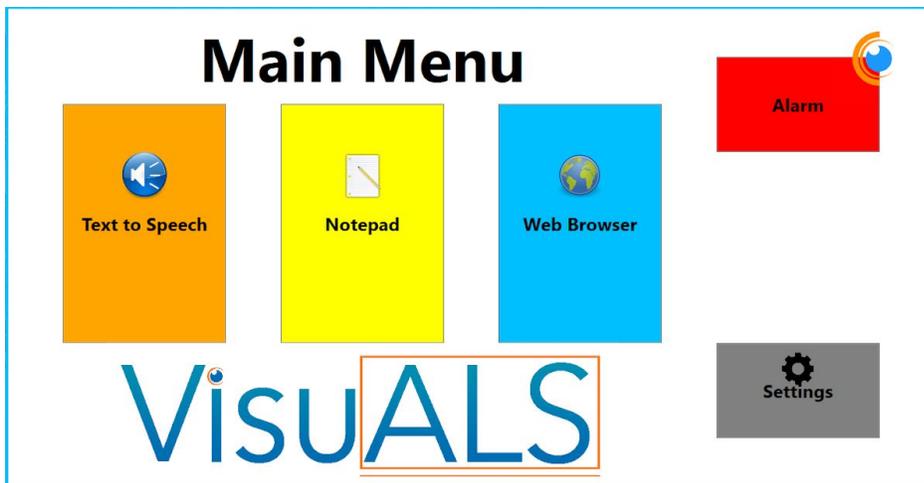


How to use VisuALS Text to Speech

For many VisuALS users, the Text to Speech component is the one they mostly use since it is the best way for them to communicate with loved ones who are with them in the same room. The Text to Speech application can also be used to control various devices in the home through a voice controlled personal assistant like Amazon's Echo devices and Alexa service.

If you haven't yet read the [Intro to Visuals](#) tutorial, please do so now, as the rest of this might not make much sense otherwise. Among other things, that tutorial explains how to use your eyes to select things within the VisuALS system.

As described in the Intro to VisuALS tutorial, to launch the Text to Speech component, simply select it from the VisuALS Main Menu:



Doing so will launch the Text to Speech component within VisuALS.

Speak										Cursor Control	Main Menu
q	w	e	r	t	y	u	i	o	p	Needs	Feelings
	a	s	d	f	g	h	j	k	l	Conversation	Home Automation
Shift	z	x	c	v	b	n	m	Back Space	Recent		
Clear	Space				Cursor Control	Special Characters		Add Phrase			
Pause	I	You		Where			Alarm				

You will notice that there is space above the application. This is there to make room for the Microsoft Eye Control toolbar so that you can keep that Windows feature active while you use the VisuALS system.

The Text to Speech component is dominated by a keyboard, laid out in the same order as a traditional typewriter or computer keyboard (often called the QWERTY keyboard because of the first 5 letters in the top left). When you select any of these keys (e.g. by looking at them long enough), that letter will be “typed” into the box to the right of the yellow “Speak” button. For the rest of this tutorial, we’ll refer to this as the “text box.”

By selecting successive characters, you can easily type words and sentences in the text box. Like any other keyboard, there is a “Space” bar below the letters. There is also a “Shift” button near the bottom left if you want to capitalize any words. Since you are putting together a string to be spoken aloud rather than read as written text, capitalization and punctuation are not essential. Sometimes punctuation can introduce pauses and some tone changes, but your listeners will likely understand you fine without them. When you have finished typing what you want to say, simply select the yellow “Speak” button and the system will speak exactly what you’ve typed in the text box.

While the traditional keyboard keys dominate the component, there are a number of other buttons that have important functions that are unique to an application like this:

- The “Back Space” button, like on many keyboards, will remove the character immediately preceding where the cursor is positioned in the text box.
- The “Clear” button will remove everything in the text box so that you can start typing a new message.
- At the very bottom of the screen are three boxes that contain words that the system thinks might be your next word. (For example, in the screenshot above, these three words are “I”, “You”, and “Where.” Selecting any of these will add that word right where the cursor currently is.
- The “Cursor Control” button near the bottom of the screen replaces the keyboard with a set of buttons that can be used to move the cursor around within the text box. (We will discuss the blue text “Cursor Control” button later in this tutorial.)

Speak						Cursor Control	Main Menu 
		Beginning of Text		End of Text		Needs	Feelings
Beginning of Line	«	←	→	»	End of Line	Conversation	Home Automation
		Go Back			New Line		Recent
						Add Phrase	
Pause	I	You	Where	Alarm			

Most of the buttons on this “Cursor Control” screen are intuitive:

- The “Go Back” button returns you to the main keyboard.
- The “Beginning of Text” button moves the cursor to the beginning of all the text in the text box.
- Similarly, the “End of Text” button moves the cursor to the end of all the text.
- The “Beginning of Line” and “End of Line” buttons move the cursor to the beginning and end (respectively) of the line that you are currently on.
- The “New Line” button moves the cursor to a new line.
- The left arrow and right arrow buttons will move the cursor one character to the left or right (as appropriate).
- The “<<” and “>>” will move the cursor by an entire word at a time to either the left or right.

The rest of the buttons on the Cursor Control screen also appear on the main keyboard:

Speak										Cursor Control	Main Menu 
q	w	e	r	t	y	u	i	o	p	Needs	Feelings
	a	s	d	f	g	h	j	k	l	Conversation	Home Automation
Shift	z	x	c	v	b	n	m	Back Space	Recent		
Clear	Space				Cursor Control	Special Characters		Add Phrase			
Pause		I	You			Where		Alarm			

The “Special Characters” button replaces the keyboard with one for typing numbers, punctuation, and other special characters:

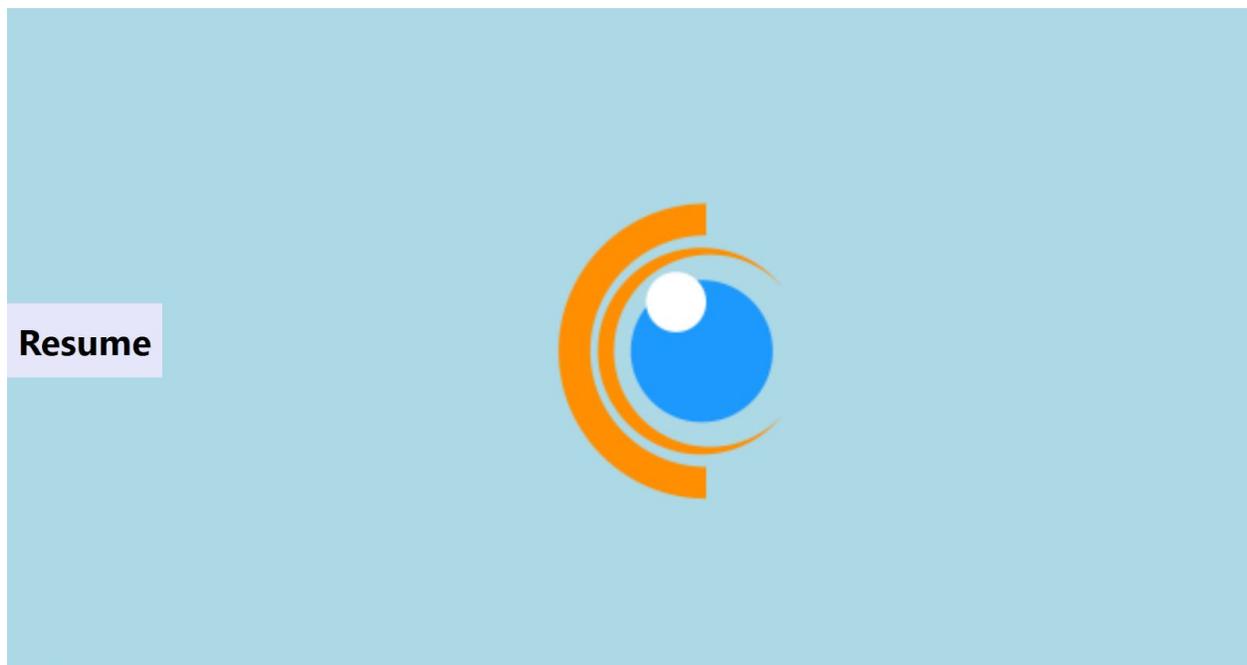
Speak										Cursor Control	Main Menu 
1	2	3	4	5	6	7	8	9	0	Needs	Feelings
!	@	#	\$	&	()	-	Conversation	Home Automation		
/	:	;	'	"	?	.	,	Recent			
		Go Back						More		Add Phrase	

As you would expect, selecting any of the grey keys will add them to the text box, just like selecting a letter on the keyboard. The “Go Back” button takes you back to the alphabetic keyboard, and the “More” button brings up another set of special characters:

Speak								Cursor Control	Main Menu 
~	^	%	+	=	[]	_	Needs	Feelings
\	*		<	>	{	}	Esc	Conversation	Home Automation
Go Back								Recent	
								Add Phrase	
Pause	I	You	Where	Alarm					

This works just as you would expect. When you add any of these characters to your text box and select “Speak” - the system will insert the name of the character - for example, if you have the phrase “What is ^” in the text box and select “Speak”, what you hear will be something like “What is carrot”.

There’s one button on the left portion of all the keyboard screens that we haven’t yet discussed, which is the “Pause” button. This can be a very helpful feature of the Text to Speech component. When you are tired and want a break from typing, or simply don’t want the system to be responding to your gaze for awhile, you can select this button and it will replace the entire screen with this:



The only active button on this screen is the relatively small “Resume” button on the left edge. Until you select this button, your eyes won’t trigger any action within the VisuALS system. Selecting “Resume” returns you back into the active VisuALS system.

So far, we’ve dealt with all of the buttons on the left side of the Text to Speech component, but we haven’t dealt with the buttons on the right side:

The easiest buttons to explain on this side of the page are the colored ones in the top right and bottom right corners.

The “Main Menu” button will exit you out of the Text to Speech component and return you to the VisuALS main menu where you can select what you want to do next.

The “Alarm” button will take you to the Alarm page and, unless you’ve muted the alarm in the settings, will cause a loud audible tone to sound, which should get the attention of anyone within earshot. (See the Alarm tutorial for more information.)

The “Recent” button is also pretty straightforward. When you select this button, you will be presented with a list of the most recent phrases that you’ve had the system speak. You can easily re-select any of these phrases and the selected phrase will be pasted back into the text box so that you can say it again. You can exit this screen and return back to the main Text to Speech window by selecting the large “Go Back” button on the right of the screen.

Cursor Control	Main Menu 
Needs	Feelings
Conversation	Home Automation
Recent	
Add Phrase	
Alarm	

This is the first message I asked the sys	Go Back
The second was like it, only different.	
For the third, I started with a prepositio	
The fourth message was predictable.	
And by the fifth, the mystery was gone	
Should the sixth be a question?	
The seventh is an exclamation!	

Cursor Control	Main Menu 
Needs	Feelings
Conversation	Home Automation

The buttons on the page with blue text are a dynamic set of buttons that can change. By default, when you come into the Text to Speech component, these will be populated with buttons to navigate a set of four pages that contain phrases you may want to say quickly (“Needs”, “Feelings”, “Conversation”, and “Home Automation”).

Each of these four pages operate in the same way. They are each a collection of handy phrases that you might want to quickly say without having to type them out letter by letter. We ship your system to you with these four lists pre-populated with phrases that we have learned from others are commonly helpful. But you can delete any of the phrases that you don’t want or need and you can add your own phrases.

For example, here is the “Feelings” page.



If you select the “I’m happy.” button, the system will speak “I’m happy.”

Notice that the “Previous Button” is dimmed out, indicating that this is the first page of feelings phrases. The “Next Page” button is not dimmed out, indicating that there are more phrases that can be seen by selecting that button.

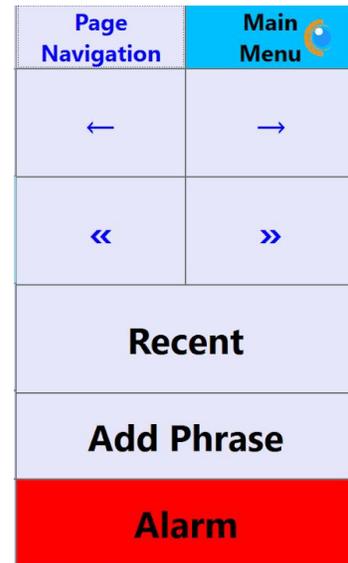
The “Delete Phrase” button lets you remove any of the phrases that you don’t want or need. When you select that, you will be asked to confirm whether or not you really want to delete the phrase.

Not surprisingly, the “Go Back” button will take you back to the main Text to Speech page.

The fifth blue text button is initially labeled “Cursor Control” indicating what these four buttons will change to if the “Cursor Control” button is selected.

Selecting this button replaces the four page names with a subset of the buttons we already discussed above under the Cursor Control section. This is a way to keep these buttons handy on the same page as the keyboard so that you can easily navigate around the text box.

When the cursor control buttons are displayed here, the top button changes to “Page Navigation” indicating that, when selected, this will repaint these buttons as the Needs, Feelings, Conversation, and Home Automation buttons.



The final button that we haven’t yet covered in the Text to Speech component is the “Add Phrase” button. When you select this button, the phrase that was most recently spoken by the system will be added to whichever one of the four lists of phrases (Needs, Feelings, Conversation, Home Automation) that you select.

Before completely leaving this topic, I do want to give a little more background on the Home Automation phrases. The VisuALS system ships with this phrase list populated with phrases designed to work with Amazon’s Alexa service, typically through one of their Echo devices. We don’t provide an Echo with the VisuALS system, but many people already have one, and if you don’t, they are relatively affordable starting at less than \$50. We plan on providing a tutorial soon to describe various things you can do to control your environment using an Echo and other accessories. We recognize that Google, Apple, and others provide similar capabilities as Alexa/Echo through devices that they sell, and those should work just as well with VisuALS as the Echo does. But for simplicity’s sake, we are focusing the assistance we provide for home automation to be through the Alexa service.

Please check out our other tutorials to learn more about how to use the VisuALS system!