



The Use and Structure of SignMaker 2015

Presented at the SignWriting Symposium on July 23rd
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in association with the Center for Sutton Movement Writing

SignMaker 2015

SignMaker is a standards based editor that makes it possible to write signs in any sign language with the SignWriting script using the SignWriting 2010 Fonts.

Built on the SignWriting Stack

Formal SignWriting (FSW)

International SignWriting Alphabet 2010 (ISWA 2010)

Regular Expressions (Regex)

JavaScript (JS)

Cascading Style Sheets (CSS)

Scalar Vector Graphics (SVG)

TrueType Fonts (TTF)

Explorer

FireFox

Chrome

Safari

Opera

Windows

Linux

Android

OS X

iOS

SignMaker 2015

- Downloads and Installation
- Symbol Palette and Editors
- Dictionaries
- Searching
- Images and Preferences
- Customizations

Download and Install

TrueType Fonts (TTF)

Reserved Font Names

- SignWriting 2010
- SignWriting 2010 Filling

https://github.com/Slevinski/signwriting_2010_fonts

<http://slevinski.github.io/sw10js/guide.html#ttf>

Without Installation

- Fonts loaded dynamically using CSS font-face

Download and Install

SignMaker Source Code

Download and Unzip

- Source Code Zip

<https://github.com/Slevinski/signmaker/archive/gh-pages.zip>

Repository Page: <https://github.com/Slevinski/signmaker/>

Without Download

- SignMaker on SignBank with International Dictionaries

<http://www.signbank.org/signmaker.html>

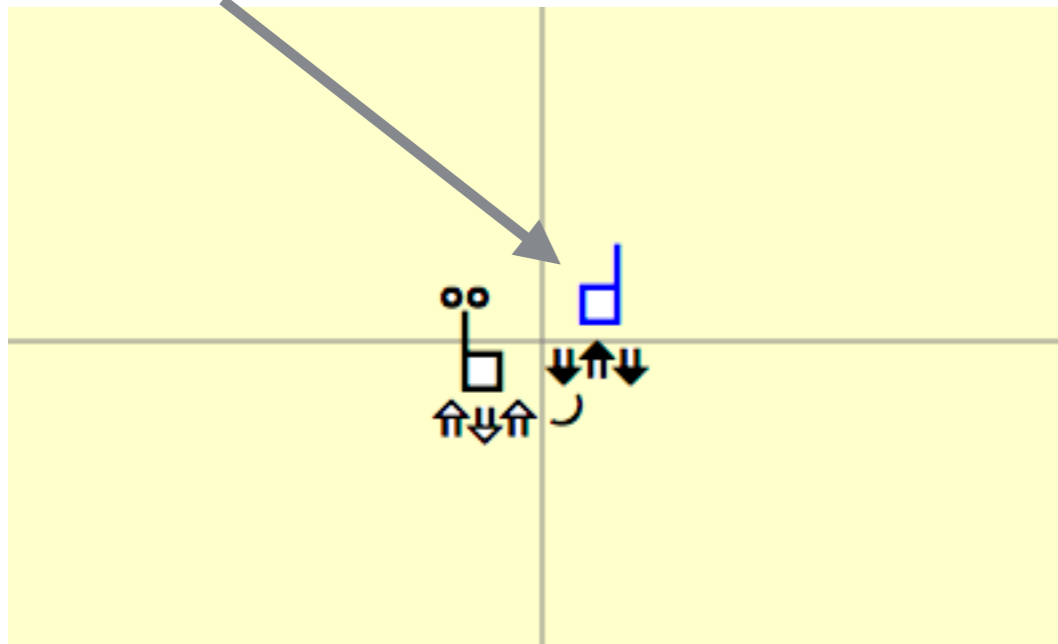
- GitHub Pages Demo

<http://slevinski.github.io/signmaker>

SignBox Editor

2-Dimensional Arrangement

Selected symbol



Fine tune symbol position

<	^	v	>
Copy	Mirror	Center	Delete
Rotate -	Rotate +	Select Next	Undo
Fill -	Fill +	Select Prev	Redo
Variation -	Variation +	Place Over	Clear All

Selected Symbol Actions

Copy = Duplicated symbol

Mirror = Vertical axis

Delete = Remove symbol

Rotate- = Counter-Clockwise

Rotate+ = Clockwise

Fill- = Change to lower fill

Fill+ = Change to high fill

Variation- = Change to lower base

Variation+ = Change to high base

Select Next = Select next symbol

Select Prev = Select previous symbol

Place Over = Move symbol to top

Sign Actions

Center = Reposition sign to center

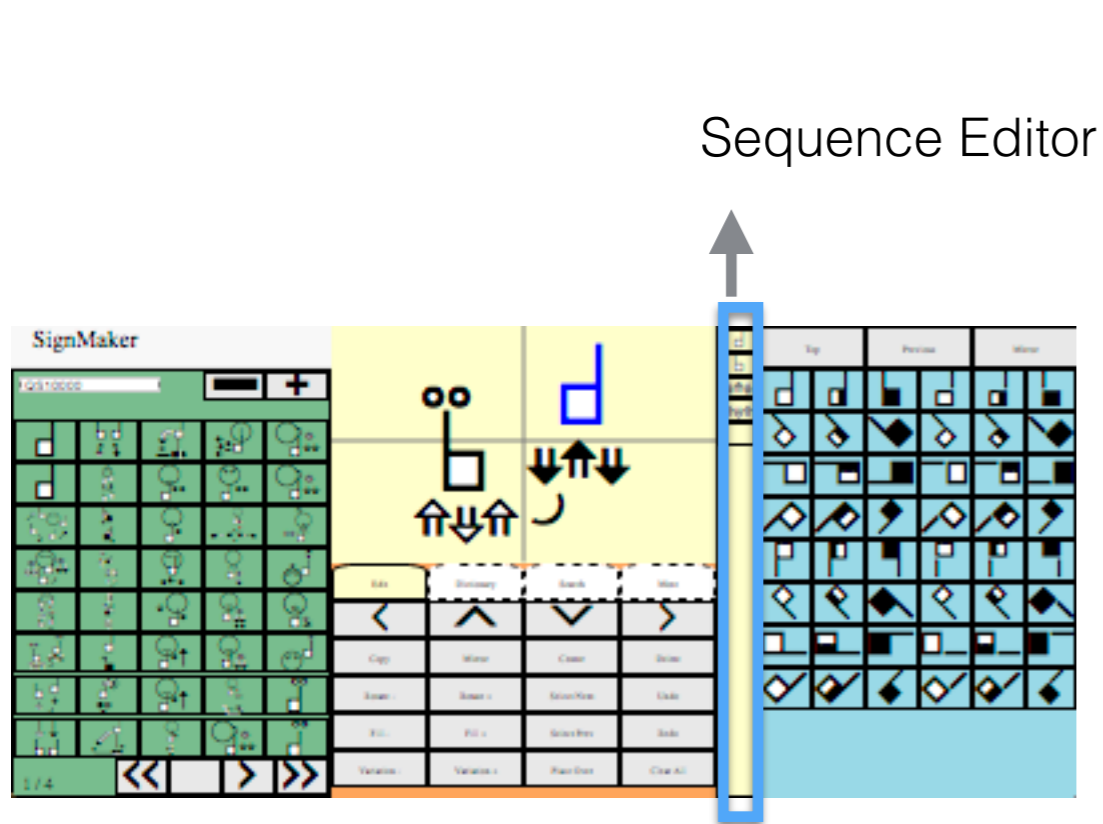
Undo = Undo last action

Redo = Redo action

Clear All = Remove symbol

Sequence Editor

Temporal Arrangement



Sign Actions of Undo and Redo affect the Sequence Editor as well.

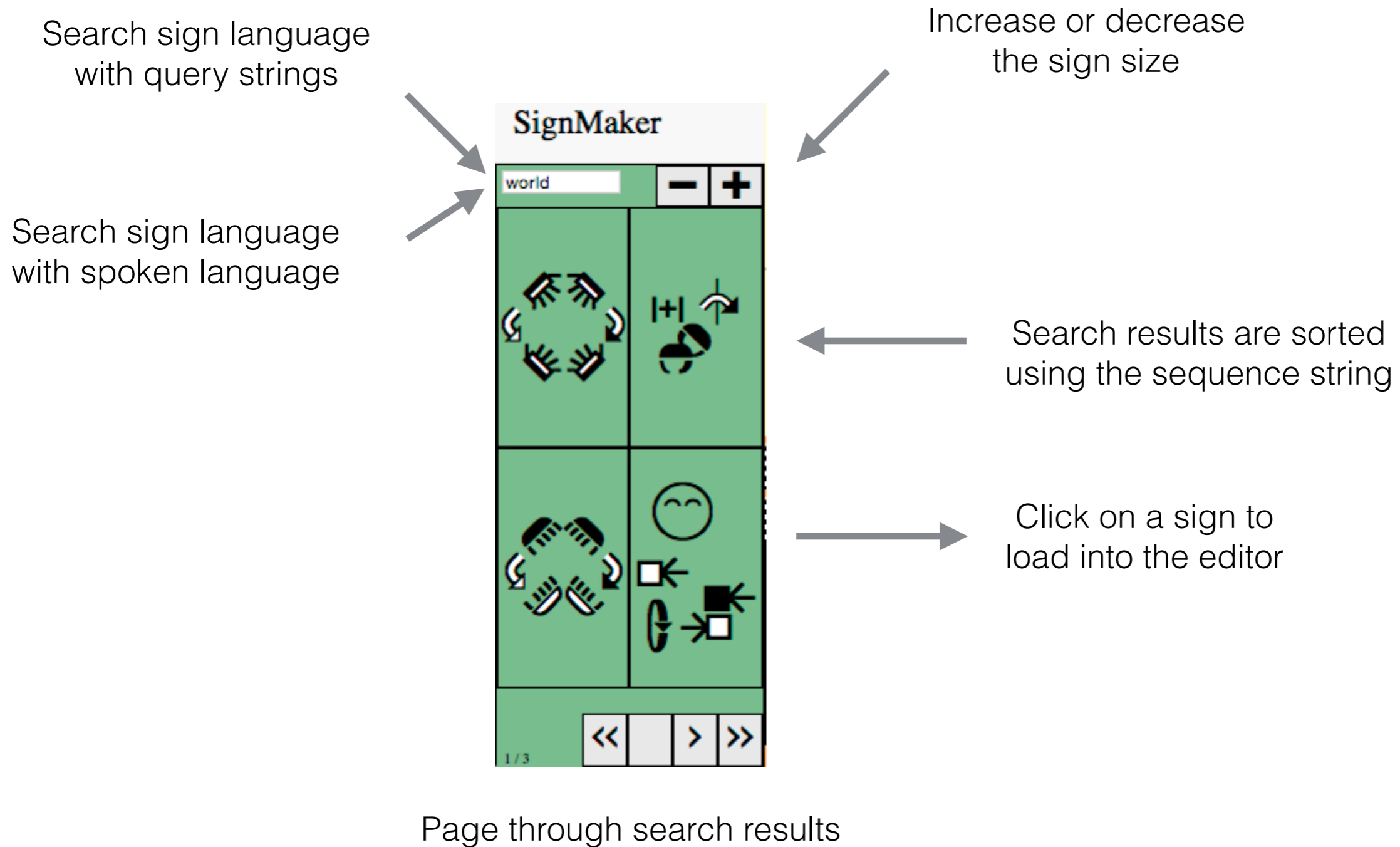
Modifying the Sequence

Drag from Symbol Palette
Drag from SignBox Editor
Drag to rearrange within sequence
Click sequence symbol to remove
Aim with tip of mouse pointer

Sorting is based on the order of the sequence.

Dictionaries

User Interface



Dictionaries

Types

My Local Dictionary

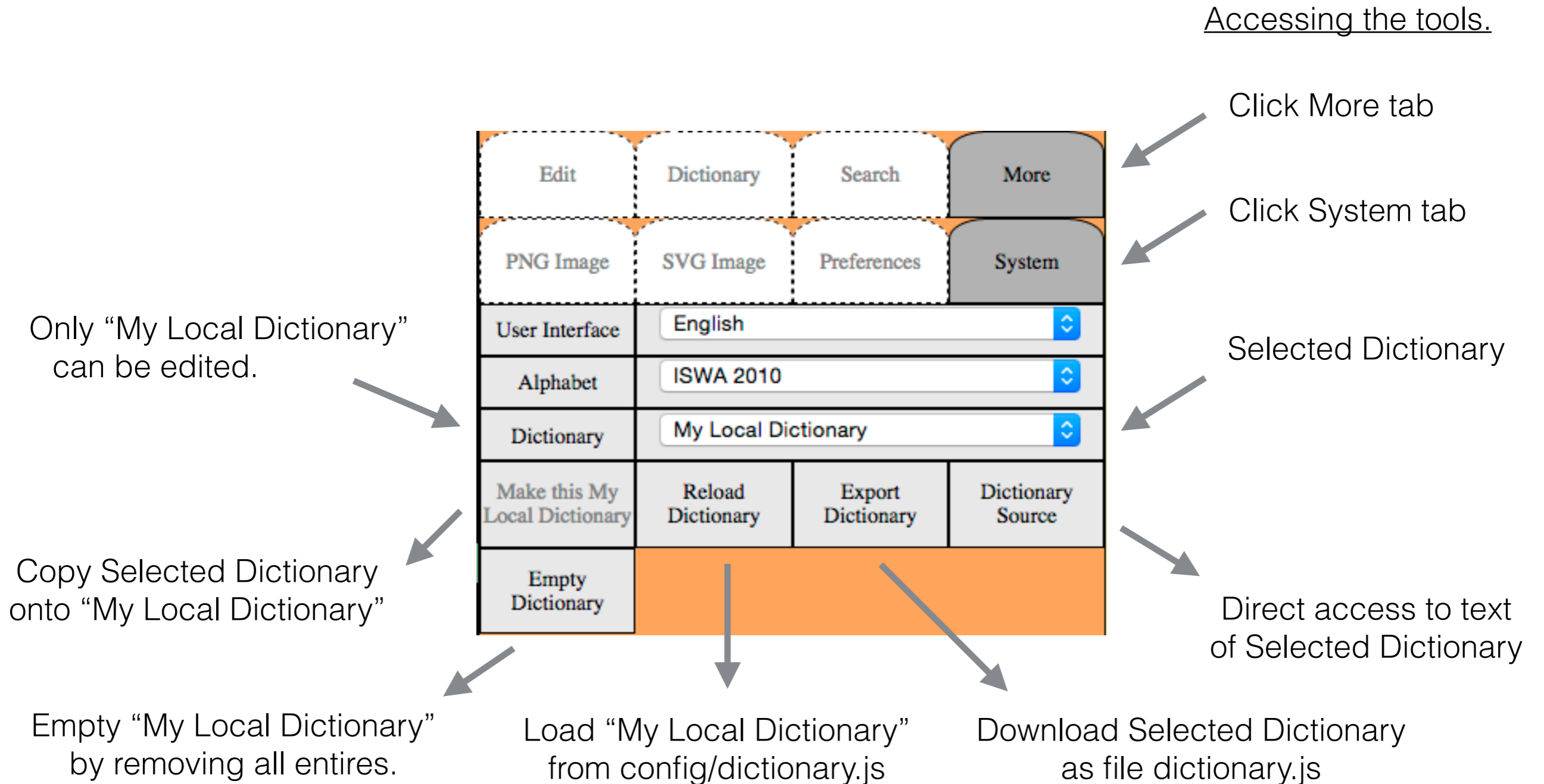
- Editable dictionary.
- Saved in browser Local Storage.
- Export as text or JavaScript.

View Only Dictionaries

- Exported from SignPuddle Online.
- Sign language specific.
- Copy to “My Local Dictionary” for editing.

Dictionaries

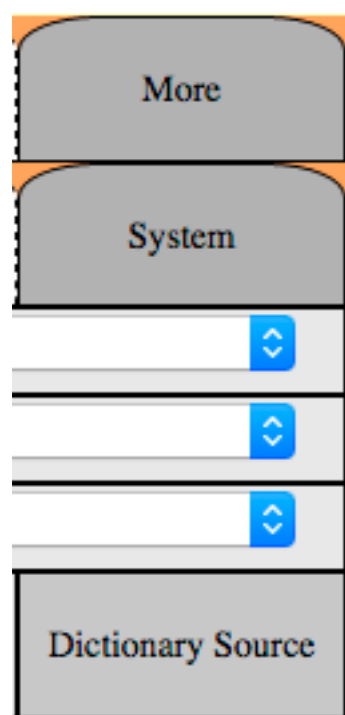
System



Dictionaries

Source

Accessing the source.

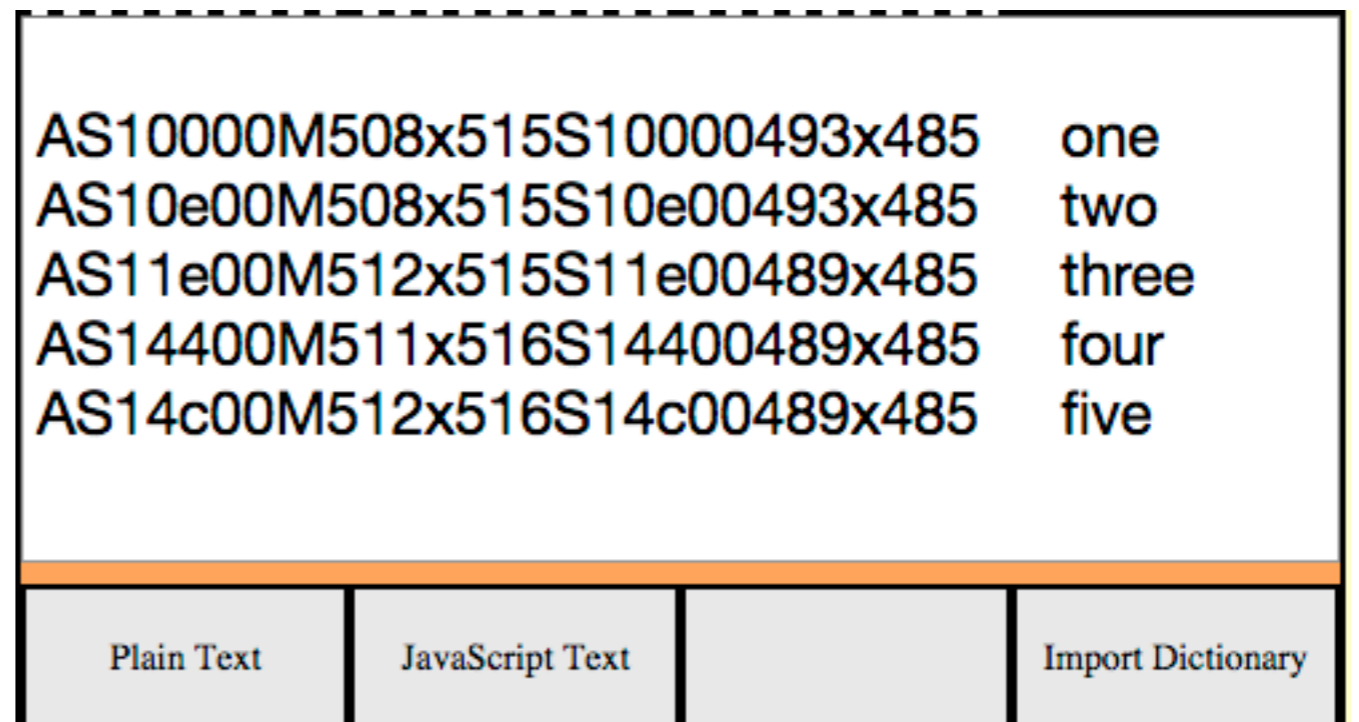


1) Click More tab

2) Click System tab

3) Click Dictionary Source

- Each line starts with one FSW string
- Tab characters divide terms in line
- Several spoken terms can follow FSW



Default Display for
Dictionary Source

Display Dictionary Source
as contents of dictionary.js

Import Dictionary Source
into "My Local Dictionary"

Dictionaries

Working with entries

- Each dictionary has many entries
- Each entry has one FSW string
- Each entry can have up to 8 spoken terms

Clear entry details
in editors and fields

Remove entry
from dictionary

Update entry
with changes

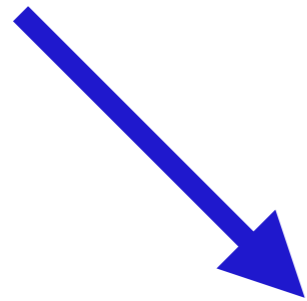
Add new entry
to dictionary

Edit	Dictionary	Search	More
Clear Entry	Update Entry	Save New Entry	Delete Entry
Sign Language			
FSW:	<input type="text" value="AS14c00M512x516S14c00489x485"/>		
Spoken Language			
<input type="text" value="five"/>	<input type="text" value="5"/>		
<input type="text"/>	<input type="text"/>		
<input type="text"/>	<input type="text"/>		
<input type="text"/>	<input type="text"/>		

Searching

Query Strings for Sign Language

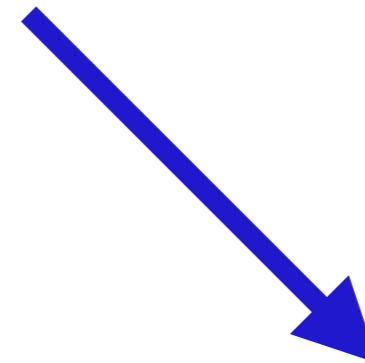
Query Strings



15 to 50 times expansion

Regular Expressions

process million of characters per second



search results

Formal SignWriting

Searching

Formal SignWriting Breakdown

AS18711S20500M514x517S18711490x483S20500486x506

Time

Space

AS18711S20500

M514x517S18711490x483S20500486x506

A S18711 S20500

M514x517

S18711490x483

S20500486x506



M 514x517

S18711 490x483

S20500 486x506

(514,517)



(490,483)



(486,506)

Sequence
Marker

Symbol

Middle Lane
SignBox

Max
Coord

Spatial
Symbol

Searching

3-Digit Number

Find a number between 122 and 455

	Regex	Matches
Step 1) 10's don't match and the min 1's are not zero (last number to 9)	12[2-9]	122 to 129
Step 2) Bring up the 10's if hundreds are different	1[3-9][0-9]	130 to 199
Step 3) Bring up the 100's if different	[2-3][0-9][0-9]	200 to 399
Step 4) Bring up the 10's	4[0-4][0-9]	400 to 449
Step 5) Bring up the 1's	45[0-5]	450 to 455

Final Regex (12[1-9]|1[3-9][0-9]|[2-3][0-9][0-9]|4[0-4][0-9]|45[0-5])

It is faster to recognize a string with regular expressions than to analyze a string with a routine.

Searching

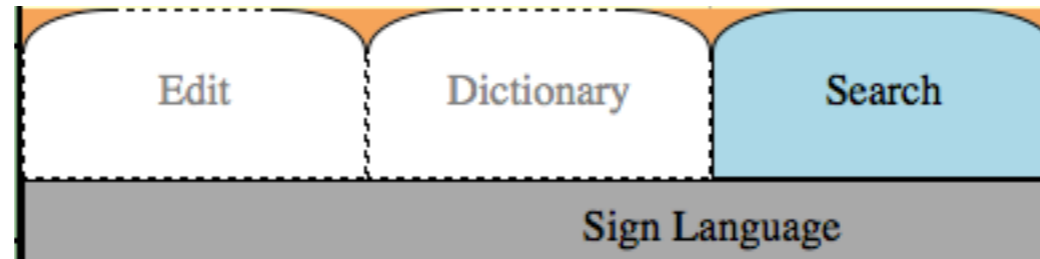
FSW to Query String

Formal SignWriting

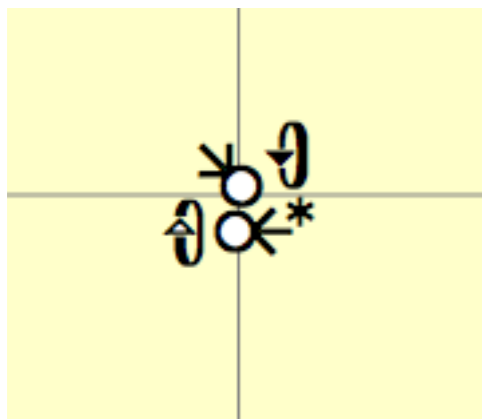
10% to 50% reduction



Query Strings



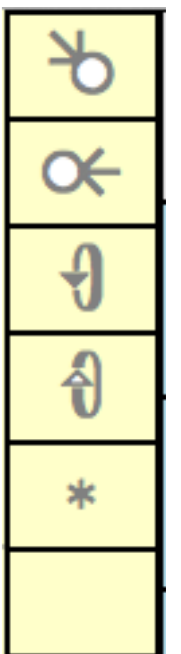
Search SignBox



Find signs within 2-dimensional order

Same Symbols	Same Symbols Location	Same Symbols Sorted
Base Symbols	Base Symbols Location	Base Symbols Sorted

Search Sequence



Find signs with ordered sequence

Searching

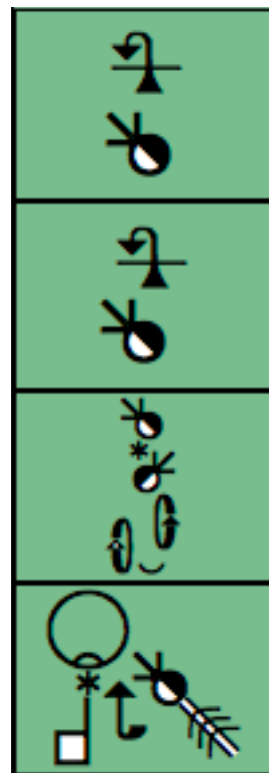
Example 1

Same Symbols

Finds signs that use the same symbols as those in the SignBox.

FSW: M512x512S18711488x488

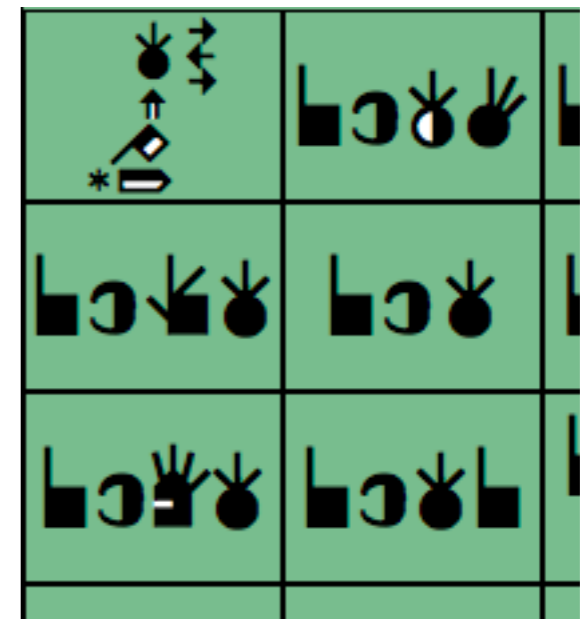
Query: QS18711



Same Symbols



Base Symbols



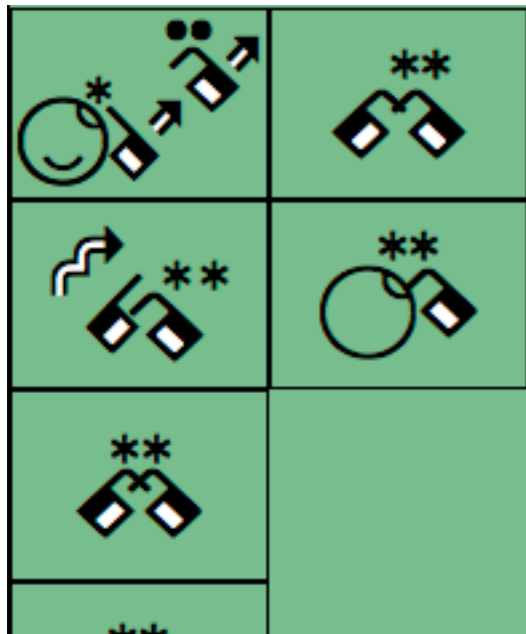
Searching

Example 2

Same Symbols

Finds signs that use the same symbols as those in the SignBox.

Query: QS10a11

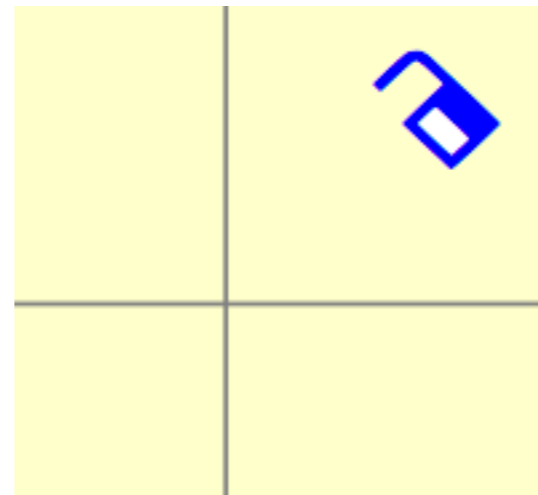


Same Symbols Location

Finds signs that use the same symbols with an approximate location as those in the SignBox.

Query: QS10a11532x445

Same Symbols



Same Symbols Location



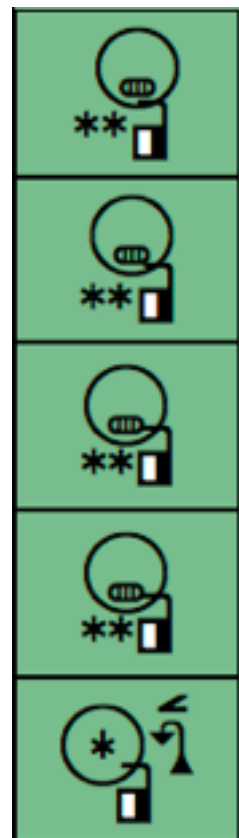
Searching

Example 3

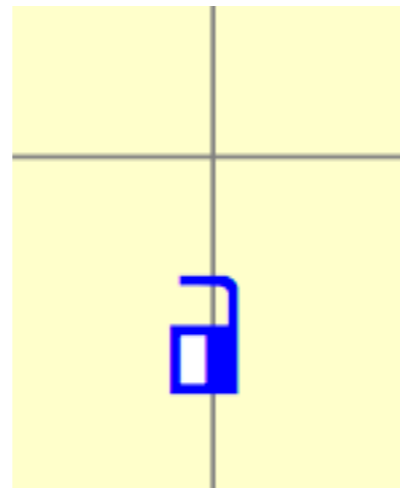
Same Symbols Location

Finds signs that use the same symbols with an approximate location as those in the SignBox.

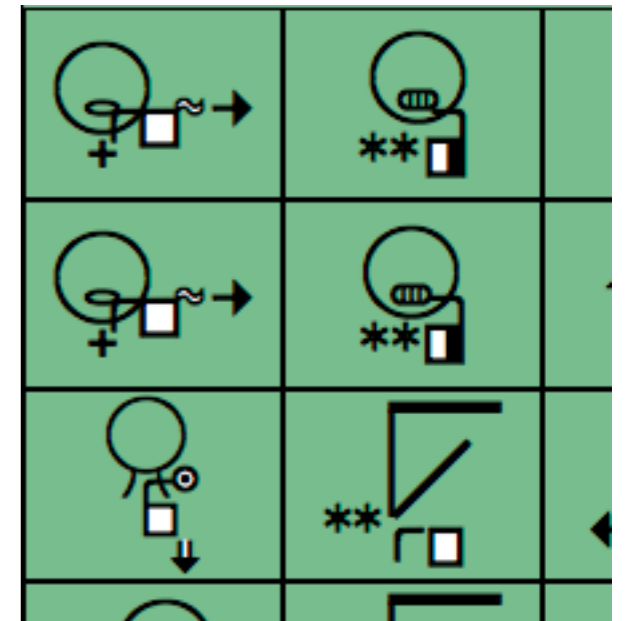
Query: QS10a10491x526



Same Symbols Location



Base Symbols Location



Searching

Example 4

Same Symbols Sorted

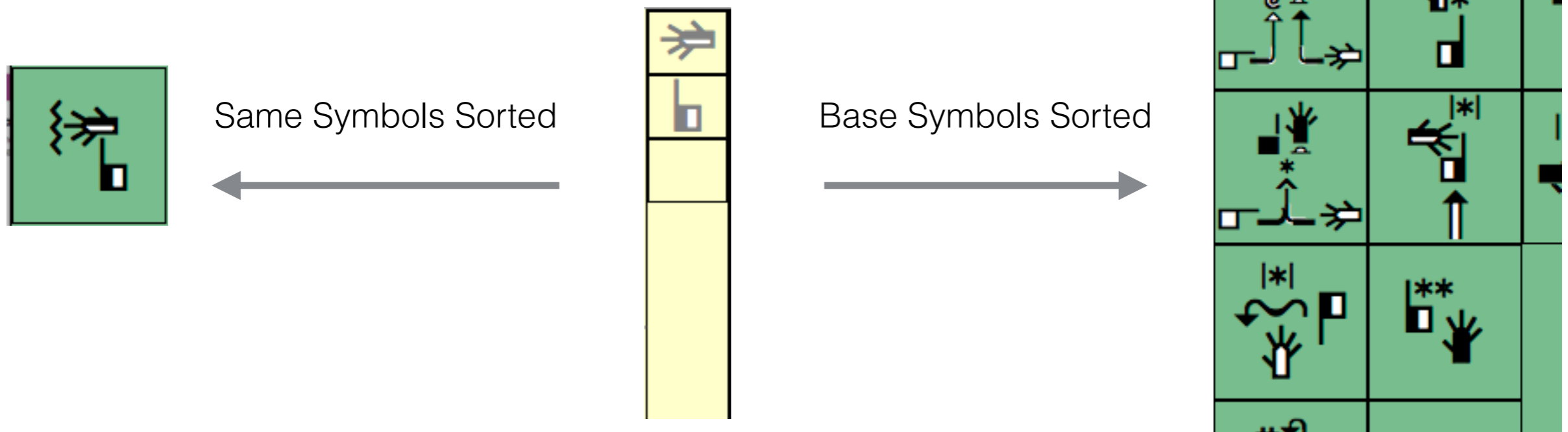
Finds signs that use the same symbols as the start of the sequence in the Sequence editor.

Query: QAS14c12S10018T

Base Symbols Sorted

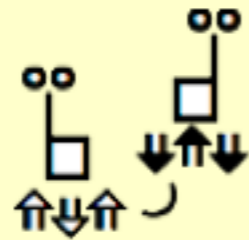
Finds signs that use the base symbols as the start of the sequence in the Sequence editor. Ignores fill and rotation.

Query: QAS14cuuS100uuT



Sign Images

PNG and SVG



Interact directly with image

- select and copy
- right click

Sign images available under the More tab

Edit	Dictionary	Search	More
PNG Image	SVG Image	Preferences	System
Size	<input type="text" value="1"/>	Fill	<input type="text" value="white"/>
Line	<input type="text" value="black"/>		
Download			

Customizing the sign

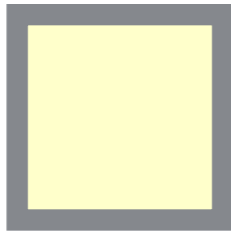
Size can be any positive decimal.
Line and Fill are color names or hex color values.

Save image with button

Preferences

Available Options

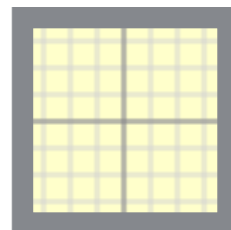
Grid 0



Grid 1



Grid 2



Edit	Dictionary	Search	More
PNG Image	SVG Image	Preferences	System
Grid 0	Grid 1	Grid 2	
Black on White	White on Black	Colorful	

Accessing the Preferences.

Click More tab

Click Preferences tab

Black on White



White on Black



Colorful



Preferences

System

Accessing the system preferences.

Click More tab

Click System tab

User Interface Language

Alphabet Subsets

Sets the Symbol Palette's organization and contents

Edit	Dictionary	Search	More
PNG Image	SVG Image	Preferences	System
User Interface	English		
Alphabet	ISWA 2010		
Dictionary	My Local Dictionary		
Make this My Local Dictionary	Reload Dictionary	Export Dictionary	Dictionary Source
Empty Dictionary			

Customizations

Config Directory

alphabet.js (7 KB)

Sets the data for the symbol palette

dictionary.js (17 Bytes)

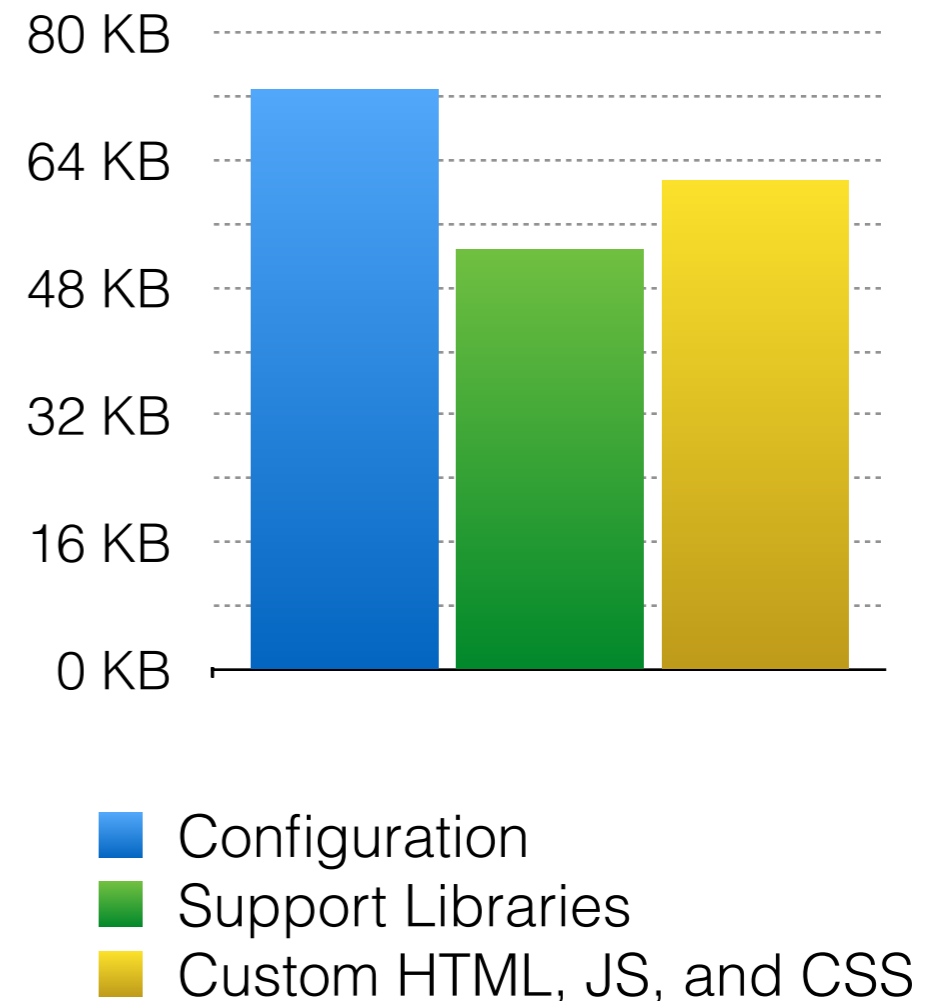
Placeholder for dictionary restore

keyboard.js (0.7 KB)

Defines keyboard actions and combinations

messages.js (65 KB)

User interface messages in different languages



<https://github.com/Slevinski/signmaker/tree/gh-pages/config>

Customizations

Config Subdirectories

config/alphabet

Place language specific
alphabet subsets here

config/dictionary

Place language specific
dictionaries here

SignPuddle Online Derivatives

Alphabet subsets and language dictionaries are derived from the dictionaries of SignPuddle Online, recreated daily.

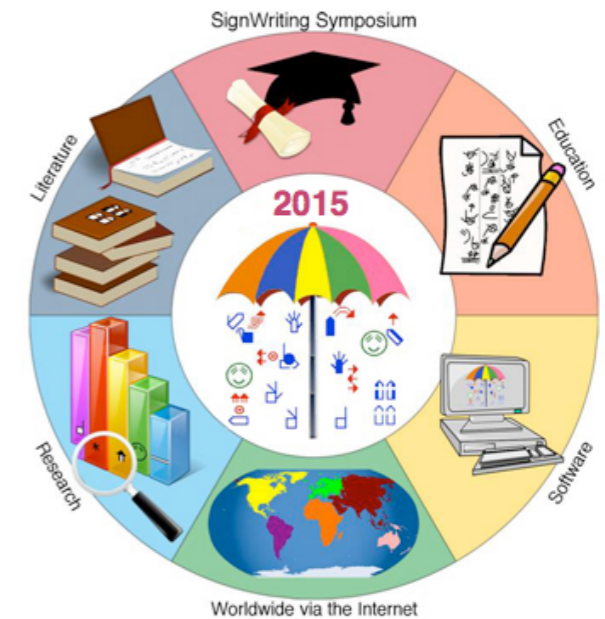
<http://signbank.org/signmaker/config/alphabet/>

<http://signbank.org/signmaker/config/dictionary/>

The Use and Structure of SignMaker 2015

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Thanks for viewing.

Feedback, bug reports, and patches are welcomed.

<http://slevinski.github.io>

<https://twitter.com/slevinski>

<http://www.signwriting.org/symposium/presentation0049.html>