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# “Magic 8 Ball” – Predictions App

8 – Ball will deliver one of its classic predictions

1 Open ***Google Chrome*** browser and type the URL https://code.appinventor.mit.edu in the ***address bar*** of the browser

***Following Screen appears in response of the step 1***


2 Click “*Enter with Revisit Code*” after entering your code.

1st Nov 2023

# Learning Goals

After completing this app, you will be to

- ***Navigate the App Inventor environment:*** Designer, Blocks Editor, Emulator and/or AI Companion on mobile device
- ***Correctly use the following App Inventor components:*** Accelerometer Sensor, Button, Player
- ***Correctly use the following App Inventor concepts:*** making and using a list, responding to an event

# Materials

- *A selection of images and sounds are available at GitHub repository*

# Outline

1.Set up computers and mobile devices or emulators. (Suggestion: do this ahead of time)

***2.Part One***: Click a Button, Hear a Sound

***3.Part Two***: Click the Button, Get a Prediction + Hear a Sound

***4.Part Three***: Shake the Phone, Get a Prediction + Hear a Sound

5.Suggestions for further exploration: Text-to-Speech, Rotating image, Custom prediction lists

# Part One: Click a Button, Hear a Sound

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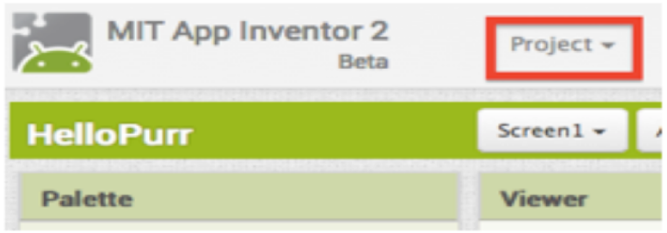
The final Magic 8-Ball App will deliver a prediction from a list that you have designed. To get started, first we'll make a button with a picture on it, and program it to play a sound when the button is clicked.

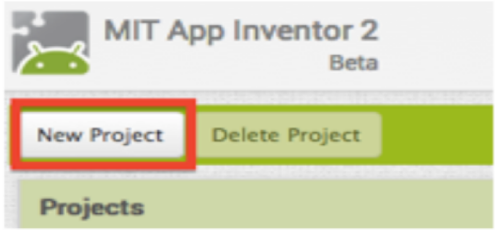
## DESIGN: App Inventor Designer

Click "Project" in the upper left corner of the screen and then "My Projects", which will take you to your list of projects. Click "New Project" and name your project something like "Magic8Ball" (note: spaces are not allowed).




1. Click **Project**


2. Click **My Projects**




3. Click **New Project**

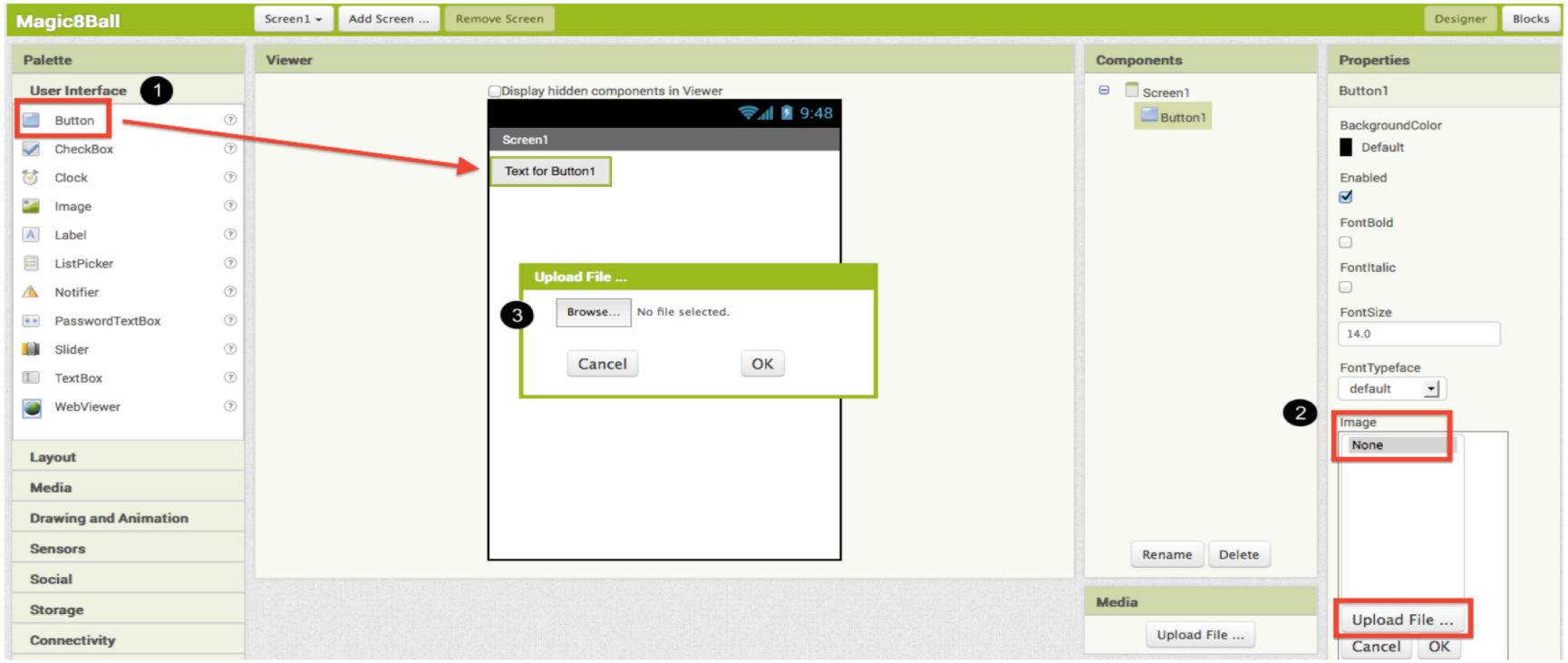

4. Give the Project a name

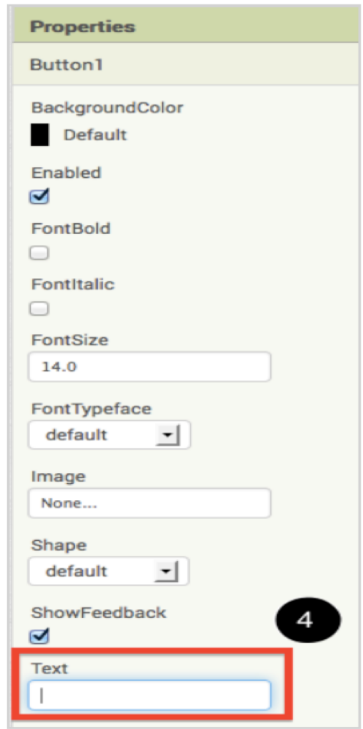
5 Download image & Sound File

6 On the left column of the Designer, you should see the User Interface Palette. Drag a **Button** component over to the Viewer (#1).

7 **Set the Button image to an 8-Ball image:** Click on your newly added Button to see its *properties* in the **Properties pane** on the right. Under *Image* click on the word "None..." and a small selection window will pop up (#2). Click the "Upload File" button and browse to where you saved the 8-Ball image. Select the file, then click OK to close the selection window. Click OK again on the properties pane to close the small popup window (#3).

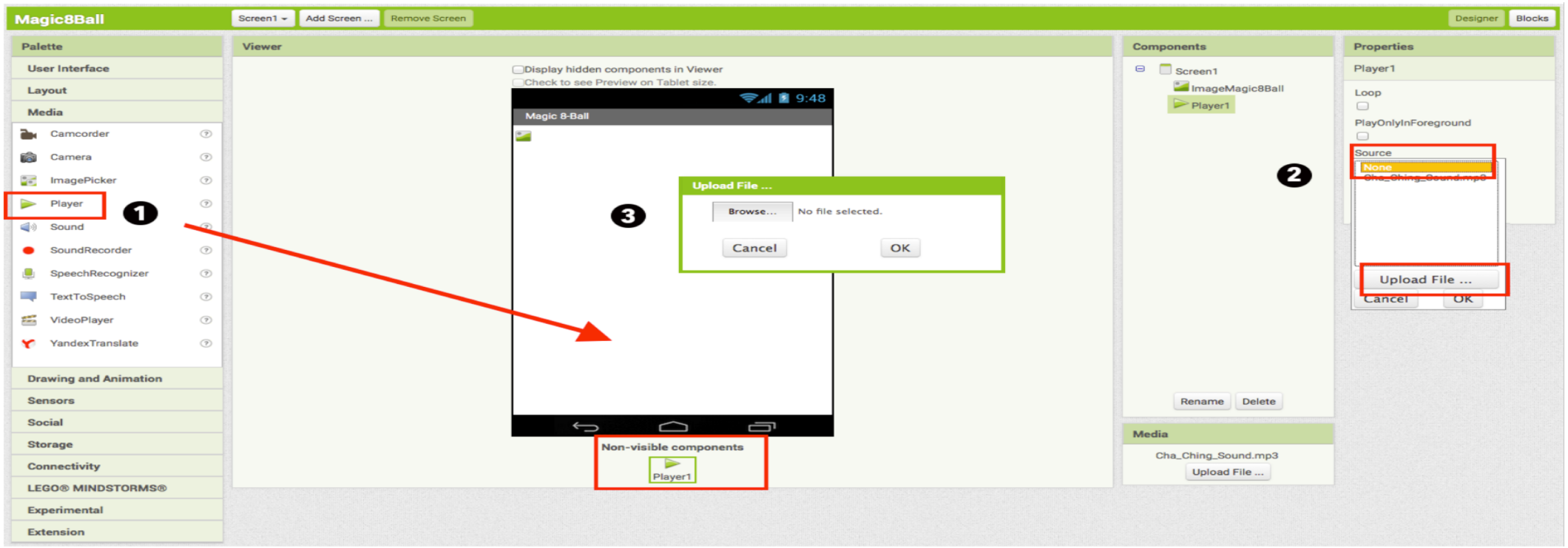
**8** Go to the *Text* property in the Properties pane and delete the display text of your Button component (#4).



9 From the Media Palette, drag a **Player** component onto the Viewer pane (#1). The **Player** component plays sound files. Notice that since the **Player** will not be a visible part of the app, it appears at the bottom of the Viewer pane, as a non-visible component.

10 Set the **Player** component's source file:
Click on your newly added **Player** component to see its properties in the Properties pane on the right.
Under *Source* click in the small box on the word "None..." and a small selection window will pop up (#2). Click the "Upload File" button and browse to where you saved the sound file. Select the sound file, then click OK to close the selection window. Click OK again on the properties pane to close the small popup window (#3).



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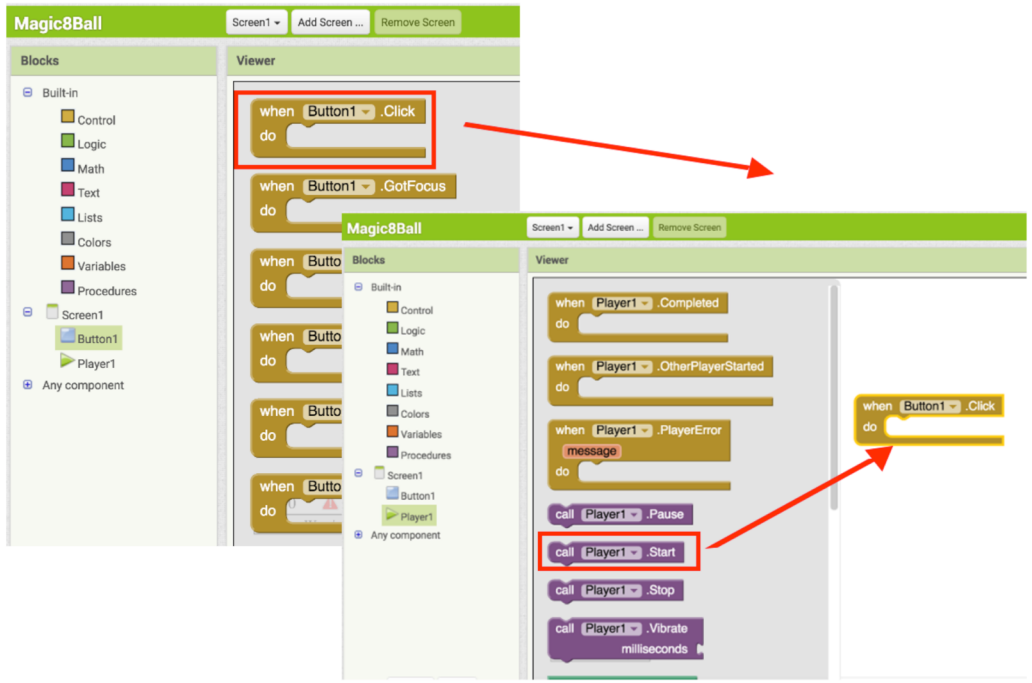
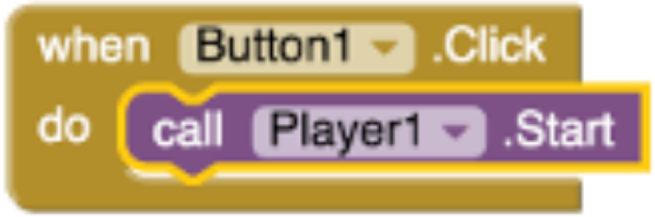
11 You have now completed the work in the Designer for Part One of this app. It's time now to go over to the Blocks Editor to program the behavior of these components.

# BUILD : Blocks Editor

In the upper right corner of the Designer, click on the Blocks button.
Under **Screen1**, click on **Button1**. Drag the when Button1.Click block into the work area (#1). Then, click on the **Player1** drawer, drag the Player1.Play block into the work area and insert it into the when Button1.Click block (#2). They will click together like magnetic puzzle pieces.




Your blocks should now look like this:




12 ***TEST YOUR APP***

# Part Two: Click a Button, Get a Prediction + Hear a Sound

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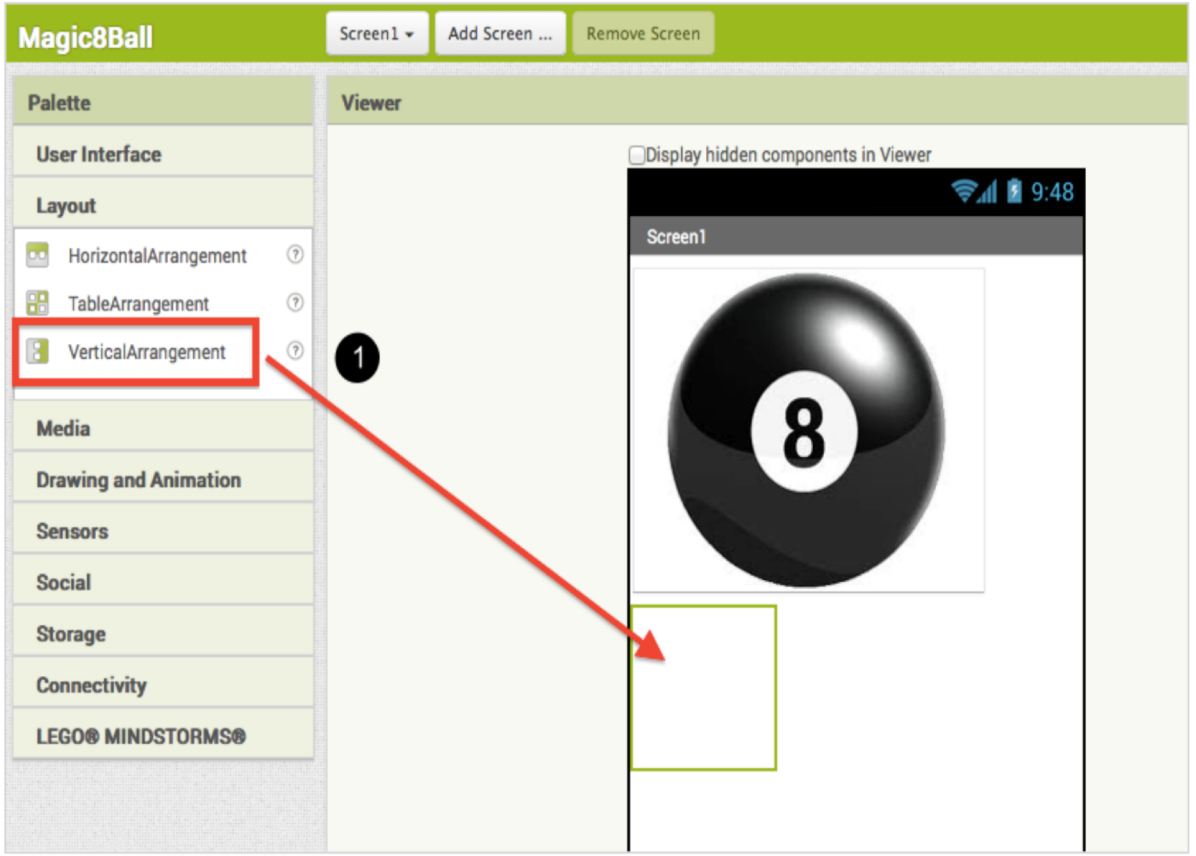
Now that we've gotten the button to perform an action (play a sound), we want to extend that action to include giving the user a prediction. First we'll need two Labels: **Label1** will display the instructions, and **Label2** will display the chosen prediction. We'll use blocks to program a **ListPicker** to choose from a list of predictions. Each time the button is clicked, the app will change the text of **Label2** to display the chosen prediction.

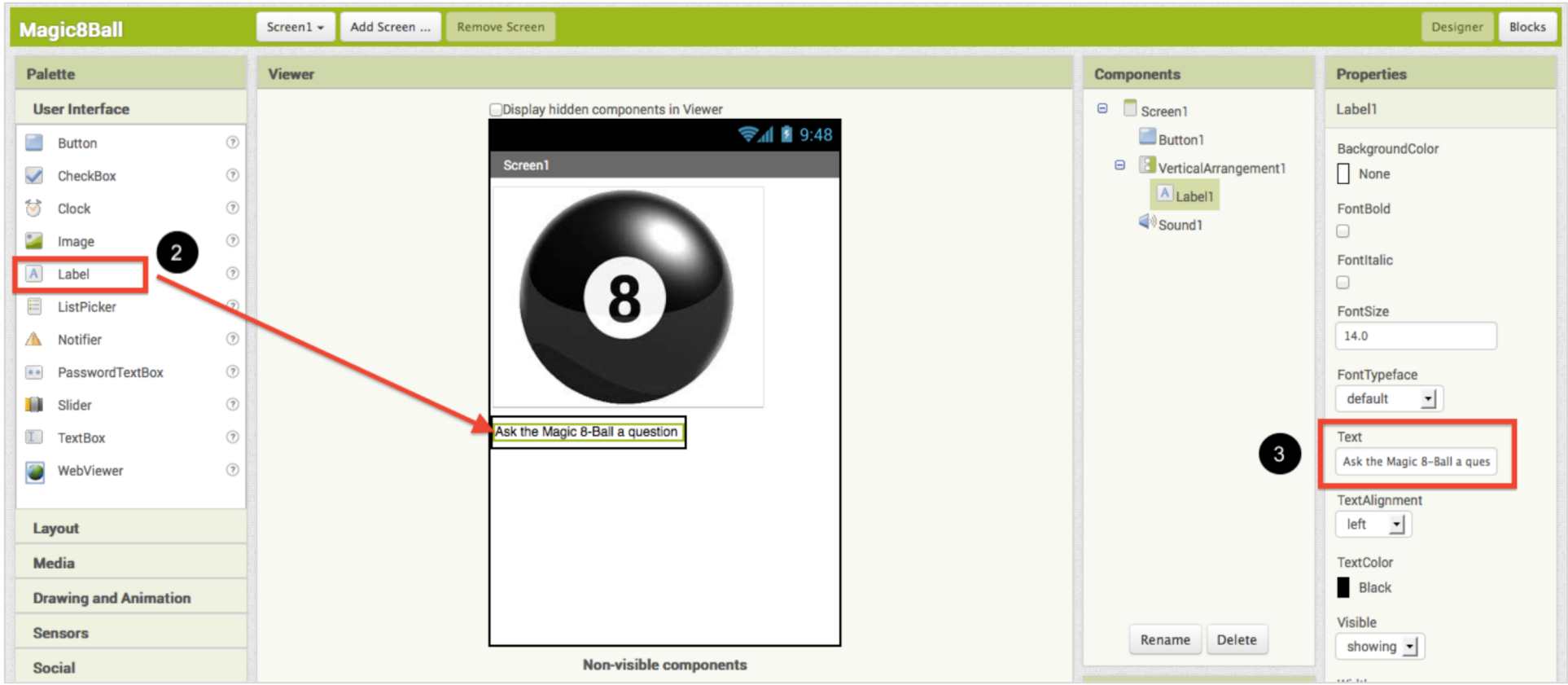
## DESIGN: App Inventor Designer

1 From the Layout drawer, drag out a **VerticalArrangement** component (#1). At first it will just look like an empty box, but when you put things in it, App Inventor will know that you want to line them up vertically (one on top of the other).

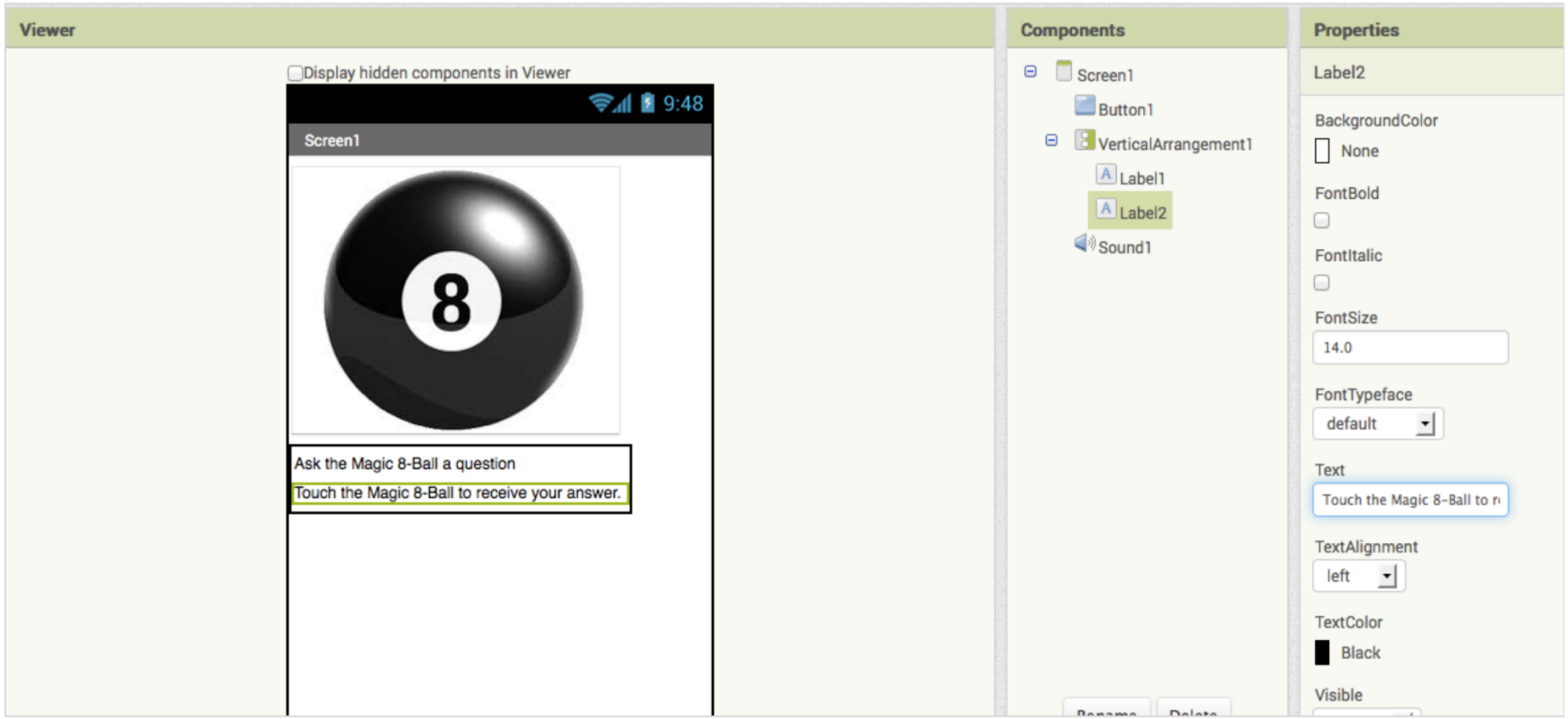


2

From the User Interface drawer, drag out a **Label** component (#2) and drop it inside of the **VerticalArrangement** component. In the Properties pane, change the *Text* property of **Label1** to "Ask the Magic 8-Ball a question".(#3)



3 From the User Interface drawer, drag over another **Label** component (Label2) into the **VerticalArrangement** box so that it sits right below **Label1**. Change the *Text* property of **Label2** to "Touch the Magic 8-Ball to receive your answer". Then drag **Button1** so that it is also inside the **VerticalArrangement** component on top of the two labels. This will cause them to line up with each other in a vertical line. (Note: this can be tricky mouse work, but get them in there just right and the **VerticalArrangement** will resize itself to fit everything.)



# BUILD: Blocks Editor

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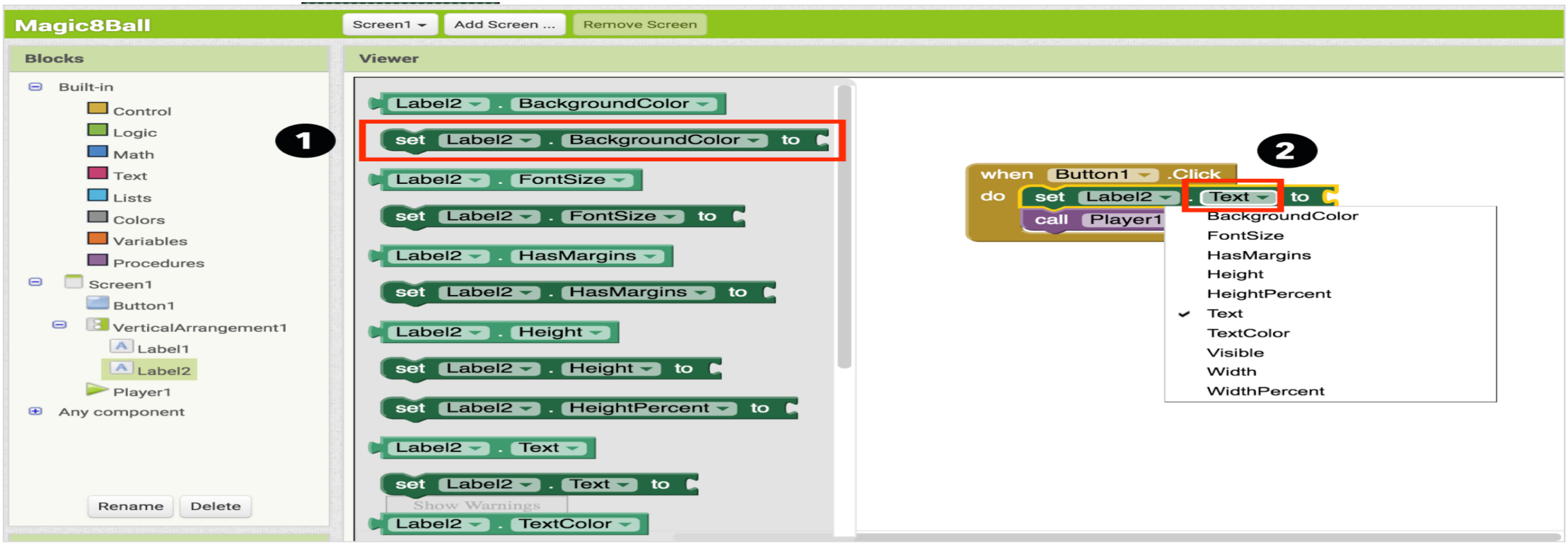
You're going to make a list of predictions and program the button to pick one item from the list and display it in **Label2**. The **Button** will also still play the sound that you programmed in Part One. Here's how to do it...

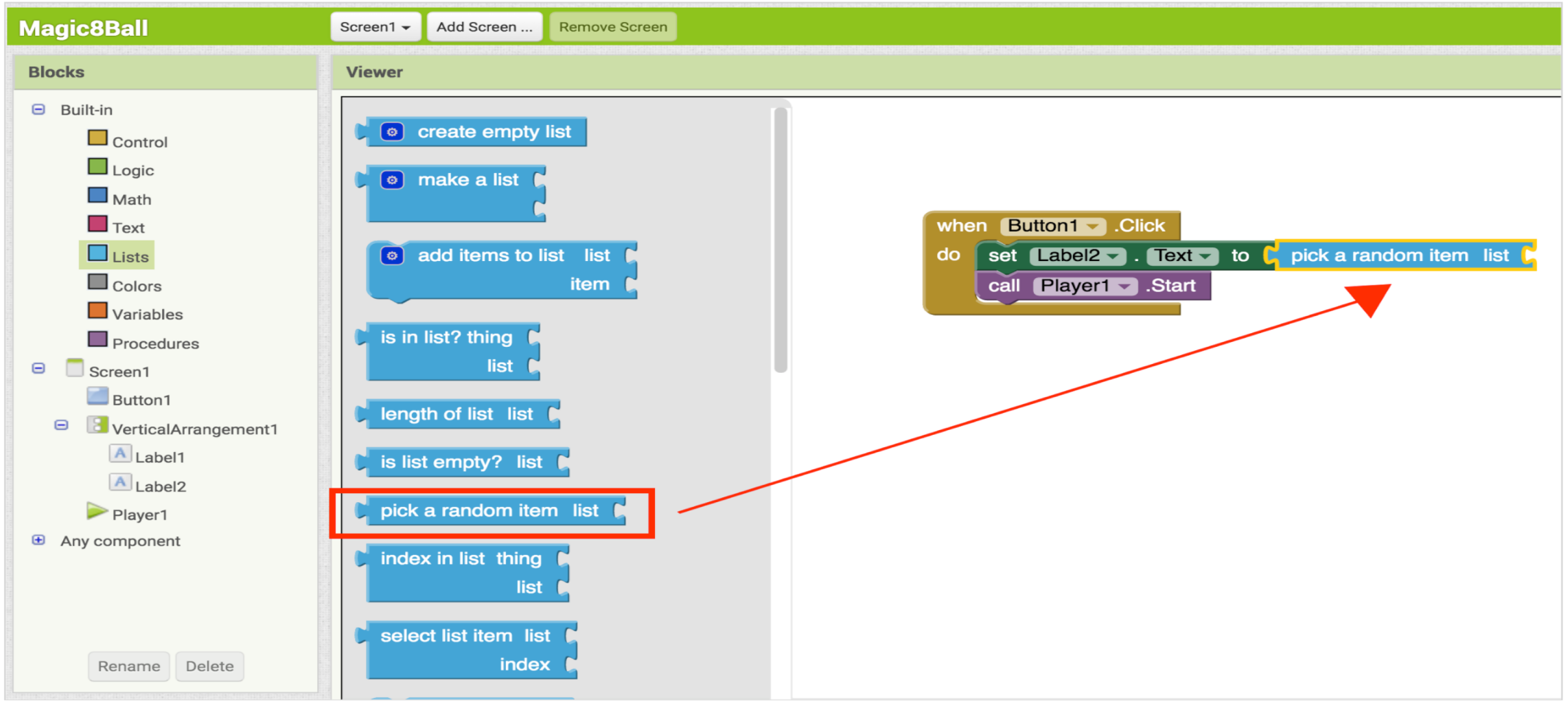
1 From the Blocks palette, click on **Label2** drawer to see all of its associated blocks. Drag over the green set Label2.BackgroundColor and insert it just above the Player1.Start block. Notice that the when Button1.Click block automatically gets bigger to accommodate the new block.

2 Clicking on the word "BackgroundColor" will give you a dropdown menu so you can change the property that is being set. Choose *Text* so your block will be set Label2.Text.



3

From the Built-In drawer, click on the **Lists** drawer. Drag over the pick random item block and connect it to the open socket of the set Label2.Text block.



4 From the Built-In drawer, click on **Lists** again, then drag out the make a list block and plug it into the "list" socket on the right side of the pick random item block.

5 From the Built-In drawer, click on the **Text** drawer, drag out a " " block and connect it to the item socket of the make a list block. Click directly on the space in the block. You can then type in text there. Think about the sayings you want in your list of predictions for the Magic 8-Ball. Type the first prediction into this new text block.

6 Notice after you plug in two text blocks, there are no more sockets to add more responses. To create more sockets, you need to click the dark blue mutator icon on the block. make a list is called a mutator block and thus can be expanded or shrunk by clicking the blue icon in the upper left corner.

7 Snap each text block into the make a list block.

Blocks should look something like this


8 TEST: Emulator or Mobile Device

# Part Three: Shake the Phone, Get a Prediction + Hear a Sound

Even though you have a working Magic 8-Ball app, there is a way to make it even more fun. You can use the **AccelerometerSensor** component to make the phone respond to shaking instead of responding to a button click. This will make the app much more like a real Magic 8-Ball toy. *Note: This part can only be done with an actual phone or tablet equipped with an accelerometer. If you are using an emulator, skip this part and go to Challenge 1 instead.*

## DESIGN: App Inventor Designer

1. Go back to the Designer. From the **Sensors** drawer, drag over an **AccelerometerSensor** component. Notice that it automatically drops down to the non-visible components area of the Viewer window. This is the only new component you need, so go on over to the Blocks Editor to change your program.

# BUILD: Blocks Editor

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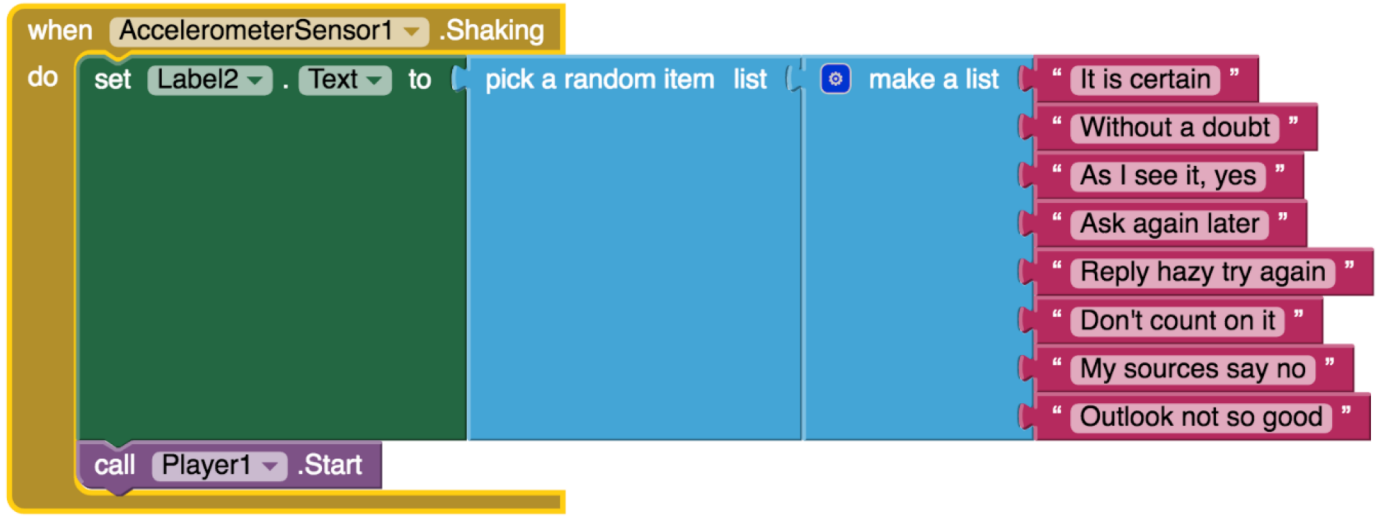
1. From the Blocks palette, click on **AccelerometerSensor**, then drag out the block for when AccelerometerSensor.Shaking.

2. Disconnect all of the blocks from inside the when Button1.Click block and move them inside the when AccelerometerSensor.Shaking block. **NOTE:** you can move whole sections of connected blocks by clicking on the uppermost or leftmost block and dragging it. The connected blocks will come with it.

3. Delete the when Button1.Click block to keep your work area tidy.

The blocks should look something like this:





4. ***TEST***: Device/Emulator

# Great work! Now extend this app


Here are some ideas for extending this app. You can probably think of many more!

- *Challenge 1: Make the Magic 8-Ball Speak*

## *Suggestions for Further Exploration*

- Ask end users to add choices to the list of predictions.
- Completely change the list to humorous choices (e.g. an app for teacher to use when a student has an excuse for not doing homework), or for useful purposes like randomly selecting a name from amongst people in the class.