# Introduction to MIT App Inventor 2

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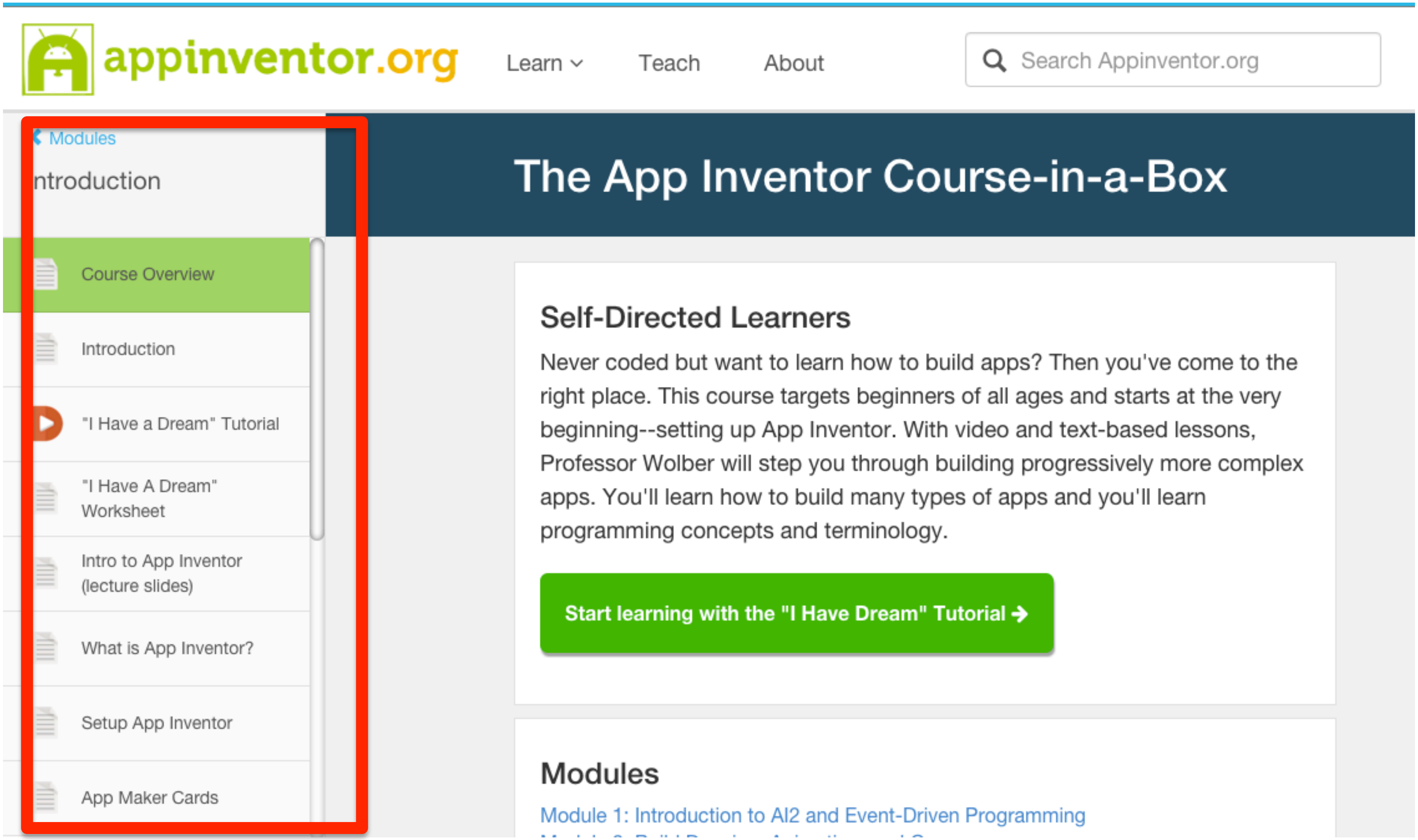
# Getting Started

- AppInventor.org
  http://www.appinventor.org/ →
  - LOGIN with your Google account
  - Follow the tutorial & build "I Have A Dream" App
  - Follow the course!

# Getting Started



## The App Inventor Course-in-a-Box

### Self-Directed Learners

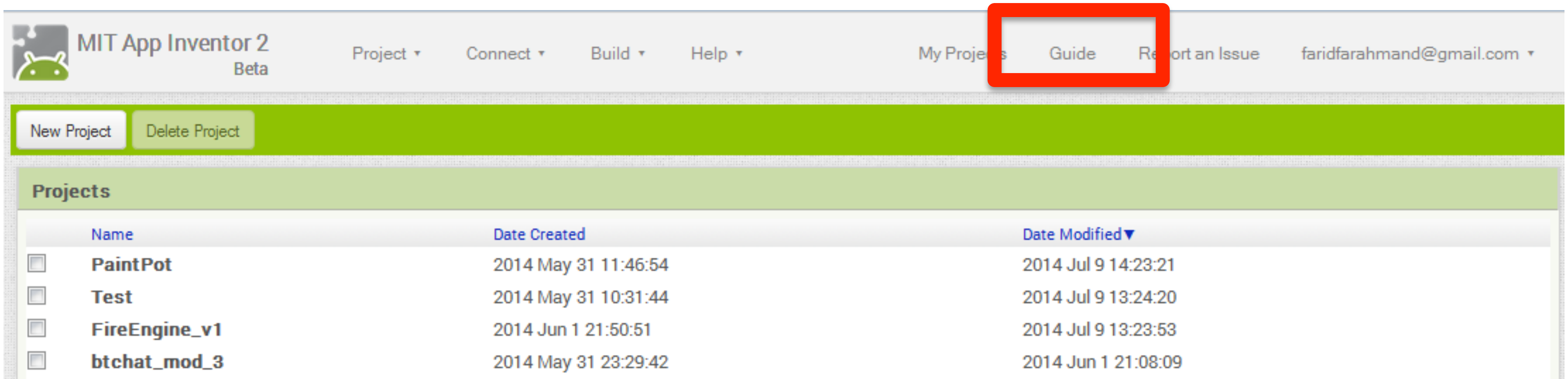
Never coded but want to learn how to build apps? Then you've come to the right place. This course targets beginners of all ages and starts at the very beginning--setting up App Inventor. With video and text-based lessons, Professor Wolber will step you through building progressively more complex apps. You'll learn how to build many types of apps and you'll learn programming concepts and terminology.

### Modules

Module 1: Introduction to AI2 and Event-Driven Programming

# Your Project Site

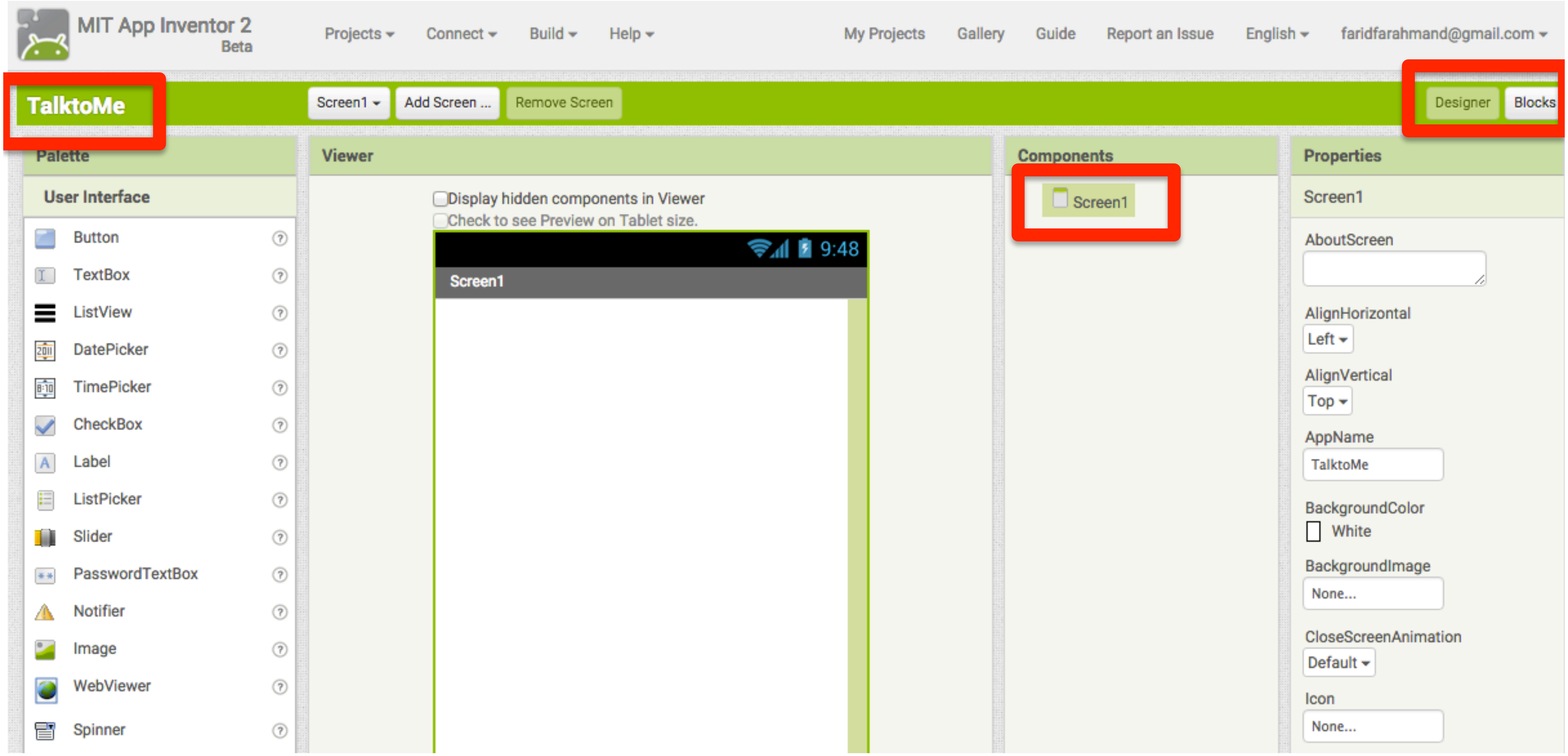
More Example!



Projects

| | Name | Date Created | Date Modified▼ |
|---|---|---|---|
| □ | **PaintPot** | 2014 May 31 11:46:54 | 2014 Jul 9 14:23:21 |
| □ | **Test** | 2014 May 31 10:31:44 | 2014 Jul 9 13:24:20 |
| □ | **FireEngine_v1** | 2014 Jun 1 21:50:51 | 2014 Jul 9 13:23:53 |
| □ | **btchat_mod_3** | 2014 May 31 23:29:42 | 2014 Jun 1 21:08:09 |

# Start A New Project - TalktoMe



MIT App Inventor 2 Beta

Projects ▾ Connect ▾ Build ▾ Help ▾ My Projects Gallery Guide Report an Issue English ▾ faridfarahmand@gmail.com ▾

TalktoMe

Screen1 ▾ Add Screen ... Remove Screen Designer Blocks

Palette

User Interface

- Button
- TextBox
- ListView
- DatePicker
- TimePicker
- CheckBox
- Label
- ListPicker
- Slider
- PasswordTextBox
- Notifier
- Image
- WebViewer
- Spinner

Viewer

□ Display hidden components in Viewer
□ Check to see Preview on Tablet size.

9:48

Screen1

Components

Screen1

Properties

Screen1

AboutScreen

AlignHorizontal: Left ▾

AlignVertical: Top ▾

AppName: TalktoMe

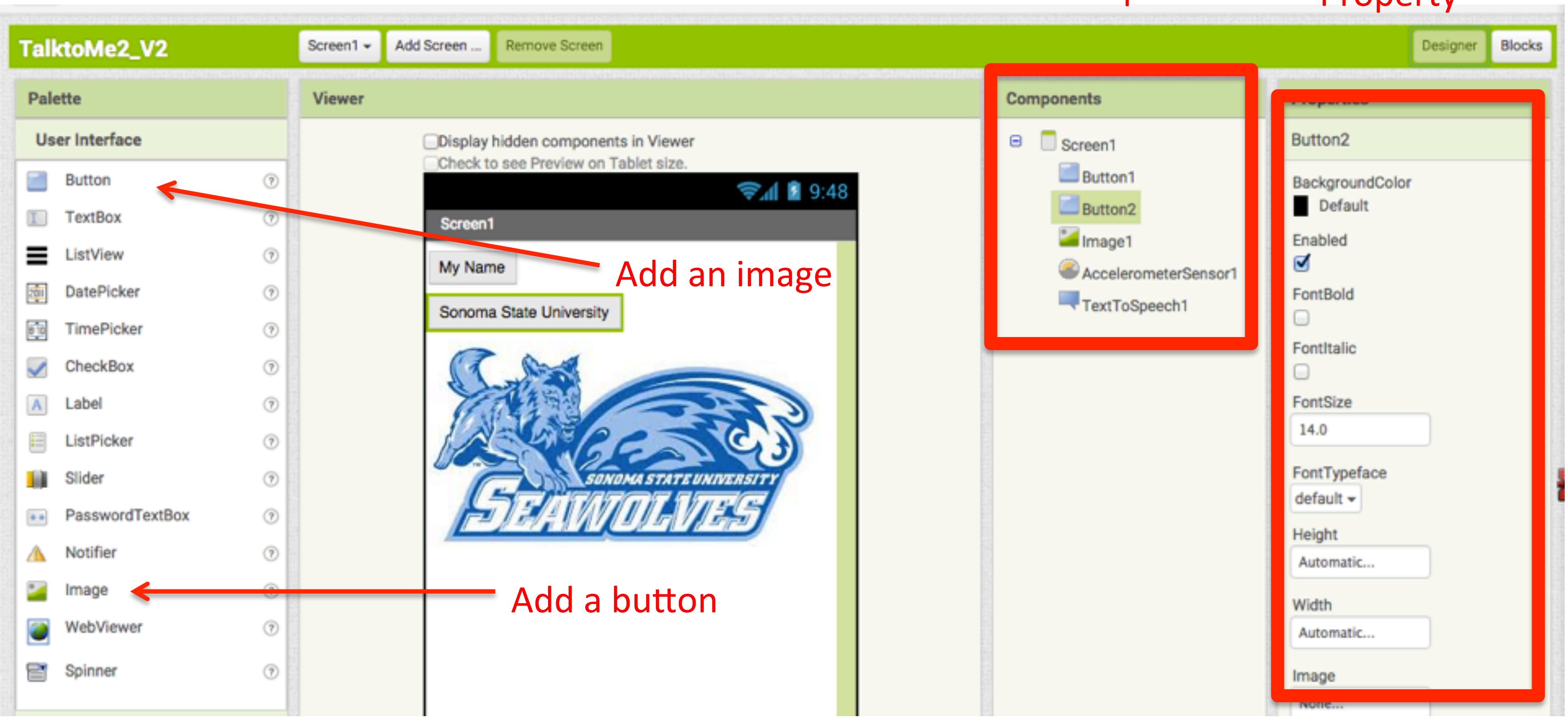
BackgroundColor: □ White

BackgroundImage: None...

CloseScreenAnimation: Default ▾

Icon: None...

# Complete the Interface – Building the Designer



Your Components

Component Property

Add an image

Add a button

Button2

BackgroundColor
■ Default

Enabled
☑

FontBold
□

FontItalic
□

FontSize
14.0

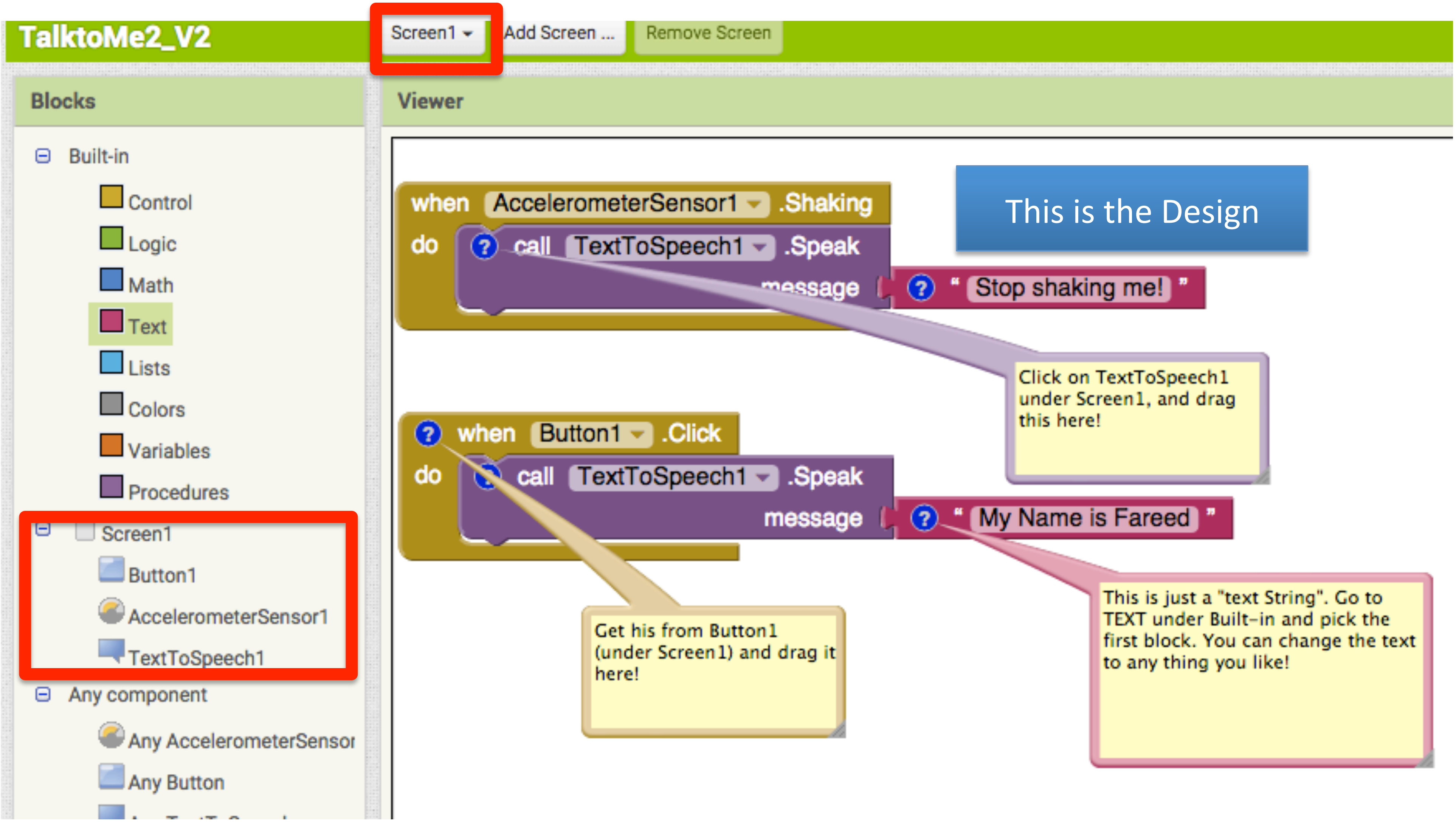
FontTypeface
default

Height
Automatic...

Width
Automatic...

Image
None...

# Build A Quick App - Blocks



```
when AccelerometerSensor1 .Shaking
do  call TextToSpeech1 .Speak
         message " Stop shaking me! "

when Button1 .Click
do  call TextToSpeech1 .Speak
         message " My Name is Fareed "
```

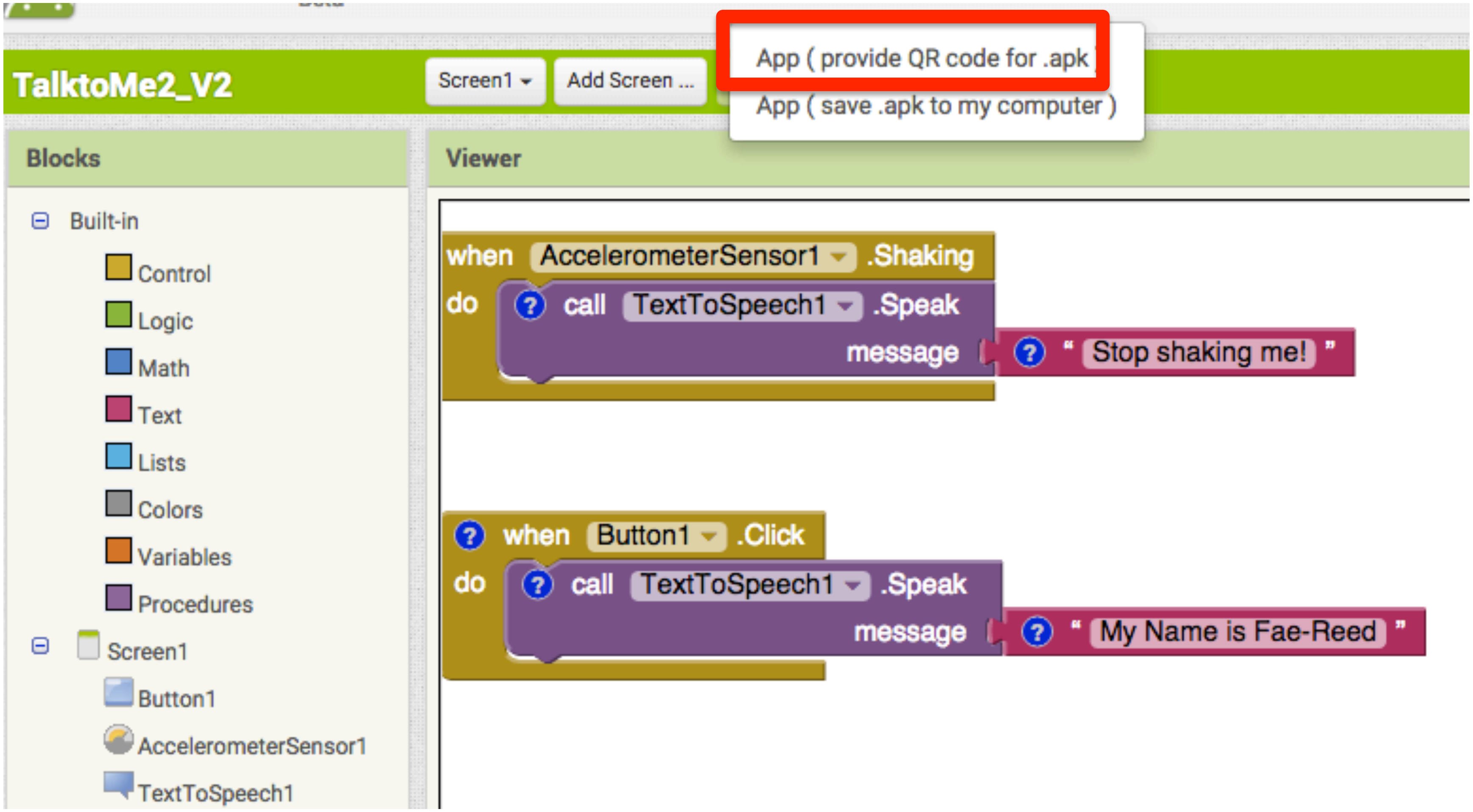
This is the Design

Click on TextToSpeech1 under Screen1, and drag this here!

Get his from Button1 (under Screen1) and drag it here!

This is just a "text String". Go to TEXT under Built-in and pick the first block. You can change the text to any thing you like!

# Creating the QR Code for the Package

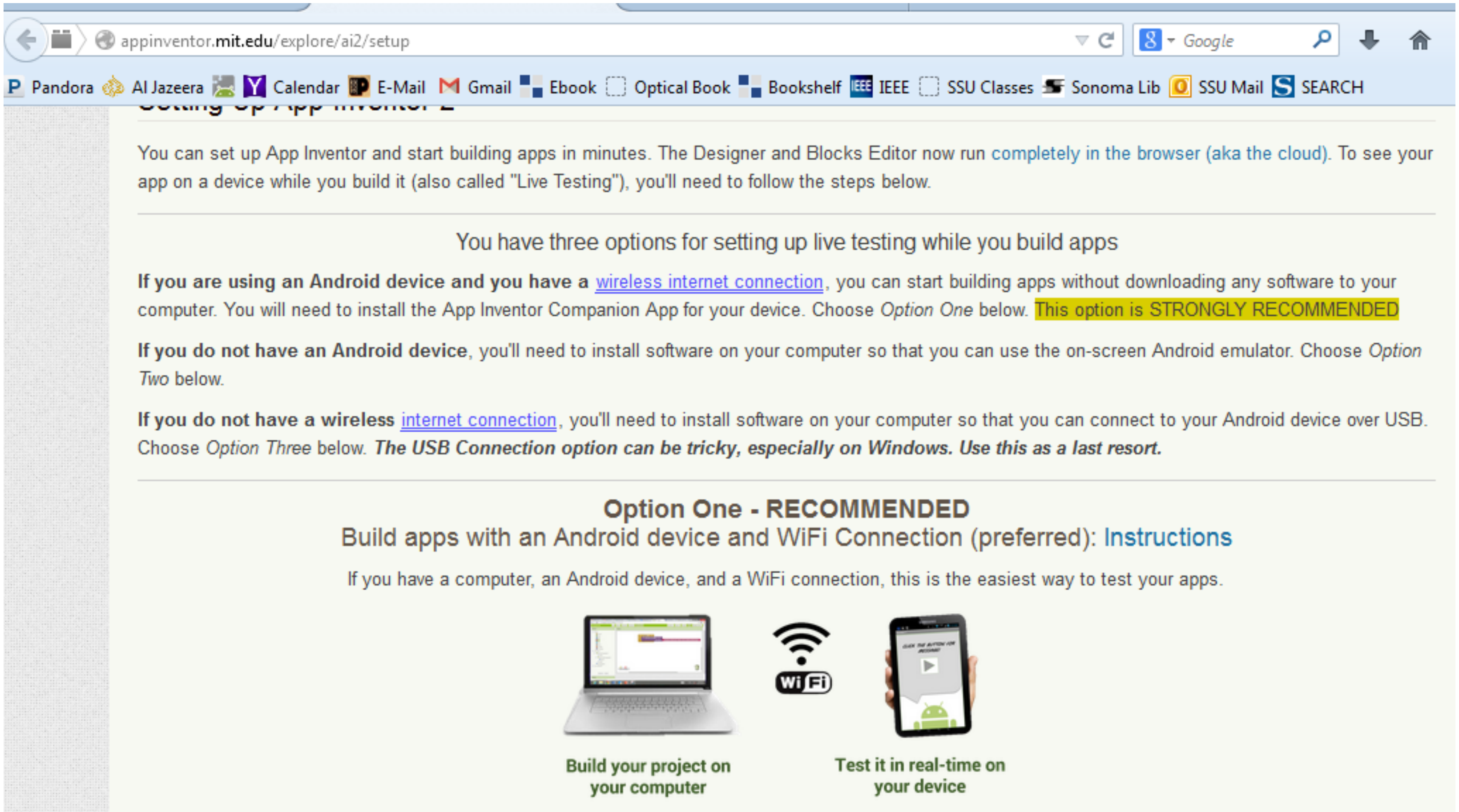


```
when AccelerometerSensor1 .Shaking
do  call TextToSpeech1 .Speak
                   message " Stop shaking me! "

when Button1 .Click
do  call TextToSpeech1 .Speak
                   message " My Name is Fae-Reed "
```

# Programming Your Device

Must download MIT AI@ Companion on your mobile device



You can set up App Inventor and start building apps in minutes. The Designer and Blocks Editor now run completely in the browser (aka the cloud). To see your app on a device while you build it (also called "Live Testing"), you'll need to follow the steps below.

You have three options for setting up live testing while you build apps

**If you are using an Android device and you have a** wireless internet connection, you can start building apps without downloading any software to your computer. You will need to install the App Inventor Companion App for your device. Choose *Option One* below. This option is STRONGLY RECOMMENDED

**If you do not have an Android device**, you'll need to install software on your computer so that you can use the on-screen Android emulator. Choose *Option Two* below.

**If you do not have a wireless** internet connection, you'll need to install software on your computer so that you can connect to your Android device over USB. Choose *Option Three* below. ***The USB Connection option can be tricky, especially on Windows. Use this as a last resort.***

**Option One - RECOMMENDED**

Build apps with an Android device and WiFi Connection (preferred): Instructions

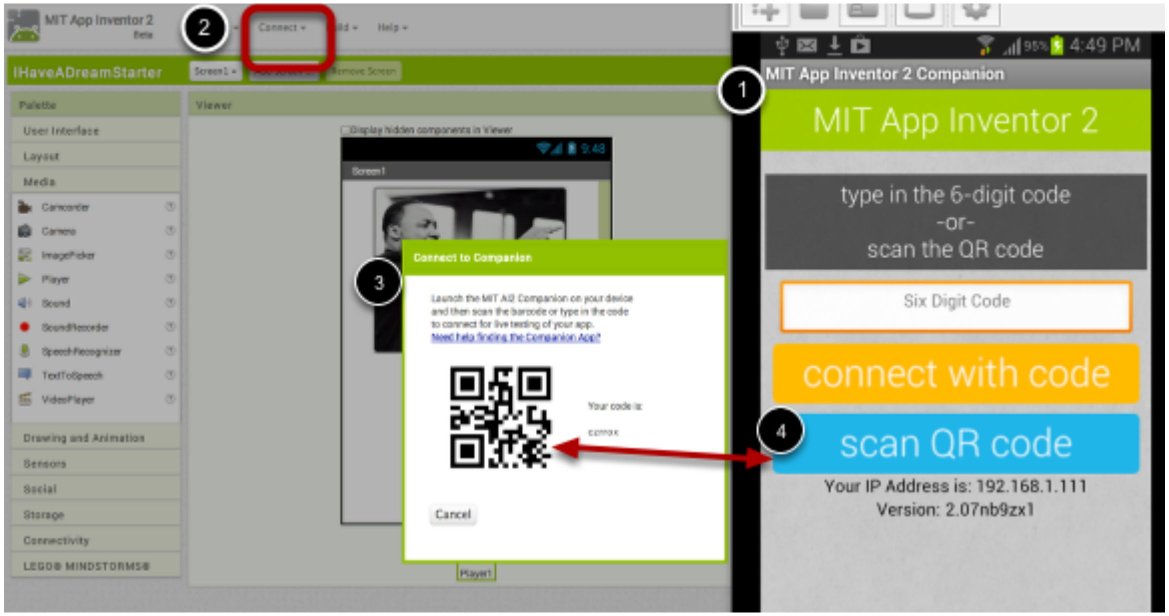
If you have a computer, an Android device, and a WiFi connection, this is the easiest way to test your apps.

**Build your project on your computer**

**Test it in real-time on your device**

# Program Your Device

When you start the Companion on your phone, it will look like (1). Back in App Inventor, choose "Connect" (2) then "AI Companion. This will cause a QR code to appear (3) You can then scan the QR code (4) with your phone to see your app live. NOTE: for live testing to work, **both your computer and phone/tablet must be connected to the same WiFi station.** Using WiFi is the easiest way to connect, but if you're at school/work you may have firewall issues.



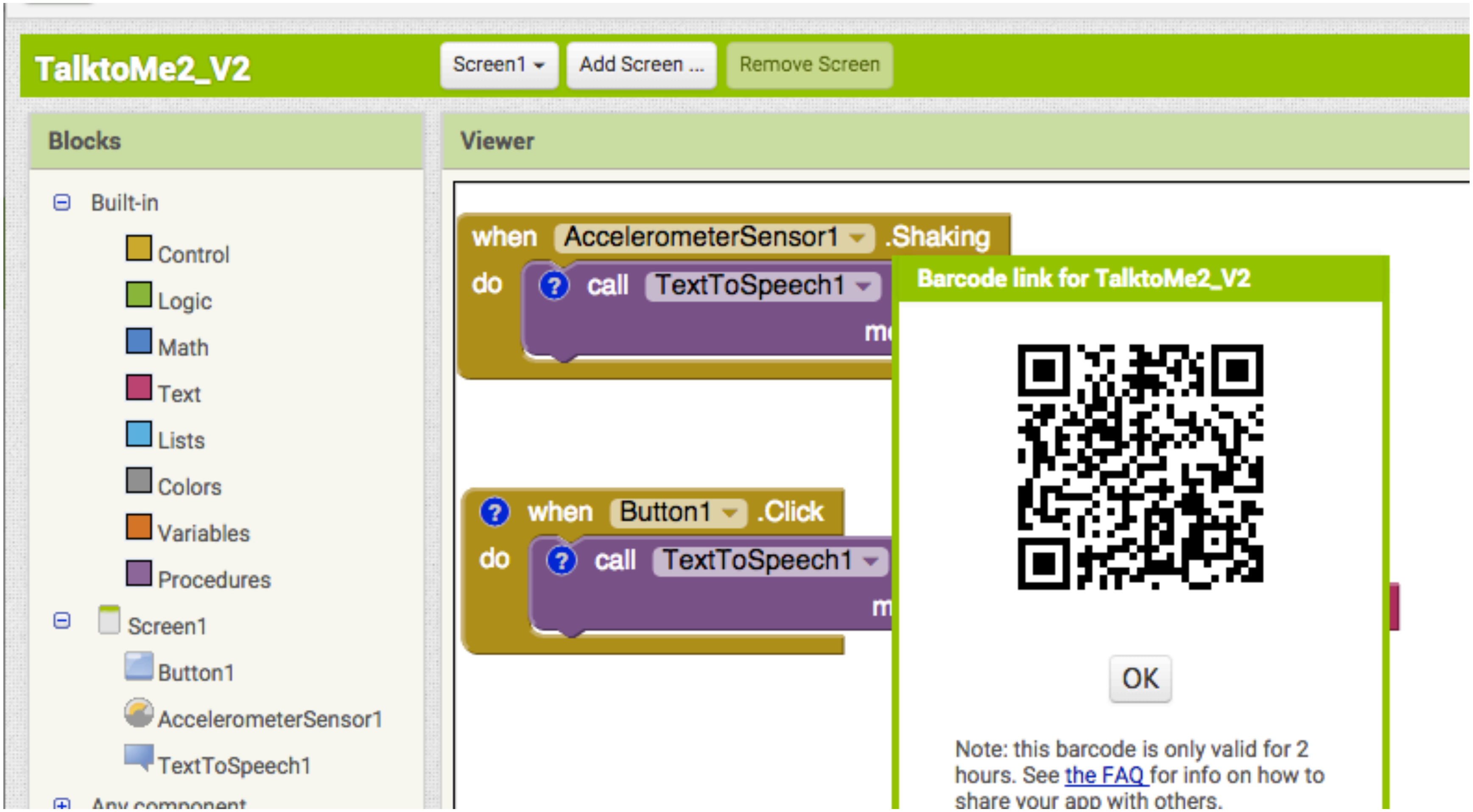
Launch the MIT AI2 Companion on your device and then scan the barcode or type in the code to connect for live testing of your app.
Need help finding the Companion App?

type in the 6-digit code
-or-
scan the QR code

Your IP Address is: 192.168.1.111
Version: 2.07nb9zx1

http://www.appinventor.org/IHaveADreamTut

# Creating the QR Code for the Package

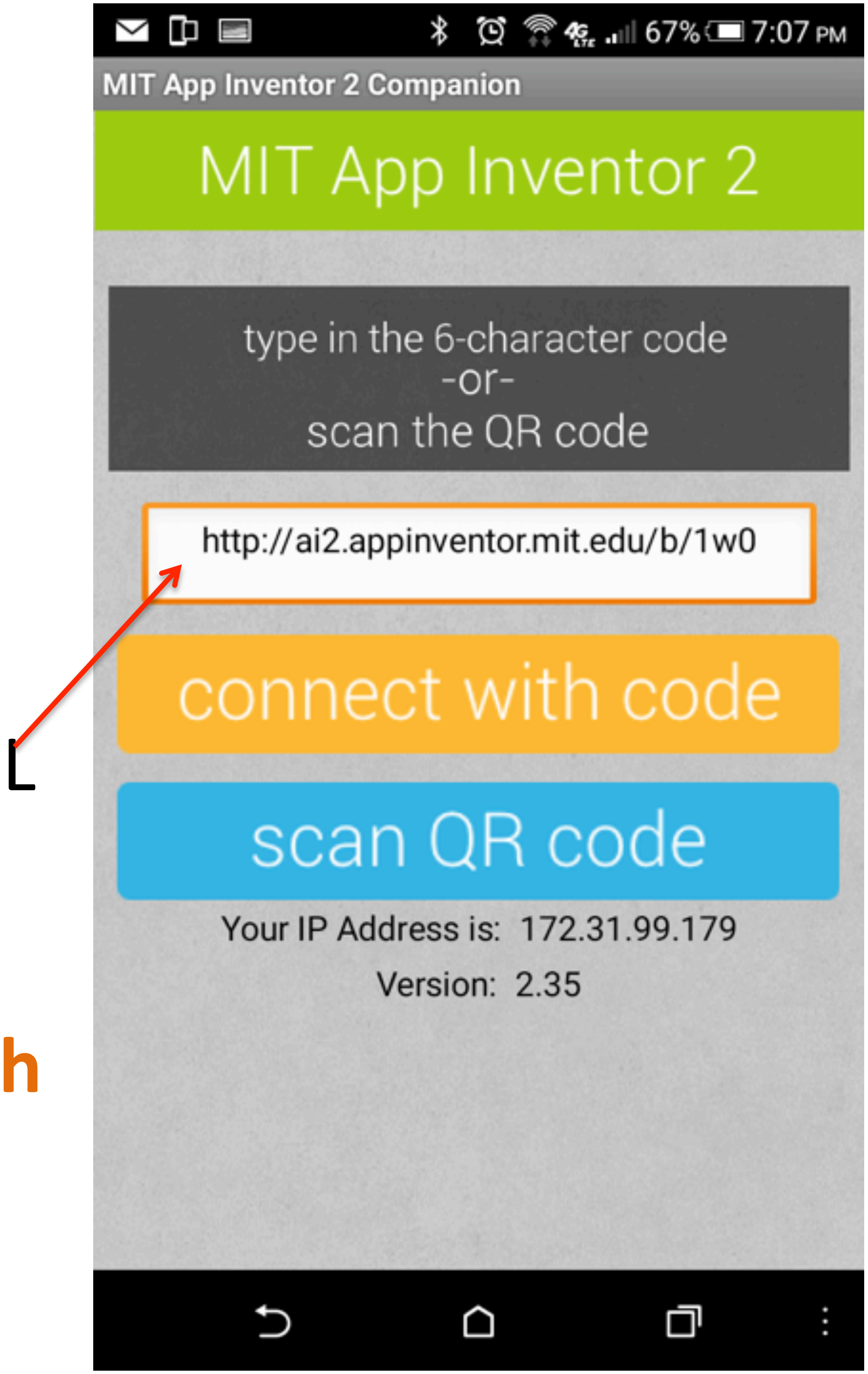


Barcode link for TalktoMe2_V2

Note: this barcode is only valid for 2 hours. See the FAQ for info on how to share your app with others.

# On Your Android

- Google Play → Download MIT AI2 Companion
- Open the application
- Make sure you get a URL address
- Press **Scan QR Code**
- Then press **Connect with Code**



MIT App Inventor 2 Companion

MIT App Inventor 2

type in the 6-character code
-or-
scan the QR code

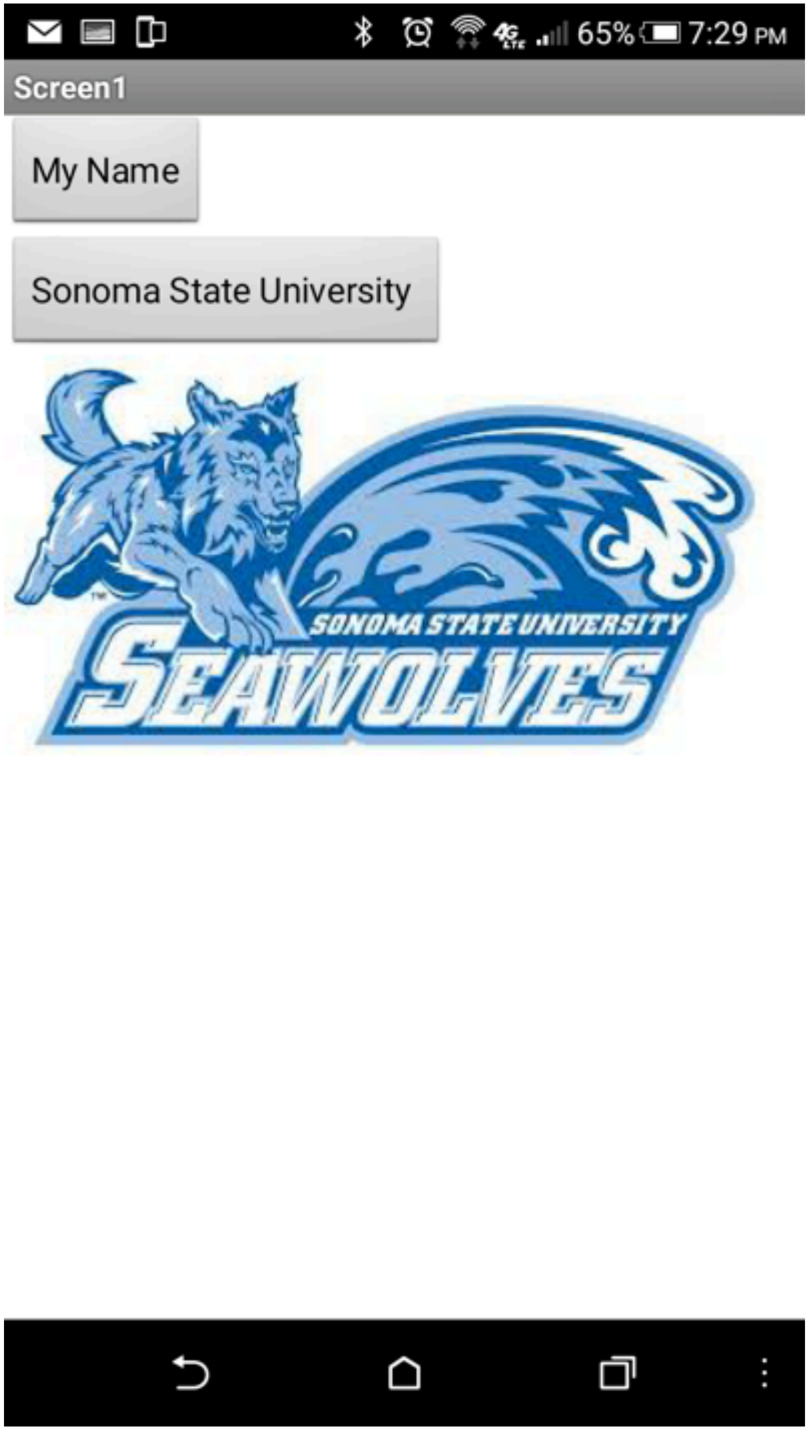
http://ai2.appinventor.mit.edu/b/1w0

Your IP Address is: 172.31.99.179

Version: 2.35

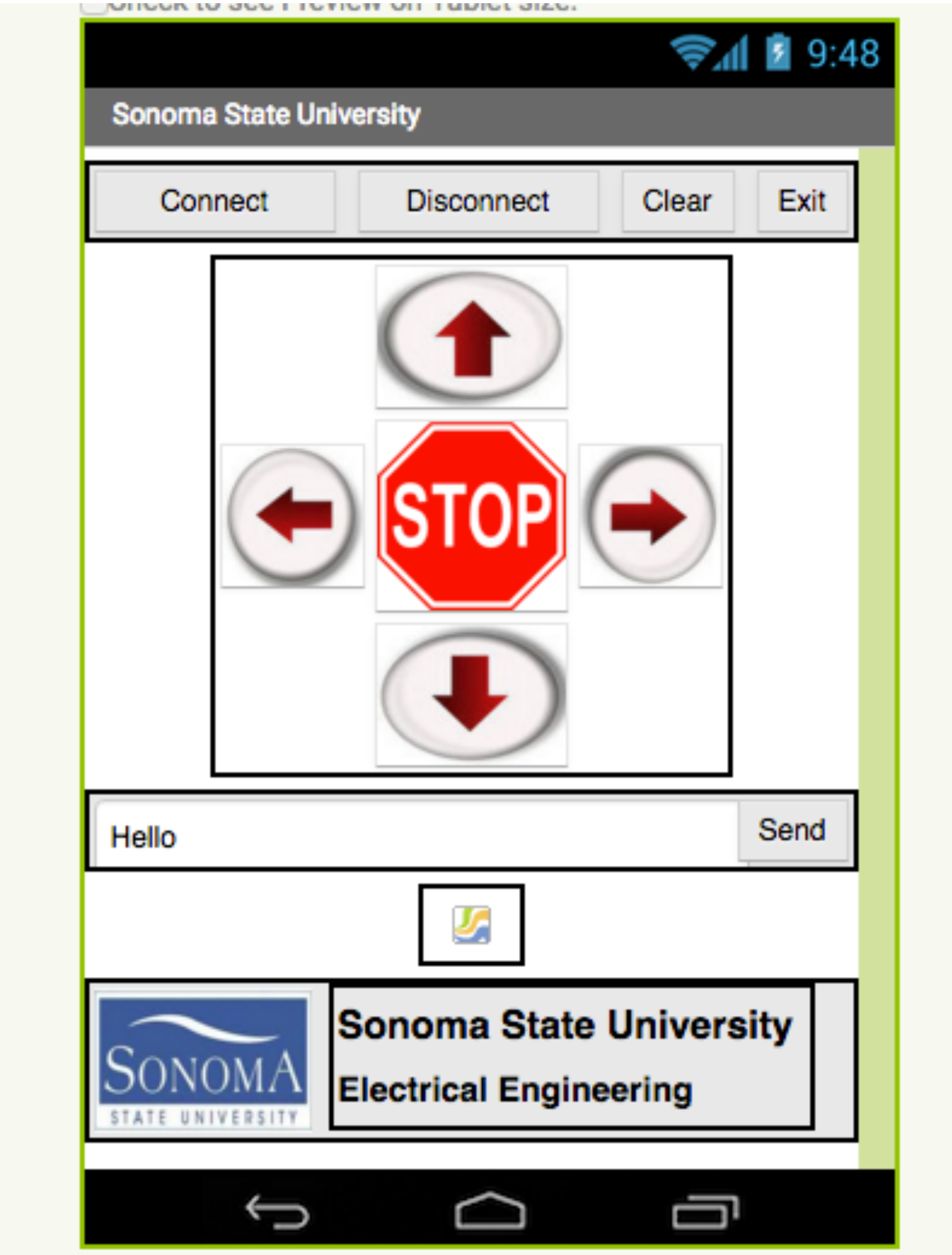
# Your APP

- Make sure your phone is setup to download applications from non-secure sources!
- Find the downloaded APP on your phone and run it!
- This is how your app looks like:

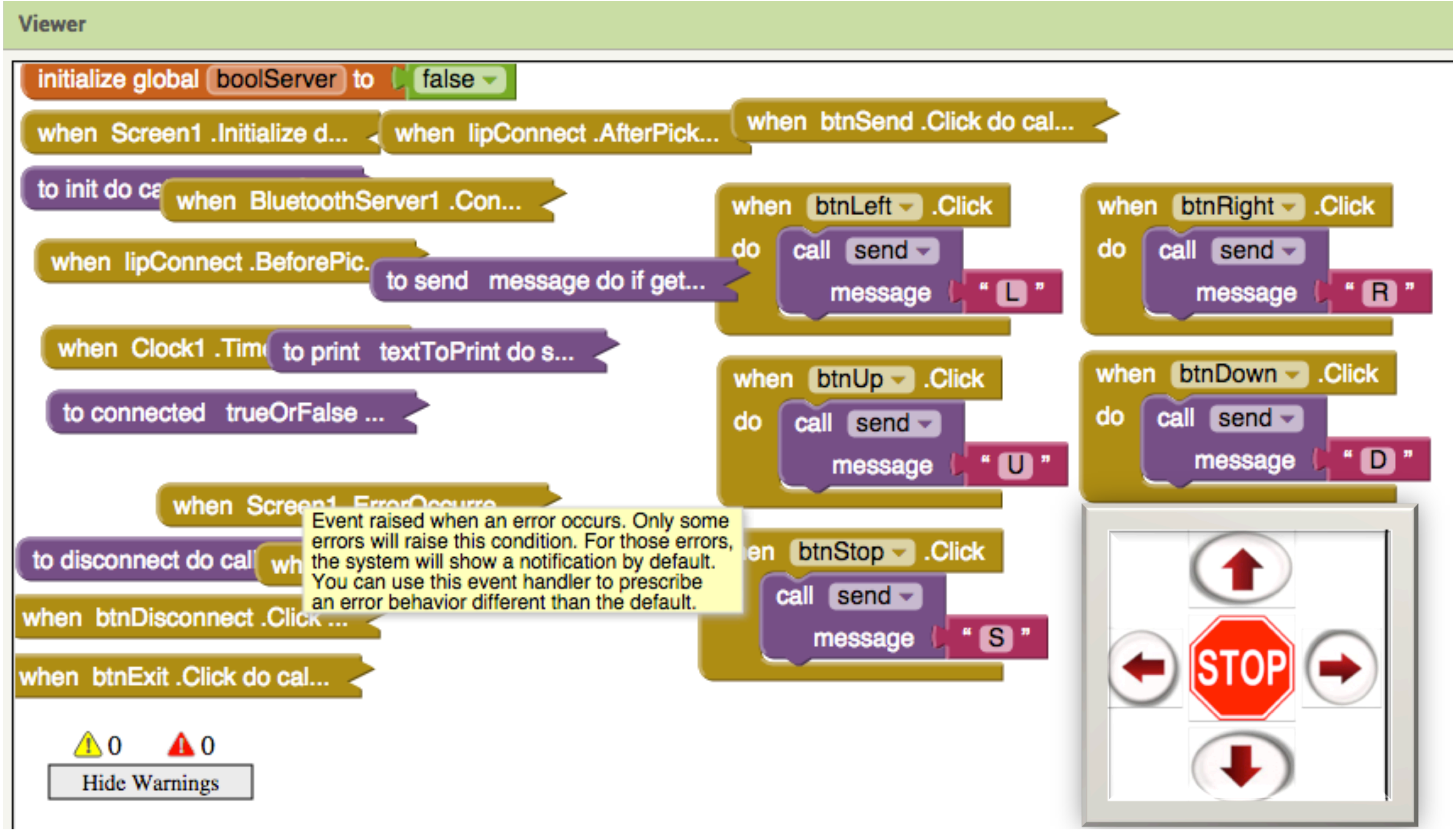


# Another Example….

# USB Interface



# The Designer



Viewer

```
initialize global boolServer to false
when Screen1 .Initialize d...
when lipConnect .AfterPick...
when btnSend .Click do cal...
to init do ca
when BluetoothServer1 .Con...
when lipConnect .BeforePic
to send message do if get...
when Clock1 .Tim
to print textToPrint do s...
to connected trueOrFalse ...
when Screen1 .ErrorOccurre
to disconnect do call
wh
when btnDisconnect .Click ...
when btnExit .Click do cal...

when btnLeft .Click
do call send
     message "L"

when btnRight .Click
do call send
     message "R"

when btnUp .Click
do call send
     message "U"

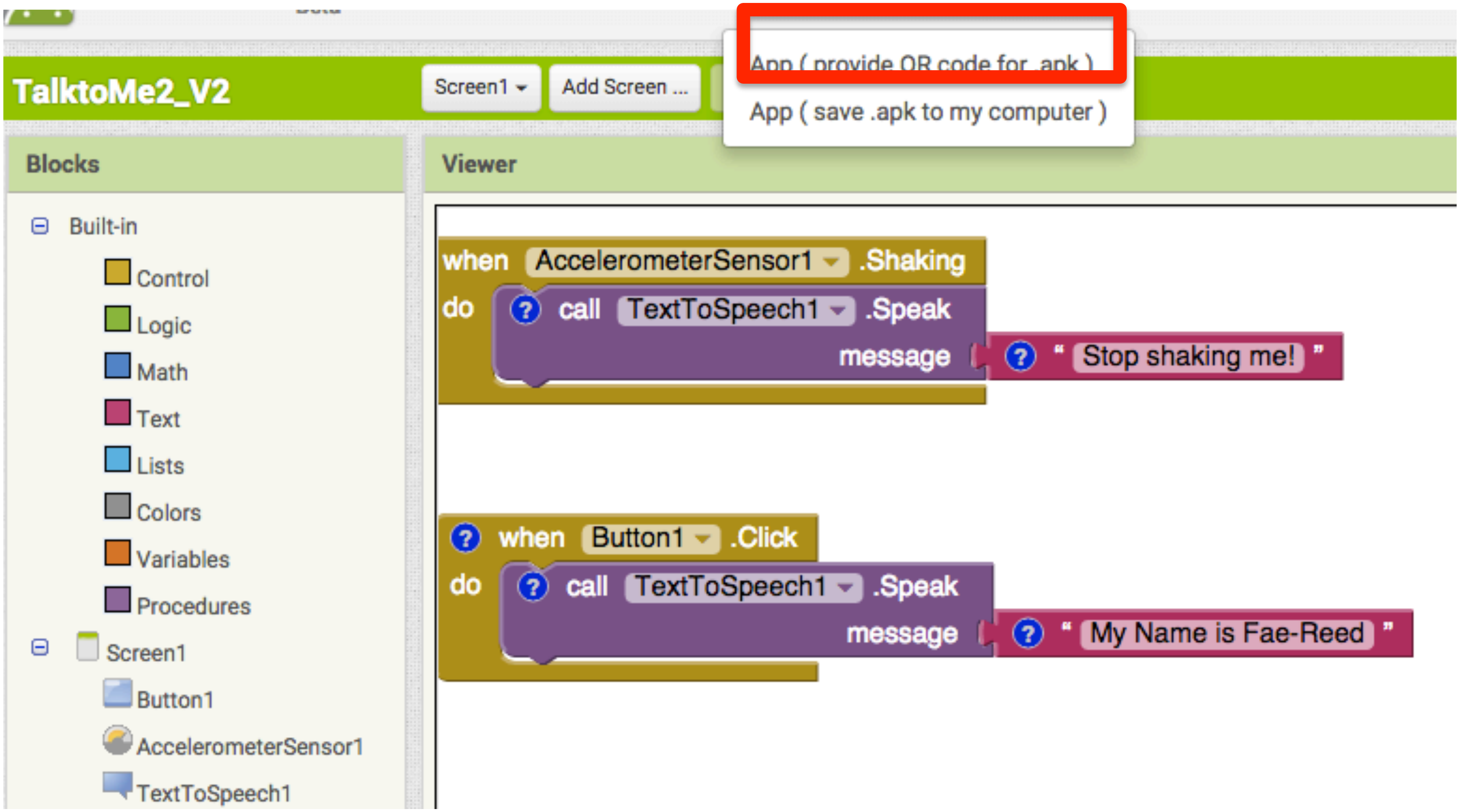
when btnDown .Click
do call send
     message "D"

en btnStop .Click
   call send
     message "S"
```

Event raised when an error occurs. Only some errors will raise this condition. For those errors, the system will show a notification by default. You can use this event handler to prescribe an error behavior different than the default.

# Download the App on your phone!

1-Create the .apk
2-Upload to your phone using USB cable
3-Run the application on the phone



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when AccelerometerSensor1 .Shaking
do  call TextToSpeech1 .Speak
                  message " Stop shaking me! "

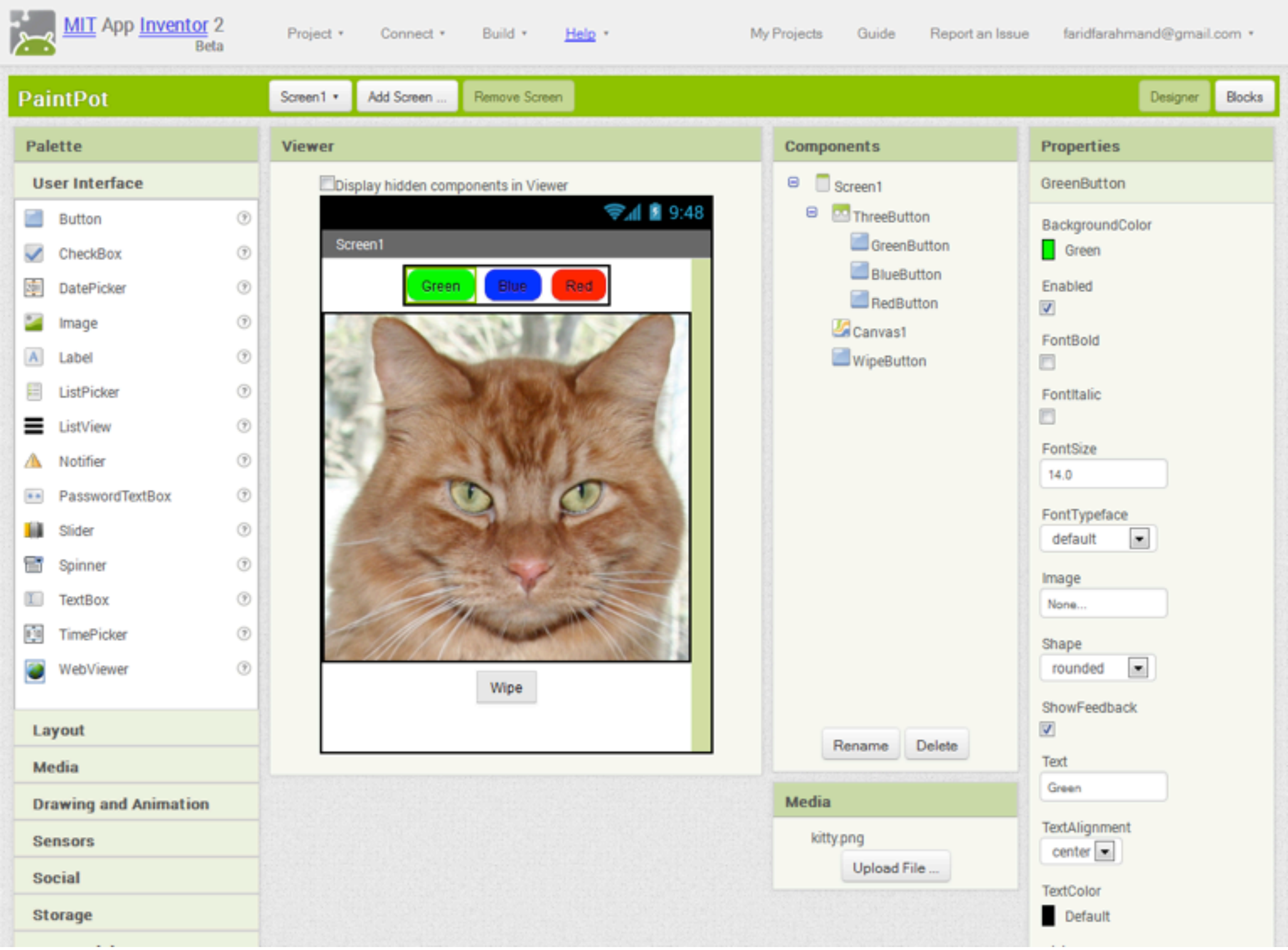
when Button1 .Click
do  call TextToSpeech1 .Speak
                  message " My Name is Fae-Reed "
```

# Pairing Your Phone & Computer

- Remove the phone device from your BT connections
- Make sure your phone's BT is on and it is discoverable
- Make sure your computer is not paired with any other devices (mouse, keyboard, etc.)

# Basic Idea

Making your first APP: http://appinventor.mit.edu/explore/ai2/hellopurr.html



BackgroundColor: 🟩 Green

Enabled: ☑

FontBold: □

FontItalic: □

FontSize: 14.0

FontTypeface: default

Image: None...

Shape: rounded

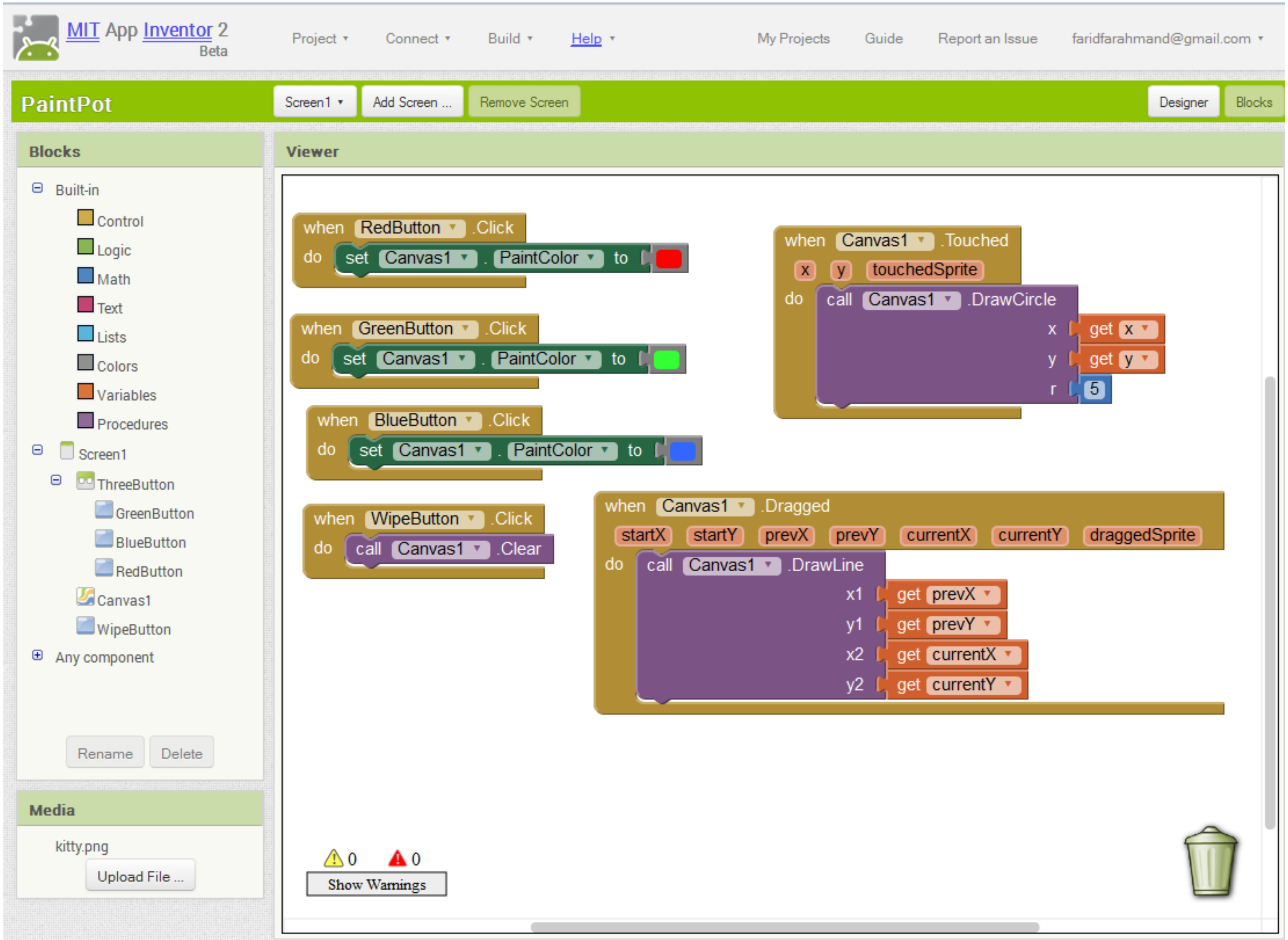
ShowFeedback: ☑

Text: Green

TextAlignment: center

TextColor: ■ Default

# Block Architecture



```
when RedButton .Click
do  set Canvas1 . PaintColor to 🟥

when GreenButton .Click
do  set Canvas1 . PaintColor to 🟩

when BlueButton .Click
do  set Canvas1 . PaintColor to 🟦

when WipeButton .Click
do  call Canvas1 .Clear

when Canvas1 .Touched
  x  y  touchedSprite
do  call Canvas1 .DrawCircle
                      x  get x
                      y  get y
                      r  5

when Canvas1 .Dragged
  startX  startY  prevX  prevY  currentX  currentY  draggedSprite
do  call Canvas1 .DrawLine
                 x1  get prevX
                 y1  get prevY
                 x2  get currentX
                 y2  get currentY
```

# References:

- AppInventor.org
  http://www.appinventor.org/ → LOGIN with your Google account
- Other Tutorials:
  http://appinventor.mit.edu/explore/ai2/beginner-videos.html
- Exploring AppInventor
  http://appinventor.mit.edu/explore/