

# Sketchlet Tutorial

## Actions

[sketchlet.sf.net](http://sketchlet.sf.net)

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# Actions – Grouping Actions

- Action enable creating more complex actions
- A action is a list of successive commands that is triggered by a single event
  - Action enable creation of complex actions by grouping simple ones
- Actions can include pauses in between actions, facilitating control of dynamic effects



# Sketchlet Actions

- Two types of Sketchlet action constructs:
  - Commands
  - Control Flow Structures



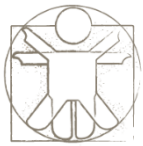
# Sketchlet Action Commands

- Currently supported commands include:
  - The transition to another sketch
  - Pausing action execution for a specified time
  - Actions on variables, including updating, appending text, and incrementing
  - Starting and stopping timers
  - Starting and stopping other actions
  - Opening external programs or files



# Sketchlet Actions Control Flow

- IF <condition>
- REPEAT <n | Forever>
- PAUSE
- WAIT UNTIL <condition>
- WAIT FOR UPDATE <variable>
- STOP



# Sketchlet Action Example

- Pause for 3 seconds and then go to Sketch 1
  - **PAUSE 3**
  - Go To Sketch      Sketch 1**

The screenshot shows a software interface for defining actions. It features a tabbed menu at the top with 'On Entry', 'On Exit', 'On Variable Updates', and 'On Keyboard Events'. The 'On Entry' tab is active. Below the tabs is a list of actions. The first action is 'PAUSE' with a duration of '3.0'. The second action is 'Go to sketch' with the target 'Sketch 1'. Each action row has a set of control icons on the right, including a play button, a stop button, and arrows for moving the action up or down. At the bottom of the interface, there is a 'Repeat' field set to '1', and buttons for 'Complete Blocks', 'Reset', and 'Test'. A checkbox labeled 'highlight execution' is also present.

Action	Value
PAUSE	3.0
Go to sketch	Sketch 1

Repeat: 1

Complete Blocks    Reset    Test     highlight execution



# Creating Sketchlet Actions

- Build in Actions
  - On Sketch Entry/Exit
- Shared Actions
  - Can be called on any event, and shared among sketches



# Build-In Sketchlet Actions

- On Sketch Entry

The screenshot shows the 'On Sketch Entry' configuration panel. The 'On Entry' tab is selected. The panel contains a list of actions:

Action	Value	Repeat	Buttons
PAUSE	3.0	1	Complete Blocks, Reset, Test, highlight execution
Go to sketch	Sketch 1	1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution

At the bottom, there are controls for 'Repeat: 1', 'Complete Blocks', 'Reset', 'Test', and a checkbox for 'highlight execution'.

- On Sketch Exit

The screenshot shows the 'On Sketch Exit' configuration panel. The 'On Exit' tab is selected. The panel contains an empty list of actions:

Action	Value	Repeat	Buttons
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution
		1	Complete Blocks, Reset, Test, highlight execution

At the bottom, there are controls for 'Repeat: 1', 'Complete Blocks', 'Reset', 'Test', and a checkbox for 'highlight execution'.



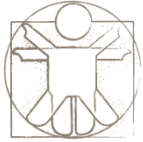


# Shared Actions

The screenshot displays a software interface for creating and editing macros. On the left, a vertical toolbar contains icons for a macro, a clock, a function symbol (fx), a document, and a folder. The main workspace shows a macro editor for 'Macro 1'. The editor includes a 'Name' field set to 'Macro 1' and a 'Repeat' dropdown set to '1'. Below these are buttons for 'Complete Blocks', 'Reset', and 'Test', along with a 'highlight execution' checkbox. The macro's logic is defined in a table:

Block Type	Condition	Action
IF	$a > b$	
Variable update	$c$	$=a$
END		

On the right, a file explorer window shows a folder structure with tabs for 'Sketchlets', 'I/O Services', 'Timers', and 'Macros'. The 'Macros' tab is circled in red and contains a file named 'Macro 1'. A red arrow points from this file to the macro editor.



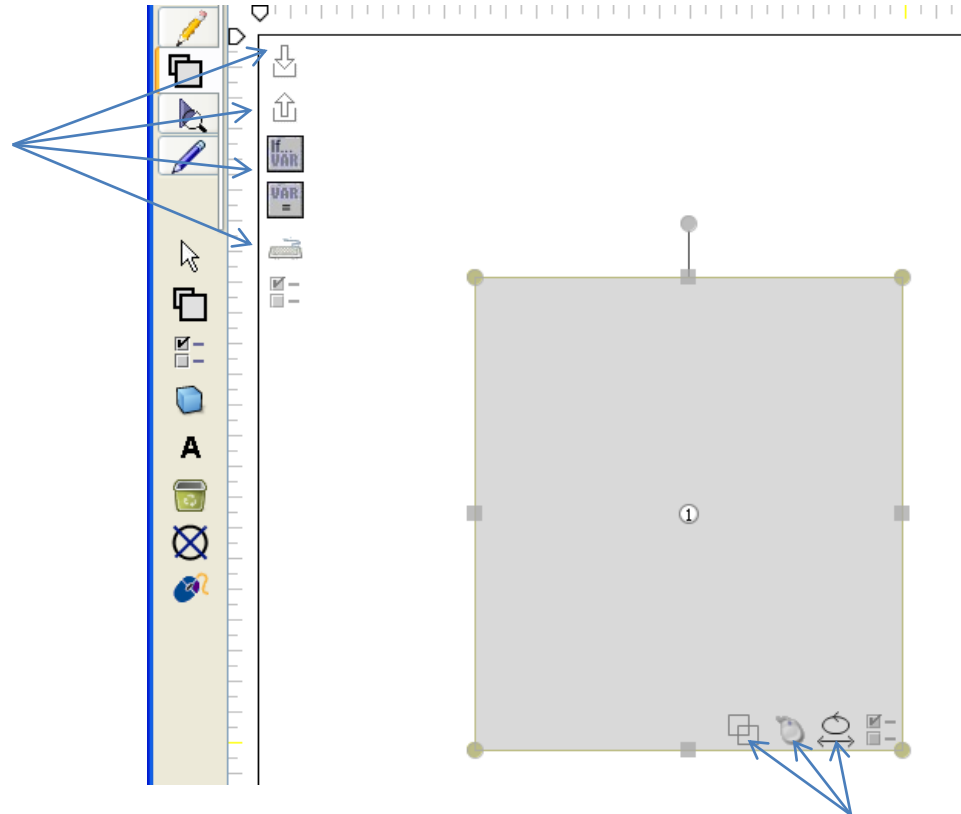
# Calling Shared Actions

- Actions can be called from several places
  - On active region mouse events
  - On sketch events (entry or exit)
  - On variable updates ("On Variable Update" actions)
  - On keyboard events
  - From other actions, as one of the commands
- Drag-and-Drop on any sketch or region event
- Directly specify in settings



# Drop Event Anchors

Anchors for connecting sketch events (on entry, on exit, on variable update, on keyboard event) by drag-and-drop of variables, timers and actions. You can also double-click on these icons to open current settings for these events and properties.



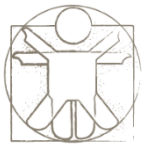
Anchors for connecting region events (region overlap, discrete mouse events, continues mouse events) by drag-and-drop of variables, timers and actions. You can also double-click on these icons to open current settings for these events and properties.



# Drop Event Anchors

Anchors for connecting sketch events (on entry, on exit, on variable update, on keyboard event) by drag-and-drop of variables, timers and actions. You can also double-click on these icons to open current settings for these events and properties.

Anchors for connecting region events (region overlap, discrete mouse events, continues mouse events) by drag-and-drop of variables, timers and actions. You can also double-click on these icons to open current settings for these events and properties.



# Directly Specify in Settings

The screenshot shows a settings panel with four tabs: "On Entry", "On Exit", "On Variable Updates", and "On Keyboard Events". The "On Entry" tab is selected. Below the tabs is a list of macro actions. The first action is "Start macro", and the second is "Macro 1". To the right of the list are icons for adding, deleting, and moving items. At the bottom, there is a "Repeat:" dropdown set to "1", and buttons for "Complete Blocks", "Reset", and "Test". A checkbox for "highlight execution" is also present.

The screenshot shows a table with columns for "Image", "Mouse Event", "Action", "Param1", and "Param2". The "Mouse Events" category is selected in the left sidebar. The table contains two rows of data.

Image	Mouse Event	Action	Param1	Param2
Properties	Left Button Press	Start macro	Macro 1	
Move & Rotate	Left Button Press	Variable update		
Mouse Events				
Overlap & Touch				
Embedded Sketch				