CoderDojo Castleknock

Fortune Teller

Show a random fortune each time the user clicks a button. Use a list to hold the possible fortunes.

Figure 1 Fortune teller App.

What You'll Build

Along the way, you'll learn about buttons, lists and non-visible components.

What You'll Learn

This tutorial covers the following concepts

- Show how to use buttons
- Show how to use non-visible components (text to speech)
- Show how to use lists.

Iteration or how we will get to Finished App.

Now we are not going to go immediately create the finished App. We are going to use a process called 'iteration' to start with a basic App and then gradually iterate to our finished app.

It's like getting on a bus. There are bus stops along the way to our finish destination, so 'all aboard' and off we go !

Figure 2. Iteration is like a bus stop.

So the iterations, or bus stops we will go through are;

1. Create still image of our App
2. Say a fortune

At each step, we should have a working app before we continue to the next step, we call this iterative development.

Iteration 1 Create still image of our App

Getting Started

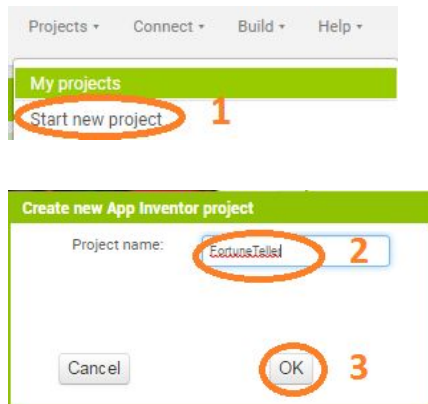Connect to the App Inventor website and start a new project. Name it "*FortuneTeller*"

Figure 3. Start new project

Next "connect" the Blocks editor to your Android device by WiFi. From the Connectmenu select AI Companion, which will display a twodimensional visual QR code for a 6character code like the one shown below:

Connect ▾   Build ▾

AI Companion

Emulator

USB

Reset Connection

Your code is:

upjrns
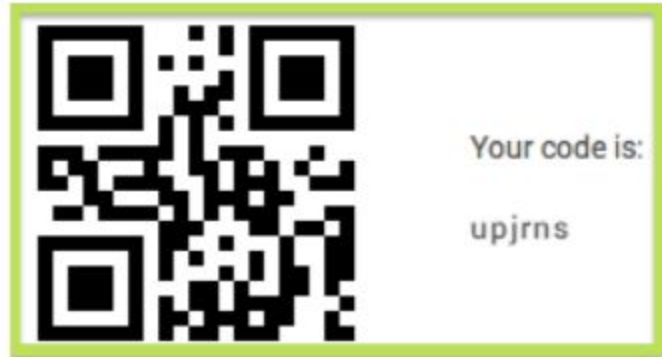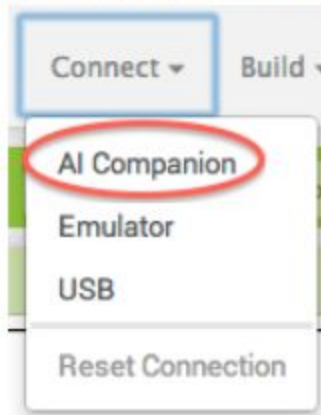
On the your Android device, launch the MIT AI2 Companionapp **MIT AI2 Companion** , press

scan QR code , and scan the QR code displayed in the browser.

(Alternatively, you can type in the 6character code and press **connect with code**).

This initiates a live development connection between the browser and the Android device. You should now see the app's components on the device, and all changes you make in the Designer and Blocks windows should be reflected on the device.

Because we are using iteration, our first stop is to Design the look and feel of our app. We will do this in the Designer editor and not need to create any blocks of code for our first stop !

You're in the **Designer** window, where you add components to your app. Drag a Button and label.

There are two main types of components in an app: visible and non-visible. The app's visible components are the ones you can see when the app is launched—things like buttons, text boxes, and labels. These are often referred to as the app's user interface.

Non-visible components are those you can't see, so they're not part of the user interface. Instead, they provide access to the built-in functionality of the device; for example, the Texting component sends and processes SMS texts, the LocationSensor component determines the device's location, and the TextToSpeech component talks. The non-visible components are the technology within the device—little people that do jobs for your app.

Component Type	Pallette Group	What you will name it	Purpose
TextToSpeech	Media	TextToSpeech1	We use the TextToSpeech component to say the fortune picked.

Table 2. All of the non-visible components for the Fortune Teller app

Set the properties of the components as described below:

Component Type	Action	Another Action
Button1	Change Text property to "".	Change image to FortuneTeller.png
	Change height to 80% (so we can see label1)	All done for Button1
Label1	Set FontSize to 16	Set Text to "Click the crystal ball to hear your fortune"

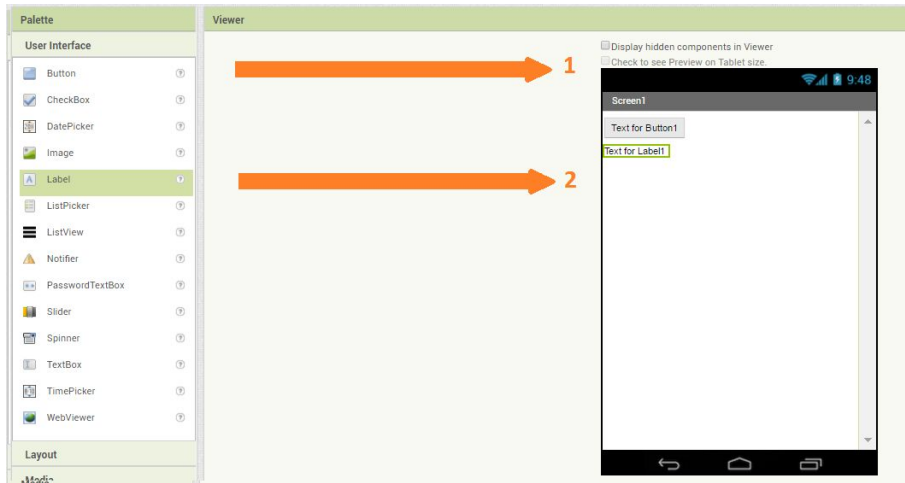Table 3. All of properties for components for the Fortune Teller app
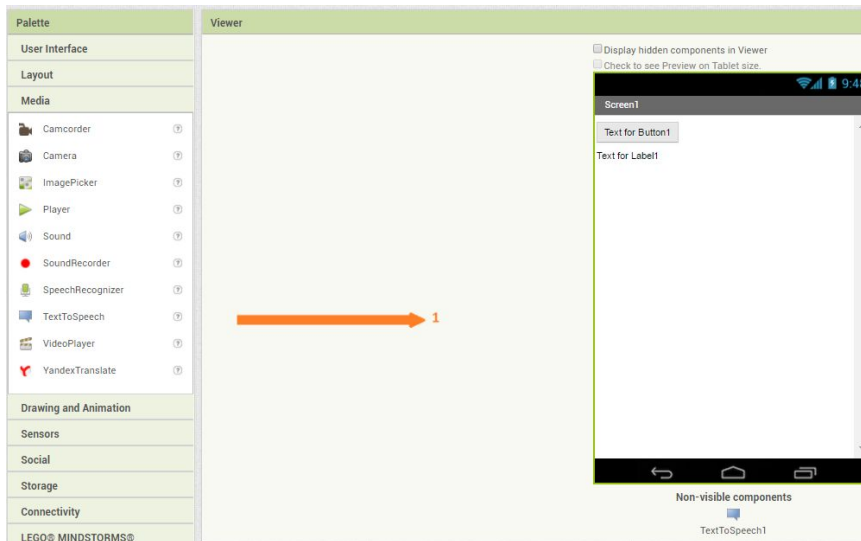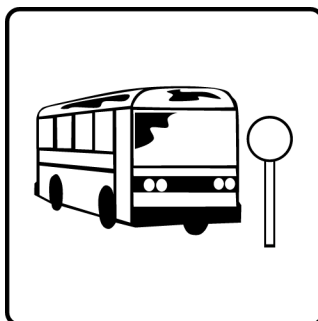
Figure 4. Visible components we use.

Figure 5. Non-visible components we use.

Bus stop reached !

We have finished our first iteration (reached our first bus stop). At this point we should have an App which looks like our finished application, but nothing happens yet !

In the next iterations we will add the 'smarts', so when we do something in the game, something happens.
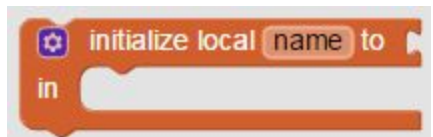
Iteration 2 Say a fortune

When we click on the crystal globe (alright, anywhere on the button), we want to say a random fortune.

Getting Started

Click the button **Blocks** in the upper right corner to switch from the Designer to the Blocks Editor, where you will specify the behavior for your app.

Populate the Blocks Editor with blocks from the Blocks pane

- from the **Button1** drawer, select the event handler block

- from the **Variables** drawer (in the built-in blocks), select the

 block.

- From the Built-in draw, in the **Text** blocks, select the empty string block.

Click on name to change its name to saying. Move the to the saying variable definition.

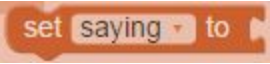If we move the mouse pointer over the local variable saying like

Figure 5. Local variable saying
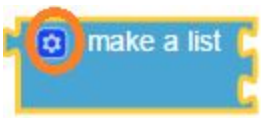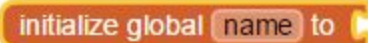
We can the move the block get.saying between the two arms of the local variable saying block like in figure 5. From the built-in Lists drawer, drag the pick a random item list block and add it to the set saying to block.

The random item we want to get from is the global variable

Figure 6. Global variable fortunes.

That we create by dragging from the Build-in folder in the Variables drawer initialize global name to to the blocks viewer. Change the name to fortunes. Drag from the Built-in folder in the Lists drawer make a list and add it to the initialize global name to that we have already dragged.

Now the list has 2 elements and need 5, so hover your mouse over the blue mutator button (in the red circle) so we get a pop out like Figure 7.
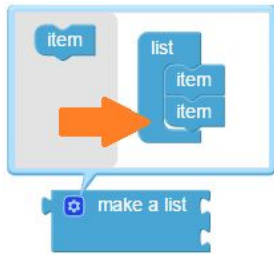
Figure 7. Extending our list.

We drag item 3 times to the right (where the arrow points) to extend our list. It should now look like Figure 8.
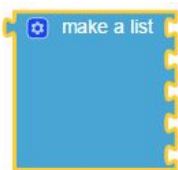
Figure 8. Extended list.

We click our list to our fortunes global variable block. We now by dragging from the Build-in folder in the drawer to the blocks viewer. We do this 5 times. We then click all our blocks to our list and add the text between the " " so it looks like Figure 6. We are finished creating our fortunes global variable.

Connect the blocks not connected from the previous step to form a block like figure 9.

Figure 9. When button.click

This is an App Inventor blocks program that says "When Button1is clicked, say a random saying from our global fortunes list.

Bus stop reached !
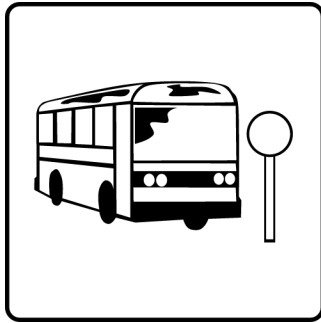
We have finished our second iteration (reached our first bus stop). At this point we should have an App which looks like our finished game, but nothing happens yet !

Test your program by pressing on the globe. The phone should read a fortune !

Variations

Once you get this program running, you may want to do the following additional features to extend it. For example,

● With the app running turn the screen sideways. What happens ? Do we want this to happen ? If not, how do we fix it ?

● Our app says Screen1 (see figure 1 or look at you app). Why ? How do we change it to say "Gypsy Rose Lee" ?

● Change the possible fortunes (see a list of possible fortunes at the end of this tutorial).

● (hard) At the moment, a fortune can be repeated. How can we remove a fortune once it's chosen to prevent it being picked again ? If we remove all fortunes, what should we do ?

P.S.

We created this tutorial standing on the shoulders of giants. We want to acknowledge the original workshop at http://ice-web.cc.gatech.edu/dl/?q=node/734

P.P.S.

Respect copyright so programmers,artists,musicians and others can make a living from their work and we can enjoy the fruits of their work !

I see a mistake !

If you see a mistake, email coderdojocastleknock@gmail.com so we can fix this tutorial.

Appendix 1.

Variables

- fortunes
- Saying

You will notice that fortunes is a global variable, which means it can be used everywhere in the app.

You will notice that sayings is a local variable, which means it only be used by anything in the 'in' part of the variable block.

Built-in blocks

- When Button1.Click

Procedure Blocks

None.

Designer
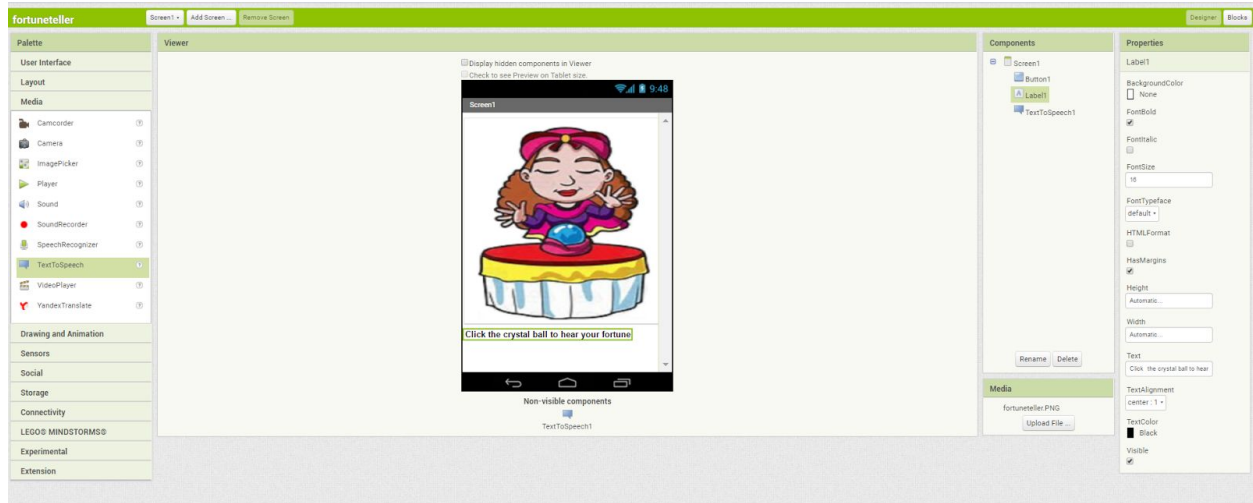
Source

[Fortune Teller](#)

Download this to your computer and then upload it to your app inventor account. To do this ;

- Click on the Don't touch my phone link above
- When you run this, the source code shown downloads to your laptop where it can be then uploaded to you App Inventor tab via;

 Projects -> Import Project (.aia) from my computer…

Assets

Assets are what we sometimes call sounds and images used in a game.

Download this to your computer and then upload it to your fortune teller project. To do this ;

- Click on the FortuneTeller.png link above
- When you run this, the image shown to your laptop where it can be then uploaded to you App Inventor via;

Figure 10. Setting Fortune Teller image for Button1
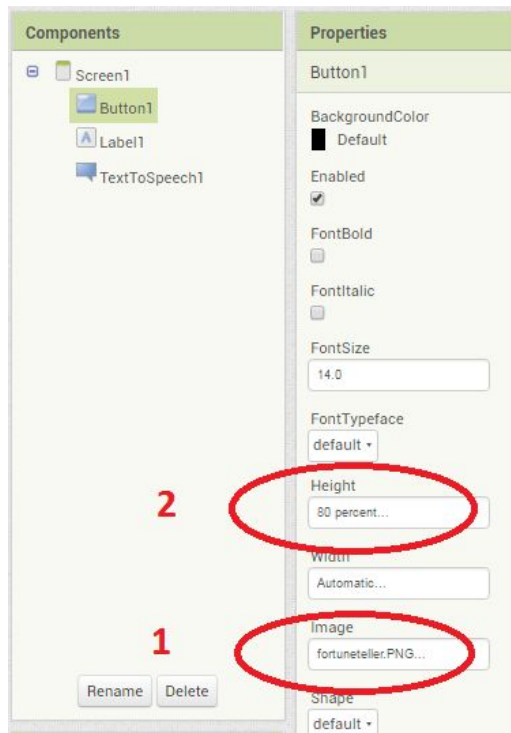
In the Designer tab. For button1 property, like in Figure 10, in the 1st circle highlighted, browse to the downloaded image and set it here.

Ps to not forget to set the height, like in Figure 10, in the 2nd circle to 80% so the label below the button is seen.

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Other possible fortunes.

- A man loves his sweetheart the most, his wife the best, but his mother the longest." - Irish Proverb
- "A man's work is from sun to sun, but a mother's work is never done." - Author Unknown
- "No gift to your mother can ever equal her gift to you - life." - Author Unknown
- "Sweater is a garment worn by child when its mother is feeling chilly." - Ambrose Bierce
- "There is only one pretty child in the world, and every mother has it." - Chinese Proverb
- $ is just a concept. People empower it.
- 'The study of history is the beginning of political wisdom.'
- 'The wit of a graduate student is like champagne.'
- 'The world is round so the place which may seem like the end, may also be only the beginning.'.
- 80% of the results flow from 20% of the activities - Pareto Principle
- A baby is God's way of saying the world should go on.
- A bashful admirer will soon be revealed.
- A beauty is a woman you notice, a charmer is a women who notices you.
- A book is in your future.
- A clean conscience is a soft pillow.
- A committee of one gets things done. - Joe Ryan
- A company is judged by the president it keeps. - James Hulbert
- A diamond is a hunk of coal that stuck with it.
- A diamond is a piece of coal that stuck with the job.
- A friend asks only for your time not your money.
- A friend is someone who knows the song in your heart, and can sing it back to you when you have forgotten the words.
- A friend will soon bring you a gift.
- A girl who is free for the evening can be one of the most expensive things in the world.
- A good beginning is only half done.
- A good example is the best sermon.
- A good time to start something new.

- A journey of 1000 miles begins with one step. ~ Lao Tzu

- A lean compromise is better than a fat lawsuit. - George Herbert

- A little girl, asked where her home was, replied, "where mother is." - Keith L. Brooks

- A long life may not be good enough, but a good life is long enough -Ben Franklin

- A man can't get rich if he takes proper care of his family. - Navajo saying

- A mother is not a person to lean on, but a person to make leaning unnecessary. - Dorothy Fisher

- A mother understands what a child does not say. - Jewish proverb

- A new challenge is near.