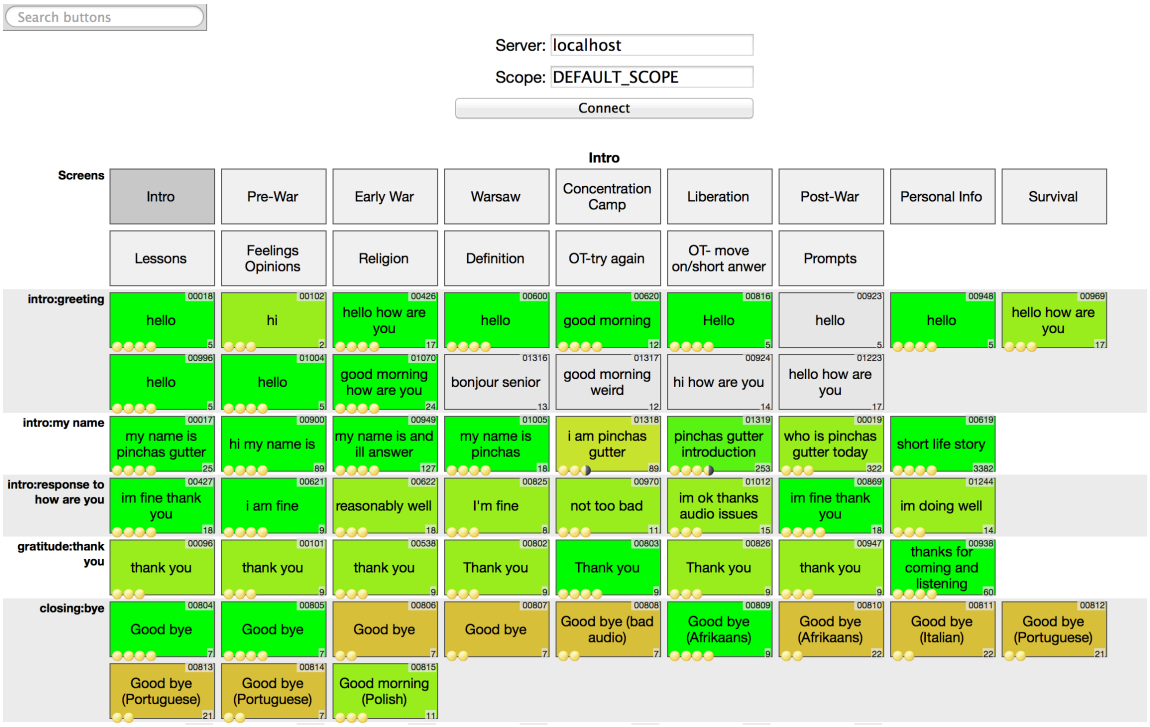
WoZ Interface

Created and last modified by Anton Leuski on Mar 22, 2016

Wizard of Oz tool.

> “A **Wizard of Oz experiment** is a research experiment in which subjects interact with a computer system that subjects believe to be autonomous, but which is actually being operated or partially operated by an unseen human being .”



Description

As you see on the attached screenshot, the WoZ tool displays a screen full of buttons, where each button corresponds to a character response. A WoZ operator (wizard) pushes a button and triggers the response that can either be a playback of an audio recording, a video clip, or an animation sequence handled Smartbody and rendering engine. The WoZ tool does not do any media playback itself. It relies on an external component to handle the media. From the technical point, each button has an associated vhmsg that is triggered when the button is pushed. For example, it can be a vrExpress message with a video clip file name supplied as a parameter. We have a separate VideoPlayer tool that listens for vrExpress messages, parses the message content, finds the video file with the right name, and plays it on the screen.

The buttons are arranged into rows, where every row has a title. The rows are arranged into screens, where every screen has a title. You can specify buttons that trigger transitions between the screens. The same button can appear in multiple rows and the same row can appear on multiple screens.

VHMSG Interface

Search Capabilities

To help an operator to locate relevant buttons WoZ has

WoZ Data

The WoZ is implemented as a web application in JavaScript. It expects a data file in JSON format that describes the layout of screen. Creating and modifying the JSON data file by hand proved a bit challenging, so we developed a data format for Microsoft Excel and created a Java Excel2Wizard tool that converts the Excel file into the JSON data file.

> **NB** Excel2Wizard evaluates the formulas in the spreadsheet before extracting the values into the JSON file. You may take advantage of this to generate WoZ layout data in the Excel table from other parameters.

Data Format

The data for the wizard comes from several tables (as in database tables) and can be created as an Excel spreadsheet. Each table should be defined as separate sheet in the Excel file. The following five sheets can be defined. 3 of the are required and 2 are optional.

Button Sheet

A sheet with the name "buttons" specifies all the buttons in the interface. Each row corresponds to a single button and the columns map to button's attributes. The first row contains the column headers. The following column (and the corresponding headers) are required:

- woz.id – the button ID in the file. All the IDs have to be unique among all objects in the database. Think about the ID as a database ID used for indexing, storing, and retrieving table rows
- woz.label – the text that would appear on the button
- woz.tooltip – the tooltip for the button. See the Section below for interactive text entry option.

The following attributes are optional:

- woz.color – the color ID for the button background color.
- woz.icon – the icon ID for an image to put on the button (the images are currently not supported)
- woz.vhmsg – the VHMSG message to send when the button is pressed. Please see the Section below for details.
- woz.transition – the ID of the screen the interface should present after the button is clicked. If this attribute is omitted, the WoZ interface will stay on the same screen
- woz.badge.[location] – is the "badge" that is placed on the button. The location is defined as either "top-left", "top-center", "top-right", "middle-left", "middle-right", "bottom-left", "bottom-center", "bottom-right". Take a look at the following screenshot, the button shows two badges. The top-right badge has a clip number (00018) and the bottom-right badge indicates the audio rating. The latter is a sequence of unicode characters (the unicode "full moon") and not an icon.

The following screenshot shows a regular button definition

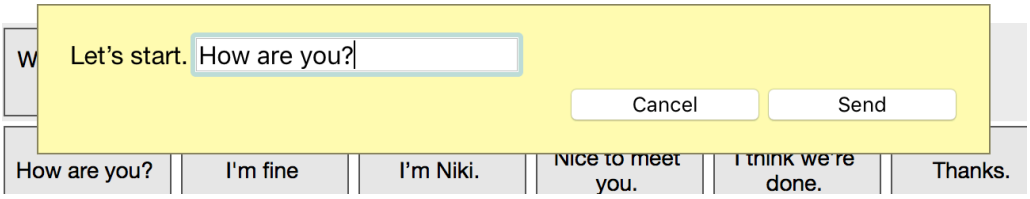
J	K	L	M	N	O
woz.tooltip	woz.id	woz.label	woz.color	woz.icon	woz.transition
in somewhat sometimes in november of nineteen forty	01404_moved_to_warsaw_nov_1940.mp4	01404 moved to warsaw nov 1940	color.40		
warsaw ghetto uprising was on the nineteenth of april nineteen forty three	01405_warsaw_ghetto_uprising_april_1943.mp4	01405 warsaw ghetto uprising april 1943	color.40		
in the third week of may in nineteen forty three	01406_moved_majdanek_may_1943.mp4	01406 moved majdanek may 1943	color.40		
in skarzysko i was between end of july beginning of august of forty three to end of july beginning of august of nineteen forty four	01407_skarjisko_july_1943_to_1944.mp4	01407 skarjisko july 1943 to 1944	color.40		
in czestochowa i was between august and december of nineteen forty four	01408_chenstachova_aug_to_dec_1944.mp4	01408 chenstachova aug to dec 1944	color.40		

The following screenshot shows how transition buttons can be defined in the sheet.

J	K	L	M	N	O
woz.tooltip	woz.id	woz.label	woz.color	woz.icon	woz.transition
	transition.Intro	Intro			Intro
	transition.Pre-War	Pre-War			Pre-War
	transition.Early_War	Early_War			Early_War
	transition.Warsaw	Warsaw			Warsaw
	transition.Concentration_Camp	Concentration Camp			Concentration_Camp
	transition.Liberation	Liberation			Liberation

Interactive Text Entry

The content of the tooltip (and the text of the response) can be modified by the user on-the-fly. If the tooltip column contains the ##input## token, when the user clicks on the button, she will be presented with a dialog box, with the text of the tooltip where each ##input## is replaced by a text entry field. After entering information into the field, the user can press the Send button on the dialog to send the modified text in the vhmsg. In the following example the tooltip column contains "Let's start. ##input##".



VHMSG Message Format

If the "woz.vhmsg" column is omitted, WoZ will send a vrExpress populated with id and tooltip. If columns "woz.sender" and "woz.addressee" are present, WoZ will use those values to fill the appropriate parts of the message. If the columns are omitted WoZ uses values "visitor" and "all". The message content can be specified explicitly or it can be defined as a template using the values in other columns as variables. For example, the default behavior can be reproduced by using

> vrExpress $$sender$$ $$addressee$$ $$sender$$$$messageCount$$ <?xml version="1.0" encoding="UTF-8" standalone="no" ?><act><participant id="$$XML(sender)$$" role="actor" /><fml><turn start="take" end="give" /><affect type="neutral" target="addressee"></affect><culture type="neutral"></culture><personality type="neutral"></personality></fml><bml><speech id="sp1" ref="$$XML(id)$$" type="application/ssml+xml">$$XML(tooltip)$$</speech></bml></act>

Here the content of column "woz.sender" will be the second token in the message and so on. Note that the variable name omits "woz." from the column title.

Note that in case when the message contains XML code, you need to make the content of the variables is encoded appropriately when inserted into the message. We introduce **XML(•)** to indicate those cases. For example, $$XML(sender)$$ will take the content of woz.sender column and encode is as valid XML (e.g., replace "<" with "<") before inserting it into the message.

Automatic generation of transition buttons

You can specify the buttons for transitions between screens by hand as described in the previous section, but sometimes it would be better to generate them automatically from the content of the screens sheet (see the Screen Sheet section for the details). You can do something like this:

	J	K (woz.id)	L (woz.label)	M (woz.color)	O (woz.transition)
2900	=ROW()				
2901	=FLOOR((ROW()-J$2900-1)/2,1)+1	=IF(J2901<=COUNTA(screens!$1:$1), CONCATENATE("transition.",N2901),"")	=INDEX(screens!$1:$2,2,J2901)	color.tab	=INDEX(screens!$1:$2,1,J2901)
2902	=FLOOR((ROW()-J$2900-1)/2,1)+1	=IF(J2902<=COUNTA(screens!$1:$1), CONCATENATE("transition.",N2902,".selected"),"")	=INDEX(screens!$1:$2,2,J2902)	color.tab.selected	=INDEX(screens!$1:$2,1,J2902)

Repeat the last two lines for every screen on the screen sheet (copy the last two rows and keep pasting them until the cells in the woz.id column starts showing up empty. Make sure you adjust the column and row references appropriately.

You should get something like this:

	J	K	L	M	O
1		woz.id	woz.label	woz.color	woz.transition
2900	2900				
2901	1	transition.Intro	Intro	color.tab	Intro
2902	1	transition.Intro.selected	Intro	color.tab.sel	Intro
2903	2	transition.Pre-War	Pre-War	color.tab	Pre-War
2904	2	transition.Pre-War.selected	Pre-War	color.tab.sel	Pre-War
2905	3	transition.Early_War	Early War	color.tab	Early_War
2906	3	transition.Early_War.selected	Early War	color.tab.sel	Early_War
2907	4	transition.Warsaw	Warsaw	color.tab	Warsaw
2908	4	transition.Warsaw.selected	Warsaw	color.tab.sel	Warsaw
2909	5	transition.Concentration_Camp	Concentration Camp	color.tab	Concentration_Camp
2910	5	transition.Concentration_Camp.selected	Concentration Camp	color.tab.sel	Concentration_Camp
2911	6	transition.Liberation	Liberation	color.tab	Liberation
2912	6	transition.Liberation.selected	Liberation	color.tab.sel	Liberation
2913	7	transition.Post-War	Post-War	color.tab	Post-War
2914	7	transition.Post-War.selected	Post-War	color.tab.sel	Post-War
2915	8	transition.Personal_Info	Personal Info	color.tab	Personal_Info
2916	8	transition.Personal_Info.selected	Personal Info	color.tab.sel	Personal_Info
2917	9	transition.Survival	Survival	color.tab	Survival
2918	9	transition.Survival.selected	Survival	color.tab.sel	Survival
2919	10	transition.Lessons	Lessons	color.tab	Lessons
2920	10	transition.Lessons.selected	Lessons	color.tab.sel	Lessons
2921	11	transition.Feelings_Opinions	Feelings Opinions	color.tab	Feelings_Opinions
2922	11	transition.Feelings_Opinions.selected	Feelings Opinions	color.tab.sel	Feelings_Opinions
2923	12	transition.Religion	Religion	color.tab	Religion
2924	12	transition.Religion.selected	Religion	color.tab.sel	Religion
2925	13	transition.Definition	Definition	color.tab	Definition
2926	13	transition.Definition.selected	Definition	color.tab.sel	Definition
2927	14	transition.Other	Other	color.tab	Other
2928	14	transition.Other.selected	Other	color.tab.sel	Other
2929	15	transition.OT-offtopic	OT-offtopic	color.tab	OT-offtopic
2930	15	transition.OT-offtopic.selected	OT-offtopic	color.tab.sel	OT-offtopic
2931	16	transition.Prompts	Prompts	color.tab	Prompts
2932	16	transition.Prompts.selected	Prompts	color.tab.sel	Prompts
2933	17		0	color.tab	0
2934	17		0	color.tab.sel	0

Row Sheet

A sheet with the name "rows" specifies all the button rows in the interface. Each Excel table **row** corresponds to a single row in the

interface. The first column contains the row ID, the second column contains the row title, the rest of the columns contain the row's buttons, one button ID per cell. The order of the buttons in the WoZ interface will be the same as the order of the buttons in the Excel table. Note that the first row in the table is an actual row in the WoZ interface. It specifies buttons that transition between different screens. Also note the different number of buttons in each row. For example, row 11 contains just one button, while row 3 references at least three buttons.

	A	B	C	D	E
1	tab.row	screen	transition.Intro	transition.Personal_Info	transition.Pre-War
2	Concentration_Camp.Abuse	Abuse	00853_most_dangerous_thing.mp4	01352_closure_for_capo_who_beat_me_majdanek.mp4	
3	Concentration_Camp.Arrival	Arrival	00218_arrival_majdanek_interrupted.mp4	00219_taken_to_majdanek.mp4	00220_arrival_majdanek.mp4
4	Concentration_Camp.Camps	Camps	00266_camps_i_was_in.mp4	00267_camps_i_was_in_short.mp4	00892_which_camps_did_you_go_to.mp4
5	Concentration_Camp.Coping	Coping	00227_became_emotionless_camera.mp4	00228_emotionless_camera_explained.mp4	00229_emotionless_camera_recordings.mp4
6	Concentration_Camp.Daily_Life	Daily Life	00235_luck_helped_survive_majdanek.mp4	00237_beaten_in_majdanek_short.mp4	00238_never_saw_guard_beat_me_again.mp4
7	Concentration_Camp.Emotions	Emotions	00226_emotions_in_camps.mp4	00859_didnt_break_down_in_camps.mp4	00860_didnt_think_of_giving_up.mp4
8	Concentration_Camp.Escape	Escape	00846_why_not_escape_train_long.mp4	00847_why_not_escape_train_short.mp4	00848_did_others_escape_train.mp4
9	Concentration_Camp.Fact	Fact	01227_what_camps_were_you_in.mp4	01228_work_at_the_camps.mp4	01230_age_at_the_camps.mp4
10	Concentration_Camp.Friends	Friends	00850_close_friend_in_camps_short.mp4	00935_did_you_have_friends_during_H.mp4	
11	Concentration_Camp.Help	Help	00944_risk_lives_for_you_WEIRD.mp4		
12	Concentration_Camp.Memories	Memories	00840_what_was_buchenwald_like.mp4	00845_arrival_at_colditz.mp4	00856_good_memories_camps.mp4
13	Concentration_Camp.Memory	Memory	00268_skarjisko_memories.mp4	00835_best_camp_tschenstochau.mp4	00909_best_ccamp_was_favorite.mp4
14	Concentration_Camp.Other	Other	00857_experiment_on_you.mp4		
15	Concentration_Camp.Reflection	Reflection	01355_some_died_not_fit_for_nazis.mp4		
16	Concentration_Camp.Religion	Religion	00281_barmitzva_story.mp4	00282_religious_observance_skarjisko.mp4	00283_how_can_i_not_believe_in_god.mp4
17	Concentration_Camp.Resistance	Resistance	00834_skarzysko_jewish_resistance.mp4		
18	Concentration_Camp.Selection	Selection	00221_didnt_know_about_first_selection.mp4	00222_didnt_see_mengele.mp4	00223_first_selection_detailed_with_father.mp4
19	Concentration_Camp.Selections	Selections	01229_when_seperated_from_family.mp4		
20	Concentration_Camp.Story	Story	00835_best_camp_tschenstochau.mp4	00840_what_was_buchenwald_like.mp4	00845_arrival_at_colditz.mp4

Automatic generation of tab rows

You can specify the tab row (the row with buttons that transition between screens) by hand as described in the previous section, but sometimes it would be better to generate them automatically from the content of the screens sheet (see the Screen Sheet section for the details). You can do something like this:

	A	B	C
230		=ROW()	
231	=IF(ROW()-B230<=COUNTA(screens!$1:$1), CONCATENATE("tab.",INDEX(screens!$1:$1,1,ROW()-B230)),"")	Screens	=IF(OR(ROW()-B230>COUNTA(screens!$1:$1),COLUMN()-2>COUNTA(screens!$1:$1)),"", CONCATENATE("transition.",INDEX(screens!$1:$1,1,COLUMN()-2),IF(ROW()-B230=COLUMN()-2,".selected","")))

You can have the same tab row for every screen. You can also elect to build tab rows that are different for individual screens. For example, you may want to highlight the button corresponding to the current screen with special color. That what the table illustrates. This will generate a tab row for every screen.

ROW()-B230 is the row index for the current row.

COLUMN()-2 is the column index for the current column

COUNTA(screens!$1:$1) is the number of screens (the number of columns on the screen sheet)

INDEX(screens!$1:$1,1, COLUMN()-2) is the screen ID.

Suppose N is the number of screens, you need to copy the row (231) N times. And, then copy the column (C) N times. You should get something like this:

	A	B	C	D	E	F	
230		230					
231	tab.Intro	Screens	transition.Intro.selected	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
232	tab.Pre-War	Screens	transition.Intro	transition.Pre-War.selected	transition.Early_War	transition.Warsaw	tr
233	tab.Early_War	Screens	transition.Intro	transition.Pre-War	transition.Early_War.selected	transition.Warsaw	tr
234	tab.Warsaw	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw.sele	tr
235	tab.Concentration_Camp	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
236	tab.Liberation	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
237	tab.Post-War	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
238	tab.Personal_Info	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
239	tab.Survival	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
240	tab.Lessons	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
241	tab.Feelings_Opinions	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
242	tab.Religion	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
243	tab.Definition	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
244	tab.Other	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
245	tab.OT-offtopic	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
246	tab.Prompts	Screens	transition.Intro	transition.Pre-War	transition.Early_War	transition.Warsaw	tr
247		Screens					
248		Screens					
249		Screens					

Screen Sheet

A sheet with the name "screens" specifies all the button screens in the interface. Each Excel table **column** corresponds to a single screen in the interface. The first row in the column contains the screen ID, the second row contains the screen title, the rest of the rows contain the screen's rows, one row ID per cell. The order of the rows in the WoZ interface will be the same as the order of the rows in the Excel table.

Note how the first row (id "tab.row") is the same across multiple screens.

	A	B	C
1	Intro	Pre-War	Early_War
2	Intro	Pre-War	Early War
3	tab.row	tab.row	tab.row
4	Fact.5_Min_Summary	Pre-War.Anti-Semitism	War.Early_Days
5	OT-other.intro:greeting	Pre-War.Childhood_Memory	War.Fact
6	OT-other.intro:how_are_you	Pre-War.Daily_Life	Fact.WWII
7	OT-other.intro:my_name	Pre-War.Early_Days	Fact.War
8	OT-other.intro:my_name_and_introduction	Pre-War.Family	
9	OT-other.intro:personal_introduction	Pre-War.Memory	
10	OT-other.intro:response_to_how_are_you	Pre-War.Religion	
11	OT-other.gratitude:thank_you	Pre-War.Song	
12	OT-other.gratitude:thank_you_for_interest	Pre-War.Story	
13	OT-other.hmmm:	Fact.Pre-War	
14	Fact.Reflection	Memories.Childhood_Memory	
15	OT-other.closing:bye		

Automatic generation of tab rows

If you are generating the tab rows using Excel formulas as described in the previous section, you can insert the tab row into the screen sheet as shown in the table.

	A	B
1	Intro	Pre-War
2	Intro	Pre-War
3	=CONCATENATE("tab.",A1)	=CONCATENATE("tab.",B1)

Color Sheet

A sheet with the name "colors" specifies all the button colors in the interface. Each Excel table **row** corresponds to a single color in the interface. The first column contains the color ID, the other three columns specify the color component values either as RGB or HSB tuples. The first row in the table contains the column headers. The attached screenshot shows the colors defined by the hue, saturation, and brightness values. If you want to use RGB, put "red", "green", and "blue" in the corresponding column titles.

> Some suggested to use Excel cell styles and background color to specify the colors for the buttons. Due to the extremely archaic way Excel stores and handles colors (don't ask) extracting the color component values that would result in colors that look anywhere close to the cell background proved extremely difficult, nigh impossible.

	A	B	C	D
1	id	hue	saturation	brightness
2	color.red	0.00	1.00	1.00
3	color.green	0.33	1.00	1.00
4	color.blue	0.66	1.00	1.00
5	color.greeting	0.08	0.30	1.00
6	color.some topi	0.75	0.12	0.85
7	color.10	0.00	0.50	0.75
8	color.20	0.05	0.57	0.79
9	color.25	0.09	0.64	0.82
10	color.30	0.14	0.71	0.86
11	color.35	0.19	0.79	0.89
12	color.40	0.24	0.86	0.93
13	color.45	0.28	0.93	0.96
14	color.50	0.33	1.00	1.00
15	color.nnn			

Like David Traum likes this