Sketchify Tutorial
Graphics and Animation in Sketchify

sketchify.sf.net

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Graphics and Animation in Sketchify

- Creating Images
  - Background Image
  - Images in Regions
- Graphical Transformations
  - Region Transformations
  - Sketch Transformations
- Animation
  - Flip Book Animation
  - Build-In Properties Animation
- Free-Hand Gesture Support
 - Defining Trajectory and Timers through Gesture

Graphics and Animation in Sketchify

- **Creating Images**
  - **Background Image**
  - **Images in Active Regions**
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Creating Background Image

- In the drawing mode, you draw on the background bitmap image of the sketchlet. You can use simples standard options to create simple images, import a file from the file, or open it in the external editor for more complex processing.
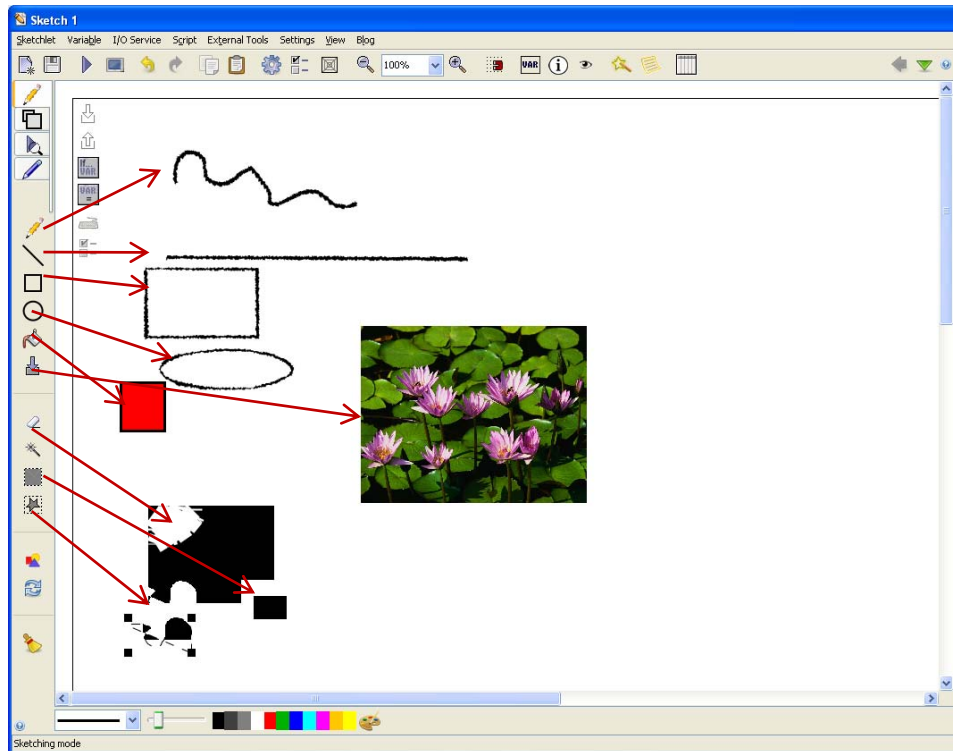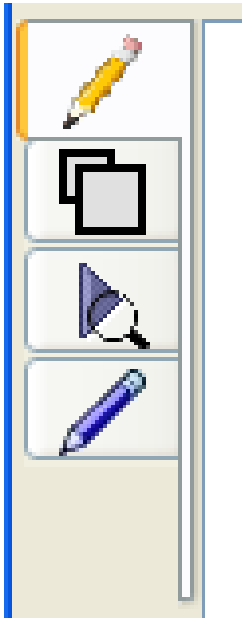
Active Regions

- An *active region* is a rectangular region in the sketch that can display drawings and text, but can also capture user events and that can be graphically transformed (translated and rotated).

- An active region may also embed one or more other sketches (with other active regions).
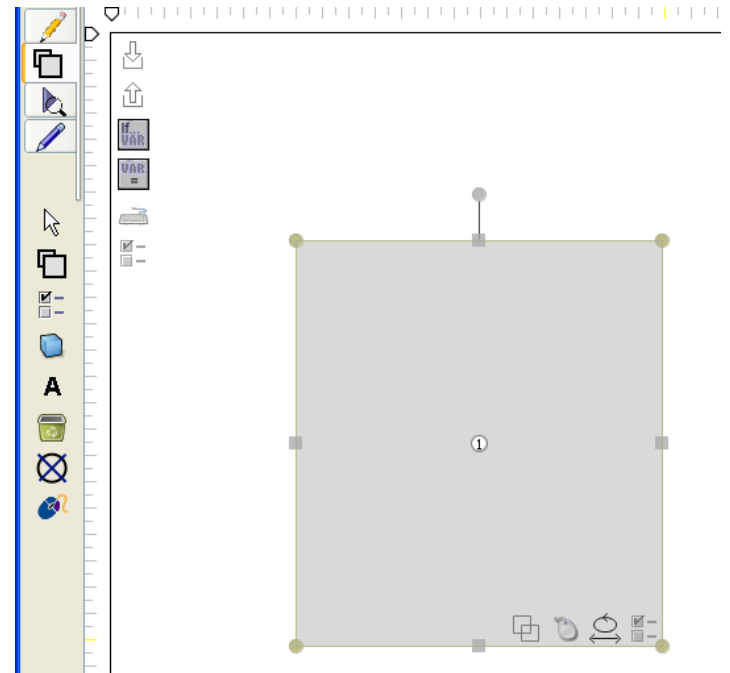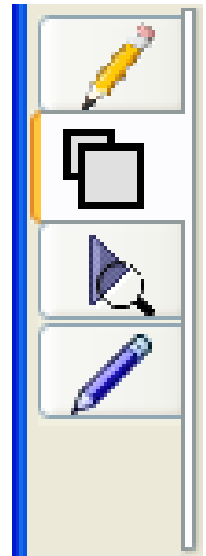
Active Regions

- Active regions allow to easily creating a multitude of interactive effects within sketches. They can, for example, detect mouse events, such as mouse clicks or mouse movement, or overlap of the regions.

- We can directly, or through variables, control most properties of an active region,
  - geometrical properties, transparency, the path to the image file that is associated with it, textual label…
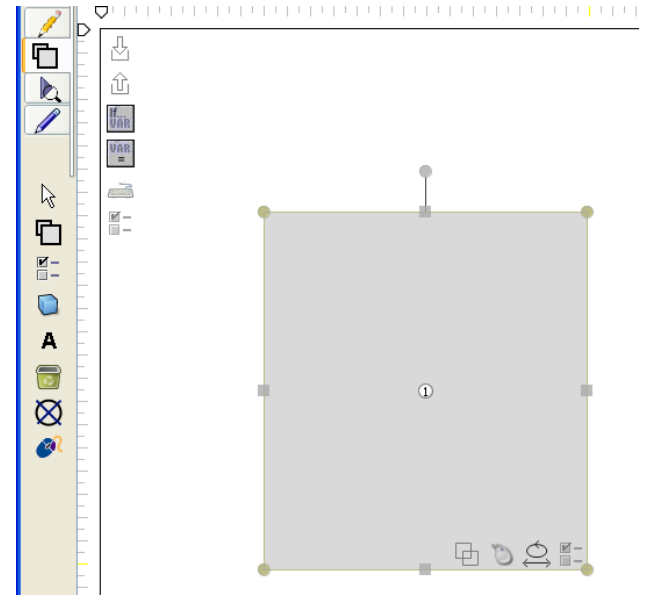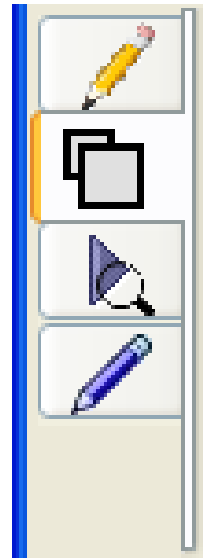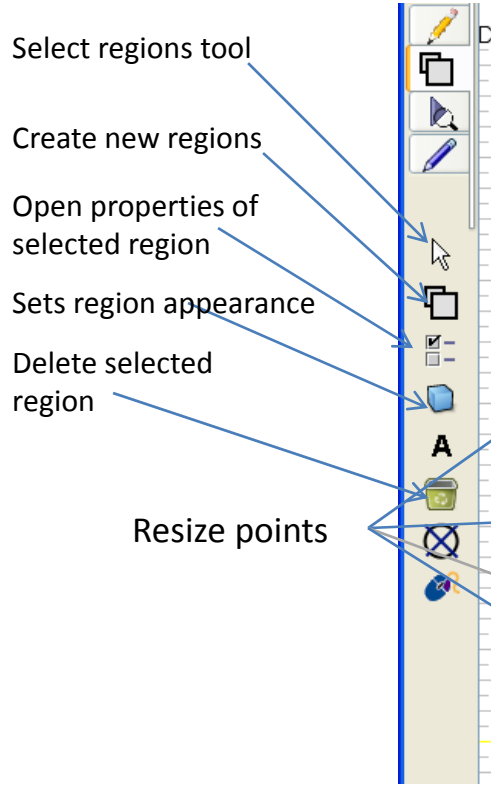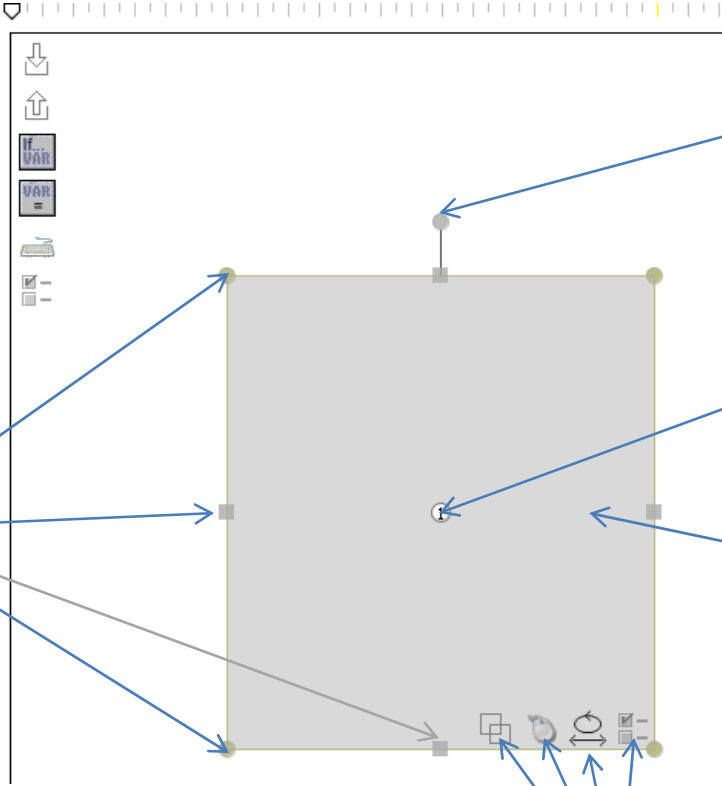
Select regions tool

Create new regions

Open properties of
selected region

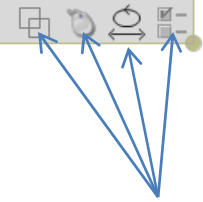Sets region appearance

Delete selected
region

Resize points

Rotation point
(you can also rotate the region by
dragging it with the right mouse
button)

Center of rotation
(you can change it by pressing
CTRL on the keyboard, and than
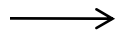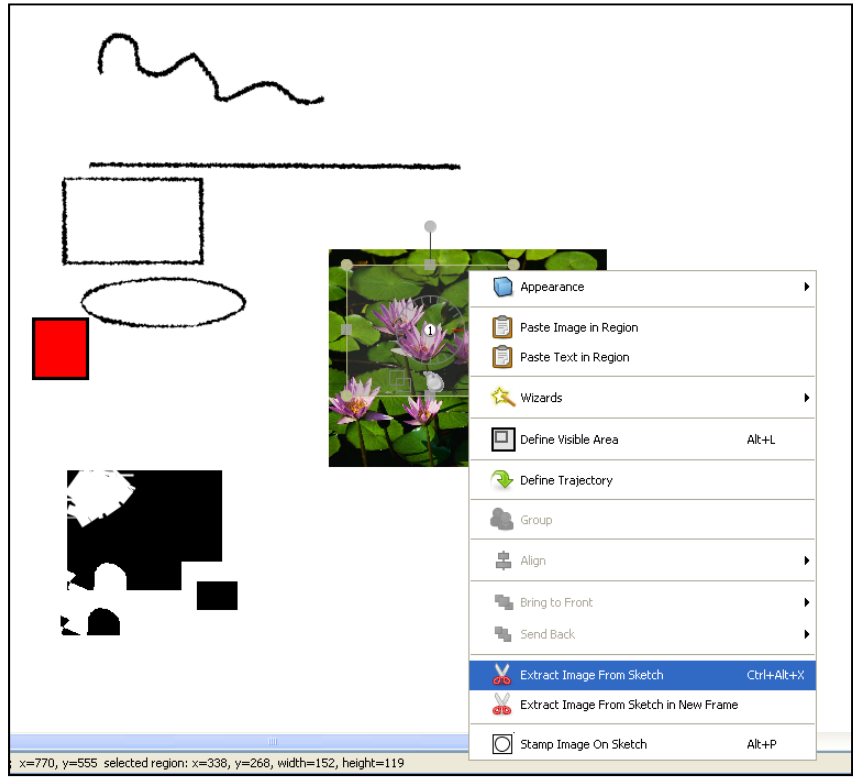dragging it with the left mouse
button)

An active region
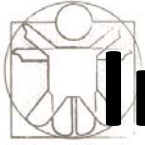
Images in Active Regions

- Extracting from the background image
- Drawing
- From URL
- Screen Capture
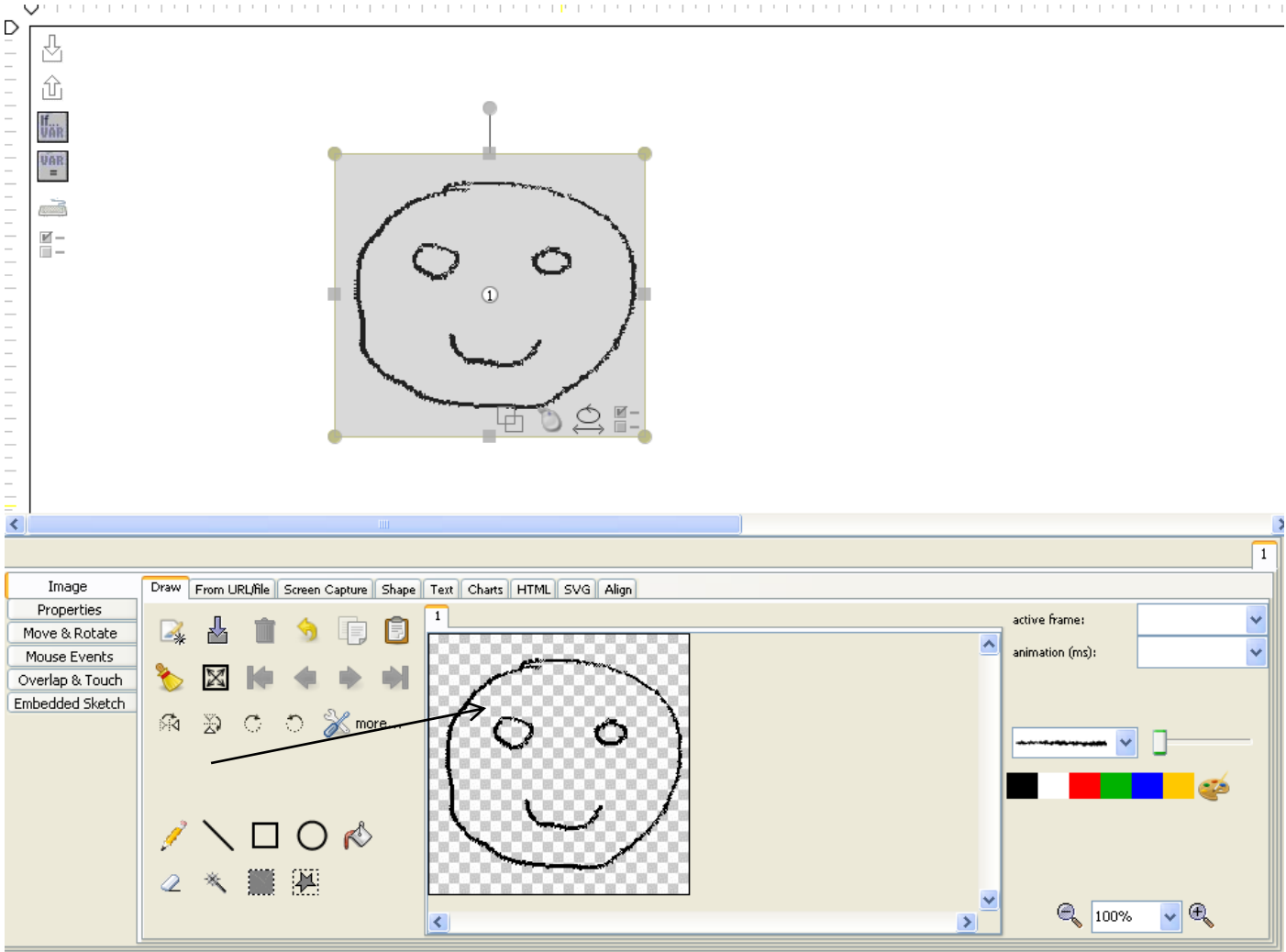- Text
- Shape
- HTML
- SVG

Image in Active Region: Extracting image from the background sketch

Image in Active Region: Drawing in Simple Image Editor

Image in Active Region: From URL

URL of the image

Image in Active Region: Screen Capture

Image in Active Region: Text

Image in Active Region: Shape

Image in Active Region: HTML

Image in Active Region: SVG

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- **Graphical Transformations**
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  - **Sketch Transformations**
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Transforming Regions by Mouse

- Change position, size, and orientation

Rotation point
(you can also rotate the region by dragging it with the right mouse button)

Center of rotation
(you can change it by pressing CTRL on the keyboard, and than dragging it with the left mouse button)

Resize points

Dragging the region with left mouse button will change it position (dragging with right mouse button will rotate the region)
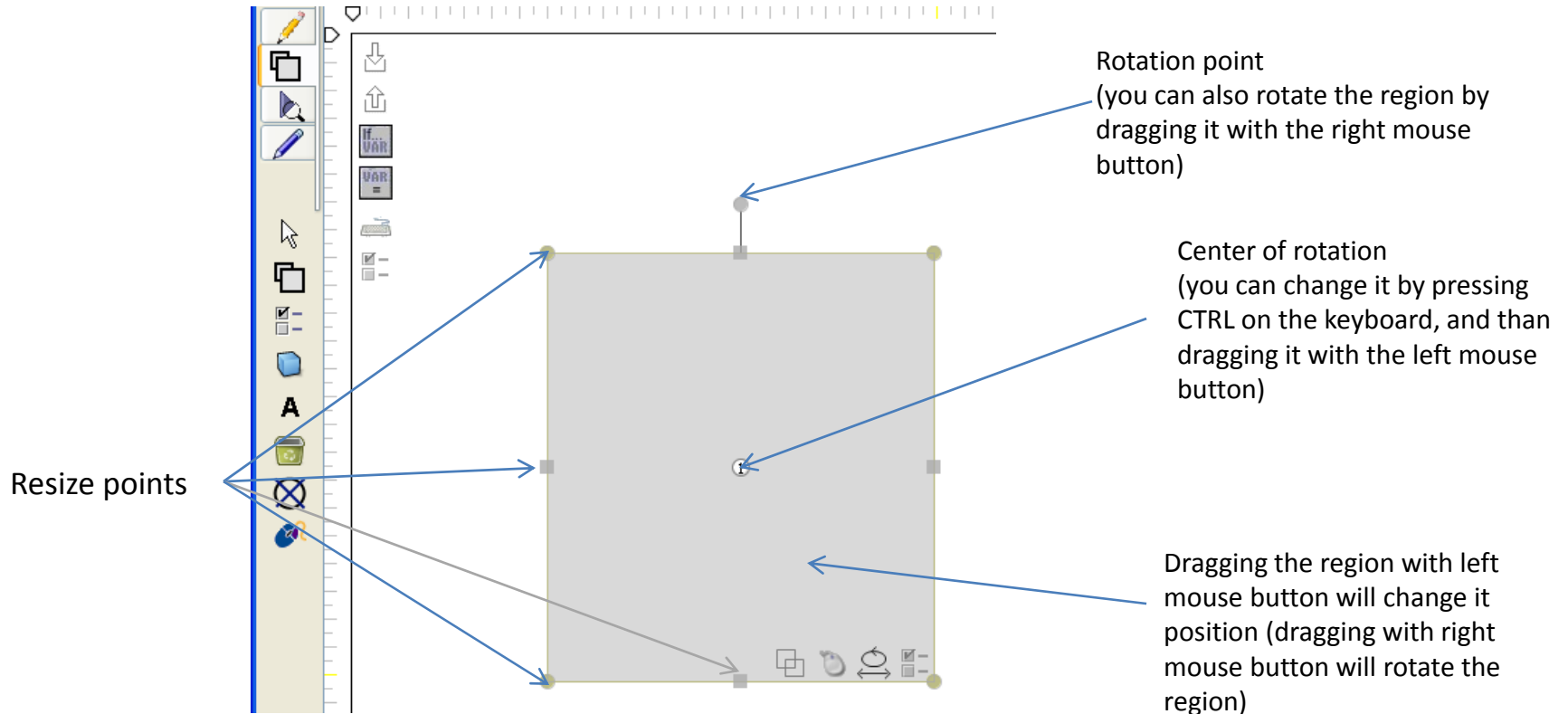
Transforming Regions by Mouse

- If you try to resize the active region with the CTRL key pressed on the keyboard, you can set the perspective points of the region:

Perspective points.
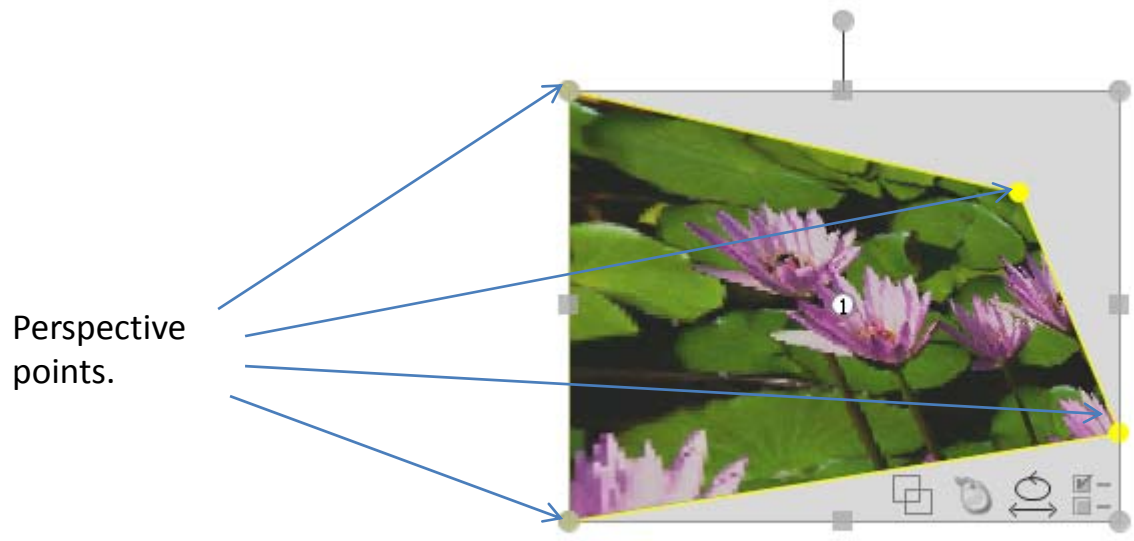
Shortcuts for Some Properties:
Right Mouse Click on the Region

More Region Transformations

Position	
position x	horizontal position (left, 0 to 1000)
position y	vertical position (top, 0 to 1000)
relative x	relative horizontal position (0.0 to 1.0)
relative y	vertical position (0.0 to 1.0)
trajectory position	0.0 to 1.0
Size	
width	region width
height	region height
Orientation	
rotation	angle
Transparency	**0.0 to 1.0**
transparency	0.0 to 1.0
Visible area	
visible area x	
visible area y	
visible area width	
visible area height	
Motion	
speed	pixels per second
direction	angle
Pen	
pen thickness	0, 1, 2…

Advanced / Coordinates	
x1	
y1	
x2	
y2	
Advanced / Sheer	
shear x	0.0 to 1.0
shear y	0.0 to 1.0
Advanced / 3D	
horizontal 3d rotation	0 to 360
vertical 3d rotation	0 to 360
Advanced / Perspective	
perspective x1	0 to 1, x top left corner
perspective y1	0 to 1, y top left corner
perspective x2	0 to 1, x top right corner
perspective y2	0 to 1, x top right corner
perspective x3	0 to 1, x bottom right corner
perspective y3	0 to 1, x bottom right corner
perspective x4	0 to 1, x bottom left corner
perspective y4	0 to 1, x bottom left corner
automatic perspective	left, right, top, bottom, parallel
perspective depth	relative perceptive depth 0.0 to 1.0

- **Expressions in properties**
  - Literals
    - 90
  - Formulas
    - =variable
    - =a + (b-c) / 50
  - String templates
    - You said <%=text%>
- Values may be given directly, for example "**120**" or indirectly through variables. For example, the expression "**=a**", means that the value will be taken from the variable "a".
- More on variables comes later in separate tutorial...
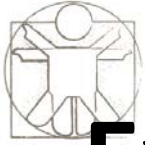
Exploring Effects of Transformations

- You can also explore the effects of transformations in the properties tab using a simple slider interface
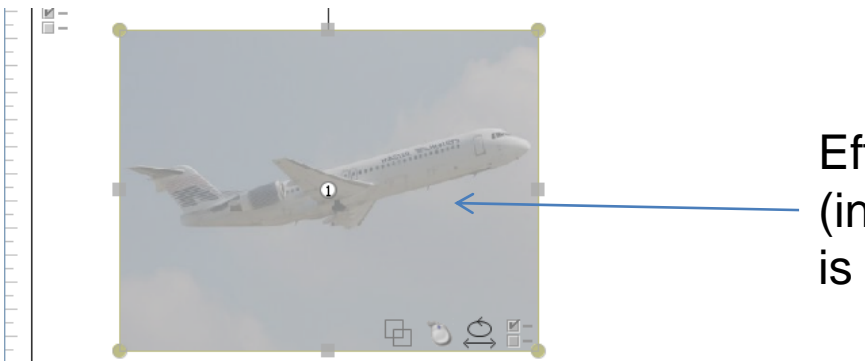
Effect of changing property
(in this example changing transparency)
is immediately visible in the sketch.

Maximal value for the property

Current value for the property.
You can change it by moving the slider

Minimal value for the property

Selected property (in this case transparency)

Region Transformations: Position, Size Orientation

- **position x** - horizontal position, in pixels, from 0 to image width
- **position y** - vertical position, in pixels, from 0 to image width
- **relative x** - relative horizontal position from 0.0 to 1.0. For example, 0.5 means that the region will be positions in the middle of its interaction space (also depends on motion limits).
- **relative y** - relative vertical position from 0.0 to 1.0
- **trajectory position** - if the trajectory is defined, you can define the relative position of the region on the trajectory from 0.0 to 1.0 (to define a trajectory, go to main window, right-click on the active region and select "Start Defining Trajectory...")
- **width** - region width
- **height** - region height
- **rotation** - the region orientation, from 0 to 360. May also have the value "random", which means that the region will randomly rotate when its position is animated (it is used only in the combination with "speed" parameter)

Region Transformations: **Shear**

- **shear x** - horizontal shear transformations (for details see http://mathworld.wolfram.com/Shear.html)

- **shear y** - vertical shear transformations (for details see http://mathworld.wolfram.com/Shear.html)
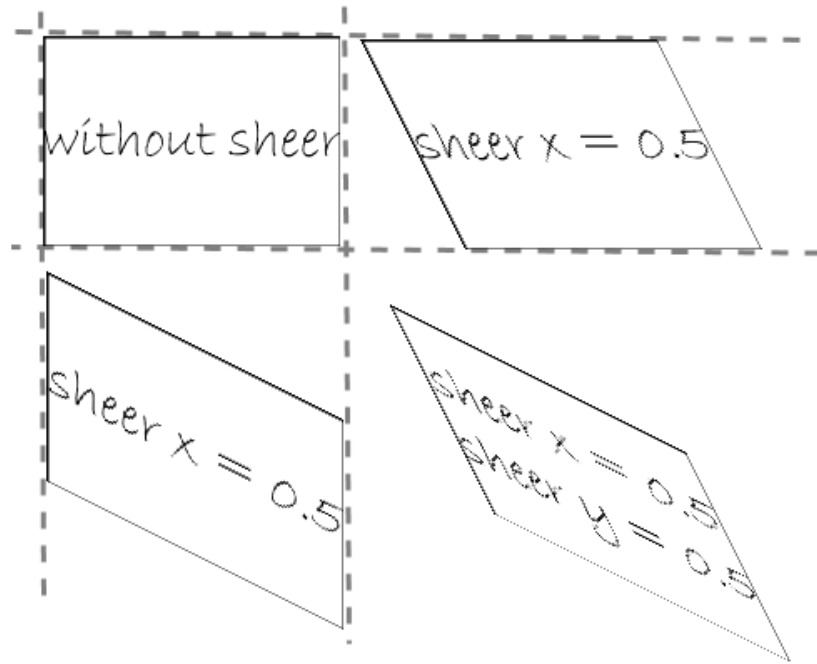
Region Transformations:
Visible Area

- **visible area x** - horizontal position of the visible area of the
- **visible area y** - vertical position of the visible area of the
- **visible area width** - width of the visible area of the image
- **visible area height** - height of the visible area of the image
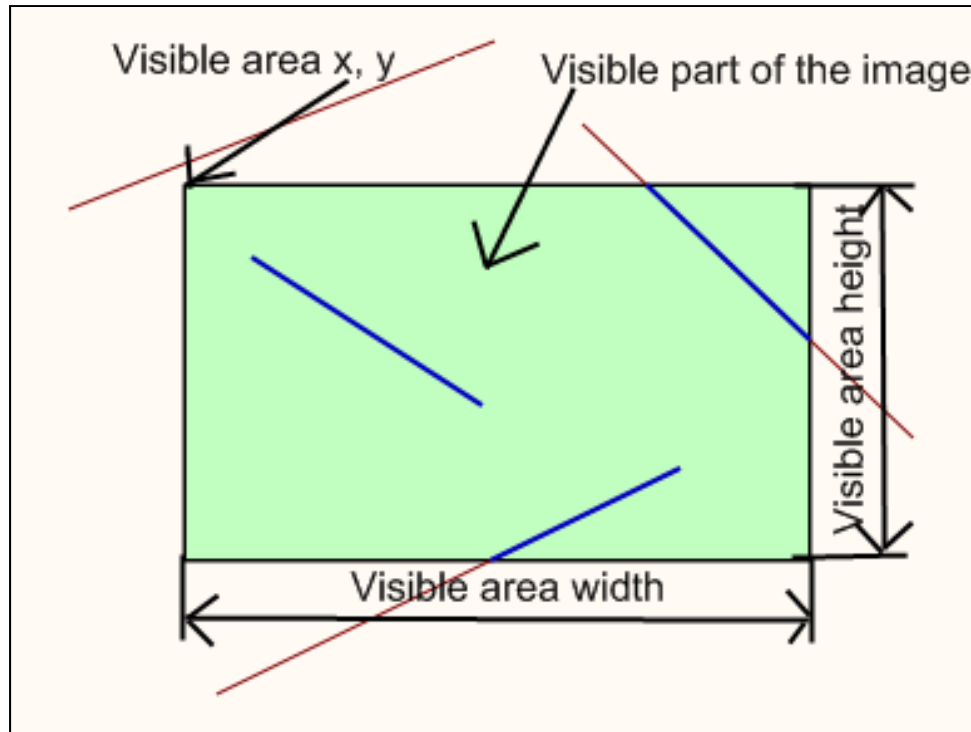
Region Transformations: **Transparency**

- **transparency** - from 0.0 to 1.0 (for details see http://en.wikipedia.org/wiki/Transparent)

Transparency 0.1

Transparency 0.3

Transparency 0.5

Transparency 0.8

Transparency 1.0

Region Transformations: **Motion**

- **speed** - in pixels per second, in the playback mode, the region will move in the direction of current

- **direction** - direction of the motion (used in combination with "speed"). Can also have the value "random". If it is not defined, that "rotation" parameter is used to define the direction of the movement.
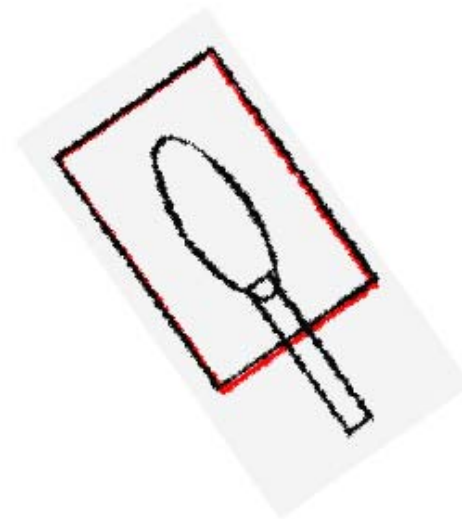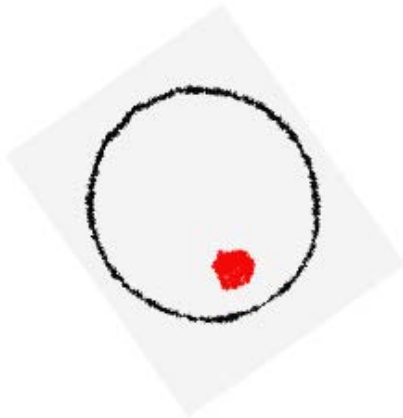
Region Transformations: **Pen**

- **pen thickness** - if region is moved around, it can leave the trace, and here you can define the thickness of the pen
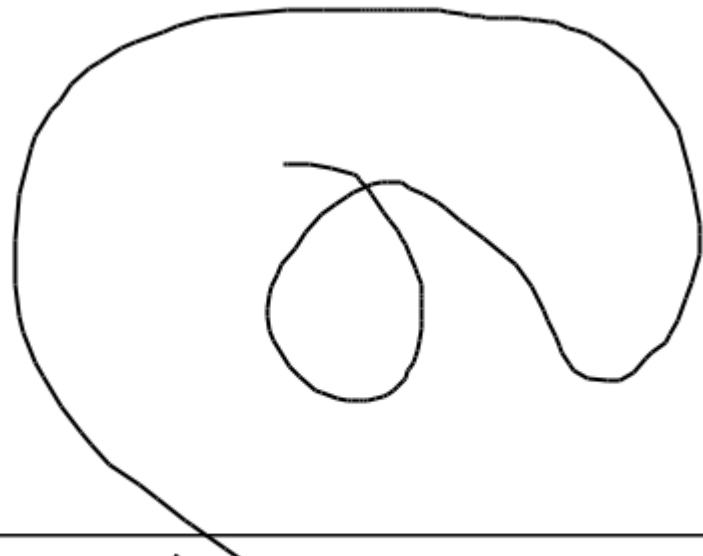
Pen thickness = 2

Region Transformations: **3D Pen**

- horizontal 3D rotation

- vertical 3D rotation
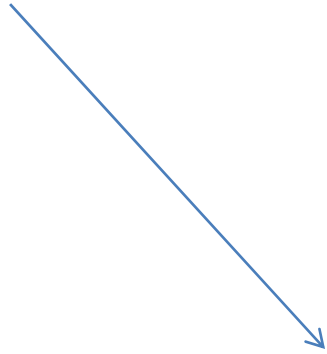
Region Transformations:
Perspective Depth
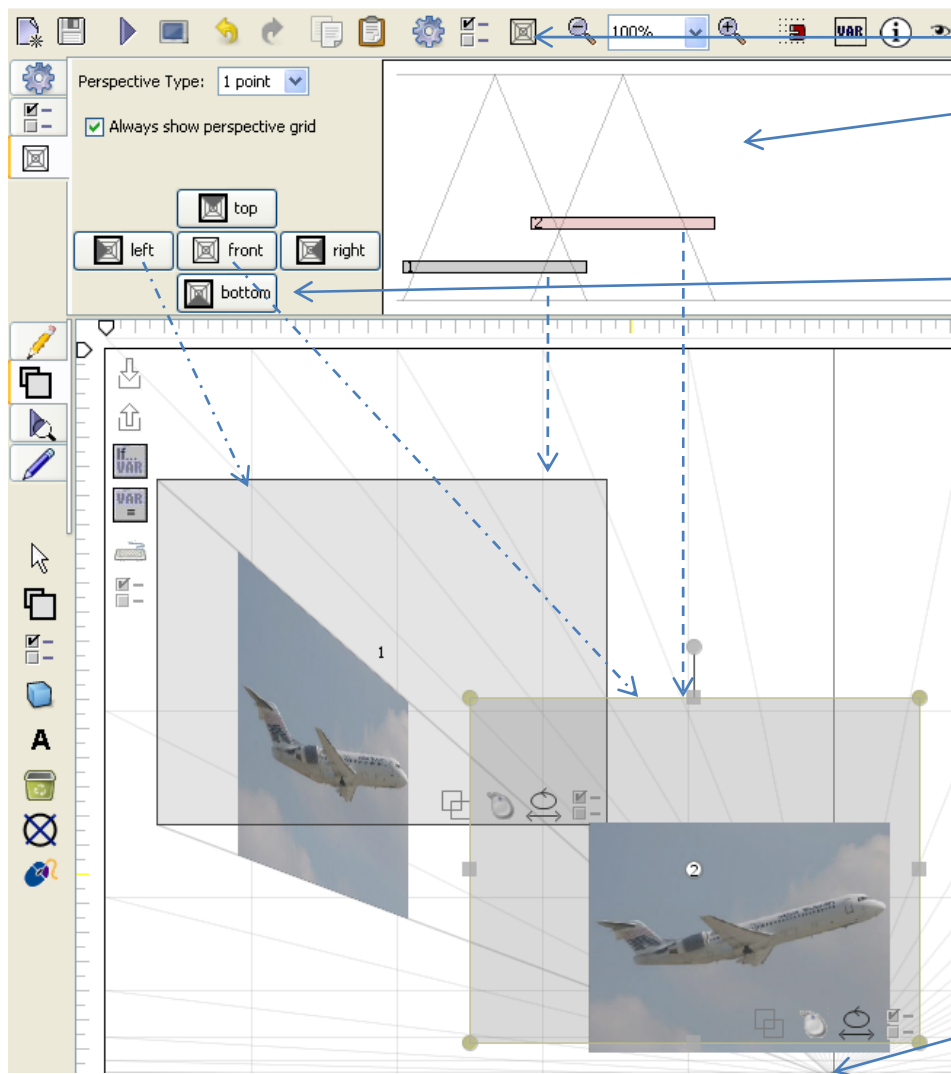
Toolbar icon for opening the perspective tab

Changing the perceptual depth of regions

Changing the side on which the image will be shown in the perspective

Perspective point. You can drag it and change.

Sketch Properties/ Transformations

Property	Value	Description
Color		
background color		red, blue, green, gray, yellow....
transparency		0.0 .. 1.0
Zoom		**1.0 means 100%**
zoom		1.0 means 100%
zoom center x		default is 0
zoom center y		default is 0
Offset		
background offset x		
background offset y		
regions offset x		
regions offset y		
Perspective		
perspective type		1 point or two point
perspective y		horizon
perspective x1		point 1 on the horizon
perspective x2		point 2 on the horizon

Set Properties · Animate Properties · Map to Numeric Variables

Explore

Clear

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Simple Animation

- **Flip Book Animation in Active Regions**
  - Analogous to traditional flipbook animation
  - Creating multiple frames with different images, and changing the image periodically
- **Build-In Properties Animation**
  - You can animate any property of the active region or sketch
- Animation start automatically when you open a sketch in preview or playback mode

Flip Book Animation in Active Regions

- You can create more than one image in an active region
- You can then specify which of them will be shown of define animation by defining pause between them

Active frame is shown in the sketch
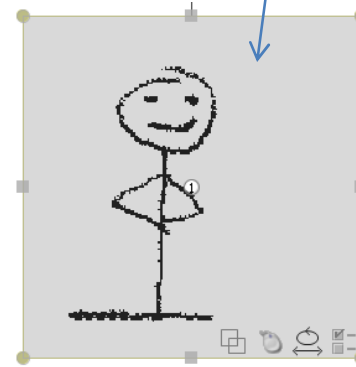
Define animation by setting pause between frames

Active frame

Create a new frame within the region

Frame 1

Frame 2

Build-In Properties Animation

- You can animate any property of the active region or sketch, by defining
  - **Type of Animation**
    - Loop Once, Loop Forever
    - Pulse Once, Pulse Forever
  - **Start Value**
  - **End Value**
  - **Cycle Duration** (in seconds)
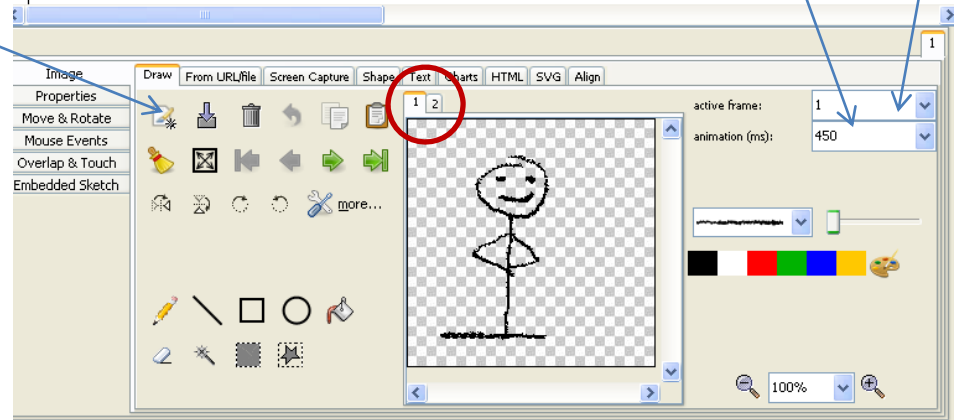
Build-In Properties Animation

In this example, four properties are animated simultaneously:
position x, width, height, and transparency

Use current value as start value for animation

Explore the effects of the properties value with slider

Use current value as end value for animation

Animate Properties Tab

Image	Set Properties	Animate Properties	Map to Numeric Variables				Explore

Dimension	Animation Type	Start Value	End Value	Cycle Duration	Curve
Position					
position x	Loop Forever	50	500	1.0	
position y					
relative x					
relative y					
trajectory position					
Size					
width	Puls Forever	50	100	1.0	
height	Puls Forever	50	100	1.0	
Orientation					
rotation					
Transparency					
transparency	Puls Forever	0.0	1.0	1.0	
Visible area					
visible area x					

Properties
Move & Rotate
Mouse Events
Overlap & Touch
Embedded Sketch

1440

0

<- Start
<- End
Clear

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Freehand Gesture Support

- You can also limit a motion of the region to a freehand sketched trajectory
  - Right-click on the active region and select "Define Trajectory"

Saving Gesture Data

- In addition to creating trajectory, you can also use gesture timing to create a timer and timer curve

- This means that timer can repeat your gesture with the same timing as you

- More on timers and timer curves in a separate tutorial…

Gesture Data

Do you also want to create a new timer using the trajectory timing data?

☑ Create timer

☑ Restart variables on sketch entry and exit

☑ Create timer curve with geture timing
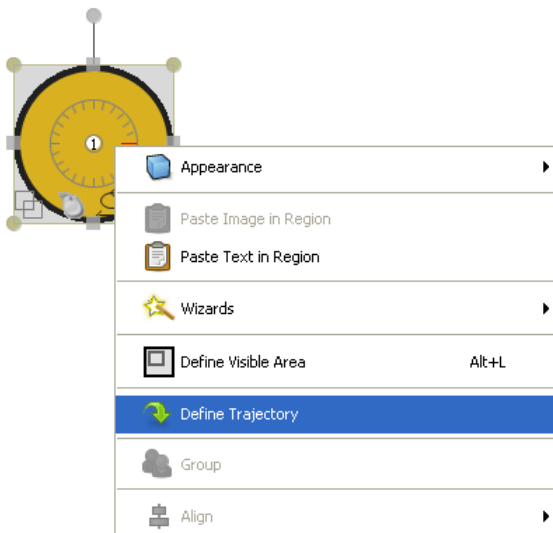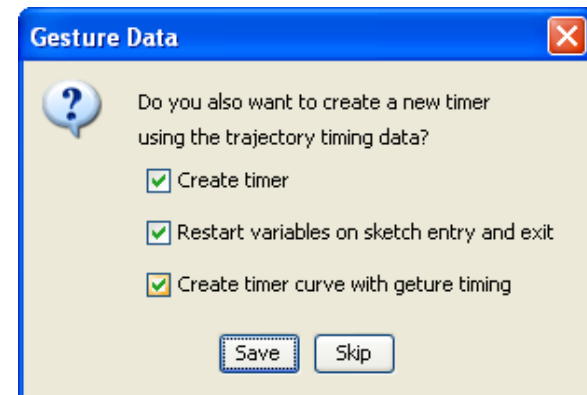
[Save]　[Skip]

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