

Installing App Inventor on the HP 7 G2 Tablet

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The HP [7 G2 tablet](#) is an inexpensive choice of an App Inventor device for personal or school use - currently \$74. It does not include phone or cellular connectivity, so you'll need to be connected to WiFi. Other than that, it runs App Inventor well, with a [small number of limitations](#).

Here are the steps you can go through to set up a new (fresh out of the box) tablet for using App Inventor with Mac and Windows computers.

Note: HP (amazingly) does not provide a Windows USB driver for this tablet, and my query to the HP help desk on Jan. 28 produced the following response:

Upon further checking, I'm afraid to inform that it's not possible to connect the HP 7 G2 Tablet to Windows computer via USB cable. There's no such driver available. I'm so sorry.

In point of fact, this answer is incorrect, and you can connect the tablet to Windows over USB by using the Google generic USB driver as in the instructions below. But if you are planning to purchase these tablets for use with Windows computers, and you'll need USB, you might want to think twice. (There's no problem with USB for Mac.)

Before starting

- You need to be in range of a Wifi network.
- You'll need to have previously installed the App Inventor setup tools on the computer you are using. Follow the installation [Instructions for Mac](#) or [Instructions for Windows](#).

Set up the tablet (for MacOS and Windows)

- Unwrap the new tablet and plug in it to AC power and let the battery charge. Start the tablet. You don't really have to be plugged in to start the tablet, but it's a good idea to be plugged in while the system is updating. You might be asked to register the tablet with HP.
- Confirm the language setting and connect to a WiFi network.
- The tablet should download a system update and show a notification you can press install the update. Do the installation, which should take about 10 minutes. My tablet updated to system 4.4.2 (update performed January 2016).
- Set the date and time to your time zone.
- Open *Settings*, then select *Security*, and check *Unknown Sources*
- Next, enable ADB on the tablet:

- Open *Settings*, and select *About tablet*
- Find the menu option labeled *Build Number* and tap this 7 times. Yes, 7 times! You need to do this only the first time the tablet is being set up. This should unlock *Developer Options* and you'll see this as a new selection.
- Choose *Developer Options* and check *USB debugging*.

The next step is to install the App Inventor Companion on the tablet. There are two options for doing this. Option 1 is to use a barcode app, which works the same for both MacOS and Windows. Option 2 is to use the USB cable, which works differently for MacOS and Windows. Option 1 is simpler (especially for Windows). For a quick setup, we suggest the barcode option. On the other hand, it would be useful to have the USB cable as a backup in case of issues with wireless, and also for debugging) so you might want to use the barcode for installing the companion and then return to connect the USB cable later.

You might also want to config

Barcode option: Install the App Inventor Companion on the tablet

- Open Google Play. If this is a new tablet you may have to register the tablet with your google ID in order to access Play.
- Find a barcode scanner or QR code scanner and install it on the tablet. I used the *QR and Barcode Scanner* app from ZXing, but any one will probably work.
- On your computer, browse to the App Inventor service at ai2.appinventor.mit.edu. Select the *Help* dropdown at the top of the page and click *Companion Information*. This will display a QR code for the Companion. Use the scanner app you just installed to download and install the companion.
- Test that live development works: Create a new project using App Inventor on your computer (or bring up an old project). At the top of the screen, under *Connect*, choose *AI Companion* to bring up a QR code. Launch the Companion on the tablet and use the 6-character code or choose *scan QR code* to connect the tablet to App Inventor to do live development.
- Test that loading packaged apps works:
 - Build the app and select *APK Provide QR code for apk*
 - Use the companion (or any other scanner app) to scan the QR code and install the packaged application

Congratulations! You are done with the setup. You can now use your tablet with App Inventor and the wireless companion.

An alternative setup option is to connect the tablet to the computer with the USB cable and download the companion via USB. You might also want to use the USB cable if there are

issues with wireless. USB can also be useful in debugging. Connecting with USB requires an extra initial step if you are using Windows, in order to install a device driver.

If you are using Windows, go on to the next step: *Install the device driver for Windows*. Otherwise, skip this step and go on to *USB Option: Connect to App Inventor via USB*.

USB Option: Extra initial step for Windows: Install the USB Device Driver for Windows on your computer

Installing the device driver for Windows is the hardest part of the installation process. You should consider getting help from someone with Windows experience. Part of the difficulty here is that HP apparently does not provide a Windows USB device driver for this tablet, which you do in this initial extra step.

- Start by installing Android Studio. This can take more than 30 minutes and may also require installing the Java JDK from Oracle. Studio will prompt you to install Java if necessary.
- Find the folder where Studio was installed. In that folder there should be a program called *SDK Manager*. If you can't find *SDK Manager*, an alternative is to run Studio, look for *Configure (Settings)*, depending on your installation) and look under tools->Android->SDK Manager and choose the SDK tools tab.
- In SDK Manager, scroll down the list of packages until you get to the Extras section, then find *Google USB Driver*. Select this package and let SDK Manager install it.

Once you've installed the Windows drivers, continue with *USB Option: Connect to App Inventor via USB*

USB Option: Connect to App Inventor via USB

- Set the tablet USB connection mode: On the tablet, choose *Settings* and tap *Storage*. You'll see three vertical dots at the upper right of the screen. Tap these, and then tap *Usb computer connection*. You'll see options for *Media Device* and *Camera*. Neither of these should be checked.
- Authenticate the computer to the device: Plug the tablet into the USB port on the computer (or unplug it and plug it back in). You should see a message appear on the tablet screen that asks: Allow USB Debugging? You need to use the USB cable only for installing the Companion, but check *Always allow from this computer?* if you want to later use the USB cable with this tablet and this computer.
- Check that adb is working and can access the tablet: Go to the directory where you installed the App Inventor set software. This should contain the adb program (probably in *Commands for App Inventor*). Open a terminal in this directory and run the command `adb devices`

You should see your tablet listed with a serial number and the word “device”. If it instead says “unauthenticated” it means the previous authentication step did not work, so unplug and plug in the USB cable and try the authentication step again. If you don’t see the tablet listed at all, make sure that you’ve enabled adb on the tablet and allowed apps from unknown sources, as described above in “Set up the Tablet”.

Your tablet can now connect to the computer over USB. If you’ve already installed the Companion using the barcode option, you are done. Otherwise go on to install the Companion using the USB option.

USB Option: Install the Companion on the tablet

- From your computer, browse to the App Inventor service at *ai2.appinventor.mit.edu*. Select *Help* at the top of the screen and choose *Companion Information*. This will display a URL that you can click to download the Companion to your computer. (It will also show a QR code, but ignore that.) Find the path to the downloaded companion file, named *MITAI2Companion.apk*. It’s probably in your *Downloads* folder.
- Open a terminal in the directory where the App Inventor setup software is located, and you found adb in the previous step. Run the command
`adb install <path to the downloaded companion>`
 This should install the companion app on your tablet.
- Check that live development works over USB: Start an App Inventor project and choose *Connect* at the top of the screen, followed by *USB*. This should start the Companion app on the tablet (no need to start it manually) and connect it to App Inventor for live development.
- Test that loading packaged apps works:
 - Build the app and select *APK Save .apk to my computer*
 - Use *adb install* to install the apk on the tablet.

Congratulations! You can now use your tablet with App Inventor and USB.

Limitations

Here are some limitations we’ve discovered in testing the tablet with App Inventor. Please add comments to include any more that you discover.

- The tablet does not have BLE (Bluetooth low energy)
- The tablet does not have NFC (Nearfield)
- I have not done testing of all the components, and there might be issues resulting from the lack of a specific USB Windows driver.
- The tablet is running Android system 4.4.2 (Kitkat) as of March 2016. This is well behind Google’s current release (system 6, Marshmallow) and I don’t know if HP has plans to update the software.

