Notes About Publishing AI2 Apps
Created From "Particle App Template"

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Introduction.

This document provides information about the process of creating and publishing apps made from the Particle App Template using MIT App Inventor 2 (AI2).

Start Creating Your App.

You begin the process of creating your app by importing the Particle_App_Template into your AI2 development screen (IDE). You start by opening a web browser on your development computer and going to:

https://github.com/TeamPracticalProjects/Particle_App_Template/blob/master/Software/src/ParticleAppTemplate.aia

Click on "Download" and select a location on your computer for the downloaded file (e.g. your Desktop). *Make a note of the location of this file on your computer.*

Next, you will open your AI2 IDE on your web browser by going to:

http://ai2.appinventor.mit.edu

If you haven't previously set up an AI2 account, do so now, following the instructions given. You will need a Google account. If you don't have a Google account, you can establish one by getting yourself a free GMAIL account. See the documentation on the AI2 web site for further information.

With the AI2 IDE open on your computer, click on "Projects" and click on "Import project (.aia) from my computer …". Click on "Choose File" from the popup dialog box and select the file "ParticleAppTemplate.aia" from the location where you previously saved it. Now click "Projects", "Save project as …" and give your project a name that you can identify it by as you develop in AI2.

Changing the App Name and Version Number.

"Save project as …" in the AI2 IDE only changes the name of the project in your AI2 "My projects" list. It <u>does not necessarily</u> change the app name as it will appear on your phone or tablet after publication, nor the name that it will appear as in the Google Play Store if you choose to publish your completed app there. Here is how to change the app name, and other relevant app properties for publication when you have completed the app:

Make sure that you are in the Designer view and have selected "Screen1" as the current screen in the AI2 IDE. This is the screen that you will develop your specific app on, but it is also the opening screen when the user opens the app. Now click on "Screen1" in the Components window in the AI2 IDE. Look at the Properties window on the right side of your IDE screen. In the box called "AppName", you will see "ParticleAppTemplate". You **must change this** to the name that you want the app to have when it is installed on a phone or tablet. This may or may not be the same name as the name that you gave to your project in the AI2 IDE, so be careful to select both names appropriately.

While you are working within the Properties window of the AI2 IDE, here are some other things that you *might want* to change (these are optional):

- "Icon". If you leave this as "none …", you will get the AI2 default icon when the app is installed. If you want another icon, you can change it to be any icon or image file that you have stored on your computer.

- "VersionCode". You should probably leave the first version code at the default of 1, but after you publish your app, you will want to increment the number for subsequent versions.

- "VersionName". You should probably leave the first version name at the default of 1.0, but after you publish your app, you will want to increment the number for subsequent versions (2.0 for a major update, 1.1 for a minor update with some new features, 1.01 for a minor cosmetic update, etc.).

- There are many other "Screen1" properties that you can change. What you do with these is dependant upon your specific app's needs. You do not need to make any other changes here; this is strictly optional on your part.

Developing Your App.

This document is not a tutorial or guide for developing apps in AI2. This section assumes that you know how to develop apps in AI2 and provides guidance about how to do this within the Particle_App_Template.

When on "Screen1", you will see a layout component called "VerticalScrollArrangement1". All of the visible components that you add to this screen **MUST be inside** "VerticalScrollArrangement1". This is necessary in order to ensure that the template components at the bottom of the screen are not altered. Non-visible components may, of course, be added anywhere in the Designer window, as they will appear at the bottom of the window and don't impact the visual layout.

Generally speaking, you only want to code (in the Blocks window) components that you add to this app. However, if you want to trigger something in your app code after the selected Particle device is pinged and returns an OK-online status, you can insert your code here:

Suggested location to add your startup code block(s) is here
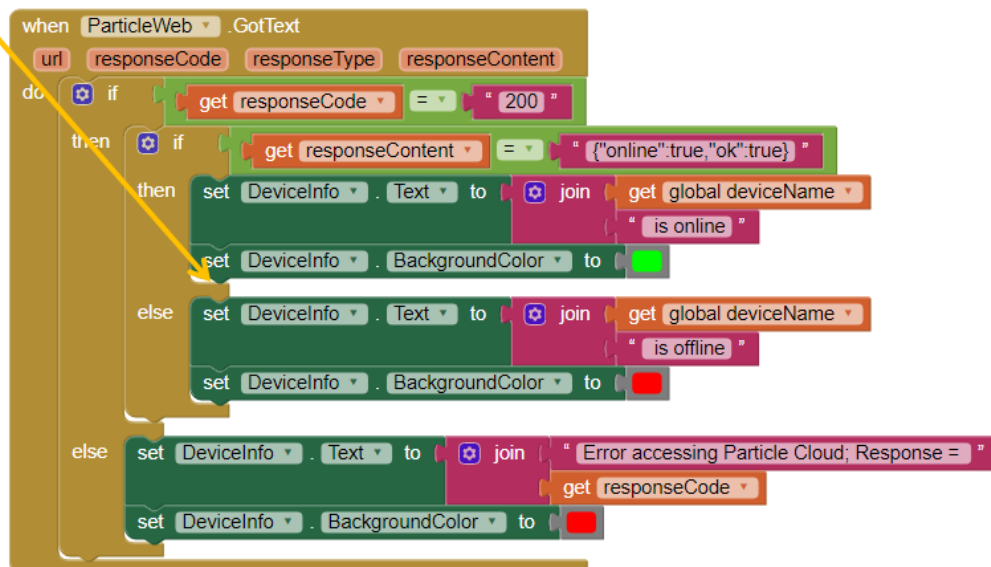
You may freely use the global variables "userToken", "deviceID" and "deviceName" that are found on "Screen1". **Do not change these global variables**, they are set up using the template code. You may use these variables to perform further cloud operations on your Particle device.

You **must not rename** the screen called "DeviceSetup" and you **must not change** any code on the "DeviceSetup" screen. You *should not rename* "Screen1" to something else. If you must rename this screen, you need to change the block in the DeviceSetup code to reflect this new name for Screen1:

Change this to the name that you Re-named "Screen1" to
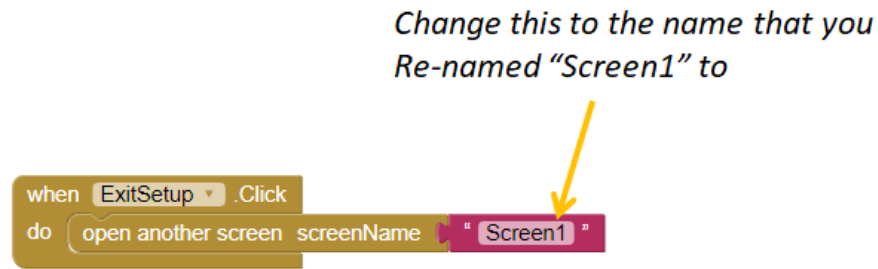
You may add other screens to your app and if you do so, these screens are yours to do with as you wish!

If your app code on Screen1 needs web access, you should drag more web components onto Screen1 (or another of your screens) and not reuse the web components from the Template. This will ensure that responses to your web calls don't get mixed up with the web calls in the Template.

If your app code needs to use the TinyDB component, you may do so (you can only have one TinyDB per AI2 app). Just make sure to tag your data with *tags that are different* from those used by the Template.

Deploying Your App.

Once you have completed and tested your app, you deploy it in exactly the same manner as any other AI2 app. See the MIT App Inventor 2 documentation and tutorials for more information.

Note that is is possible to change properties of an installed Android app by modifying the Manifest inside of the .apk file that is used to install the app. One handy (and safe!) tool for doing this is an app called "APKEditor" that you can download and install (for free) from the Google Play store. You can use this app to make many changes to any installed Android app, including those created in AI2.

One change that you might want to make to your AI2 apps after installation is to allow the app to be installed to an SD card in your tablet or phone, as opposed to the device's internal memory. The .apk files created by MIT App Inventor 2 always default to installing the app to internal device memory and you cannot change this using the Android Application Manager. APKEditor will allow you to change this app property to any installation option that you want. We recommend changing it to "Auto (OS select)" so that you can then use the Android Application Manager to move the app to your SD card and later to move it back to internal memory, as you wish.

APKEditor allows you to make many other changes to your installed apps, but be careful about what you change! Things that you might want to change (that are generally safe to change) are the App's name and the App's icon. However, it is best to set the correct name and icon when actually developing your app in AI2, as explained in this document.