ANDROID APP DEVELOPMENT

Building Mobile Kitty App

Session 2

Session Name:

Building Mobile Kitty App

Summary:

This course teaches the basics of mobile app development using the App Inventor development tool.

Time Allotment:

75 minutes

Learning Objectives:

- *Utilize the App Inventor Designer to create a mobile app user interface*

- *Utilize the App Inventor Blocks Editor to program the behaviors for a mobile app*

- *Test the application using either a Android phone*

- *Modify the created app to change the user interface and/or programmed behavior*

Supplies:

- *Scrap paper / notepad to take notes*

- *Android tablet*

- *Laptop / computer with Internet access*

Learning Activities:

- **(5 minutes) - Session overview**

  During this lesson, we will become familiar with the App Inventor development tool. We will build a mobile app together and then you will use what you have learned to modify and customize the app.

  - *App Inventor Tool*
  - *Building Apps In App Inventor*

·   *Introduction to App Inventor Designer & Blocks Editor*
·   *App Development*
·   *App Testing*

- **(10 minutes) - Group Activity : Build Mobile Kitty App**

Introduce materials

○   *"Assets Folder" - contains images and sounds for use in activities*

○   Login http://appinventor.mit.edu/explore/ai2/hellopurr.html

○   *We are going to begin by building and testing an app in App Inventor together (Login http://appinventor.mit.edu/explore/ai2/hellopurr.html)*

○   *Later, you will use what you have learned to modify and customize the application*

Switch from slide show to Instructor screen share ***

○   Start New Project Build Mobile Kitty App

○   Login to App Inventor

·   *ai2.appinventor.mit.edu*

○   Select "Start new project" (1)
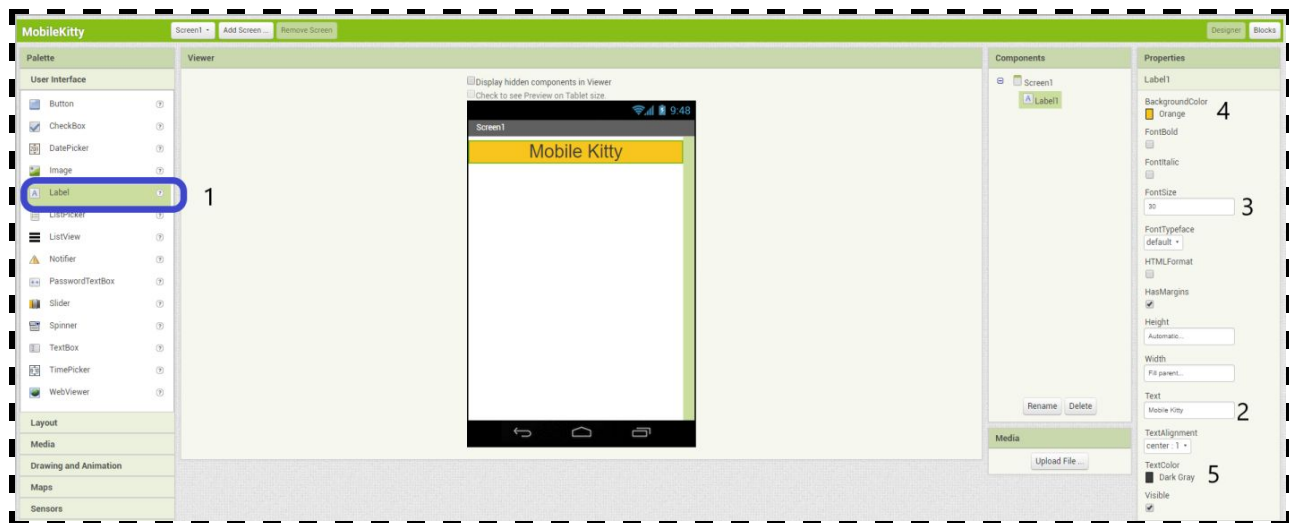
○   Enter Project name (2) and click OK (3)
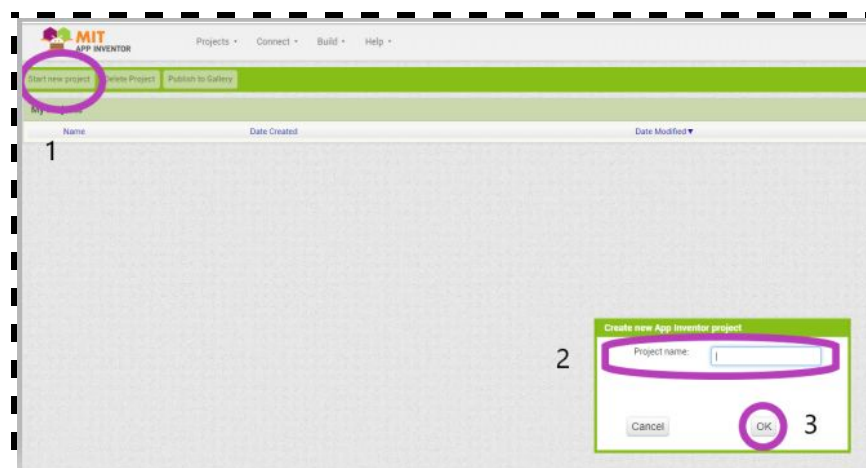
- **(10 minutes) - Group Activity : Build Mobile Kitty App User Interface**

 Select **Label** from Palette and Drag to Screen1 in Viewer (1)

  - *Enter Title for App in Text Box (2)*
  - *Set Font Size (3)*
  - *Set Background Color (4)*
  - *Set Text Color (5)*
  - *Optional - Set Width to "100%" to set to full screen width*
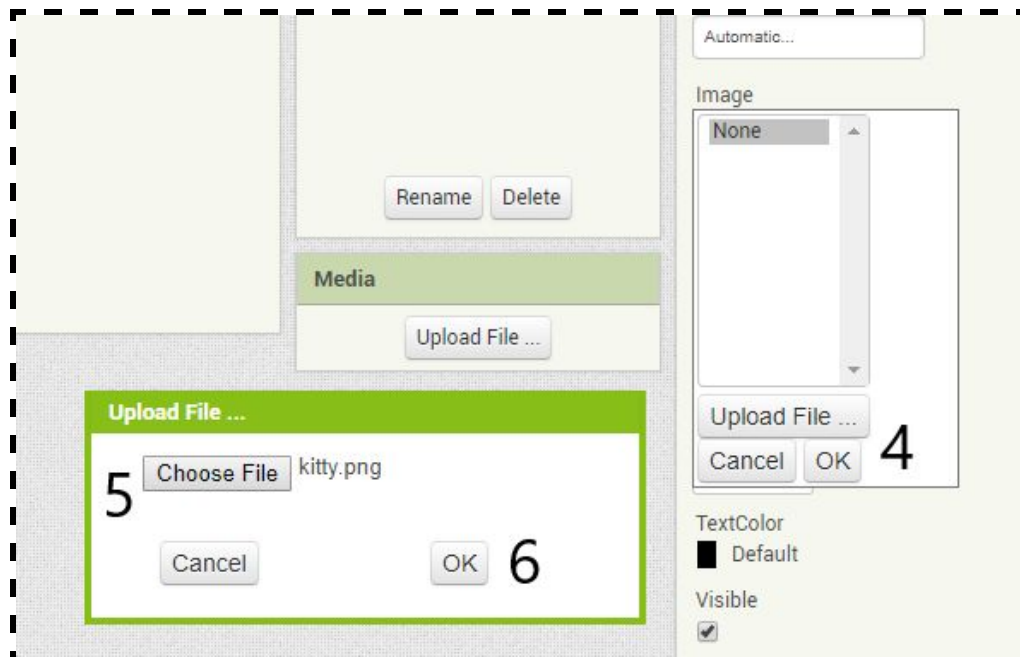 - *Optional - Set Alignment to Center*

  Select **Button** from Palette and Drag to Screen1 in Viewer (1)

  - *Clear Text box (2)*
  - *This will prevent any text from displaying over the image*
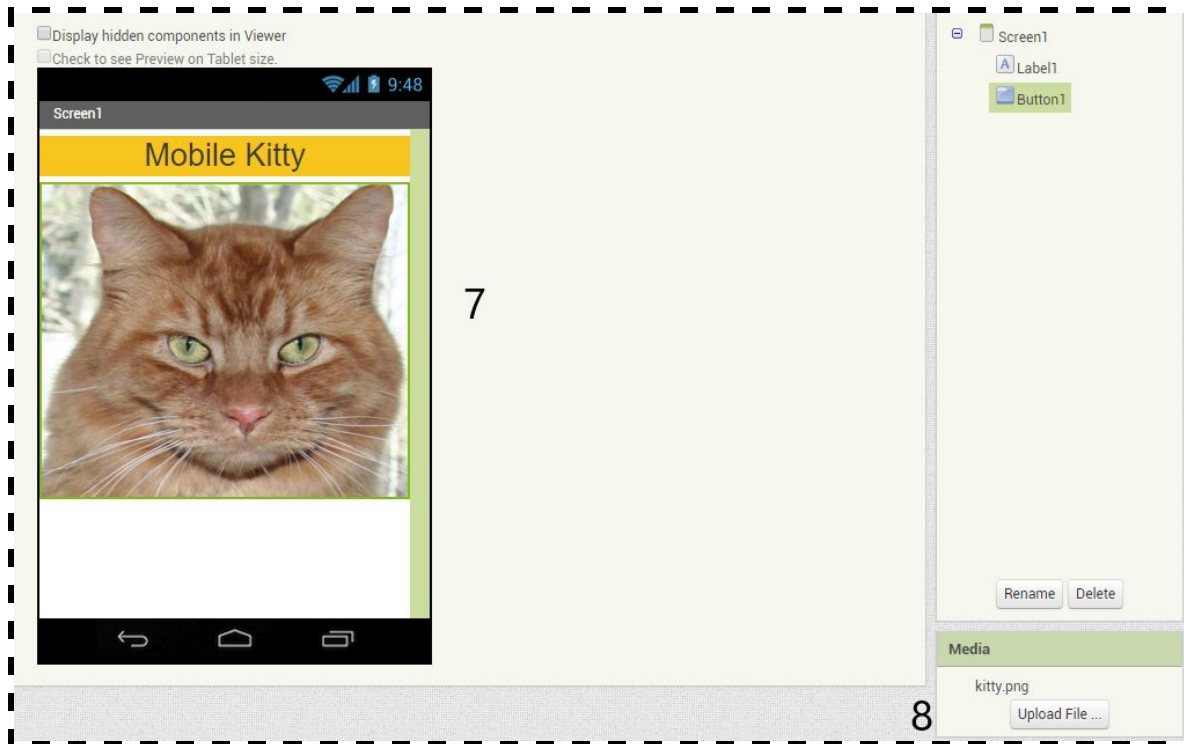 - *Click into Image box to open upload window (3)*
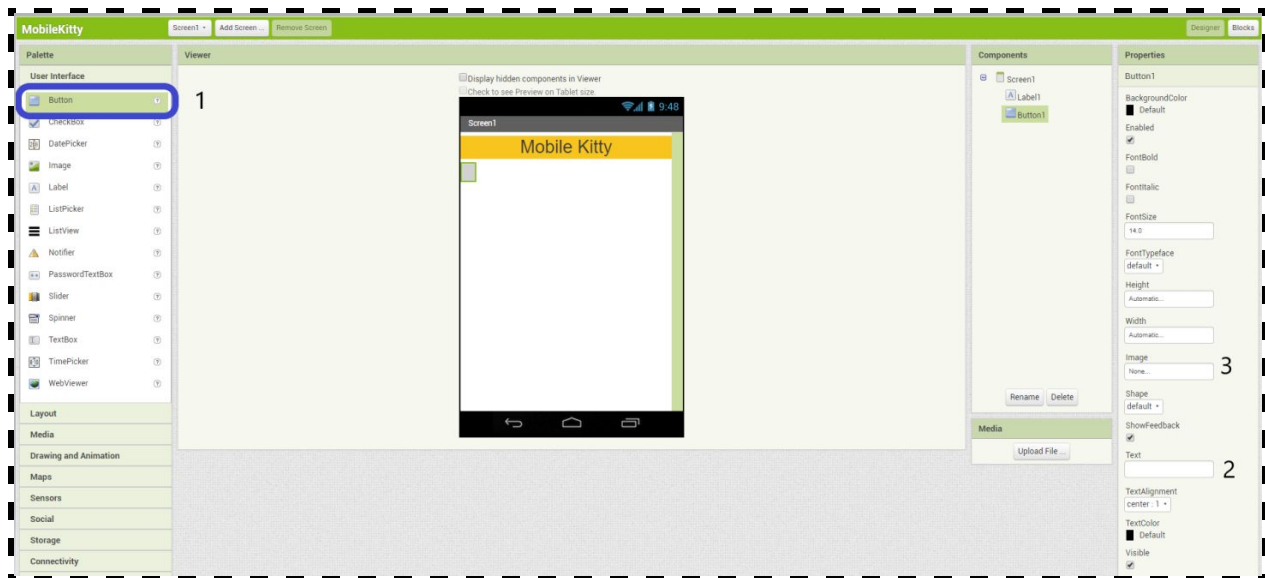
- ○ *Click Upload File button to open Upload File Window (4)*
- ○ *Click Choose File button and select image file from ProjectFiles Folder (5)*
- ○ *Click OK to upload media (6)*

- ○ *Image populates Button element (7)*
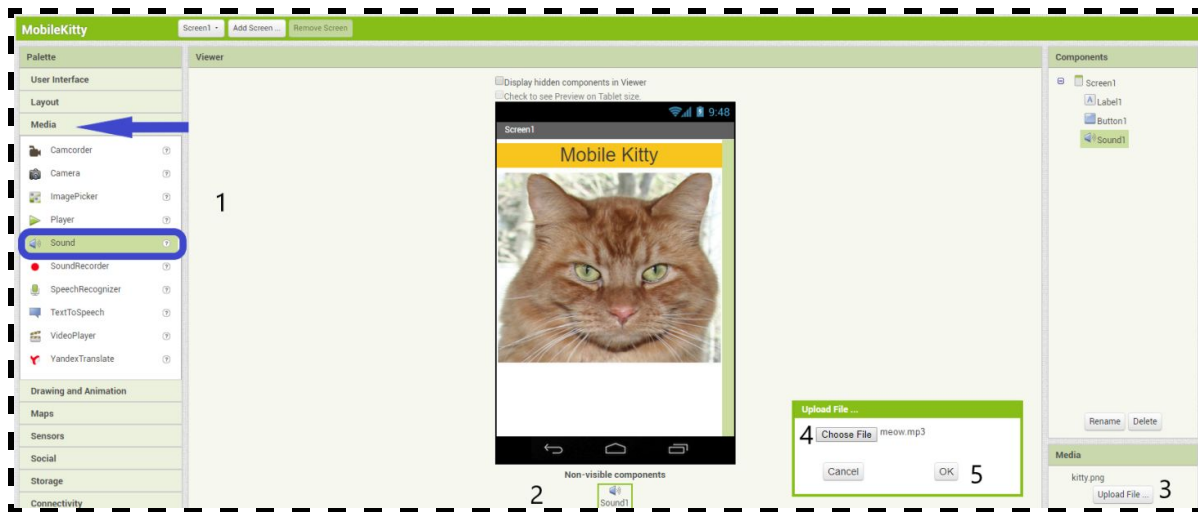- ○ *Image file name is listed in Media block (8)*

- ○ *Optional - Set Width to "100%" to set to full screen width*

Select **Media>Sound** from Palette and Drag to Screen1 in Viewer (1)

- ○ *Tool will create Non-visible components element below Screen (2)*
- ○ *Click Upload File in Media block to open Upload File Window (3)*
- ○ *Click Choose File button and select image file from ProjectFiles Folder (4)*
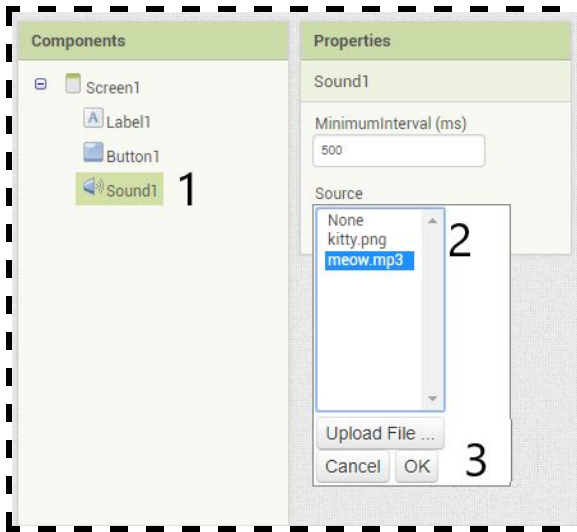- ○ *Click OK to upload media (5)*

- ○ *Sound file name is listed in Media block*
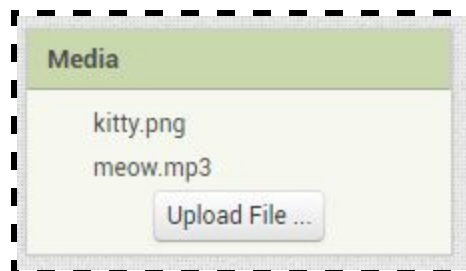
- ○ *Select Sound1 in Components (1)*

- ○ *Click in the source box & Select the sound file name (2)*

- ○ *Click OK (3)*

- **(15 minutes) - Group Activity : Build Mobile Kitty App Behavior Programming**

  Select **Blocks Designer** button from Title Bar
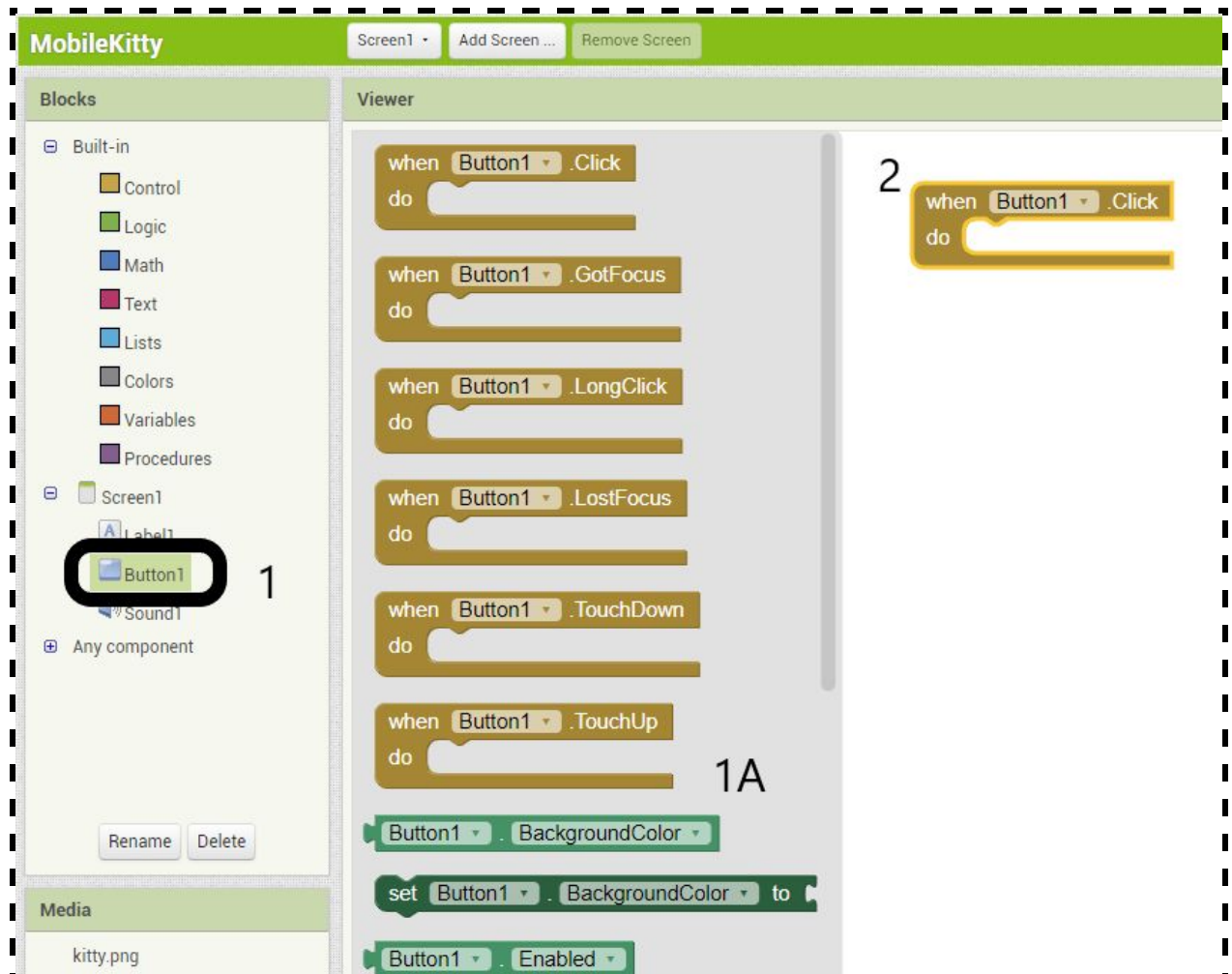

  Select **Button1** from Blocks (1)

  ○ *A Window will pop open with a different coding block options(1A)*

  Select the "when Button1.Click" block and drag to workspace (2)

  ○ *The brown blocks are "event handlers" that are used to determine how the phone responds to user input (e.g. click, shake)*

 ▪ *In App Inventor, "event handler" blocks begin with the word "when"*

Select **Sound1** from Blocks (3)

- ○ *A Window will pop open with a different coding block options(3A)*

Select the "call Sound1.Play" block and drag it into the "when Button1.Click" block (4)

- ○ *The purple blocks are "command" blocks that fit within"event handlers". The "command" blocks indicate the action that happens in response to the user input.*

- ○ *When fit together, the blocks can be read to describe the user and phone action*

    - · *When Button1.click do call Sound1.Play (i.e. when button 1 is clicked play sound 1)*
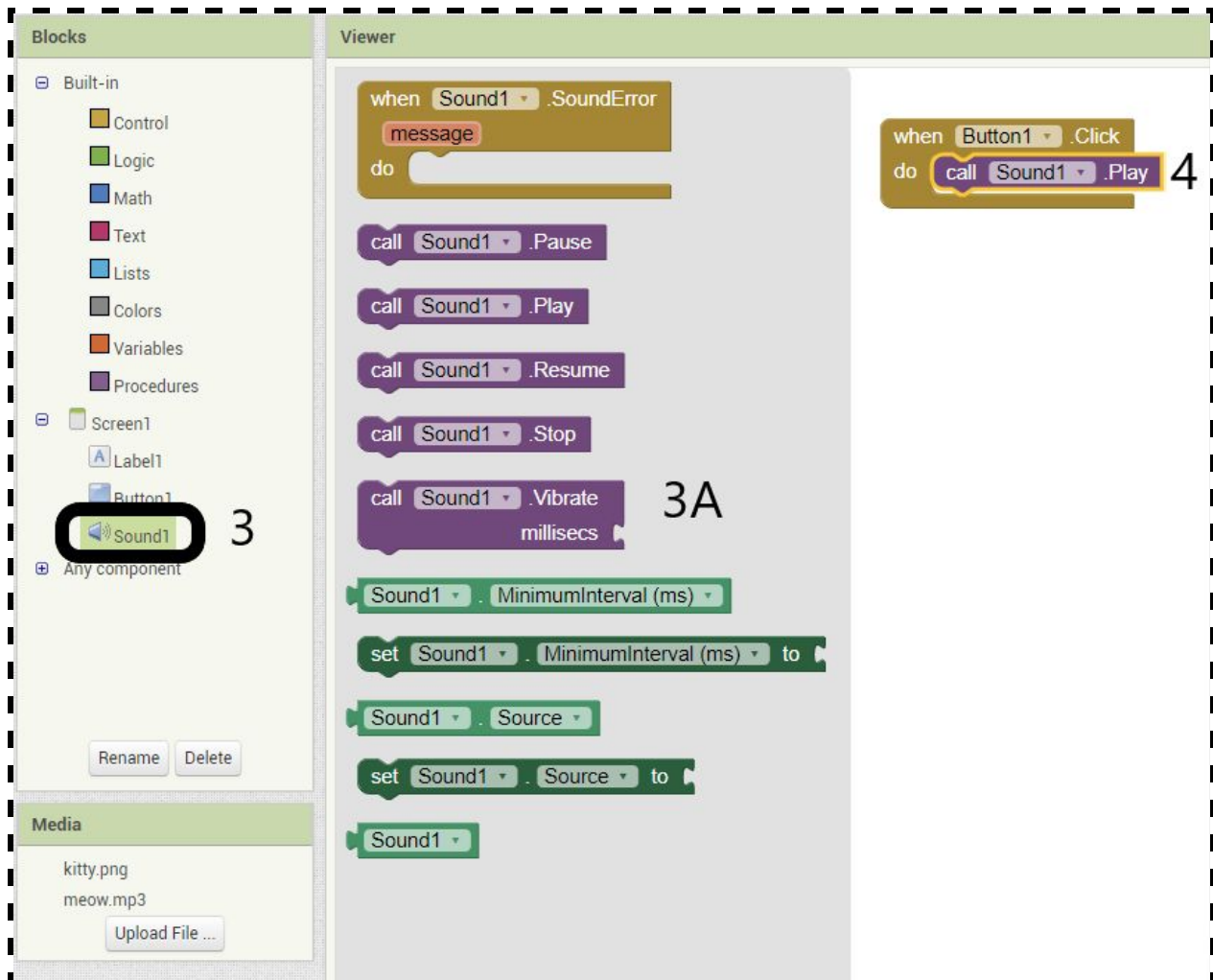
*** *Switch from Instructor screen share to slide show* ***

- **(5 minutes) - Group Activity : Test Mobile Kitty App**

Introduce materials

- *App Inventor App*
- *Android phone with testing set up complete*
- *Test using QR code*
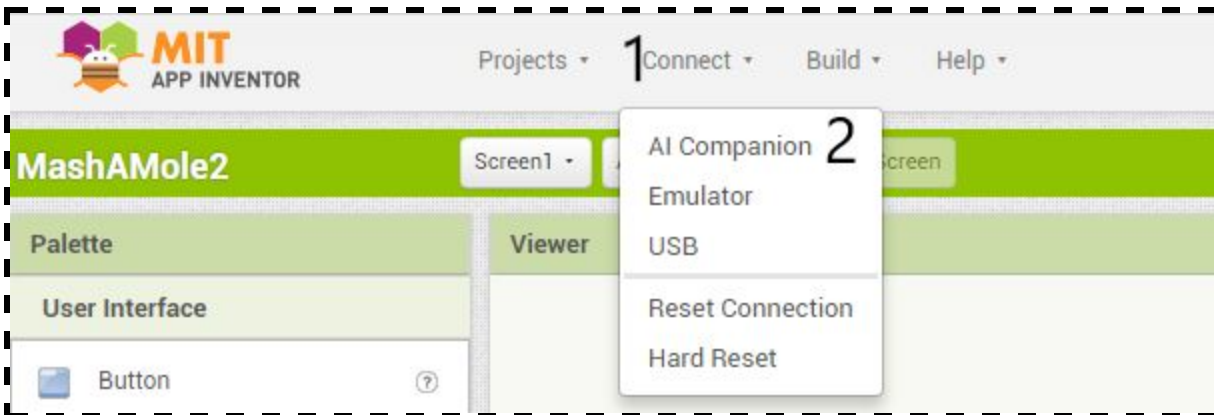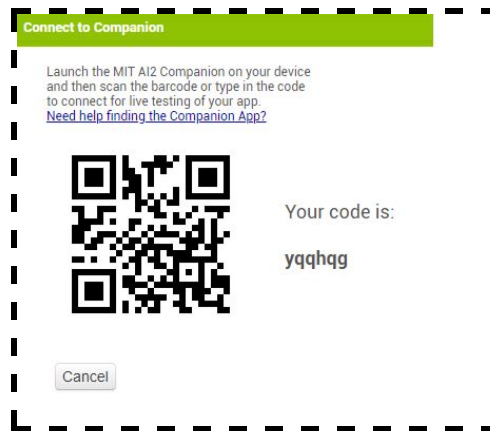 - **On your phone/tablet:** *Open the MIT AI2 Companion App*

- *On your computer:* Select **Connect** (1) dropdown

- Select **AI Companion** (2) wait while system compiles and packages the code (progress bar may be displayed)

● When packaging is complete, QR code will be displayed.

On your phone/tablet: Select scan QR code (1) and scan.

- *Note: If you do not want to use the QR scanner, you may select the connect with code button (orange) and enter the six character code (below "Your code is:" from the Connect to Companion window) in the app text box*
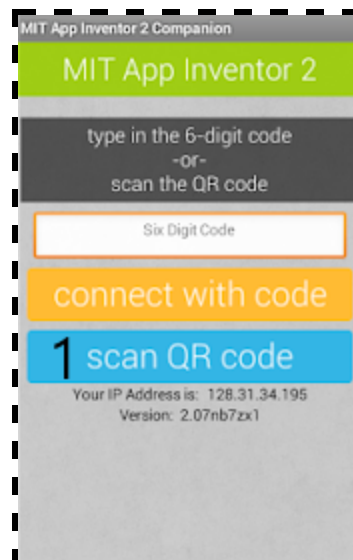

- ***On your phone/tablet:*** *The app you created will run. Test all functions and when done, use the back arrow to exit.*

- ***On your computer:*** *Click cancel to clear QR code window popup.*

- *Make any necessary changes and continue the process until you are satisfied with your results.*

Note: If re-packaging and re-testing, causes the the AI Companion dropdown to stop responding (grey out) complete the following steps to reset:

- *__On your phone/tablet:__ Stop the app from the "3dot" menu in the upper right corner and select Stop and Exit from the pop-up window*
- *__On your computer:__ From the Connect dropdown select Reset Connection*
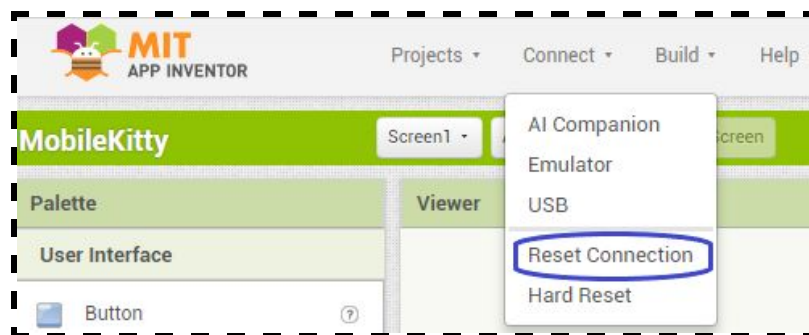
- **(40 minutes) - Student Activity : Modify & Test Mobile Kitty App**

  Introduce materials

  - *App Inventor App*
  - *Android phone*
  - *Mobile Kitty App created previously*

  This is student time to use App Inventor to make the Mobile Kitty app their own.

  - *Encourage students to change the appearance & behaviors of the app*

    - *Modify colors, text, images*
    - *Change the title from "Screen 1"*
    - *Add buttons to enable additional features*
    - *Add vibration to sound*
    - *Add additional behaviors based on different user inputs*
    - *Change Icon Image*

- *Change App Name*
- *Change Sizing*

○ *Have students test their new apps for functionality & share with class if time allows*

- **(2 minutes) - What's next?**

Inform students to head back to cafeteria for a 30 minute lunch break, and remind them to use restroom before next session starts.