

Unit 2

Description of Materials:

Participants will learn: the programming concepts of conditionals, lists, iteration and how to use this information while building apps. Materials include video, tutorials, and readings.

Learning Objectives:

- trace existing code to understand functionality
- utilize MIT App Inventor interface to modify existing code
- demonstrate ability to include conditionals, lists and iteration

Programming Concepts -- Conditionals

Apps need to make decisions. A game app needs to decide what jewels to display or whether or not the game is over when you lost another life. A social app needs to decide which information to display to you on the news feed. Inside the phone, it uses conditionals to make these decisions. Conditionals, conditional statements, or conditional expressions are all terms that computer scientists use when talking about how a computer makes decisions. Please read this [Chapter 18 on Conditionals](#) from the App Inventor book to find out more on conditionals and how to use them in App Inventor ***Note that this guide was made for App Inventor Classic so the blocks are formatted slightly differently.*

Programming Concepts -- Lists & Iteration

Apps contain data or information. Data is raw facts, information is data processed into usable items. This data can be anything from your location to a high score. All apps need to have ways to store this data. One of these ways is by using lists. A list in Computer Science is essentially what you think it would be: a number of connected items or names written consecutively. You may have a list of names of the contacts in your phone, a list of email addresses from a conference, a list of homework assignments for the week. Apps also use lists and App Inventor makes it easy to do so. Please read [this Chapter 19 from the App Inventor book](#) to find out more on lists and how to use them in App Inventor ***Note that this guide was made for App Inventor Classic so the blocks are formatted slightly differently.*

You now know about lists and how they can contain data or information. Now, you're going to learn how to iterate or go through all that data. Think about a screensaver that shows a collection of images. These images are stored in a list. To display all of them one at a time, one after the other, this process is called iteration. Please read [this Chapter 20 on Iteration from the App Inventor book](#) to find out more on iteration and how to use them in App Inventor ***Note that this guide was made for App Inventor Classic so the blocks are formatted slightly differently.*

Now that you've read about lists and iteration in apps, it's time to reflect. Think about an app that uses lists or iteration.

Discovery Time -- App Experimentation

Play around with the following app, [Chatter Box](#), and source code by experimenting and completing the following tasks outlined in this [ChatterBox PDF](#).

Challenge Time -- App Modification

Now that you have learned about lists and conditionals, it's time to practice your new skills. The following source code, [HelloAnimal](#), displays a random image and plays a corresponding animal noise for every time the button is clicked. Currently, there are only two images in this app. Your assignment is to add two additional images and sounds to the app. You will also need to modify the blocks in the Blocks Editor to work for two additional images and sounds.

When you finish, change the theme of this app from animals to fruits, TV characters, superheroes, or something else you like.

If you don't know where to download sounds or images from, check out our [Media Library page](#).

Challenge Time -- App Creation

Follow along the attached [Magic8Ball tutorial](#) to create a Magic8Ball app. After you are finished, try making some modifications of your own to the app.

Products

When you are finished you should have:

- A modified version of Chatterbox
- A modified version of HelloAnimal
- A modified version of Magic8Ball app