

English to Spanish translate!

An MIT App Inventor tutorial

Feat. Tim the beaver





App overview: English to Spanish translate!

When you are done you and your friends will be able to use this app to:

- Type a word or phrase in English and translate it to written Spanish
 - Have your phone read the translated text out loud in Spanish!





Step 1: Signing in to App Inventor

Click the "Create apps!" button in the menu bar at the top of the MIT App Inventor Hour of Code page.





Welcome to MIT App Inventor!

You can either Continue with an Account, and you will be given a Revisit Code to return to the site if you wish.

Continue Without An Account

Or you can sign in if you have a Google account. Your projects will be saved with your account id.









Step 2: Creating a new project

Click "Start a new project" in the upper left corner...





Step 3: Familiarize yourself with the designer window

NewProject	Sc	creen1 • Add Screen	Remove Screen			Designer Blocks
Palette		Viewer			Components	Properties
User Interface				Display hidden components in Viewer	Screen1	Screen1
 Button CheckBox DatePicker Image Label ListPicker ListView Notifier PasswordText Slider 	Palette: Choose components ? ? Box 7 ?	5		Check to see Preview on Tablet size.	Components: View an organized list of	Properties: Set component properties AlignVertical Top : 1 • AppName NewProject BackgroundColor White BackgroundImage None
SpinnerTextBoxTimePickerWebViewer	(?) (?) (?)				Components Rename Delete	Default Icon None OpenScreenAnimation Default ScreenOrientation
Layout Media Drawing and Anir	mation				Media Upload File	Unspecified Scrollable ShowStatusBar



Step 4: Add components!

First, we will build the app's layout by adding three components—a Label, and two HorizontalArrangements. Find these components in the Palette and drag and drop them onto the Viewer.





Your screen should now look like this:





Now we will add the rest of the components. We will need six more in total—two TextBoxes, two Buttons, one YandexTranslate, and one TextToSpeech. Find these components in the Palette and place them in the viewer—don't worry about where you put them for now!



Media					
	Camcorder	?			
ø	Camera	?			
0	ImagePicker	?			
	Player	?			
(پ)	Sound	?			
•	SoundRecorder	?			
Ļ	SpeechRecognizer	?			
	TextToSpeech	?			
-	VideoPlayer	?			
۷	YandexTranslate	?			



Step 4 continued: Layout

Place the two TextBox components side by side in the uppermost HorizontalArrangement. Do this by dragging and dropping in the Viewer.

				The second) 	9 :4	48
Screen1							
Text for Label1							-
·							
Text for Button1	2						
Text for Button2							
							-
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Step 4 continued: Layout

Place the two Button components side by side in the lower HorizontalArrangement in the same way you placed the Buttons.

Text for Label1		
Text for Button1	Text for Button2	
	T	1
	1	
		1
		1
		1
		1



Your screen should now look like this:

		📚 🕼 📓 9:48
Screen1		
Text for Label1		<u>^</u>
Text for Button1	Text for Button2	
2		
		-
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Step 5: Set properties

Properties

HorizontalArrangement1

AlignHorizontal

Left : 1 🔹

AlignVertical

Top : 1 🔹

BackgroundColor None

Height

80 pixels...

Width

Automatic...

Image

None...

Visible

1

Now we will change some component properties to start truly building our app! To view and change a component's properties, find it in the "Components" list and click on it.

First, select the uppermost HorizontalArrangement and set its height to 80 pixels

> Then select "Label1" and set "FontSize" to 24. Also set "Text" to "Translate English to Spanish!" and "TextAlignment" to center. If you'd like, you can also change "TextColor" to a color of your choosing!

Properties Label1 BackgroundColor None FontBold FontItalic FontSize 24 FontTypeface default 🔹 **HTMLFormat** HasMargins 1 Height Automatic. Width Automatic. Text Translate English to Spanish! TextAlignment center : 1 • TextColor Black Visible 1



Now we just a few more properties to set—centering the screen and adding text to both of our buttons! First, set "Text" of Button1 to "Translate" and "Text" of Button2 to "Read translation." Then click on "Screen1" and set "AlignHorizontal" to "Center"

Double-check your

properties to make

sure you don't

miss anything!

Properties	
Screen1	
AboutScreen	
AlignHorizontal Center : 3 🔹	
AlignVertical Top : 1 🔻	

Properties	Properties
Button1	Button2
BackgroundColor Default	BackgroundColor Default
	·
•	•
•	•
•	•
Text	Text



Your screen should now look like this:

9:48 📓 🕯
Screen1
Translate English to Spanish!
Translate Read translation
▼ ▲



Step 7: Switch to the blocks window to write code!

Now that all components have been added to the app, we will write code to tell the app what to do with them! To do so, switch to the Blocks Editor window by clicking the "Blocks" button in the upper right corner.





Step 7 continued: Get to know the Blocks Editor window

TakePictureWithTin	n Screen1 • Add Screen Remov	e Screen	Designer Blocks
Blocks	Viewer		
 Built-in Control Logic Math Text Lists Colors Variables Procedures Screen1 Screen1 Screen1 Canvas1 Tim CameraButton Camera1 Any component 	Built-in blocks: These are always available and handle things like math, text logic, and control Component blocks: These correspond to the components you've added to your app	An example of two Assembled blocks when CameraButton Click do call Camera1 TakePicture	
Rename Delete Media TimTheBeaver.png TimTheBeaver1.png Upload File	€ 0 ▲ 0 Show Warnings		



Step 8: Start coding!

When Button1 is clicked—the English input text should be translated into Spanish. We write code to do that now.



First, find Button1 under Screen1, click on it, and drag out a "when Button1.Click" block



Now we need to add a block to call YandexTranslate and tell it to translate the text in Textbox1 to Spanish, which has the language code "es"



Find YandexTranslate under Screen1 and grab a "call YandexTranslate1.RequestTranslation" block. Snap it into place in the "when" block.



Click on Text and grab an empty text block. Click on it and type "es" then lock it into place.





Then click on TextBox1 and pull out a "Textbox1.Text" block. Snap it into place below the "es" block for the textToTranslate!





After the text has been translated, we would like to write the translation in TextBox2!



Find YandexTranslate under Screen1 and grab a "when YandexTranslate1.GotTranslation" block.





Find TextBox2 under Screen1 and grab a "set TextBox2.Text to" block. Snap it into place in the "when" block. Then hover over the orange box in the "when" block labeled "translation." Grab a "get translation" block and snap it into place!



Now let's write the code to read the translation out loud using Button2.



Click on Button2 and drag out a "when Button2.Click" block



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Click on TextToSpeech1 and drag out a "call TextToSpeech1.Speak" block. Drag it into place under the "Button2.Click" block.



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Then click on "TextBox2" and drag out a "TextBox2.Text" block. Snap it into place!



Great job! You just wrote code in App Inventor! But does your code do what we want it to? To find out, we're going to have to learn how to test our app...

Step 9: Testing!





Step 9 continued: Connect to your phone

In order to test your app, you will need an Android phone with the MIT AI2 Companion app installed. To download the Companion from the app store, scan the QR code below or search directly for "MIT AI2 Companion" on the Google Play Store,

https://play.google.com/store.



NOTE: If you do not have an android phone, or if you are unable to download the Companion app, you can still use App Inventor using an emulator. Visit: <u>http://appinventor.mit.edu/explore/ai2/setup.html</u> and follow the instructions under Option 2.



To connect to the AI2 Companion app, first choose "AI Companion" from the "Connect" drop down menu in the App Inventor site.



A QR code and 6-letter code will pop up.





Step 9 continued: Open the companion app

Open the companion app. You can then either input the 6-letter code or scan the QR code to connect.





Step 10: Testing and debugging!

- Awesome! You're all done programming this app. Now connect to the App Inventor companion app to make sure everything is working properly. Remember, your app should:
 - Let the user type a word or phrase in English and translate it to written Spanish by clicking the button labeled "Translate"
- Have the phone read the translated text out loud in Spanish when the button labeled "Read translation" is clicked

