MIT App Inventor

Take a picture with Tim!

An MIT App Inventor tutorial

Feat. Tim the beaver

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App overview: Take a picture with Tim!

When you are done you and your friends will be able to use this app to:

- Take a picture of yourselves using App Inventor's camera component
- Set this picture as the background of a *Canvas* component
- Add an image of Tim the Beaver and place him wherever you would like in the picture!

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Step 1: Signing in to App Inventor

Click the “Create apps!” button in the menu bar at the top of the MIT App Inventor Hour of Code page.

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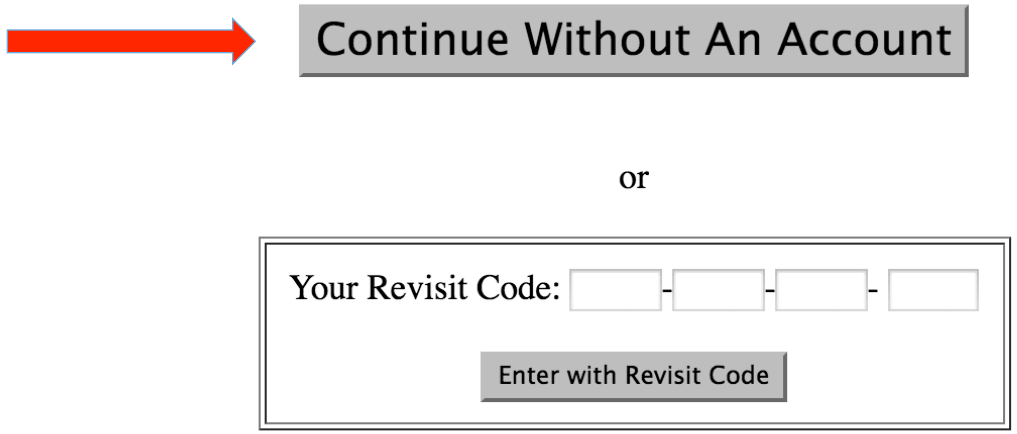
Step 1 continued

You can either Continue with an Account, and you will be given a Revisit Code to return to the site if you wish.



Or you can sign in if you have a Google account. Your projects will be saved with your account id.

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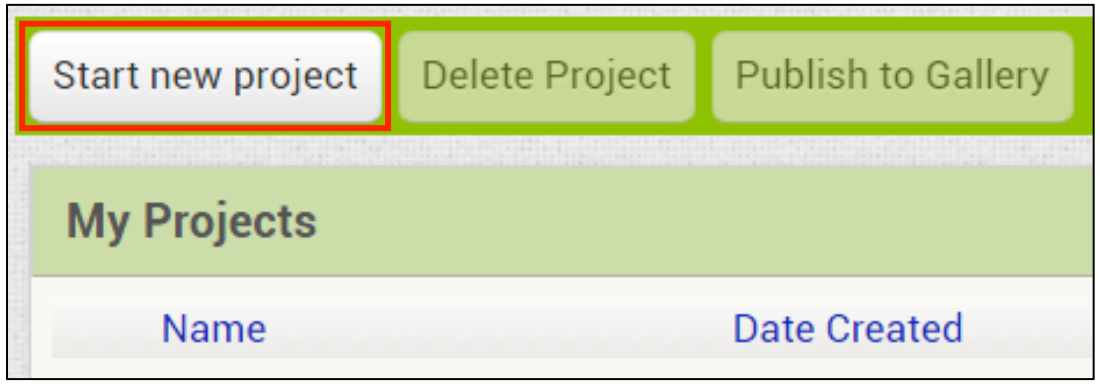
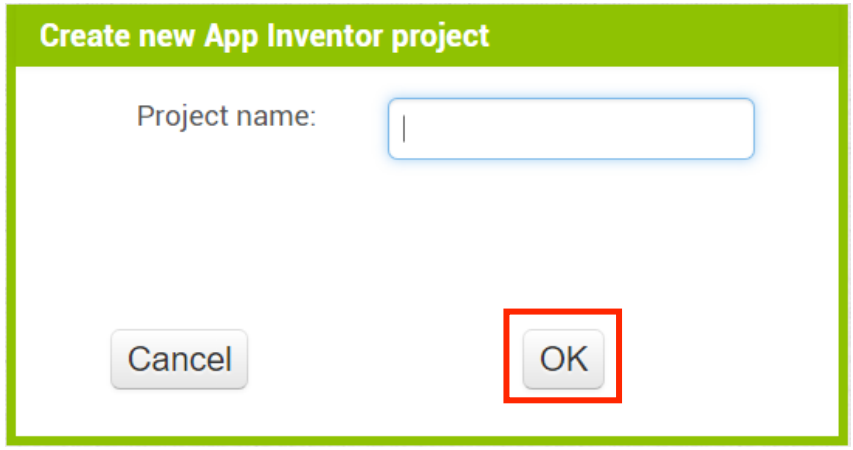
Step 2: Creating a new project

Click “Start a new project” in the upper left corner…



For this tutorial you can call your app “MeetTim”

…give it a name and click “OK” to get started!



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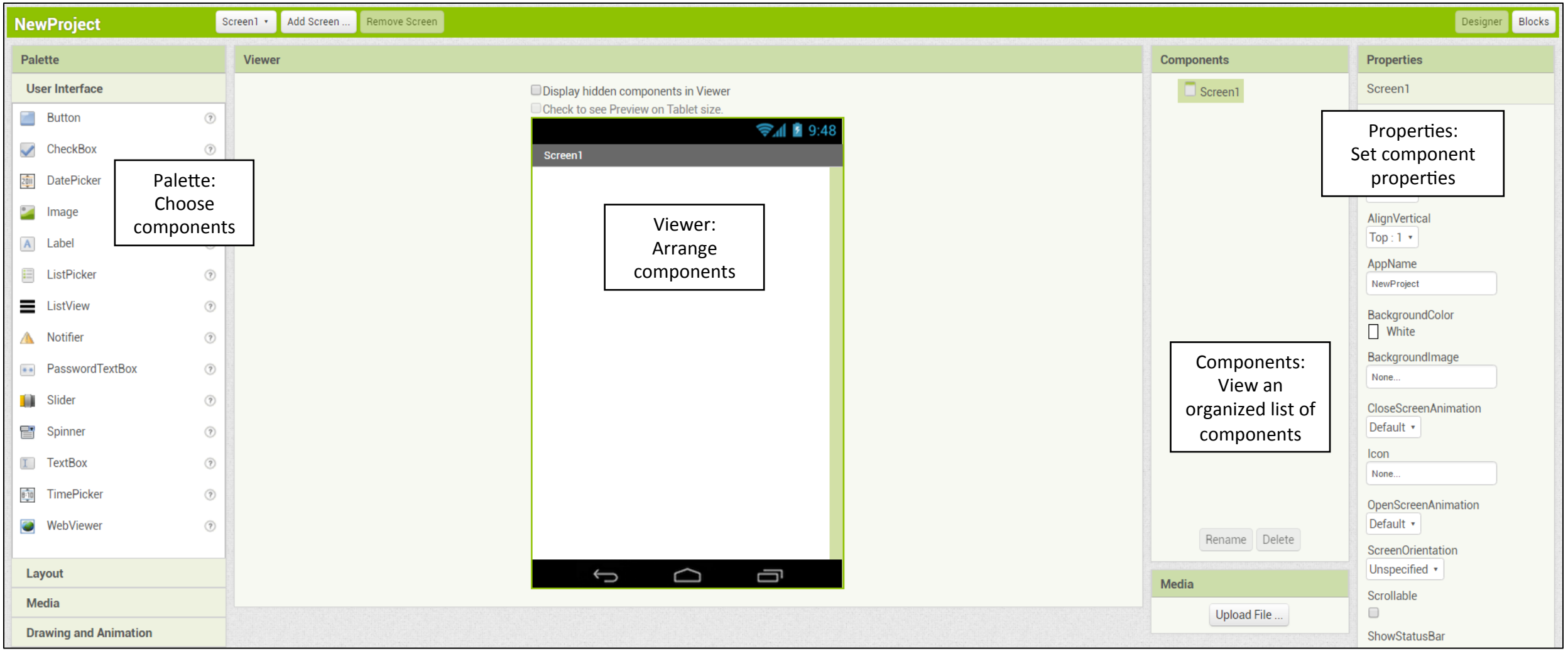
Step 3: Familiarize yourself with the designer window



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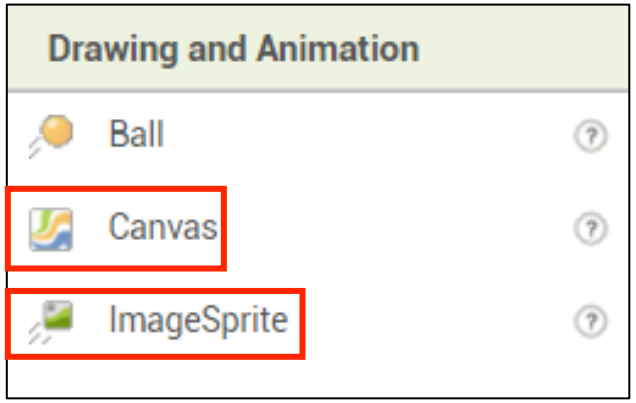
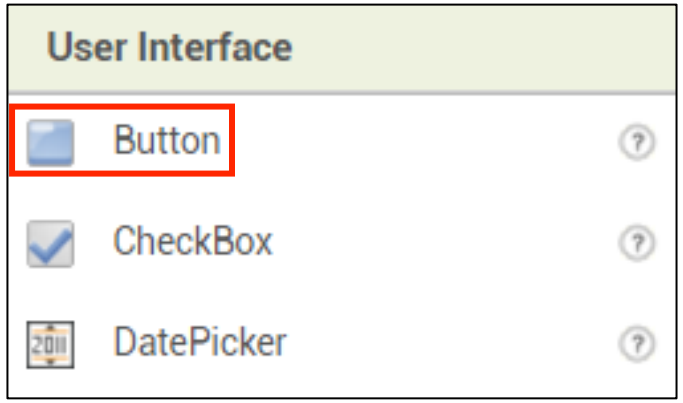
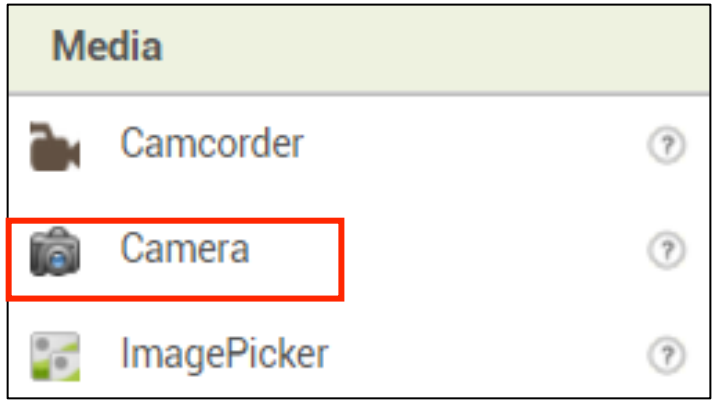
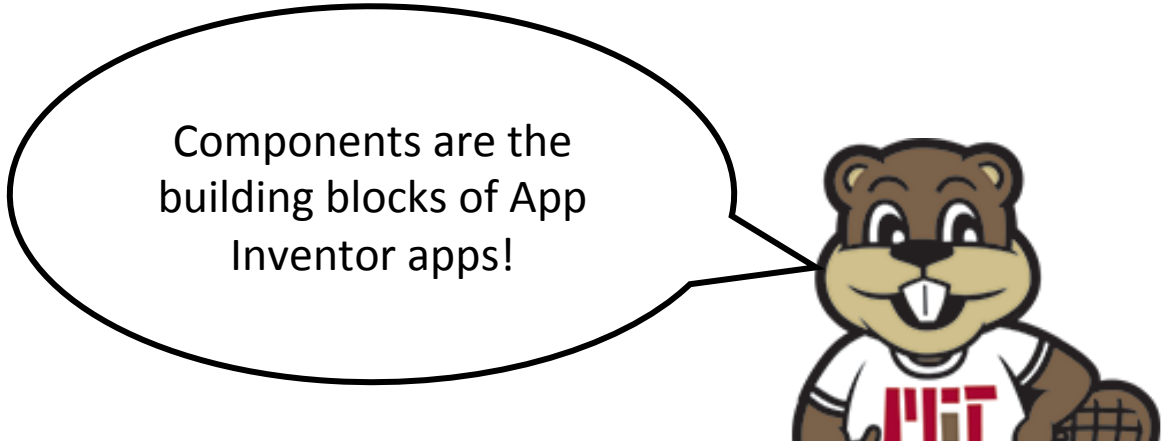
Step 4: Add components!

To build this app you will need four components—a canvas, image sprite, button, and camera. Find these components in the Palette and drag and drop one of each onto the Viewer.









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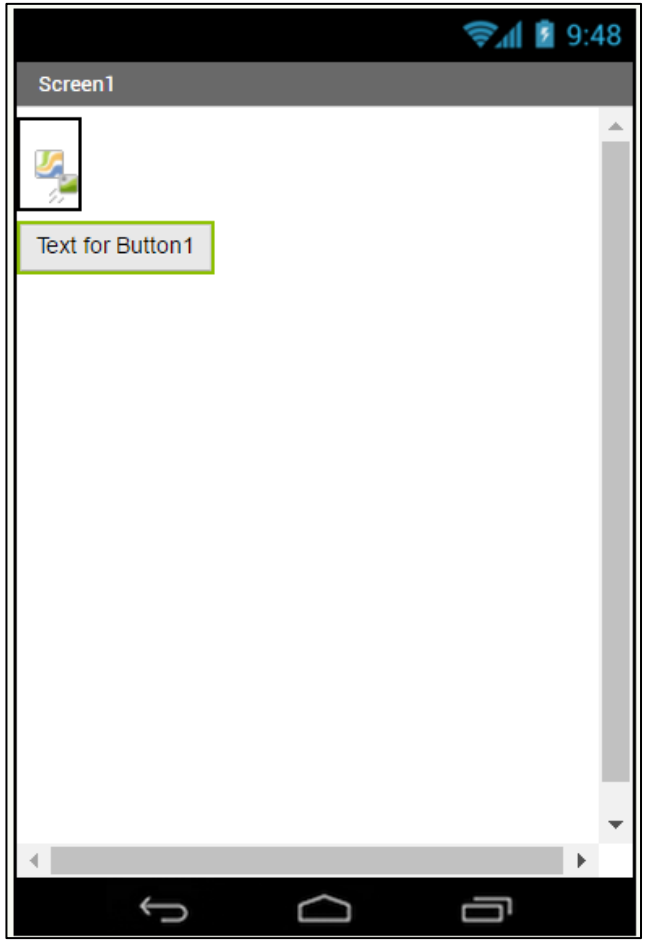
Your screen should now look like this:



Note that no matter where you drop the Image Sprite, it will end up inside the Canvas

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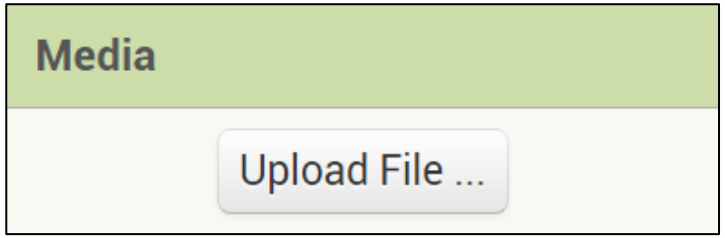
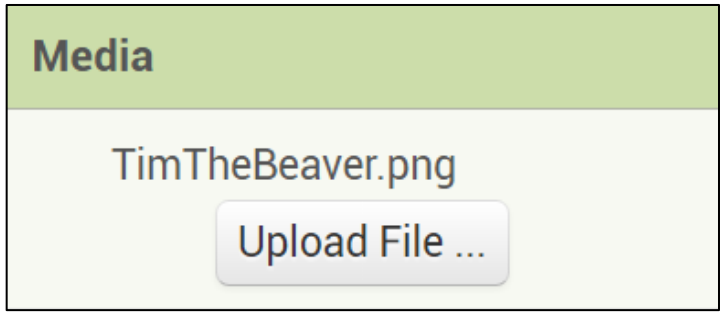
Step 5: Upload media files

To complete this app you will need to download a picture of Tim from here. Then you will need to upload it to the App Inventor server by clicking the upload file button under “Media”



Before upload



After upload

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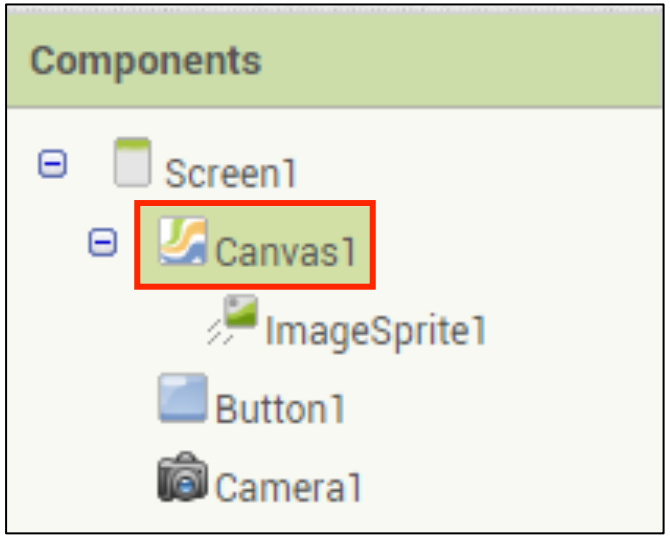
Step 6: Set properties

Now we will change some component properties to start truly building our app! To view and change a component's properties, find it in the "Components" list and click on it.



Let's start with the canvas! Find "Canvas1" in the "Components" list and click on it. Then change both its Height and Width properties to "Fill parent". This will ensure that our canvas is as big as possible.

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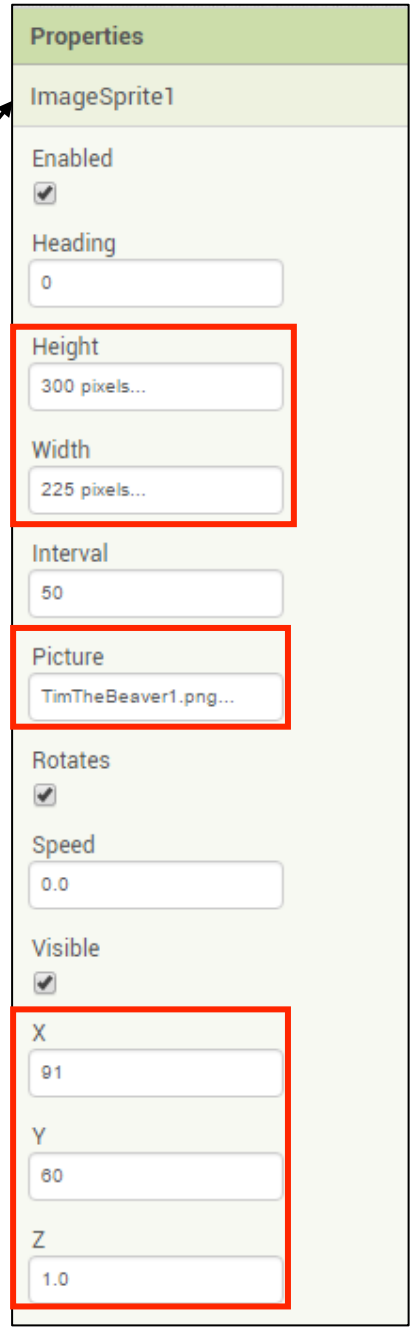
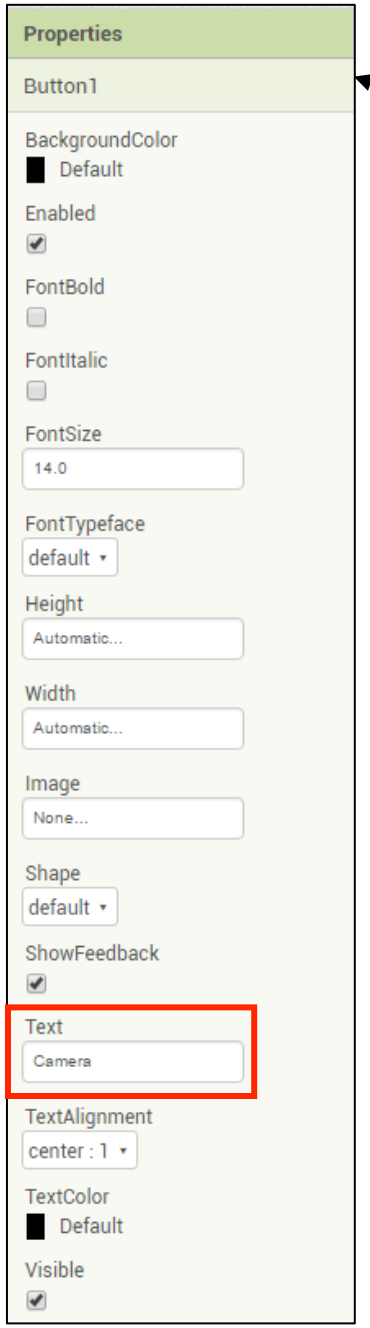
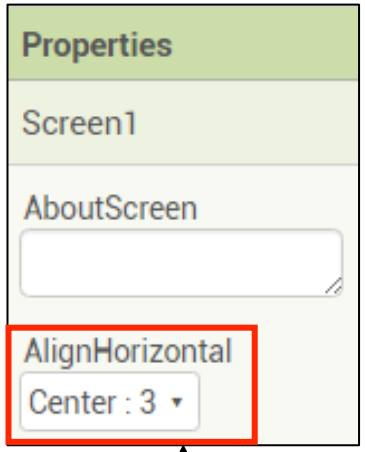
Step 6 continued

Select “ImageSprite1” and set the following properties:
Height to 300 pixels
Width to 225 pixels
Picture to TimTheBeaver.png
X to 91
Y to 60
Z to 1.0





Next, select “Button1” and set the Text property to “Camera”



Finally, select “Screen1” and change the “AlignHorizontal” property to “Center”

Whew! There’s a lot to do on this page. Double-check to make sure you don’t miss anything!

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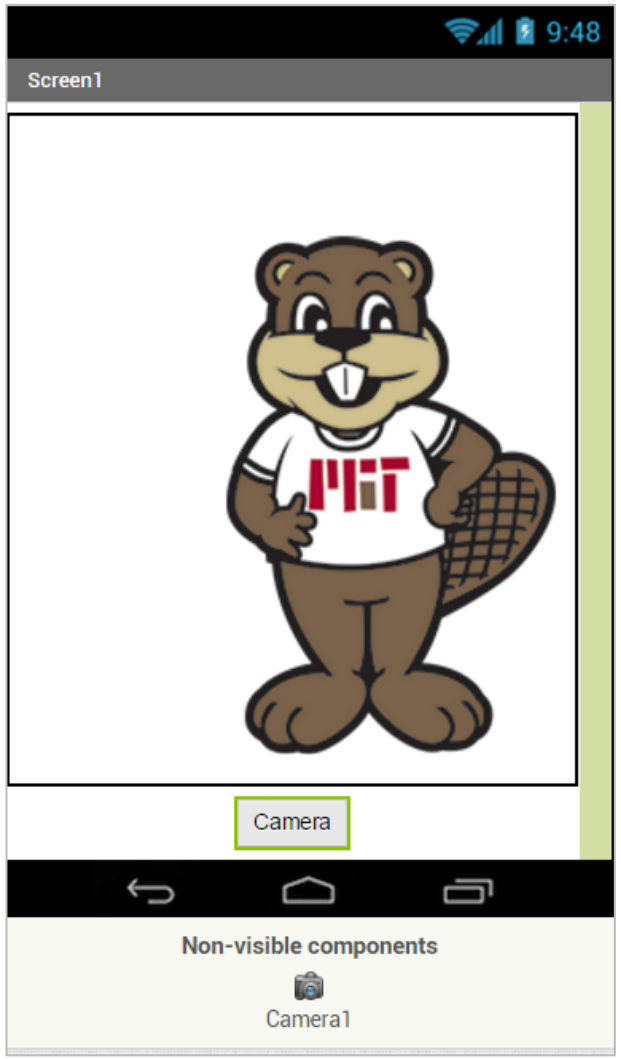
Your screen should now look like this:



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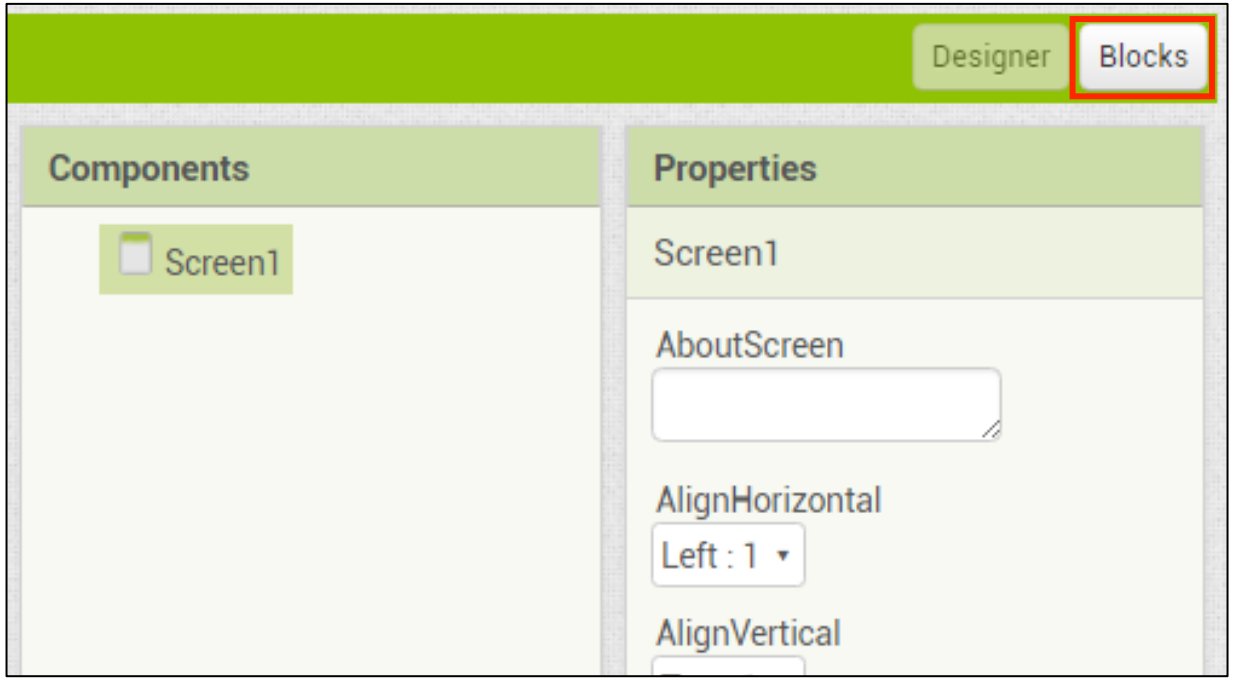
Step 7: Switch to the blocks window to write code!

Now that all components have been added to the app, we will write code to tell the app what to do with them! To do so, switch to the blocks window by clicking the “Blocks” button in the upper right corner.



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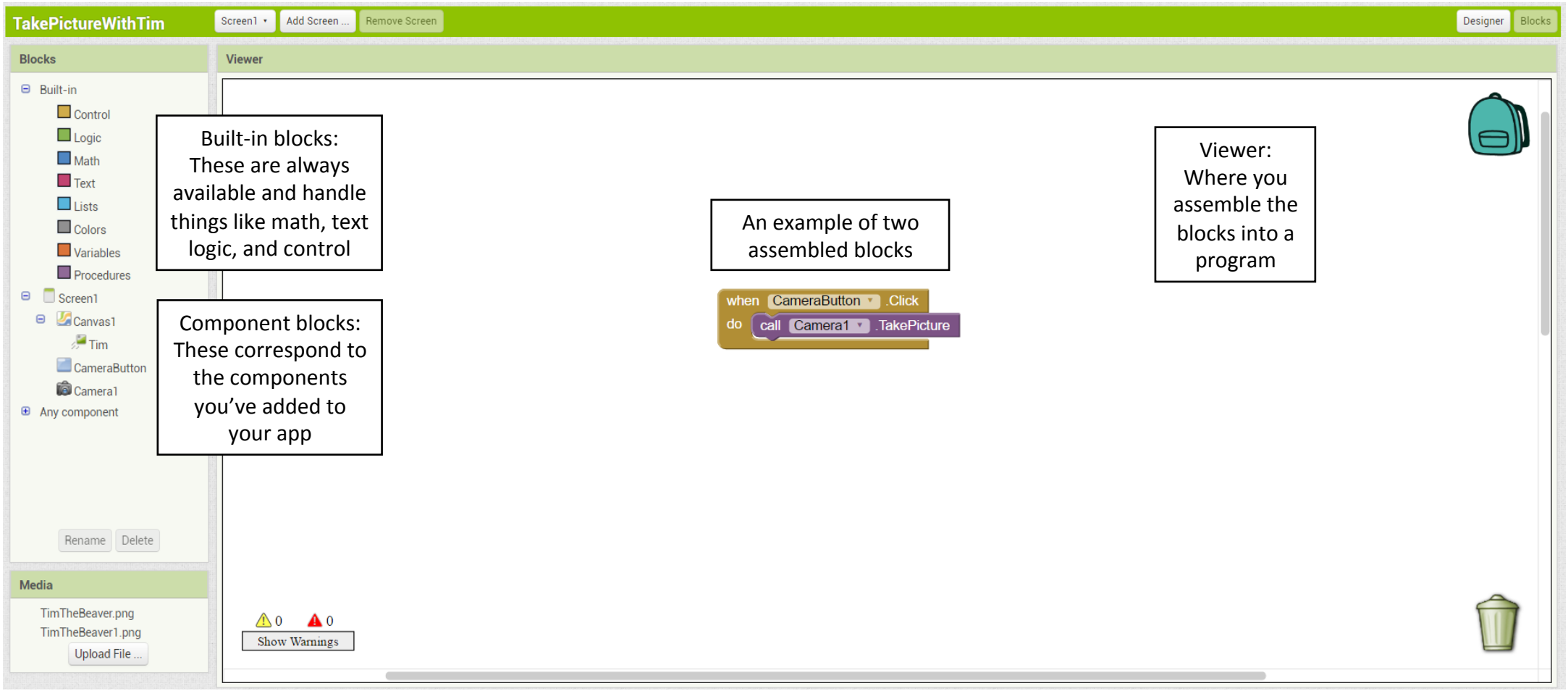
Step 7 continued: Get to know the blocks window



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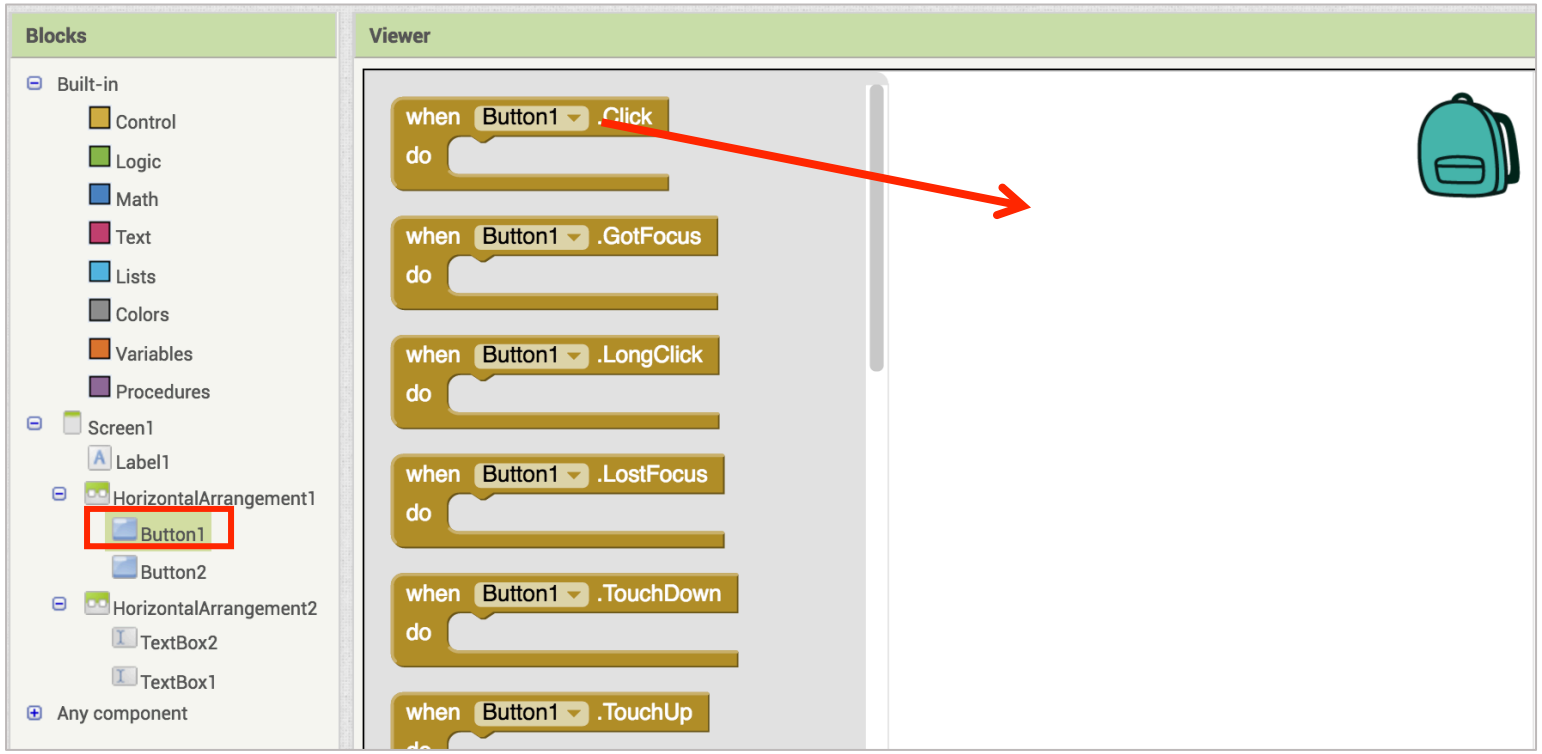
Step 8: Start coding!

When the Camera button is clicked, your phone's camera should open.
We will write the code to make this happen now!



Find Button1 under Screen1, click on it, and drag out a "when Button1.Click" block

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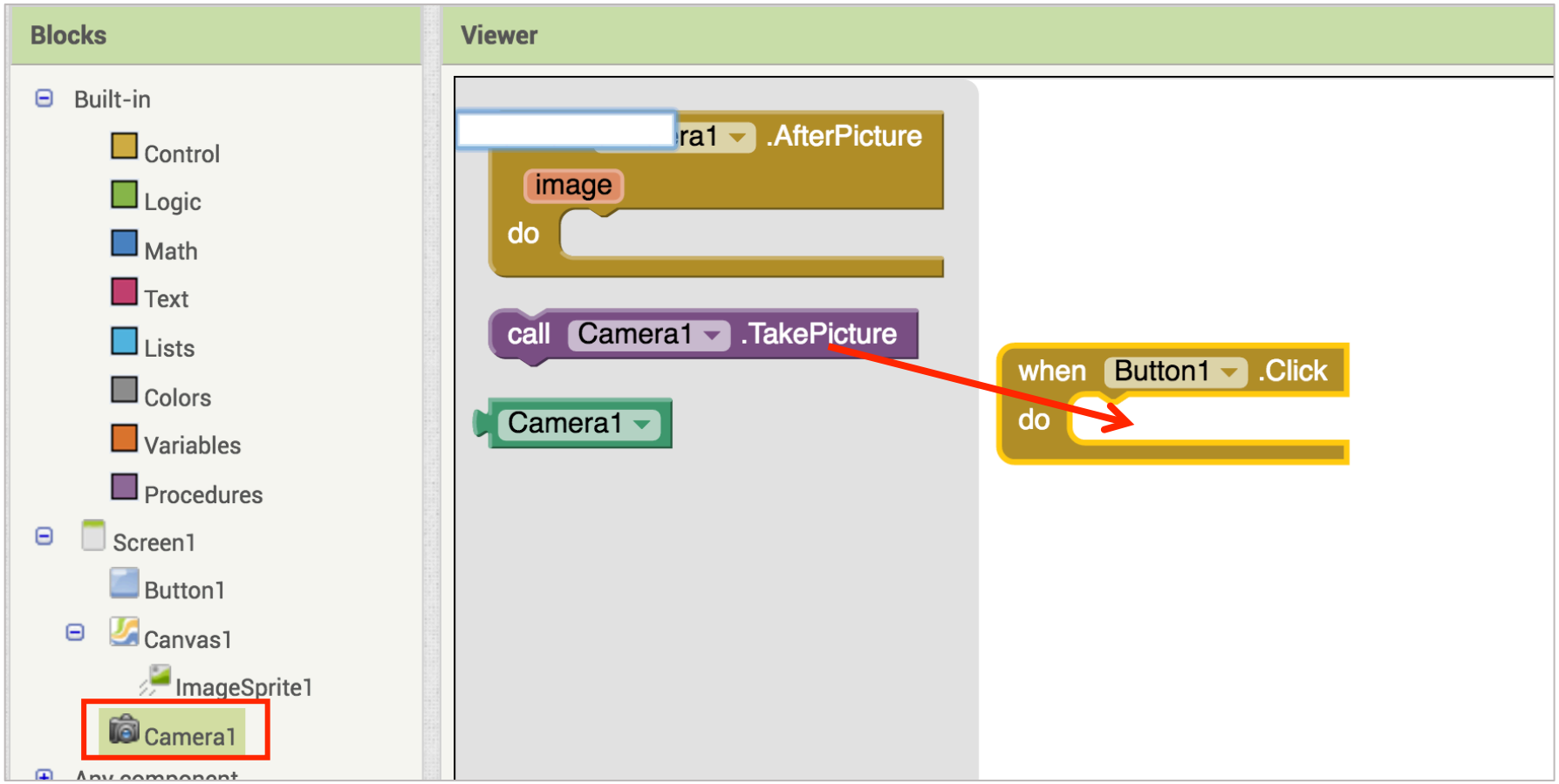
Step 8 cont'd



Click on Camera1 this time and drag out a "call Camera1.TakePicture" block.
Lock it into in the Button1.Click block!

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Step 9: Testing!

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Step 9 continued: Connect to your phone

In order to test your app, you will need an Android phone with the MIT AI2 Companion app installed. To download the Companion from the app store, scan the QR code below or search directly for “MIT AI2 Companion” on the Google Play Store, https://play.google.com/store.

NOTE: If you do not have an android phone, or if you are unable to download the Companion app, you can still use App Inventor using an emulator. Visit: http://appinventor.mit.edu/explore/ai2/setup.html and follow the instructions under Option 2.

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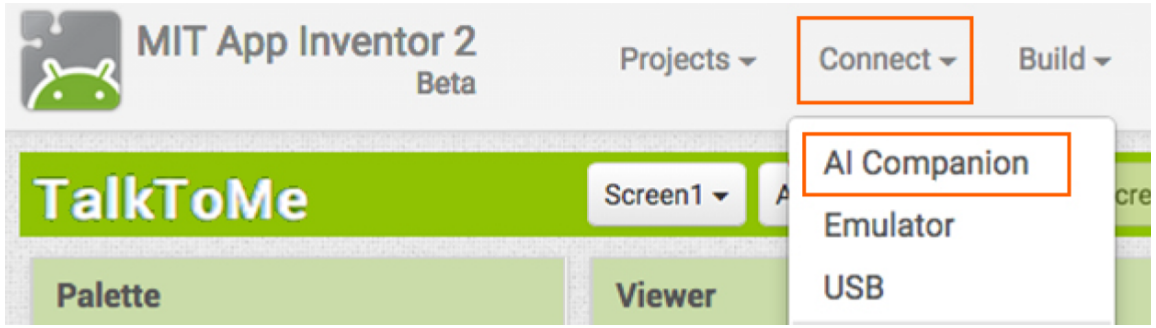
Step 9 continued

To connect to the AI2 Companion app, first choose “AI Companion” from the “Connect” drop down menu in the App Inventor site.



A QR code and 6-letter code will pop up.

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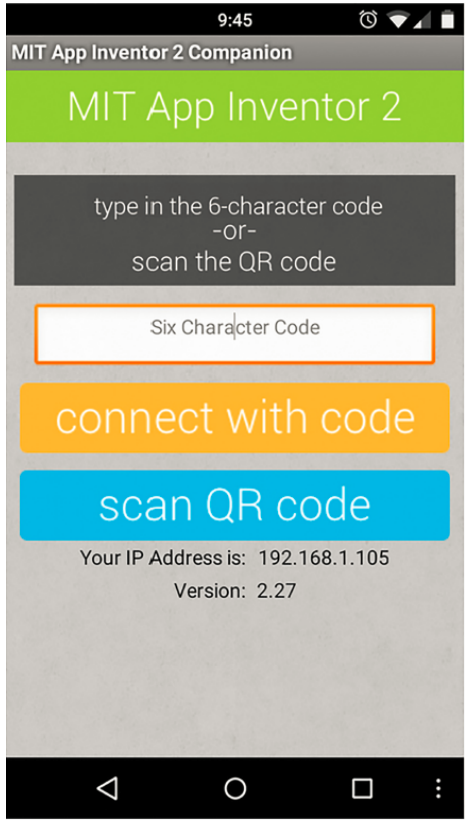
Step 9 cont'd: Open the companion app

Open the companion app. You can then either input the 6-letter code or scan the QR code to connect.



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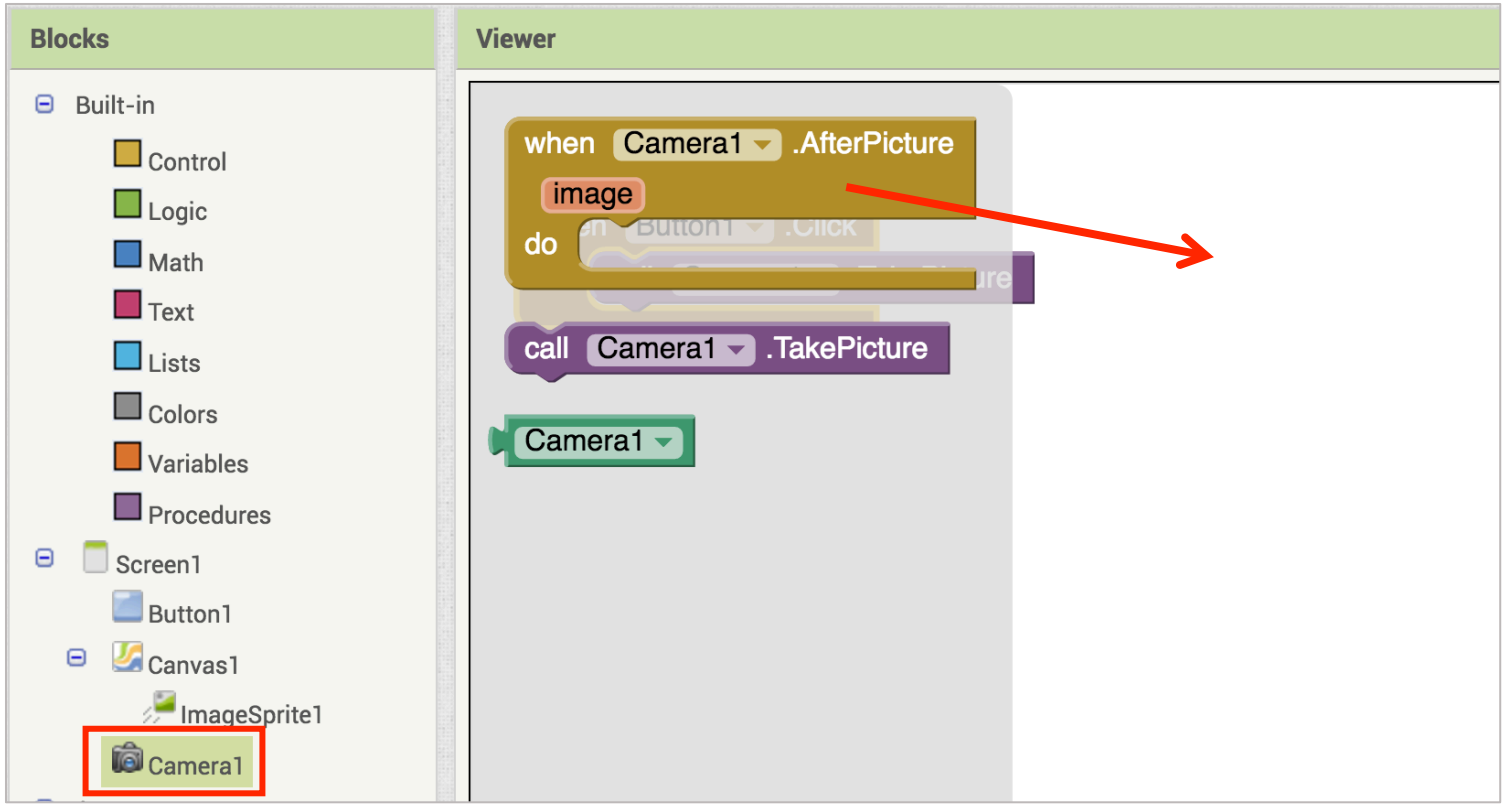
Step 10: More programming!

Awesome! We've created an app that opens the phone camera and lets us take a picture. But we're not done yet! Once a picture is taken, the app should set it to be the Canvas background.



Find Camera1 in the blocks menu under Screen1. Click on it and drag a "when Camera1.AfterPicture" block onto the workspace

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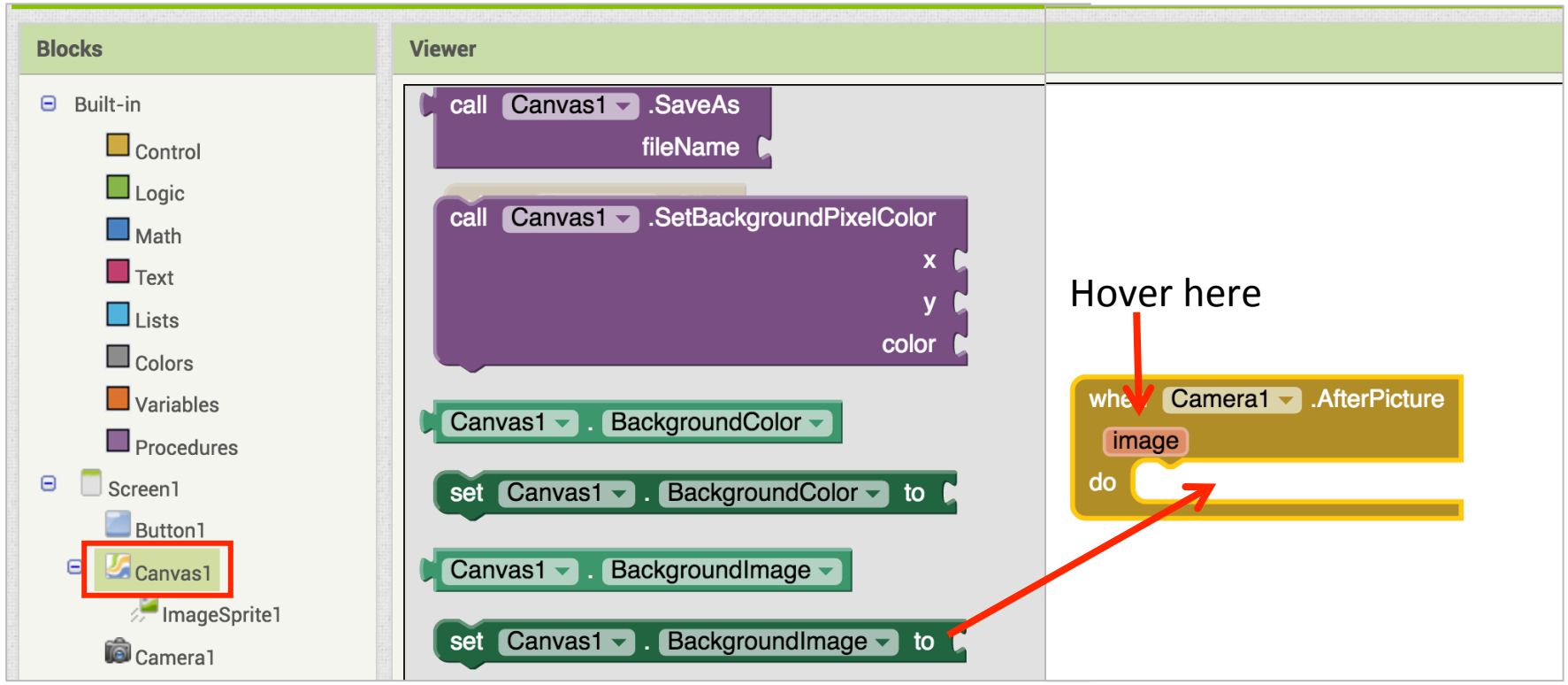
Step 10 continued



Now find Canvas1, also under Screen1. Click on it and drag out a “set Canvas1.BackgroundImage” block. Click it into place under the “when” block. Then hover your mouse over the orange “image” box on the “when” block and drag out a “get image” block. Snap it into place!

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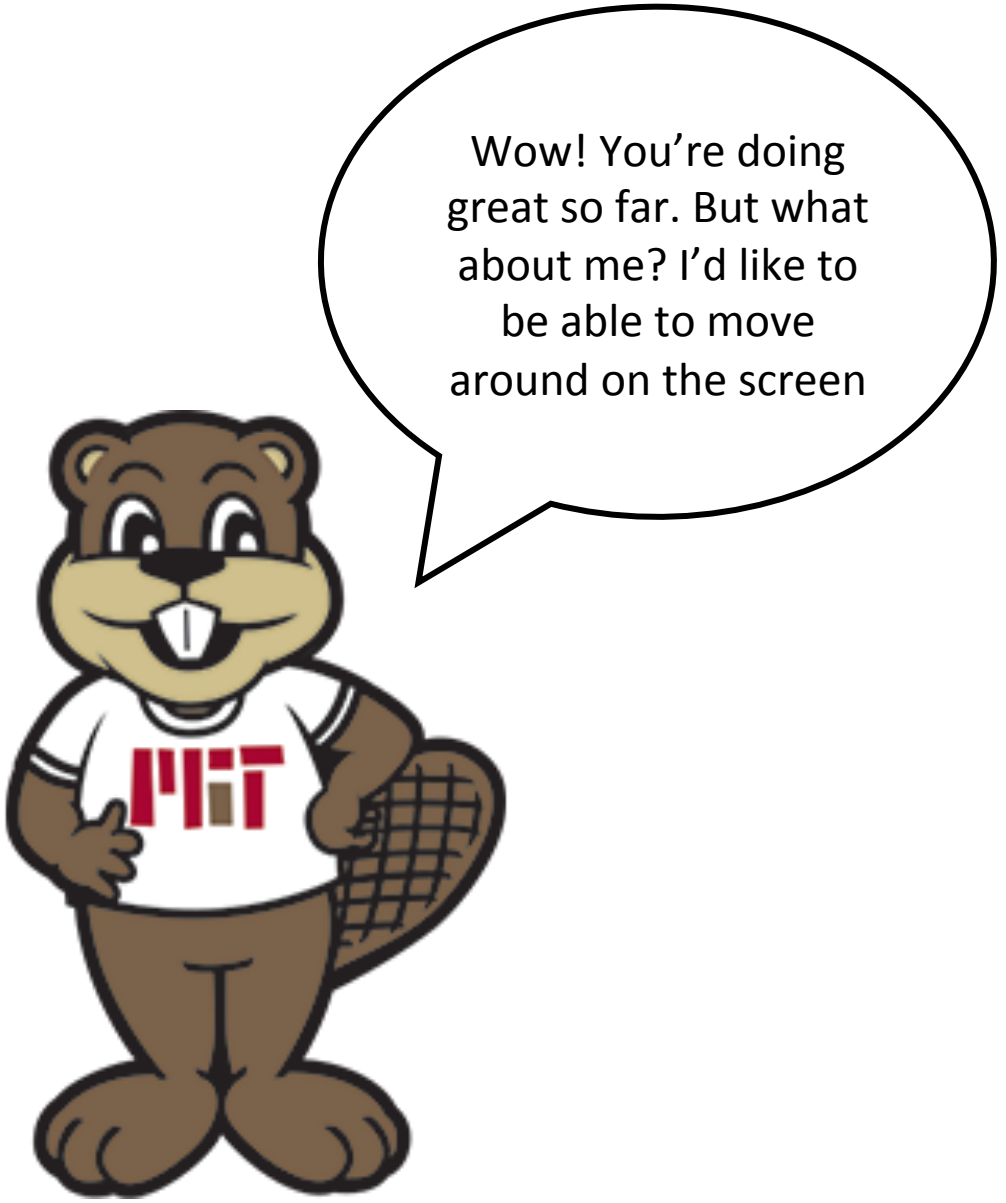

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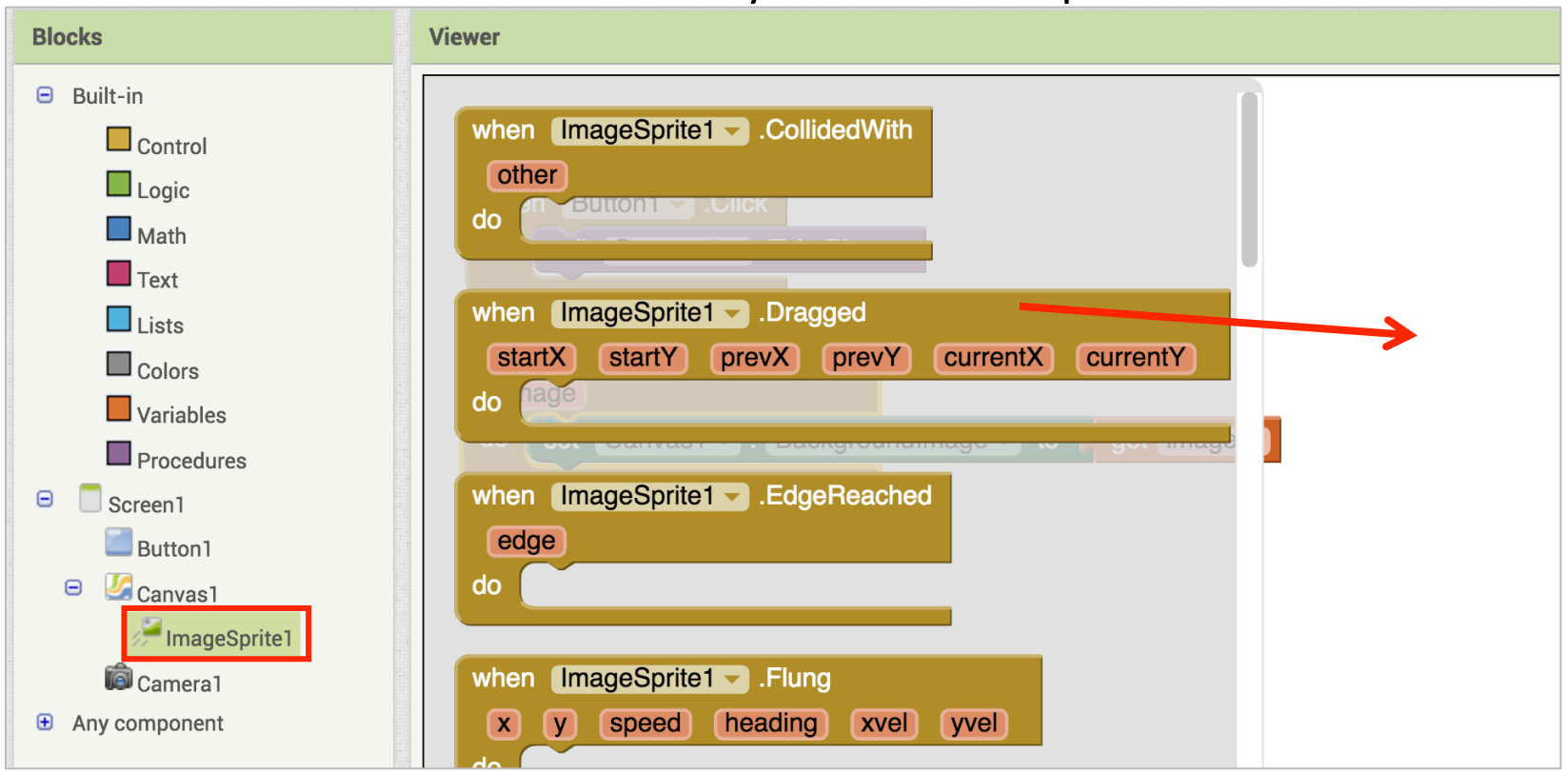
Step 10 continued: Moving Tim

We would like Tim to move when he is dragged, so that the app user can place him where they'd like in their picture!



Find ImageSprite1 under Canvas1, click on it and drag out a "when ImageSprite1.Dragged" block

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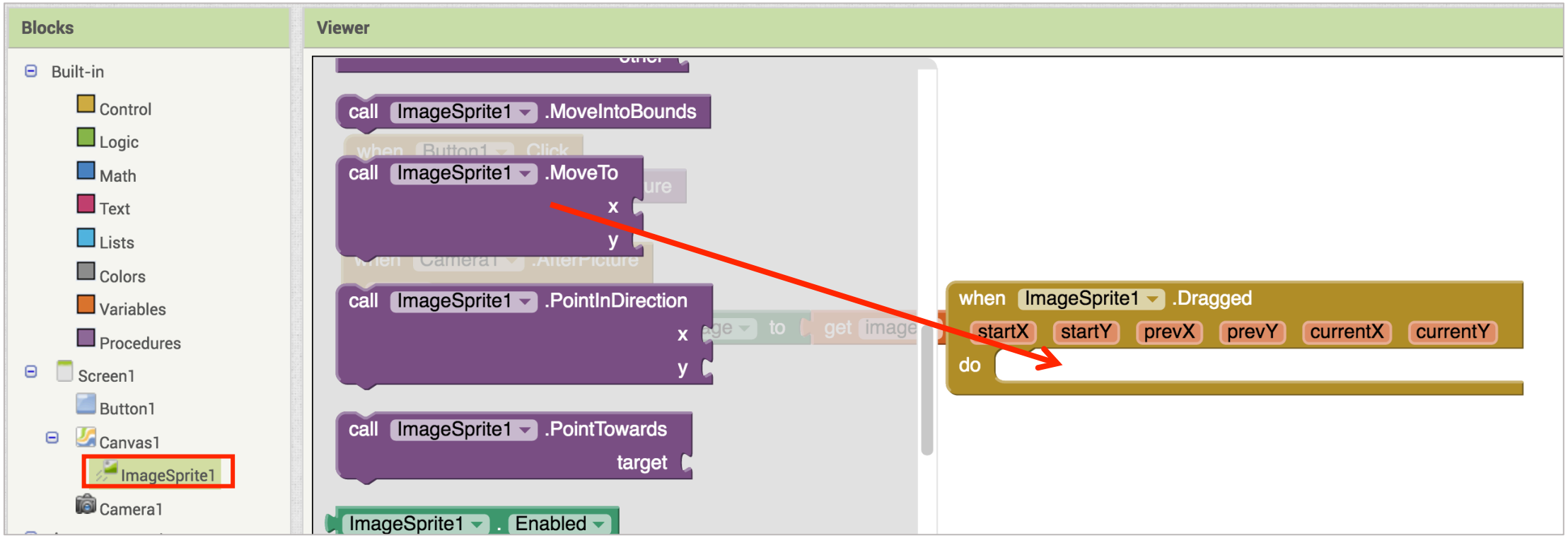
Step 10 continued



Under ImageSprite1 again, find a “call ImageSprite1.MoveTo” block and lock it into place in the ImageSprite1.Dragged block.

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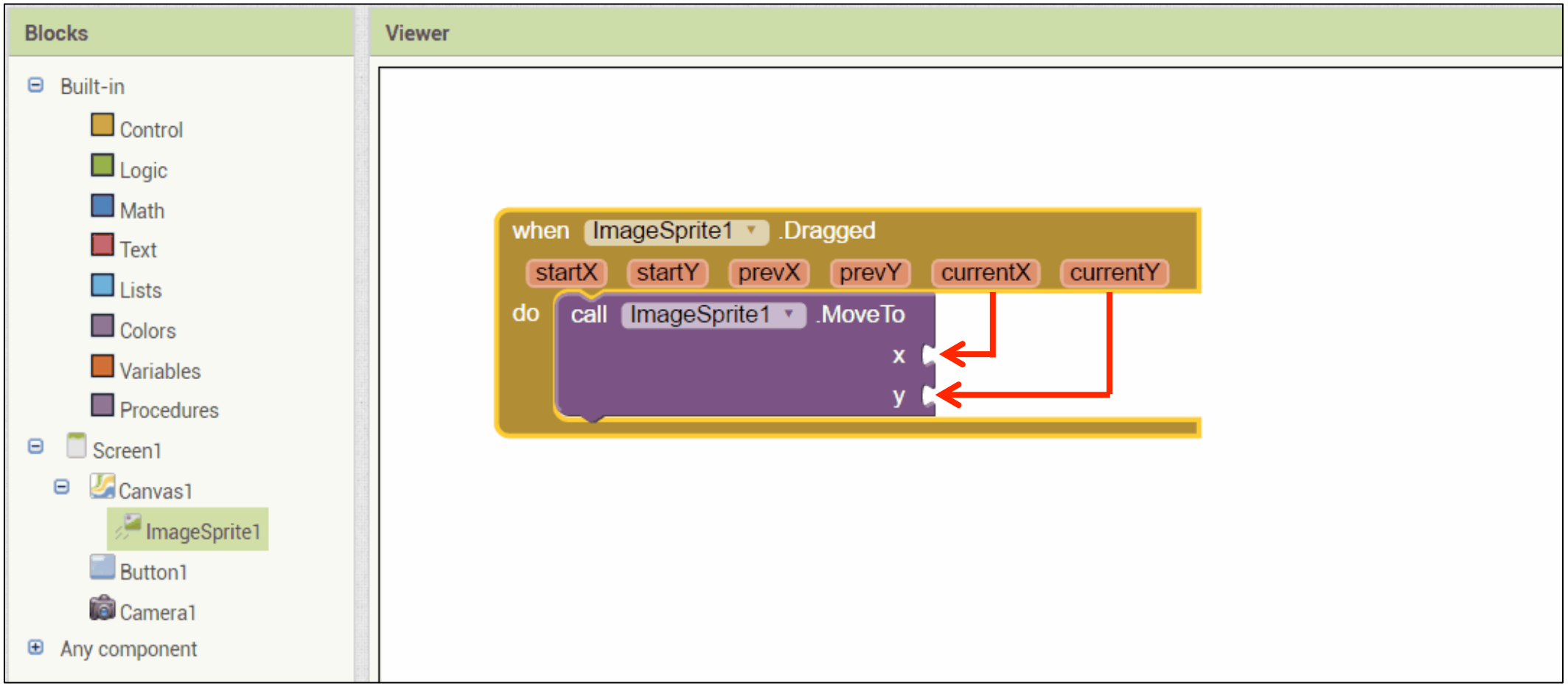
Step 10 continued



Hover your mouse over the “currentX” box in the “when” block.
Grab a “get CurrentX” block and snap it into place next to the “x” in the “call” block;
then grab a “get CurrentY” and snap it into place next to the “y” in the “call” block.

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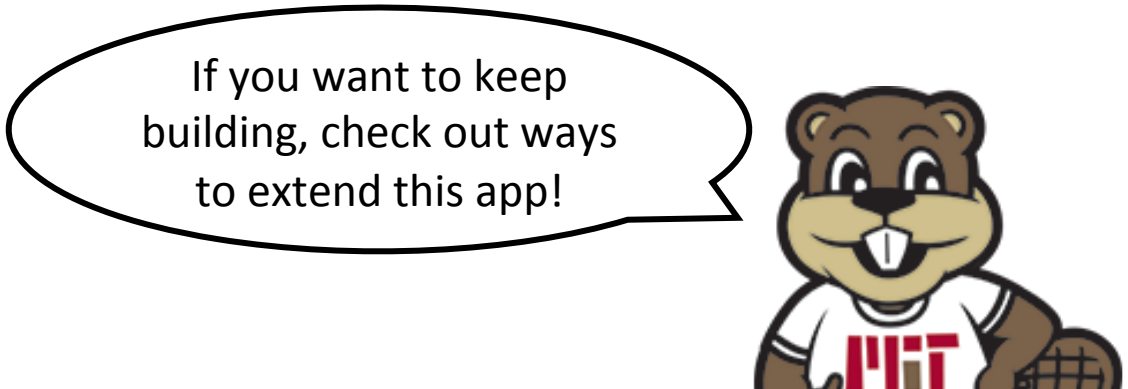
Step 11: Testing and debugging!

Awesome! You're all done programming this app. Now connect to the MIT AI2 Companion app to make sure everything is working properly. Remember, your app should:

- Open the phone camera when you click the button labelled "Camera"
- Set the background of the canvas to the picture you take
- Include an image of Tim that you can drag around to place in your picture!



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Thanks for coding with us!
You've done a great job. Check out more tutorials at
http://appinventor.mit.edu/explore/hour-of-code.html