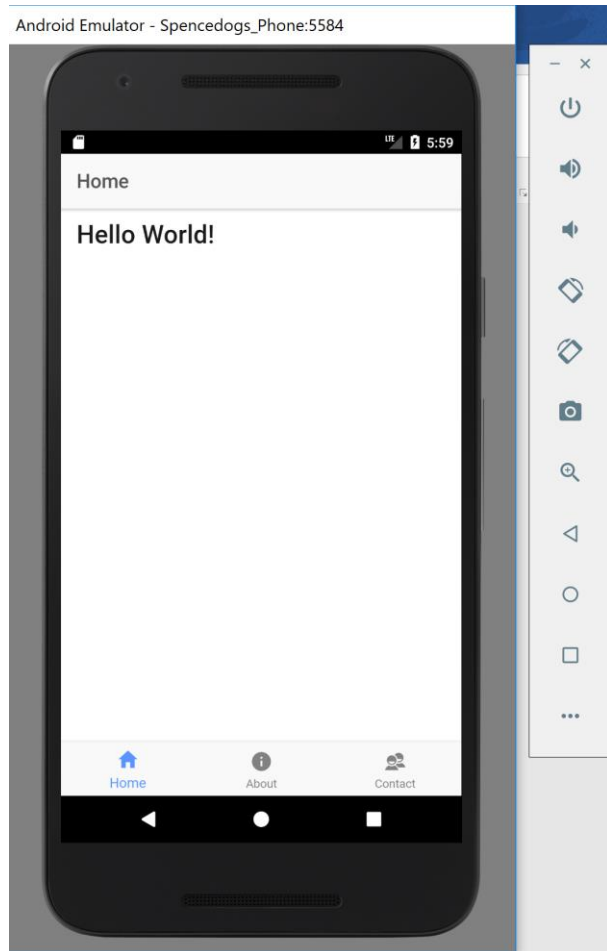
And that's it! That's all it takes to get a sample app up and running on a virtual device. To start coding with Ionic, I would suggest learning Angular2 and NodeJS. There are plenty of free resources and community support on Stack Overflow to get you started.