



presented by

Máirín Duffy

Principal Interaction Designer, Red Hat, Inc.



redhat.

fedora^f

PROTOTYPE

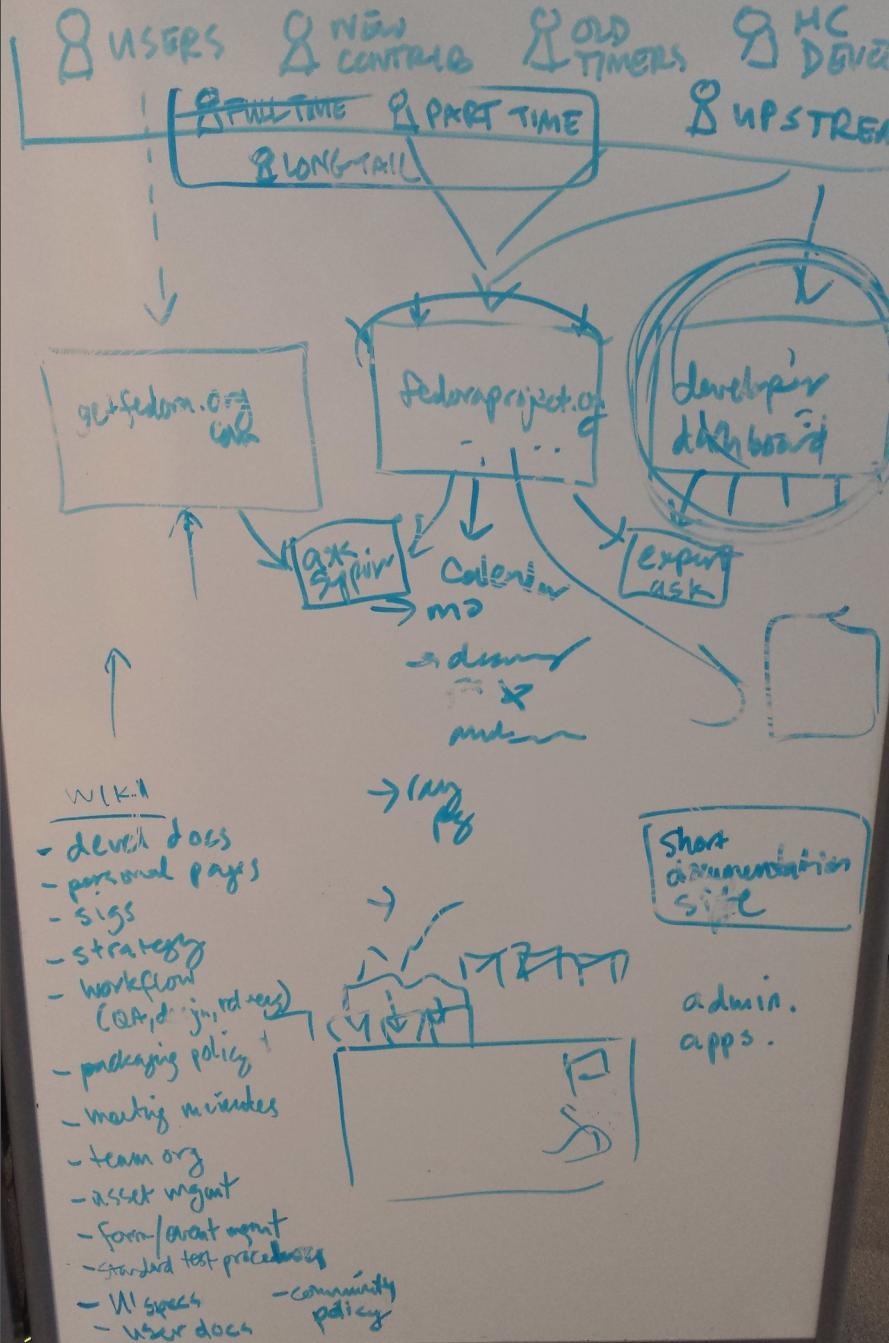


"A rough proof-of-concept to see if an idea is worth it to (continue to) pursue."

Photo Credit: Public Domain image, US Library of Congress.
First flight of the Wright Flyer I, December 17, 1903, Orville piloting, Wilbur running at wingtip.

IDEATION

Whiteboard discussion



FINAL IMPLEMENTATION

www.getfedora.org/workstation

Fedora Workstation – Mozilla Firefox

Fedora Worksta... x https://getfedora.org/en/workstation/ DuckDuckGo fedora

WORKSTATION

This is the Linux workstation you've been waiting for.

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Fedora Workstation is a reliable, user-friendly, and powerful operating system for your laptop or desktop computer. It supports a wide range of developers, from hobbyists and students to professionals in corporate environments.



"The plethora of tools provided by Fedora allows me to get the job done. It just works."

— Christine Flood, JVM performance engineer

Sleek user interface

Focus on your code in the GNOME 3 desktop environment. GNOME is built with developer feedback and minimizes distractions, so you can concentrate on what's important.

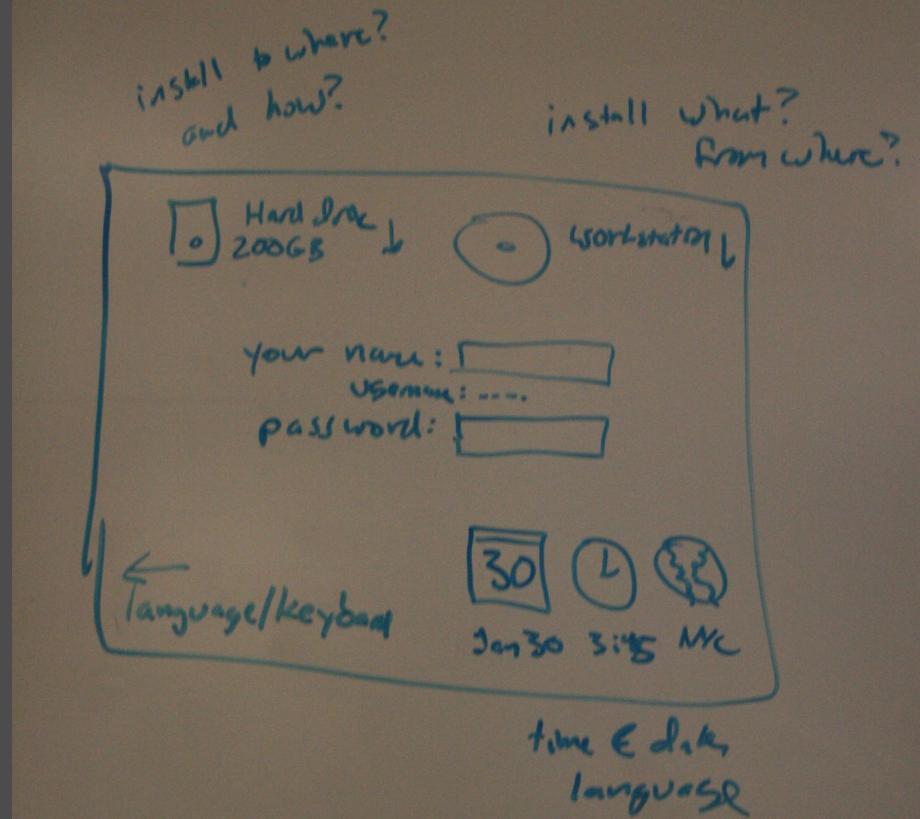


Complete open source toolbox

Skip the drag of trying to find or build the tools you need. With Fedora's complete set of open source languages, tools, and utilities, everything is a click or command line away. There's even project hosting and repositories like COPR to make your code and builds available quickly to the community.

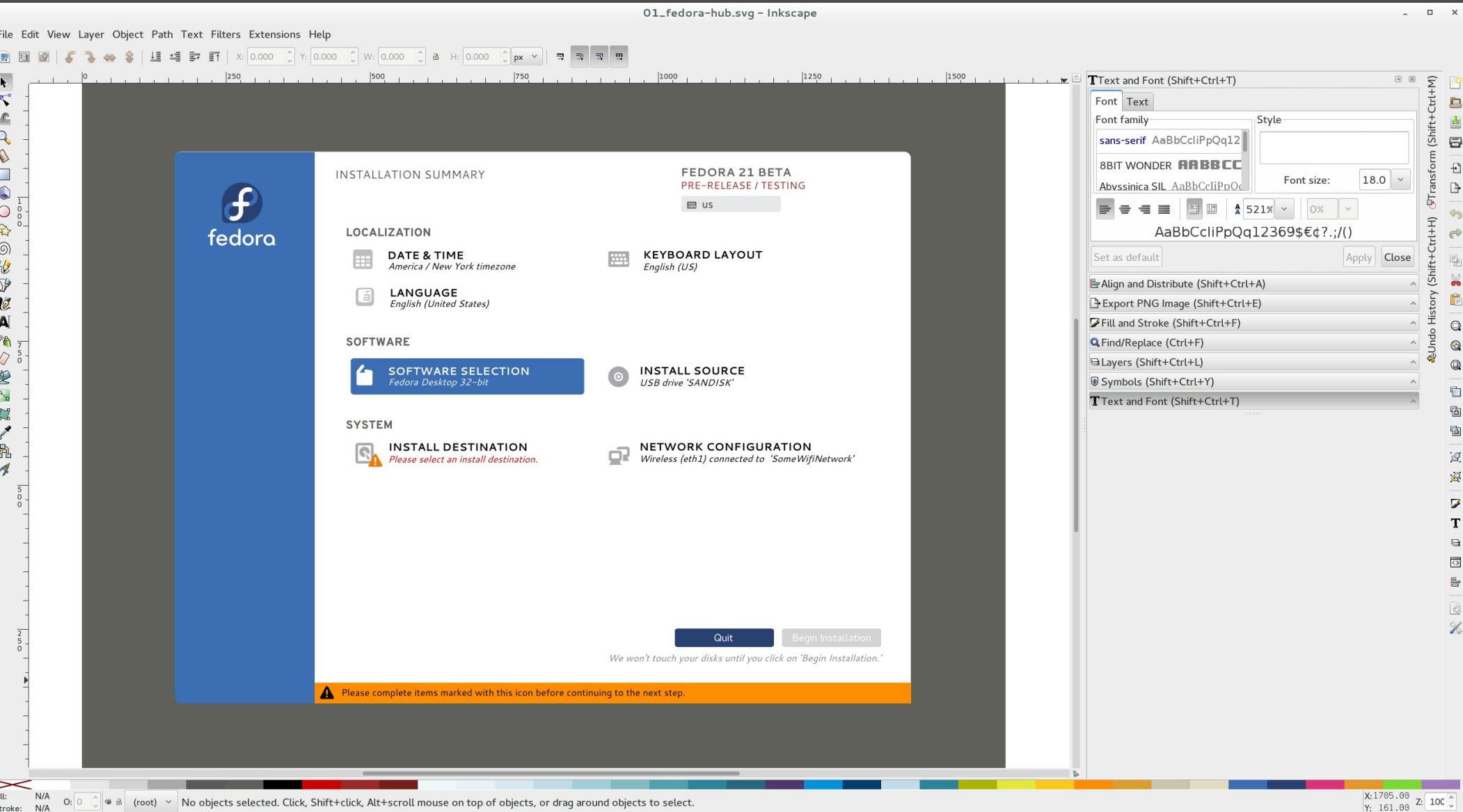
IDEATION

(Whiteboard discussion)



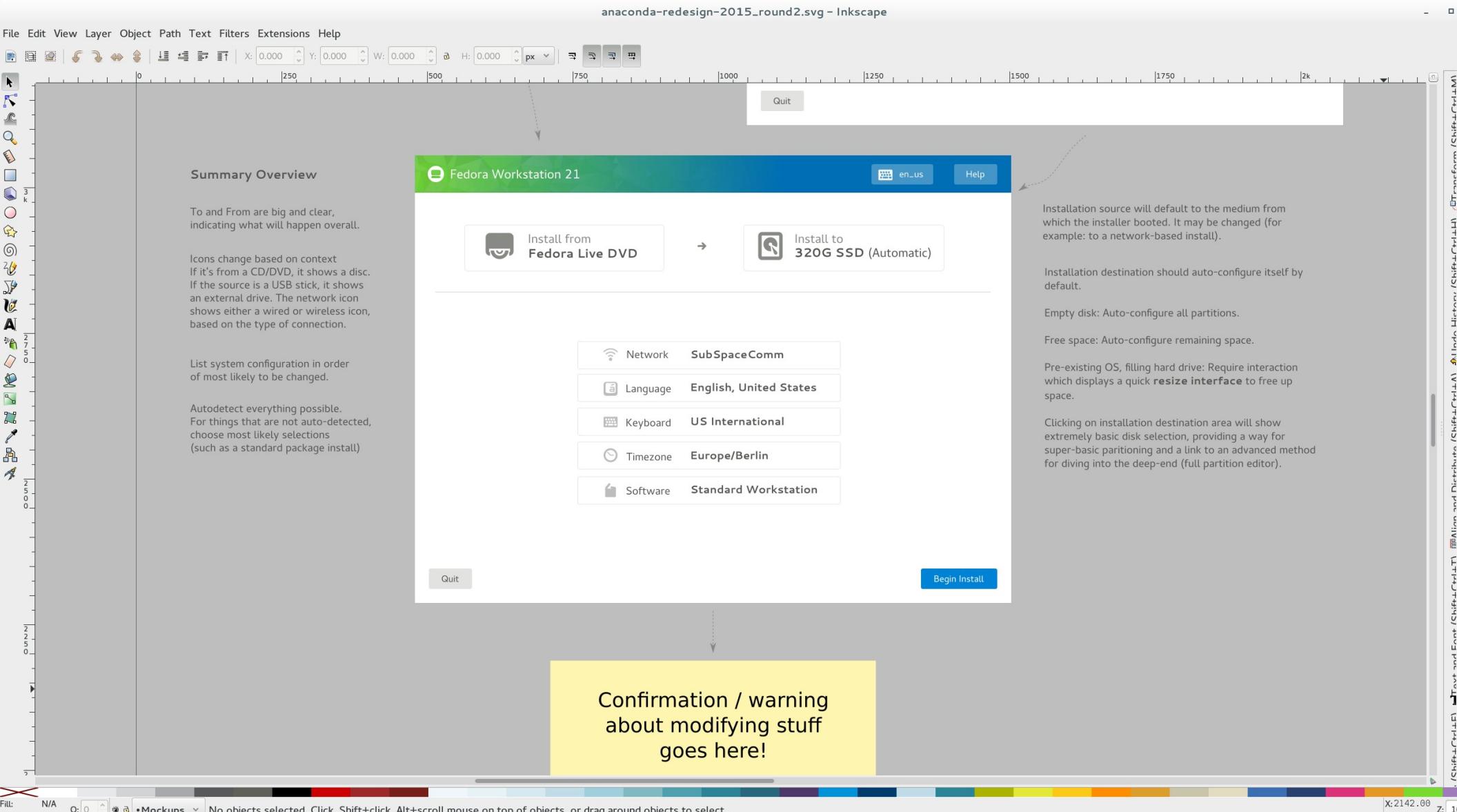
MORE INKSCAPE PROTOTYPES

(Iterations based on feedback)



MORE INKSCAPE PROTOTYPES

(Even more iterations based on more feedback)



PHYSICAL OBJECT PROTOTYPING

(with 3D printing)

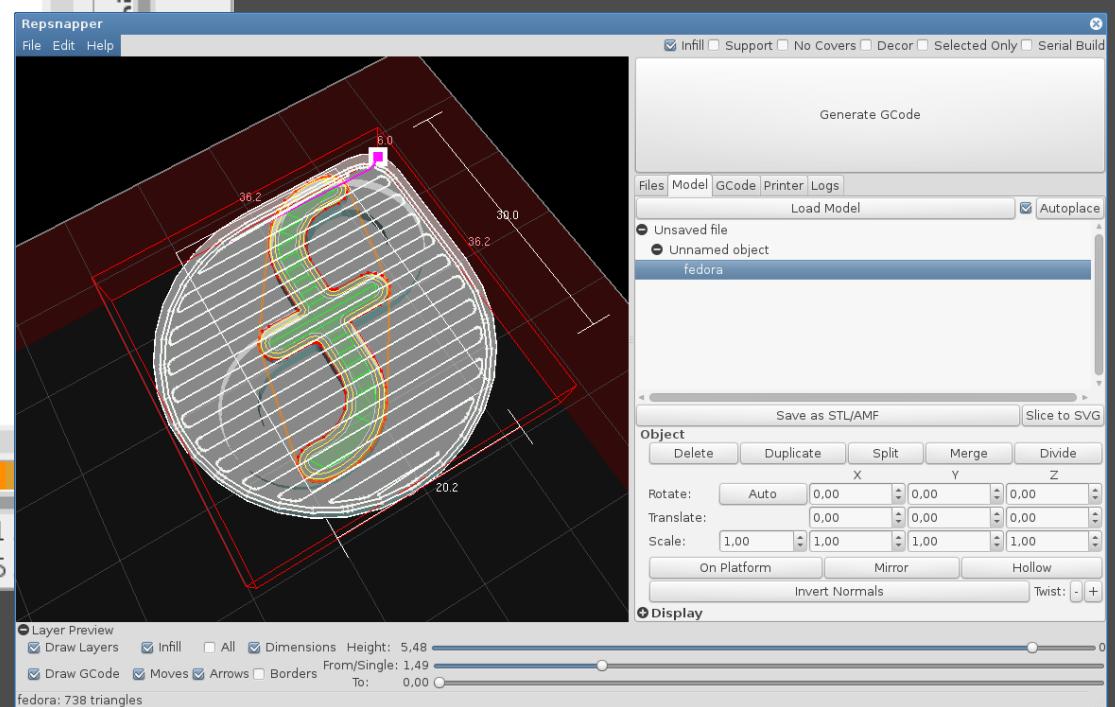
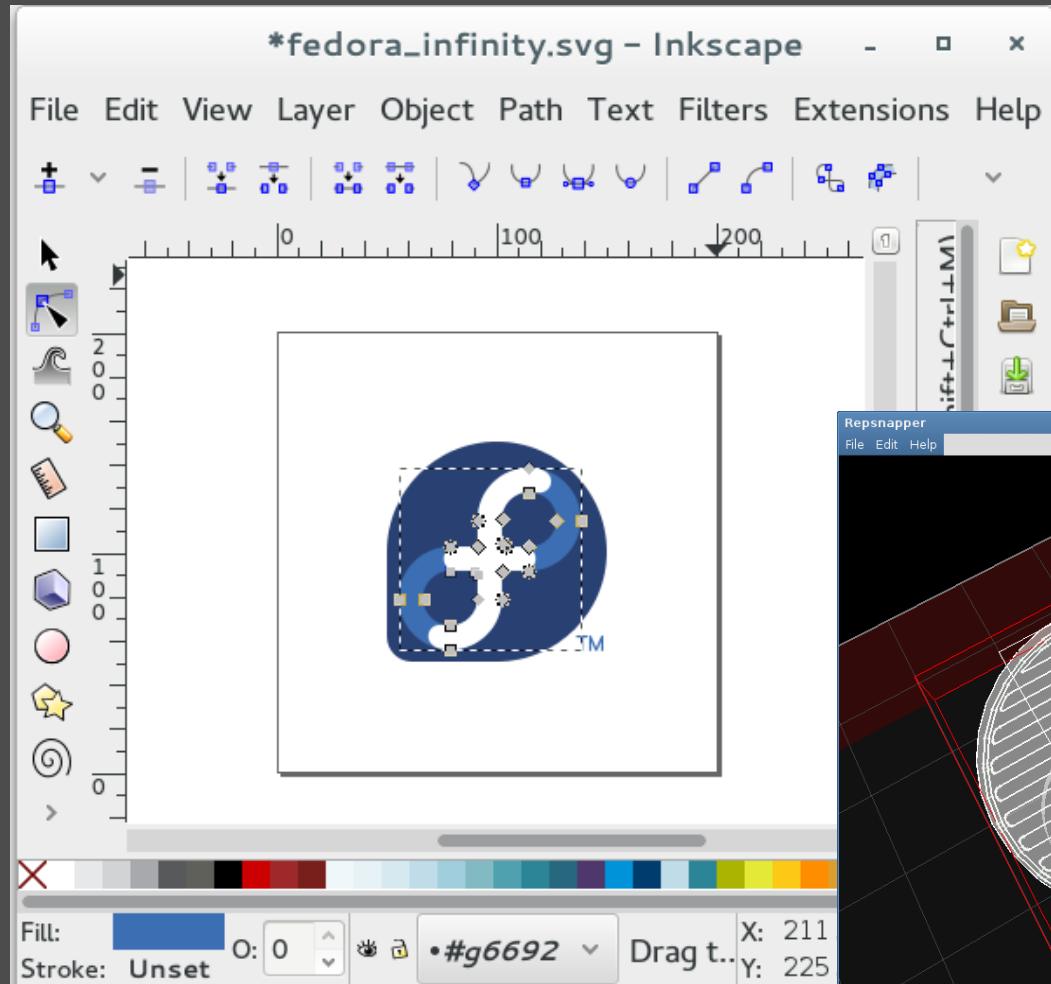




Photo Credit: Miro Hrončok, used under a Creative Commons Attribution 3.0 license.

FAST. FURIOUS. FUN.

Can I really do all of
this? I don't know...

Of course you can.
YOU CAN DO IT!

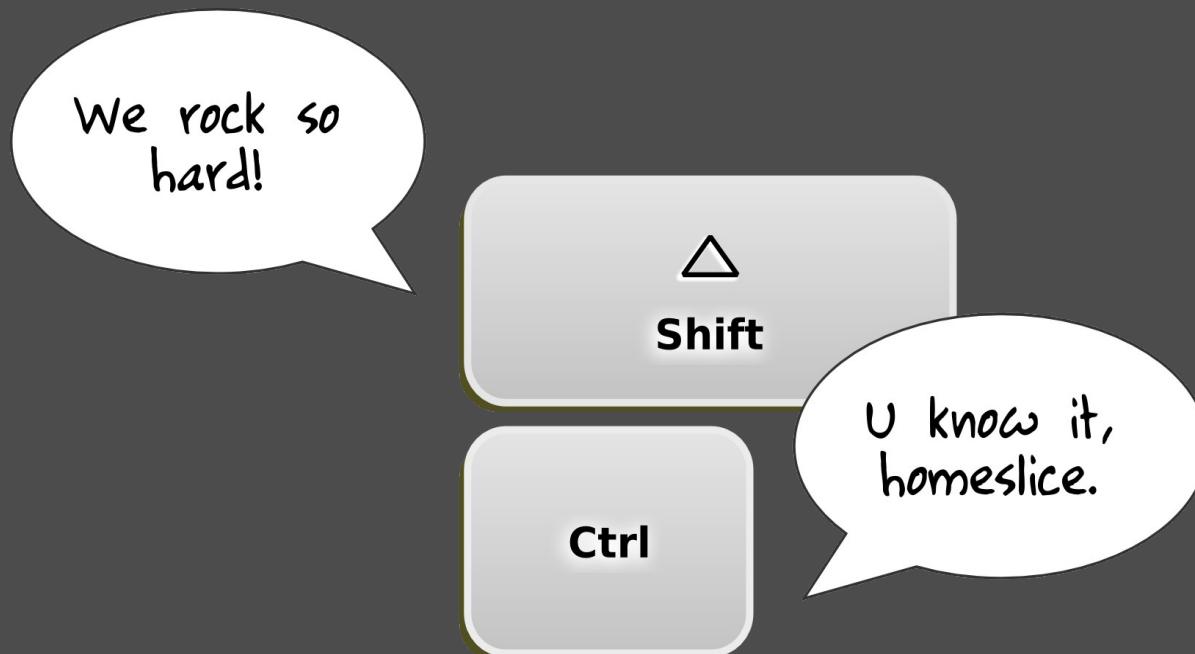


TODAY'S TOPICS:

- #1 Let's snag some artwork!**
- #2 Hack the evil computer!**
- #3 Some more basics.**
- #4 Working with shapes**
- #5 Shapes vs. paths**
- #6 Working with text**
- #7 Fill and stroke**
- #8 Save and export**

BRIEF INKSCAPE UI PUBLIC SERVICE MESSAGE #1:

Ctrl & Shift are magic!



WHEN IN DOUBT, TRY THEM OUT!

SCALING, ANGLES, ROTATION, MOVING, UNDO, STROKE v. FILL ...

BRIEF INKSCAPE UI PUBLIC SERVICE MESSAGE #2:

Don't get lost!



STUCK IN LALA LAND? HITTING '5' WILL BRING YOU BACK TO CENTER.

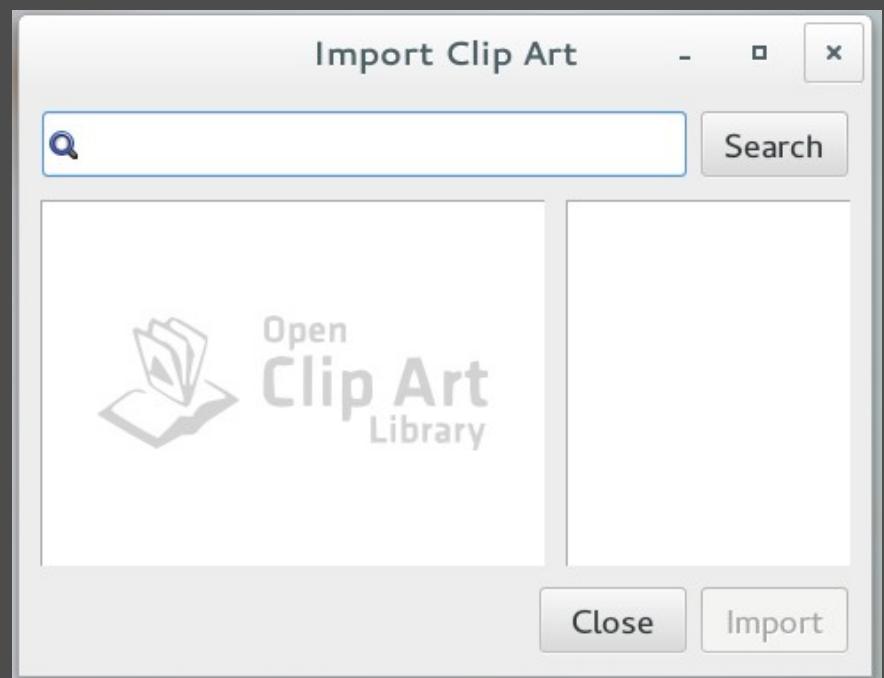
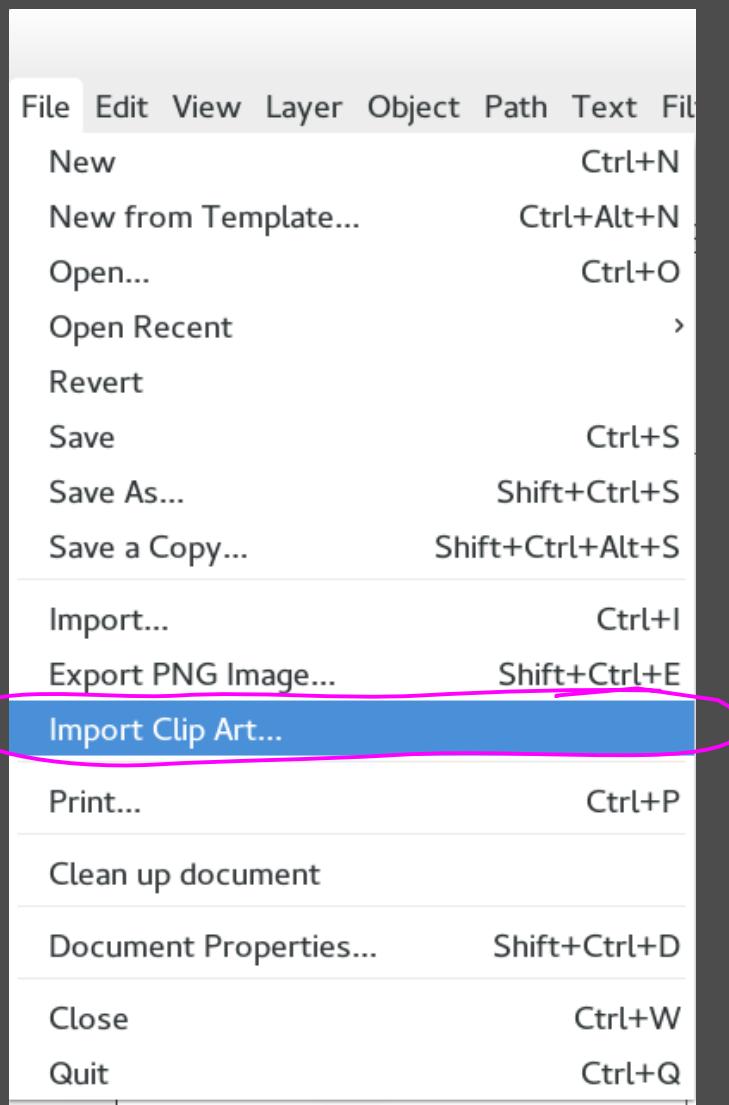
#1

Let's snag some artwork!

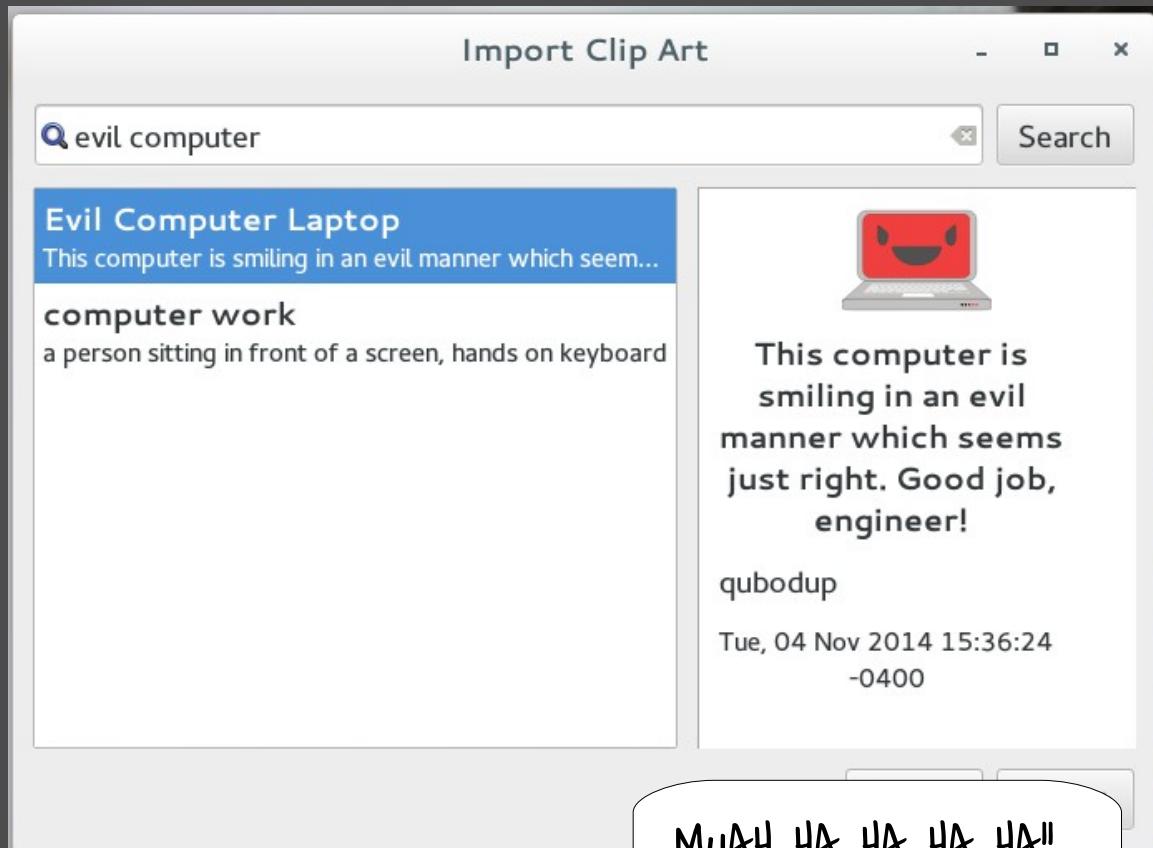
It's public domain
artwork too, so
we can use it freely!



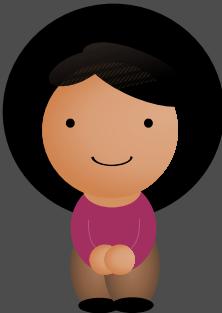
File > Import Clip Art



Import the Evil Computer!



You don't scare me, dude.



#2

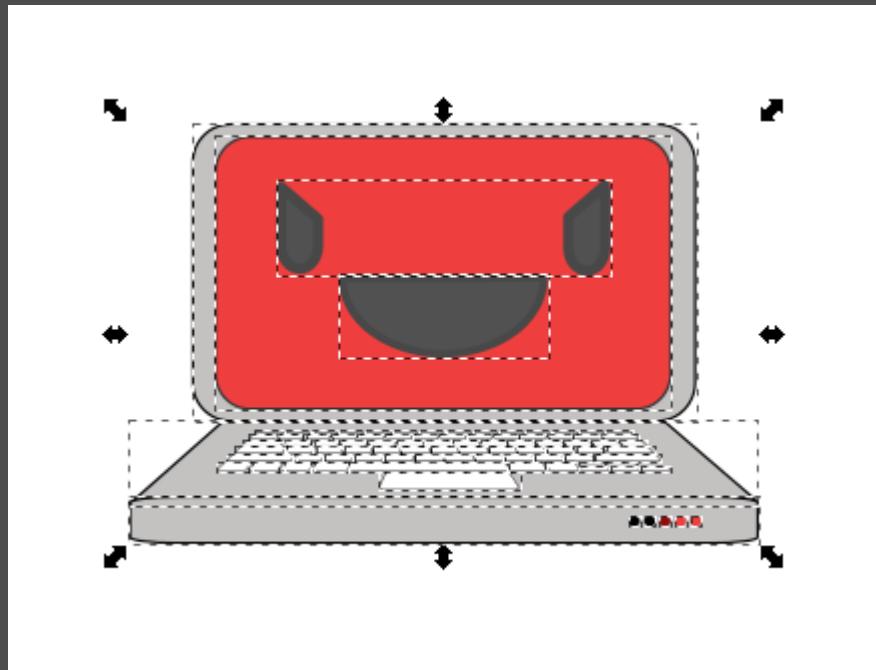
Hack the evil computer!

Yeah!



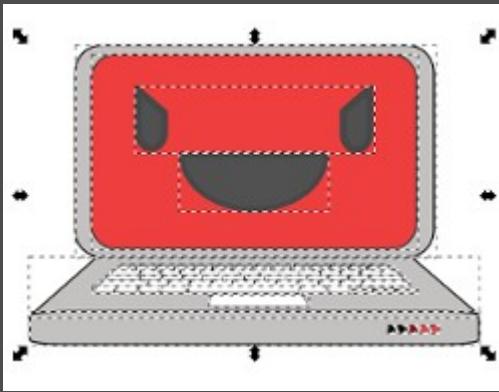
Grouping makes many into one.

Click on the evil computer, and drag him around in Inkscape. He seems like a single solid object right? But, wait:



Select the little beastie, then hit **Ctrl+Shift+G** (or go to Object > Ungroup.) What happens?

Selecting Objects



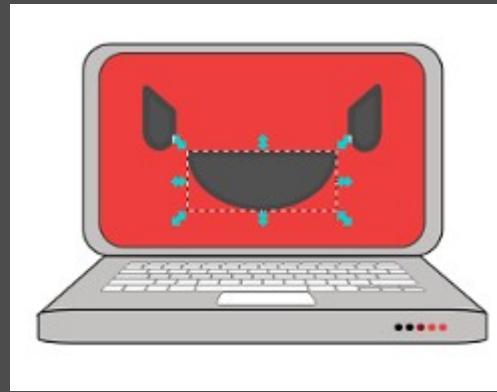
Notice the dotted boxes with around various parts of Beastie.

The boxes show all of the different objects that are selected.



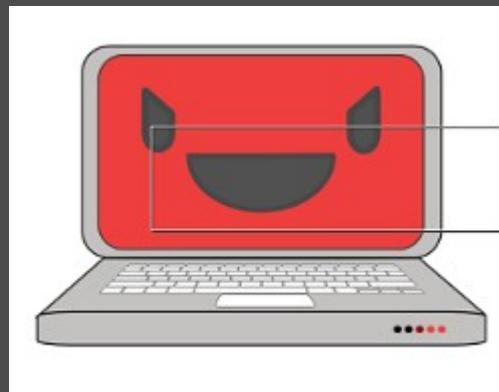
Click the blank area outside of Beastie. The boxes disappear.

All of the various Beastie parts are no longer selected.



Click on Beastie's mouth. Notice the dotted box that appears around it.

This box shows that Beastie's mouth alone is selected.



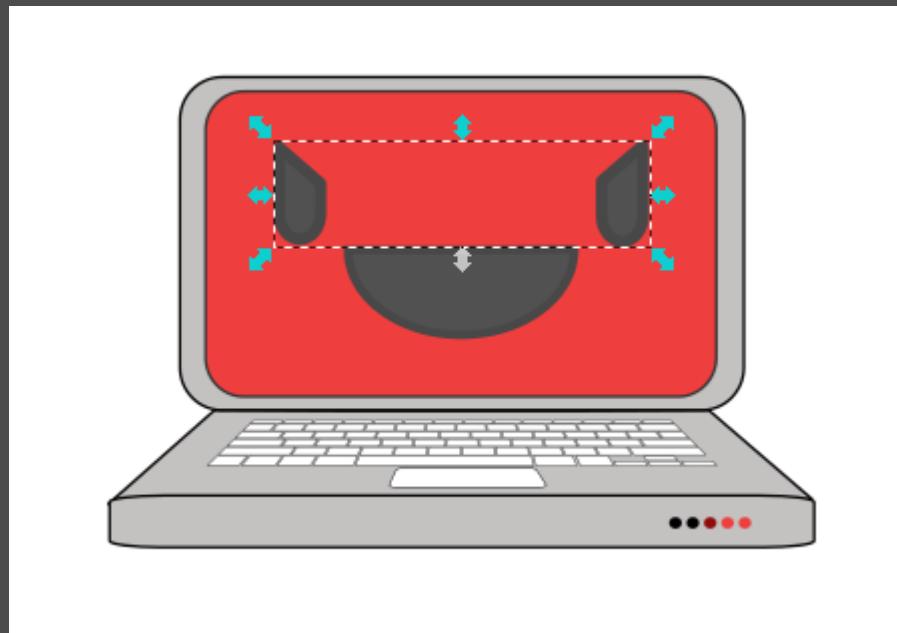
Click, hold down the button, and drag a box around Beastie, then let go.

This is another way to select an object.

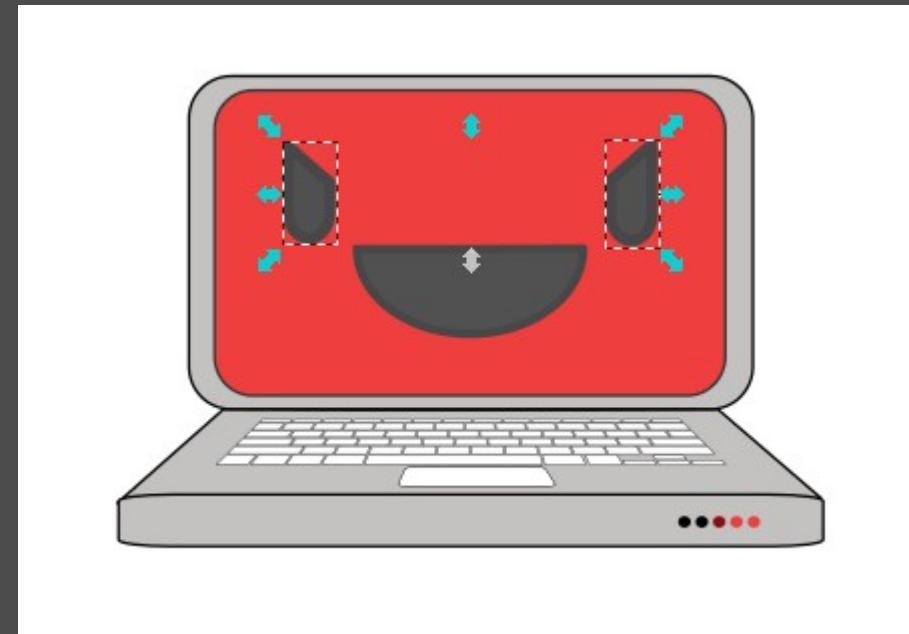
You can hold down shift and click different objects to select multiple objects at once.

More Ungrouping

Groups may be grouped inside of groups and then all grouped! Sometimes artwork you import will have many layers deep of grouping.



Try to select just one of Beastie's eyes. Can't do it, right?



Ungroup its eyes - **Ctrl+Shift+U**.
Now you can select them separately.

Positioning Objects

There's two main ways to position selected objects:



#1 THE MOUSE

Click and drag the object where you want.

Quick, easy, imprecise.

#2 THE KEYBOARD

Use the keyboard arrow keys to move the object; hold down shift or alt to modify speed.

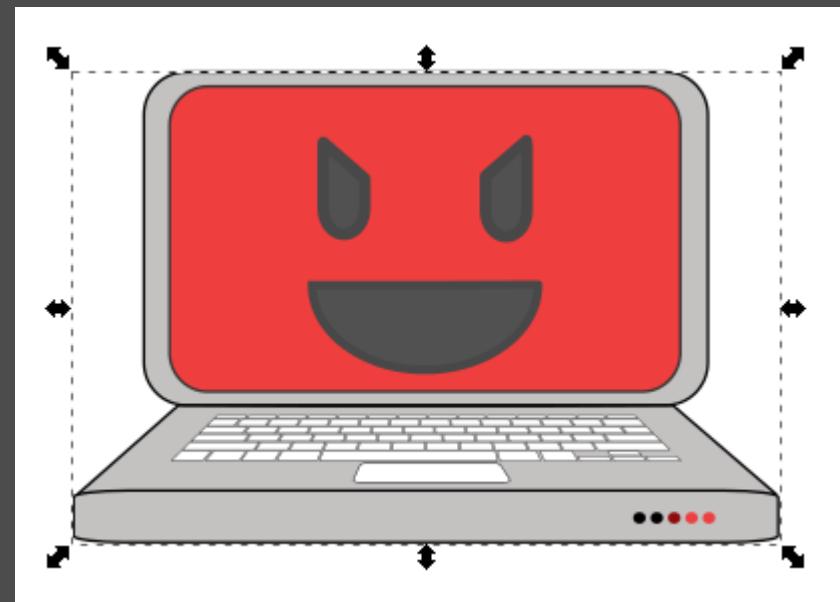
Slow, but precise.

Put Beastie Back Together

What if you want to move all of Beastie around now? You'll have to regroup it. Hit **Ctrl+G** to make it whole again!



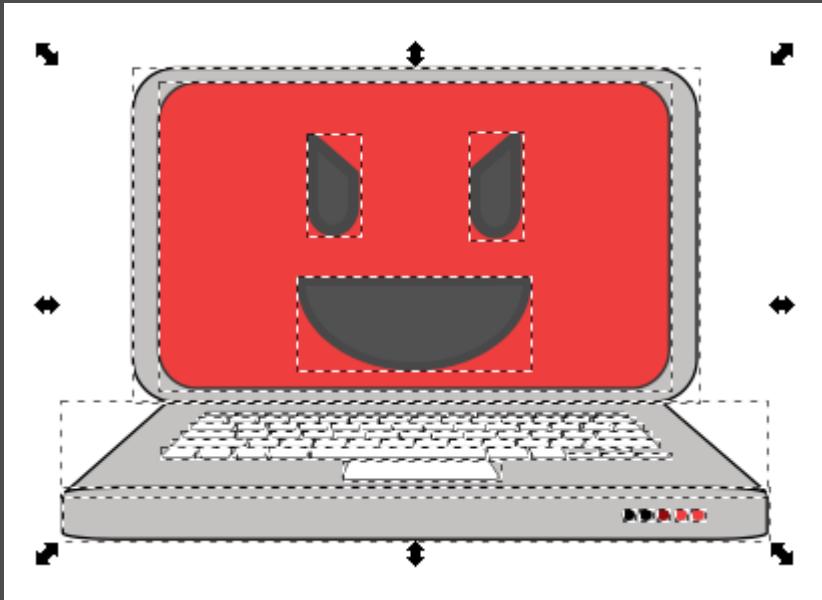
UNGROUPED



GROUPED

Inside the Group

You can go inside a group without ungrouping it!



INSIDE THE GROUP

Double-click on the grouped object. It will act as if it is ungrouped.

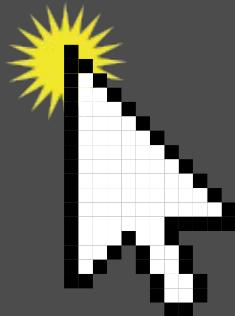


OUTSIDE THE GROUP

Double-click outside of the object to go back outside of the group.

BRIEF INKSCAPE UI PUBLIC SERVICE MESSAGE #3:

Things acting wacky?
You may be in a group!



DOUBLE-CLICK THE BLANK SPACE OUTSIDE OF THE OBJECT YOU'RE
WORKING WITH TO EXIT THE GROUP!

#3

Some more basics.



Zoom zoom!

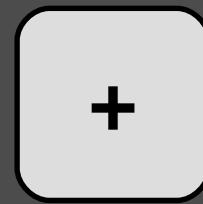
Helpful keyboard shortcuts:



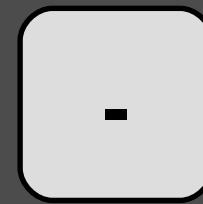
100% zoom



Center canvas,
fill screen

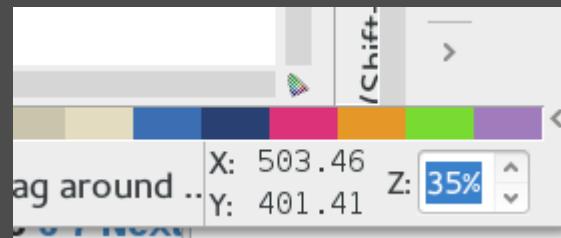


Zoom In



Zoom Out

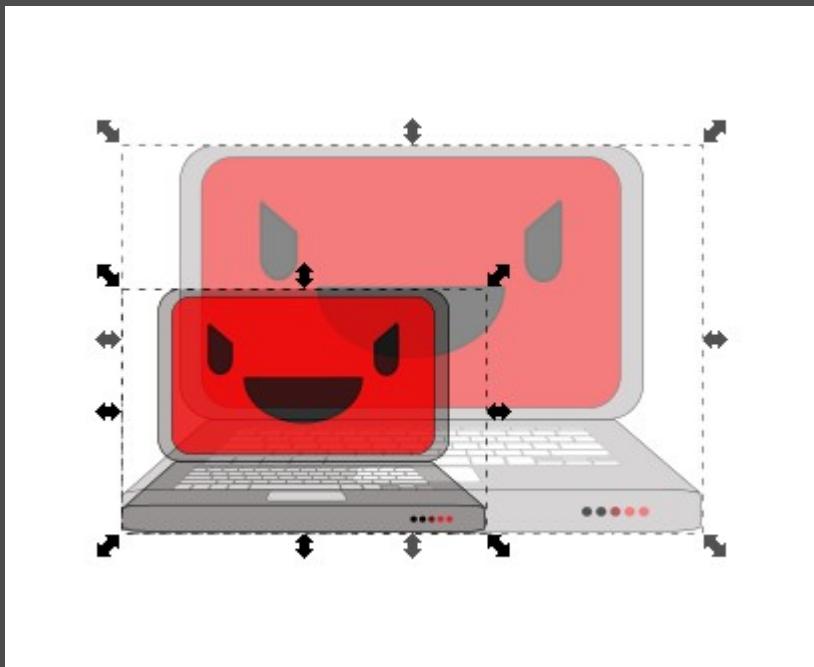
There's also a zoom level indicator / changer in the bottom right:



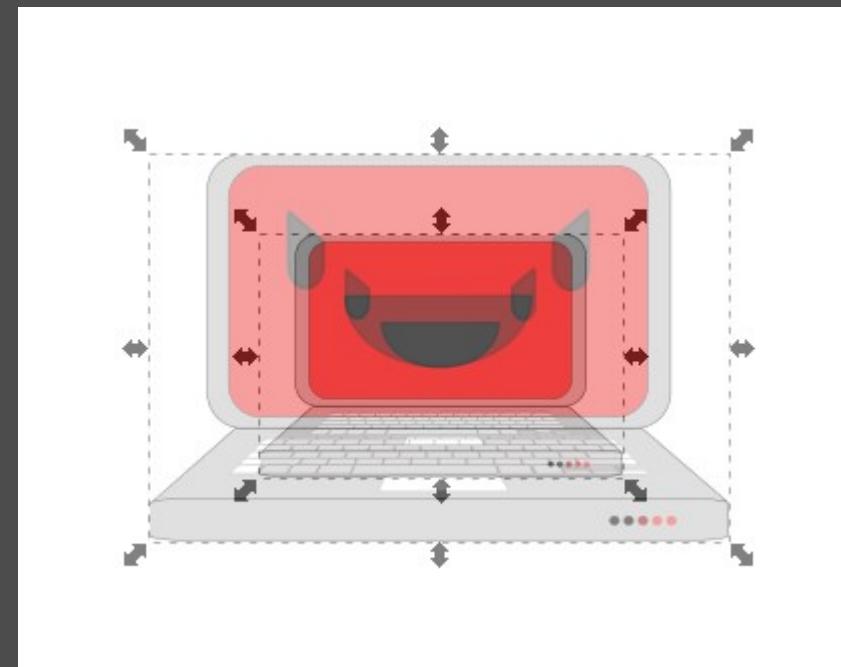
Zoom around a bit now! Practice!

Scale the evilness up (or down)

**SCALE FROM THE LOWER LEFT
(CLICK & DRAG)**



**SCALE FROM THE CENTER
(SHIFT + CLICK & DRAG)**

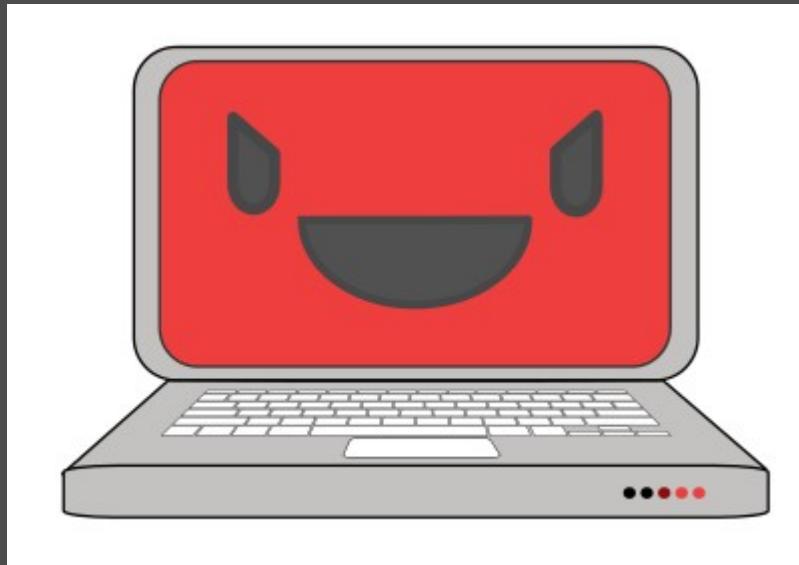


Try it on your own! Size it up, size it down! Double-click to go inside the group and scale Beastie's eyes, then exit the group.

Beastie's Makeover

Let's practice selecting and positioning objects. Rearrange Beastie's face however you like:

- Try selecting by clicking, and selecting by dragging.
- Try positioning with the mouse, and positioning with the keyboard.
- Change the size of the parts of his face.



BEFORE



AFTER

BRIEF INKSCAPE UI PUBLIC SERVICE MESSAGE #4:

Don't forget this lock.

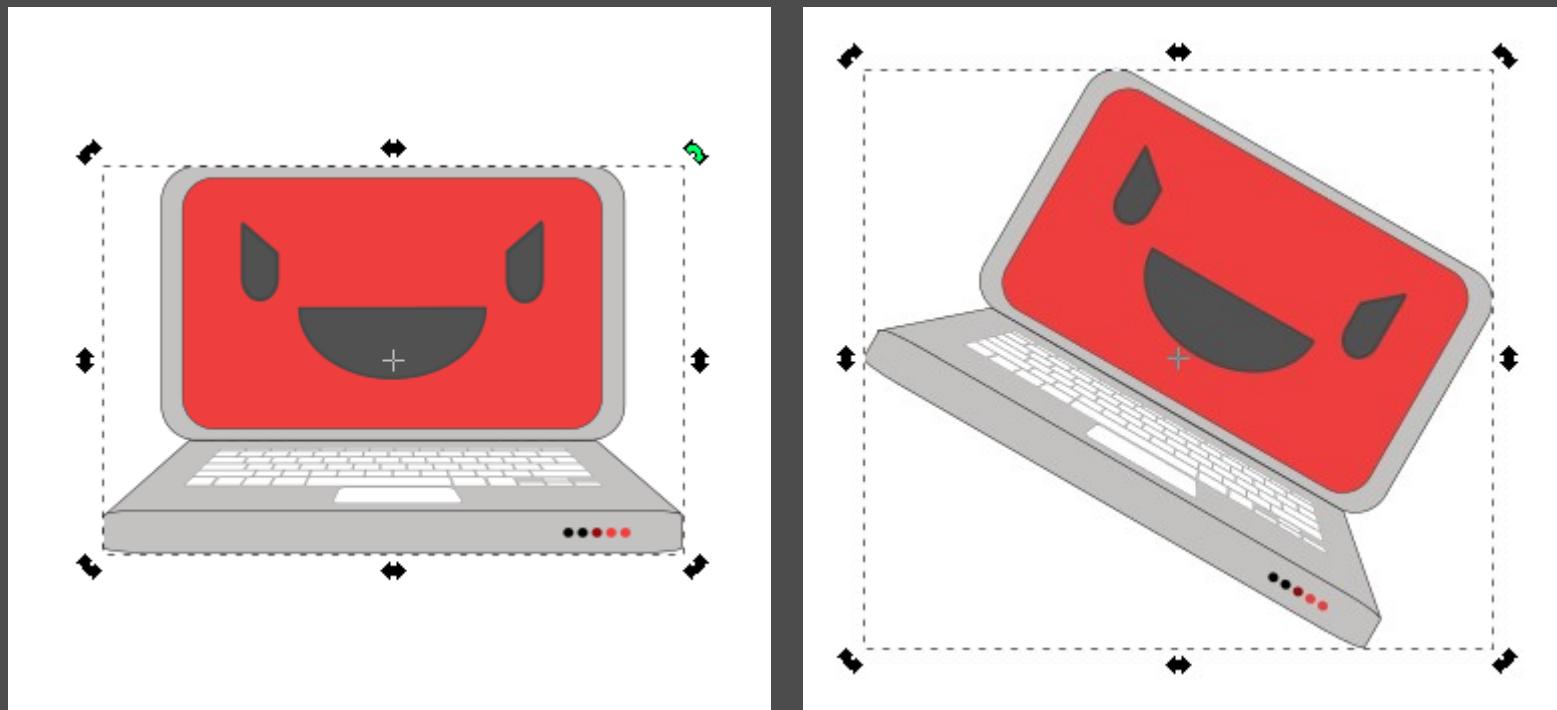
Don't forget
about me!



IF YOUR DRAWINGS AND TEXT ARE GETTING STRETCHED, TRY CLICKING IT!

Now, spin it!

Click on an object twice until you see curved arrows at the corners. Drag on the curved arrows to rotate it! Hold down Ctrl while you spin to rotate at regular angles!



Spin the computer on your own now! Now double-click to go inside the group and rotate Beastie's mouth into a frown.

BRIEF INKSCAPE UI PUBLIC SERVICE MESSAGE #5:

Don't fear mistakes.

*Keep pressing me
until you get back to
where you were!*

Ctrl

Z

MAKE A MISTAKE? OR 3? PRESS CTRL+Z UNDO. (CTRL+Y WILL REDO)

Flip out!

Select an object,
then press one of these:



Flip
Horizontally

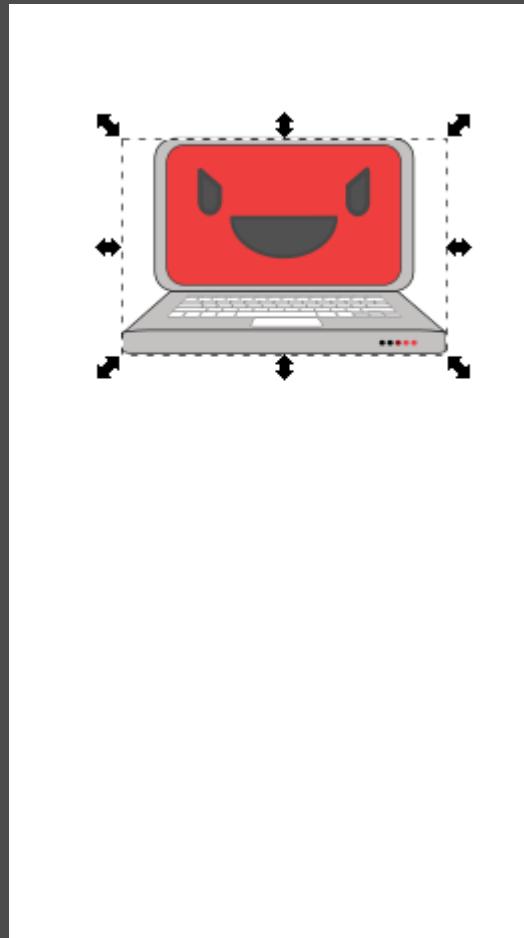


Flip
Vertically

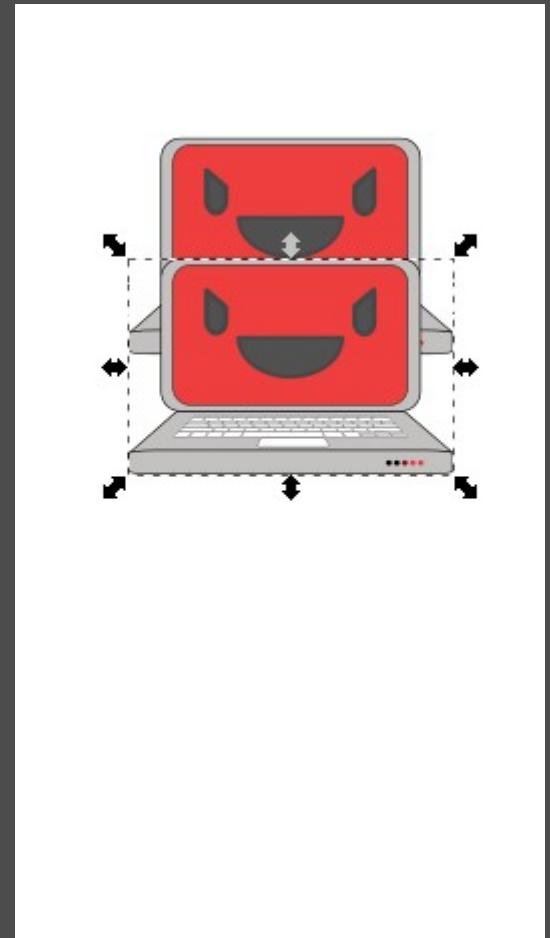
It's that simple - try these now!

The Magic of Ctrl+D

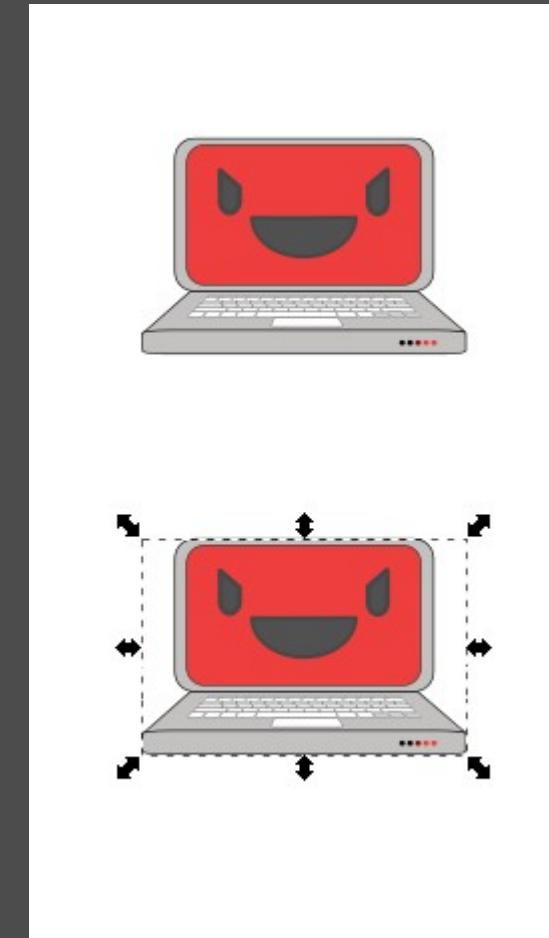
(Duplicate)



SELECT OBJECT &
HIT CTRL+D



HOLD DOWN SHIFT
AND KEEP PRESSING
ARROW DOWN



A PERFECTLY-
ALIGNED COPY.

On Top of the World

There's a stacking order to everything on the Inkscape document area. Things can be moved on top of or below each other.

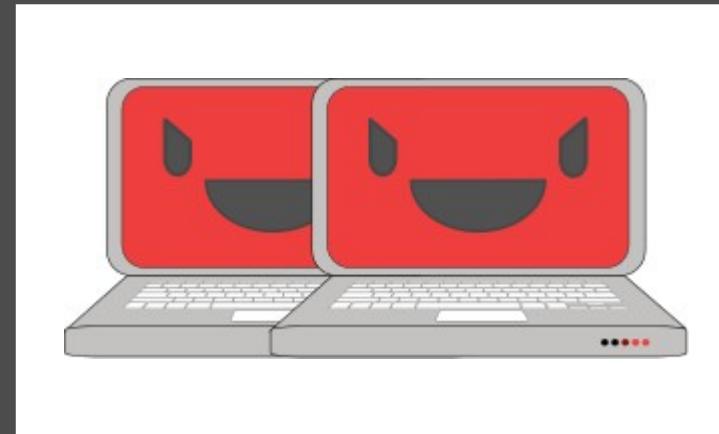
Move to the Top

Select the left Beastie and press the 'Home' key. Or, press PgUp a lot.



Move to the Bottom

Select the left Beastie and press the 'End' key. Or, press PgDn a lot.

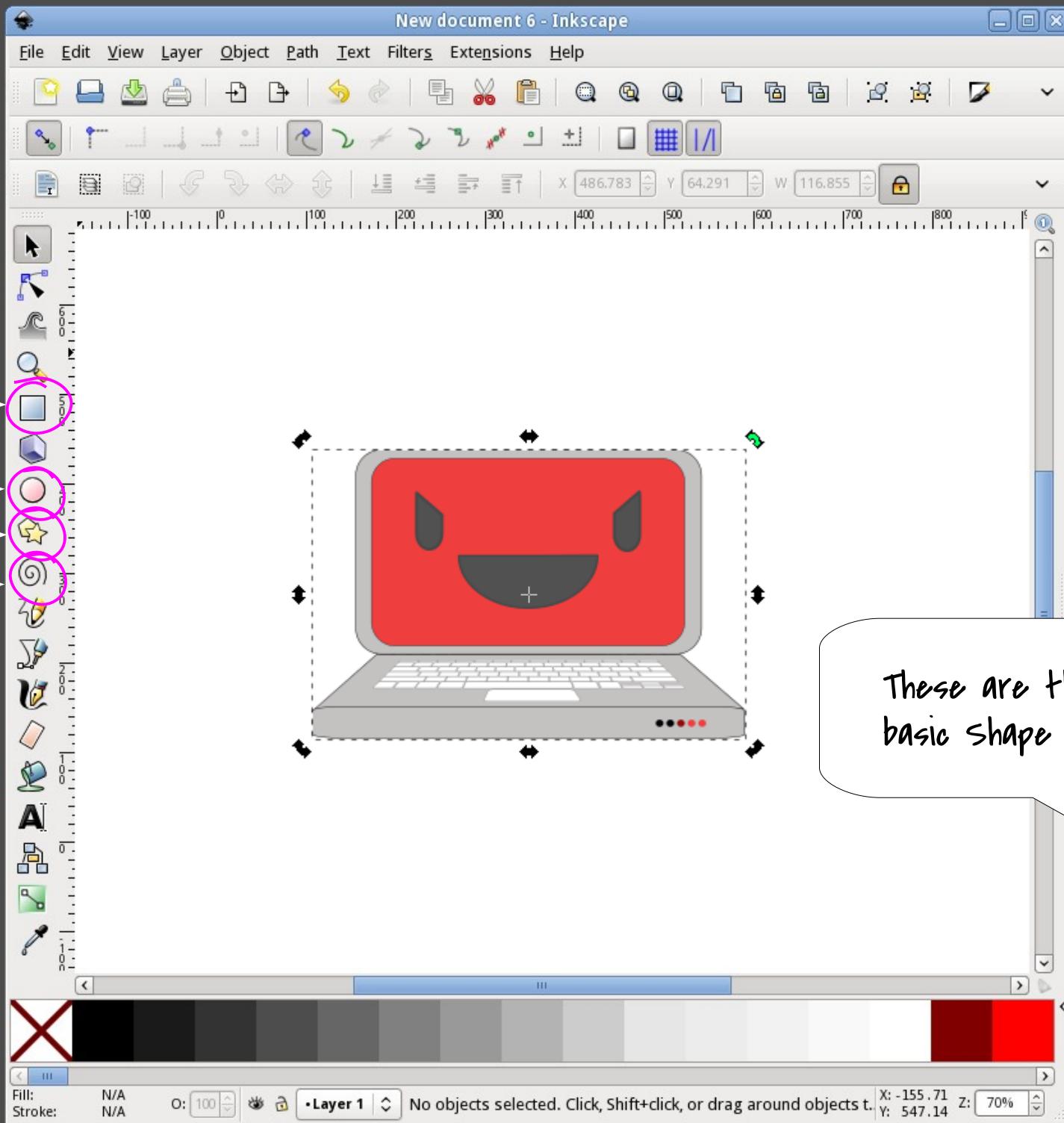


#4

Working with shapes

I'll use shapes to make a hat for Beastie.



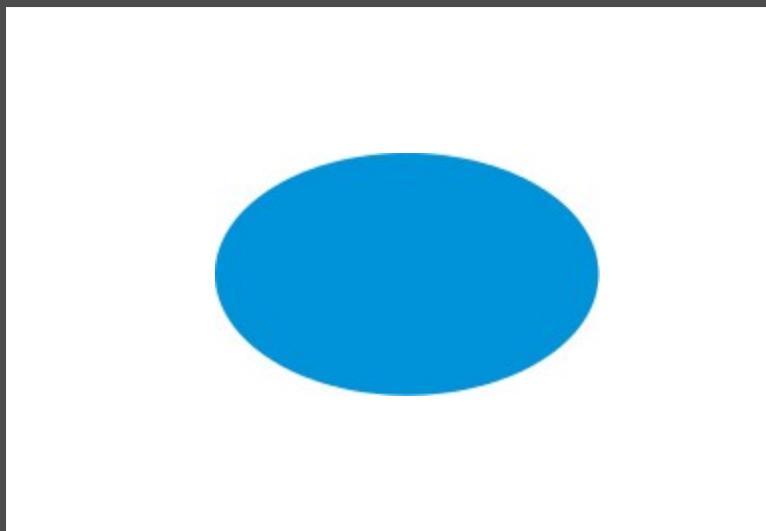


These are the
basic shape tools.

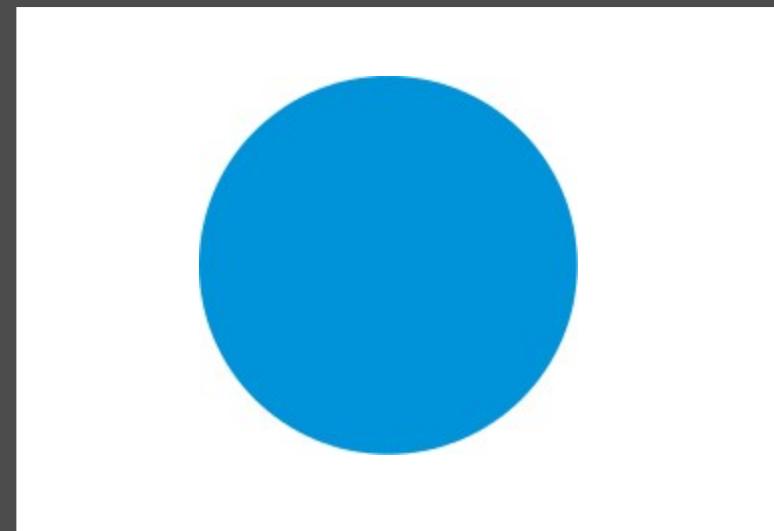


Creating Shapes

Select the shape tool you want from the toolbar. Click and drag, or hold down Ctrl while you click and drag to make the shape evenly-sized.



This circle is a little squished. It was dragged out without using Ctrl.

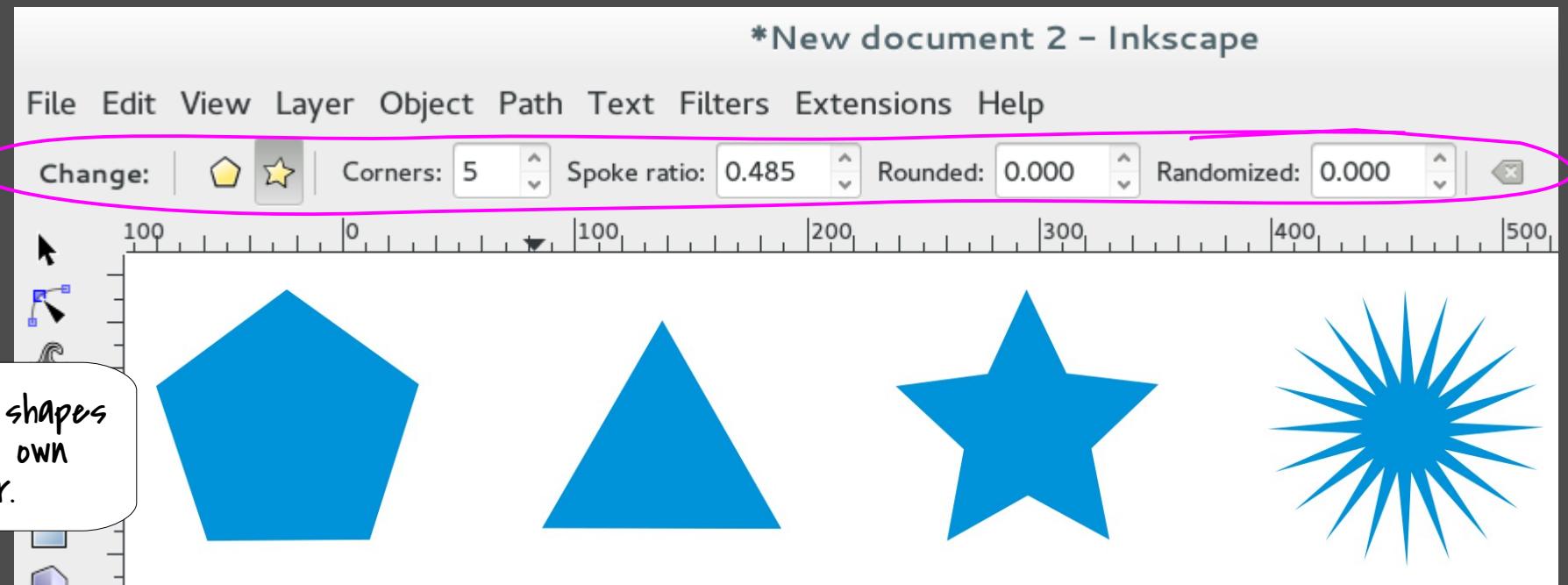


Ctrl

This circle is perfectly round; it was creating by holding down Ctrl while dragging.

Modifying Shapes

Select the shape tool you want from the toolbar. Look at the long toolbar just above the main document / canvas. There are special controls there that will let you modify the shape.



Pentagon

Mode: Polygon
Corners: 5

Triangle

Mode: Polygon
Corners: 3

Star

Mode: Star
Corners: 5
Spoke Ratio: 0.5

Starburst

Mode: Star
Corners: 20
Spoke Ratio: 0.3



Try it Out

Make a party hat for Beastie using a triangle (polygon / 3 corners) and a starburst (star, 15 corners, 0.3 spoke ratio.)



#5

Shapes vs. paths

Time to make
some bunny ears!

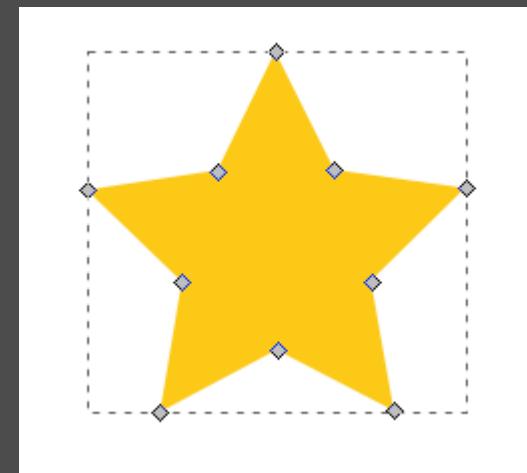


Star Shape vs. Star Path

You can control shapes in different, special ways, while paths are pretty much just points with lines between them.



STAR SHAPE

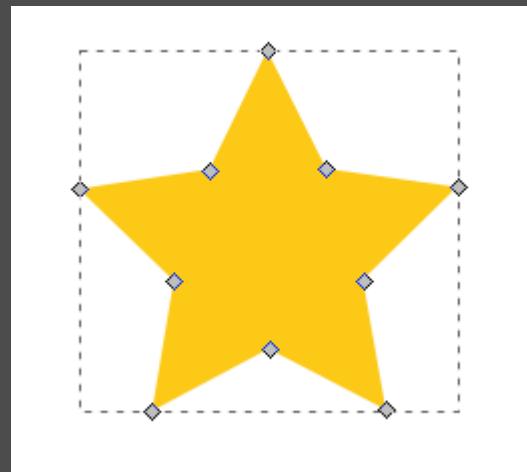


STAR PATH



Star Shape vs. Star Path

The little gray diamond-shaped boxes are called “nodes.” Select nodes by clicking on them with the node tool; select multiple by holding down shift (or drag-selecting.)



Shapes vs. Paths

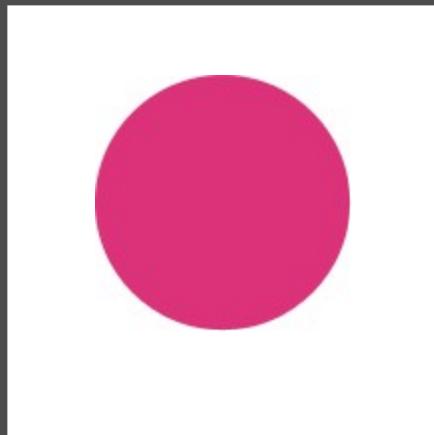
Are Beastie's eyes paths or shapes? How about Beastie's mouth?



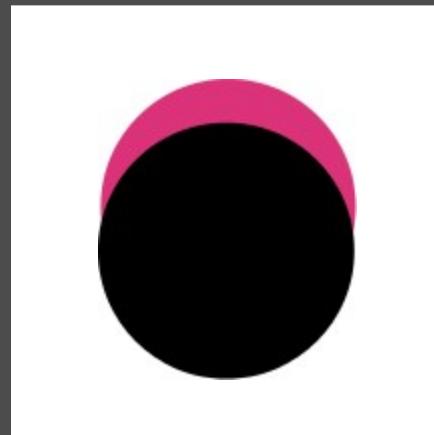
Try clicking on his parts using the node selector tool (second tool from the top in the toolbox.)

Combining Paths + Shapes

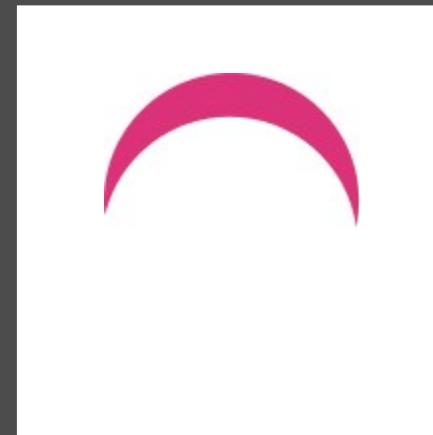
Let's make some bunny ears for Beastie.



Draw a circle, and color it pink.



Duplicate the circle (Ctrl+D), then move it a little down and make it black.

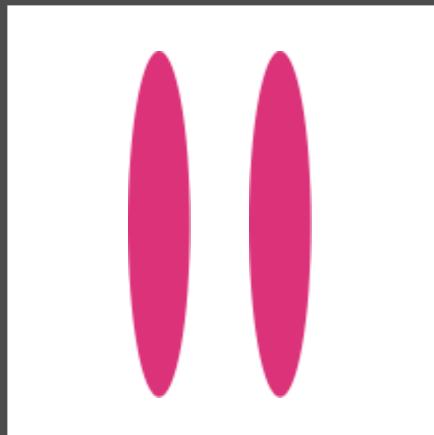


Select both the pink and black circles, and select “Difference” from the Path menu. This is the base.

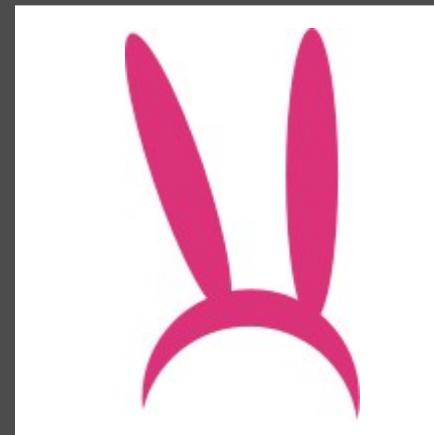
With “Difference,” the shape on top acts like a hole punch.

Combining Paths + Shapes

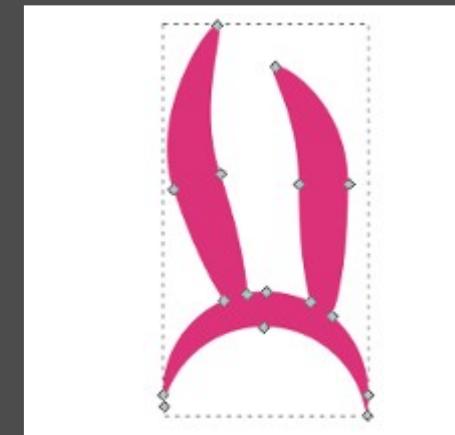
Let's make some bunny ears for Beastie.



Draw a skinny circle
(an ear.) Duplicate it so
that you have two.



Place the two ears on
the base. Rotate one of
the ears if you like. Select
all and select "Union" from
the Path menu.

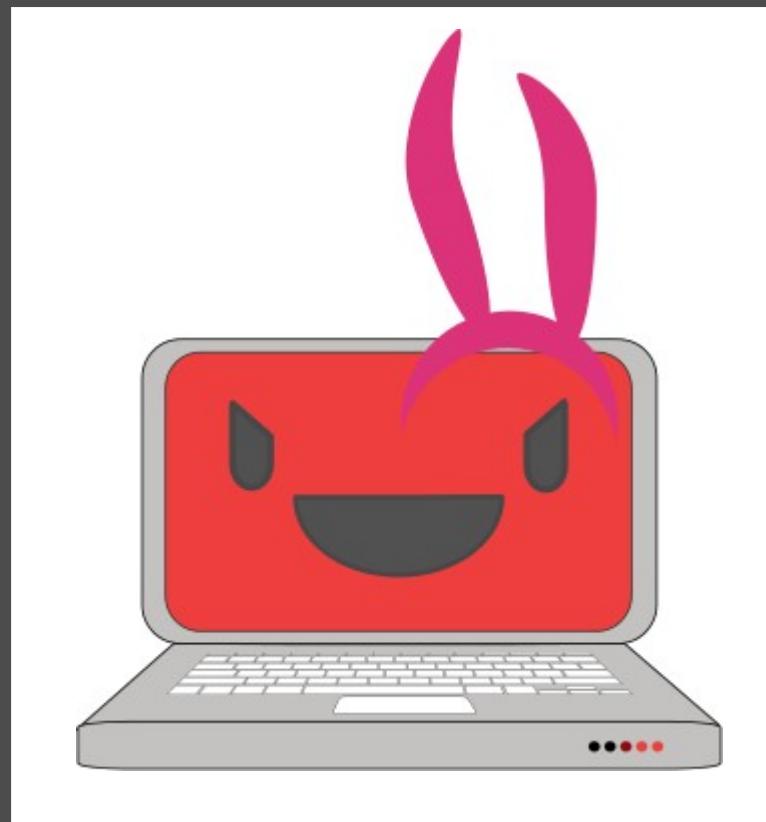


Using the node selector,
grab the nodes at the tip
of the ears and drag to
further refine their shape.

With "Union," all shapes and paths are converted to paths and added together into one single path.

A Gift for Beastie

Hope you like them, Beastie!

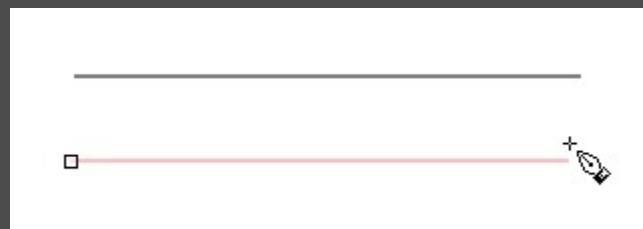


Drawing a Path

Now that you understand paths a little better, you can draw paths using the pen and calligraphy tools as well.

Note that the pen tool is the best way to draw straight lines.

- Hold down Ctrl to keep the line straight!
- Double-click to end the line!
- Click on the open starting square to close the path (if you're making a polygon instead of a line!)



#6

Working with text

*Text helps you
share your ideas.*

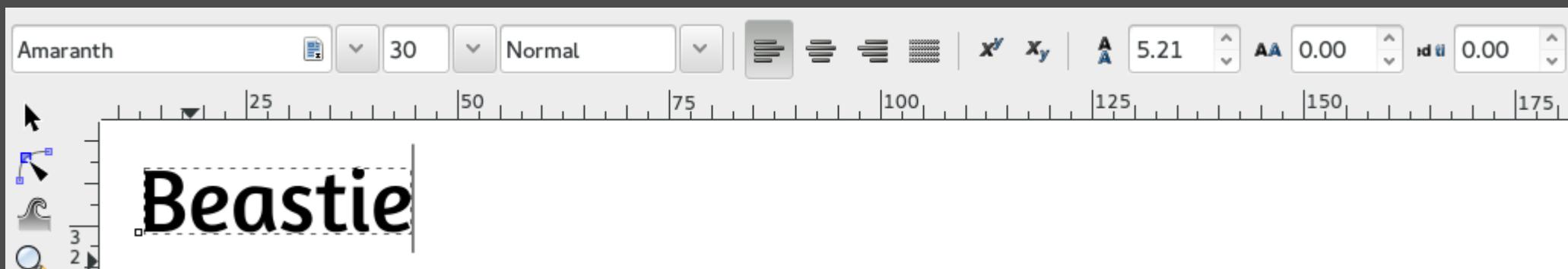


Creating & Modifying Text

The text tool has its own options bar, just like the shape tools.

Select the text tool, click on the canvas, and start typing.

Make modifications in the options bar, including font and font size.



Hover over the options in
the options bar to learn
More about them!



Text is a shape, too.

You can do all the things to text we did to Beastie - you can scale it up and down, you can flip it, you can rotate it... you can even combine it with other shapes and paths.



#7

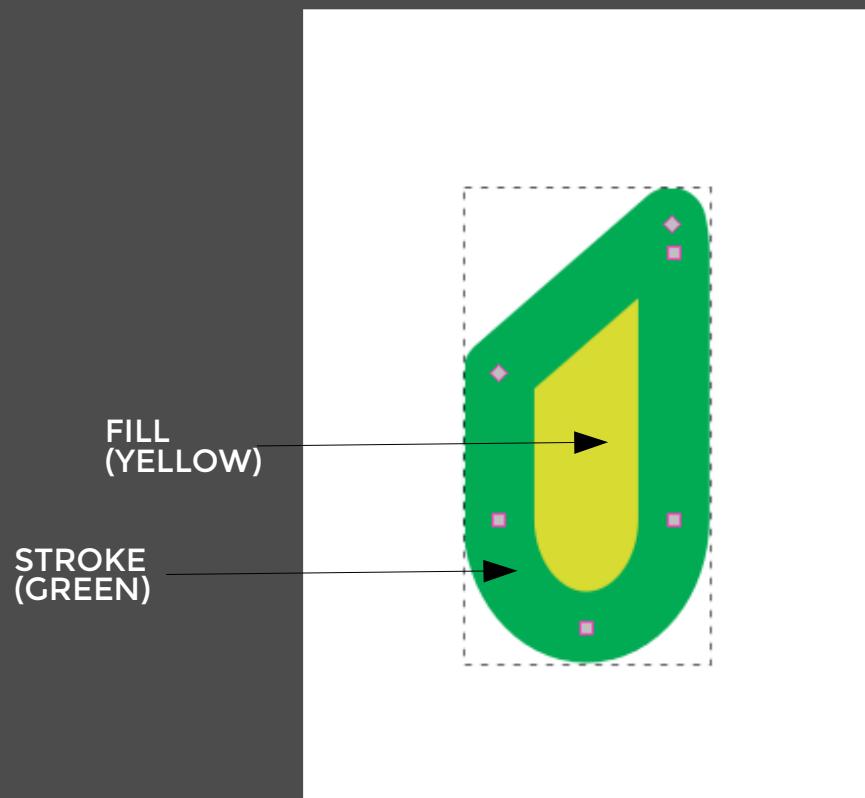
Fill and stroke

Let's play with
some style!



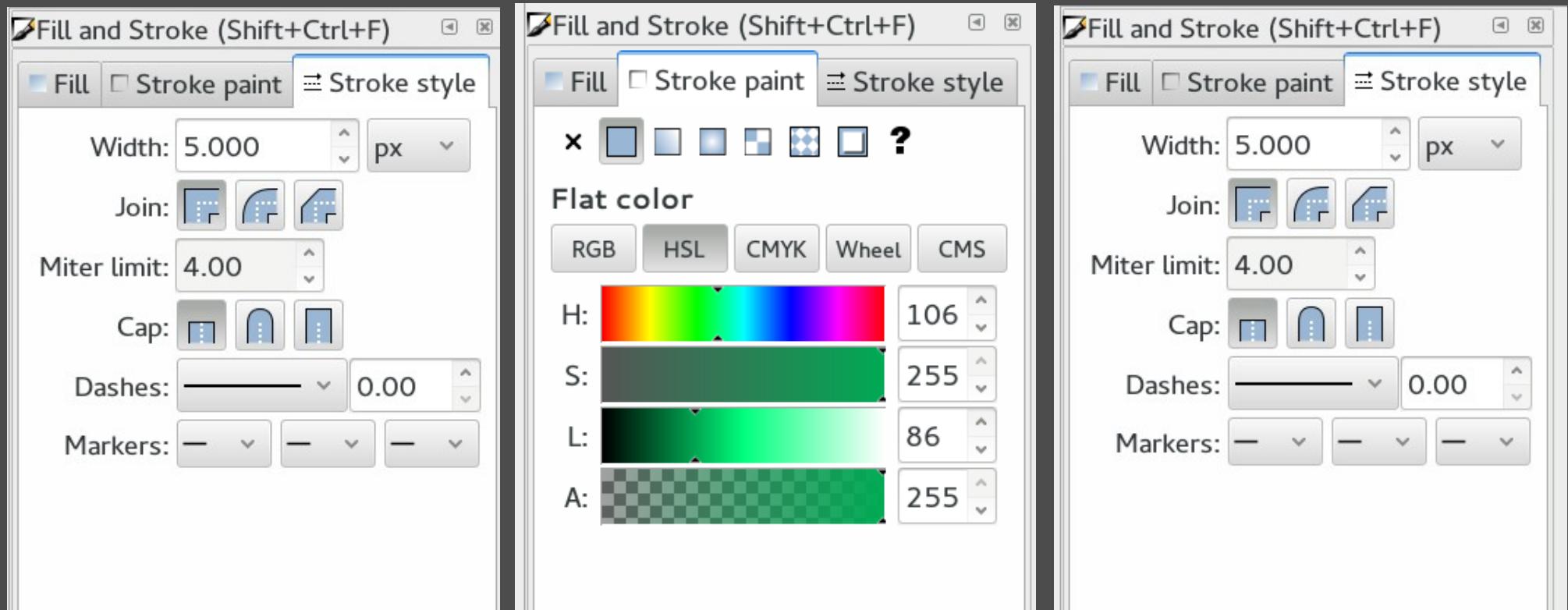
Fill vs. Stroke

Fill is the center of a shape or path; the stroke is an outline around it. They can be different colors. Either can also be transparent.



Fill & Stroke Dialog

Open it up via **Ctrl+Shift+F** or the **Object > Fill & Stroke** menu item.



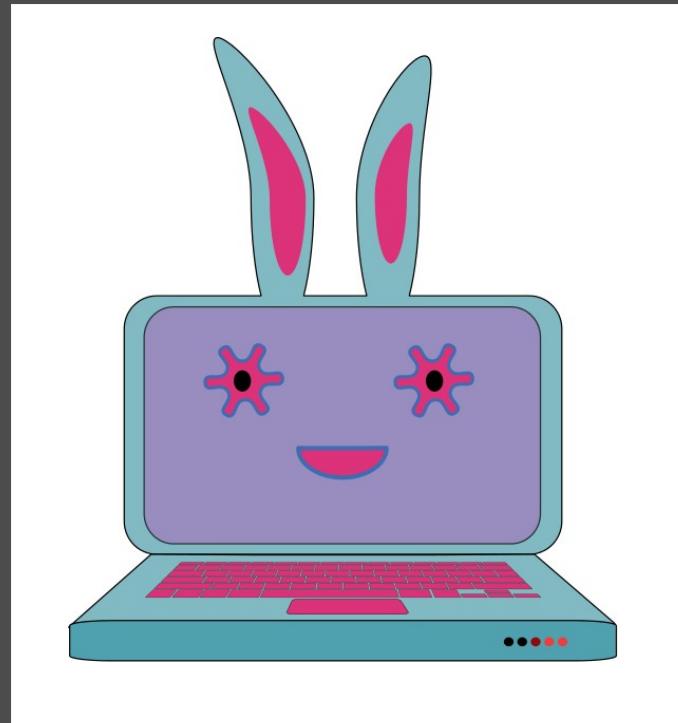
You can also set the fill by clicking on a color along the bottom of the screen (fill,) or shift+clicking a color (stroke.)

Another Beastie Makeover

Using all the skills you've learned so far, make Beastie over as much as you'd like! Use shapes, paths, colors, flip, rotate, scale, group and have fun!



BEFORE



AFTER

#8

Save and export

Share your work
by exporting it.



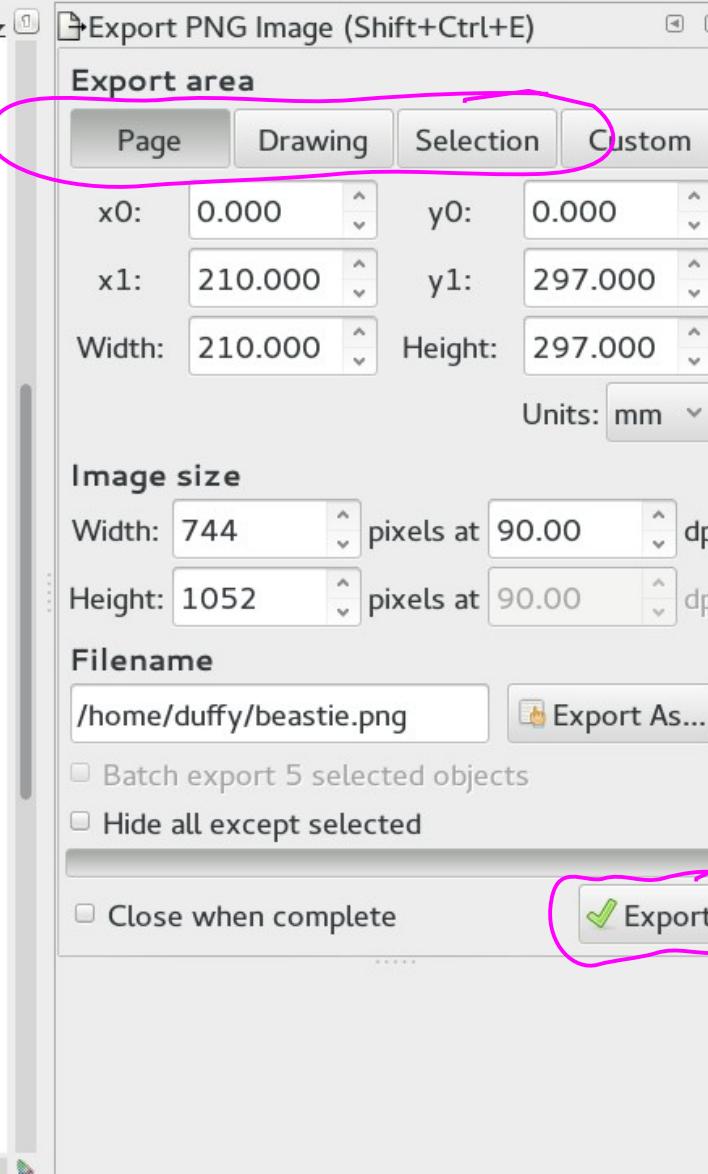
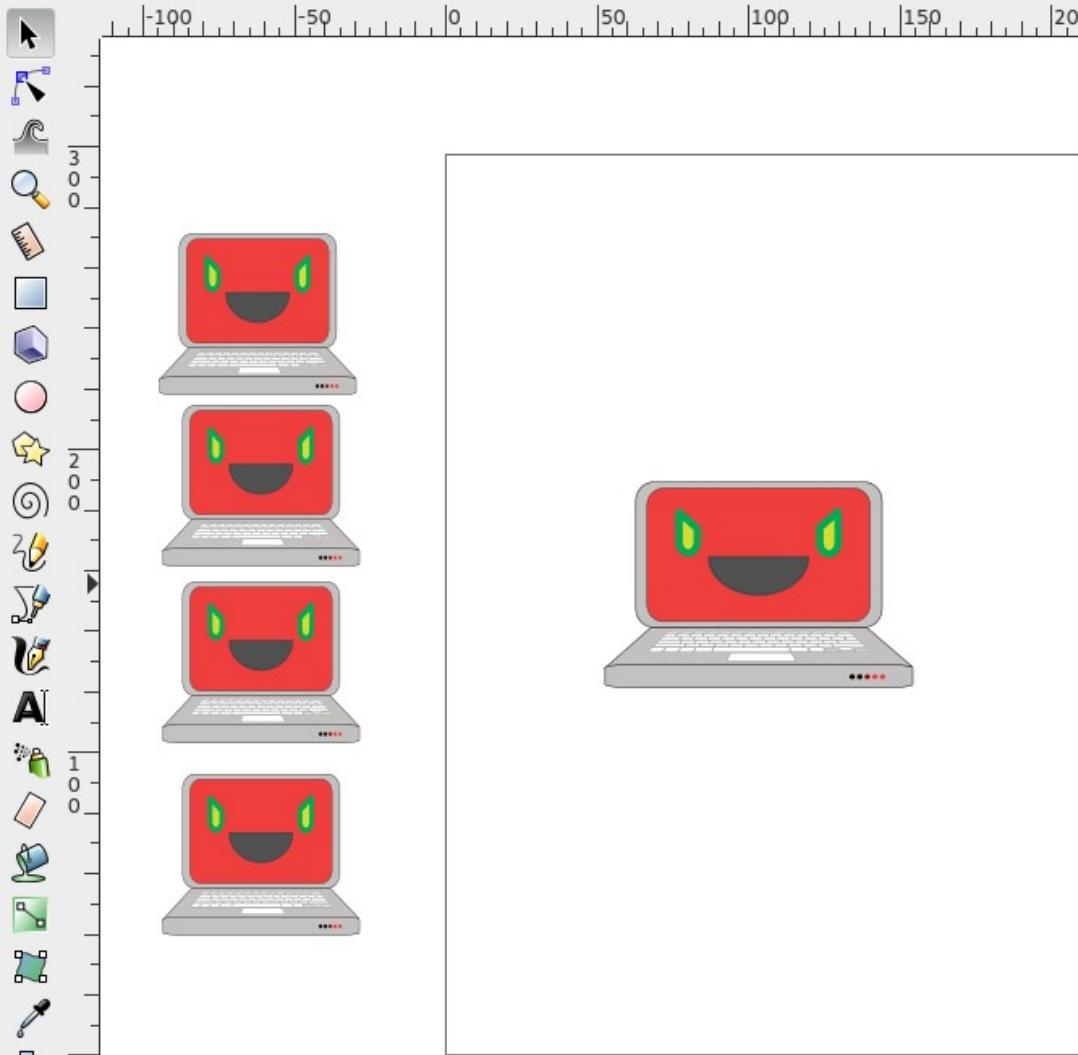
Saving Your Work

Inkscape's file format is SVG. Make sure you save your work in SVG format if you want to be able to modify it later.

File > Save As... in the menu will save your file. You can then press Ctrl+S or File > Save periodically to save your work so you don't lose anything.

*beastie.svg – Inkscape

File Edit View Layer Object Path Text Filters Extensions Help



Distribute (Shift+Ctrl+A) Undo History (Shift+Ctrl+H) Transform (Shift+Ctrl+M)

Fill: N/A O: 10 Stroke: N/A •Layer 1 No objects selected. Click, Shift+click, Alt+scroll mouse on top of objects, or drag around o... X: 235.73 Y: 155.02 Z: 50

Exporting Your Work

Select the “Page” tab in the Export dialog to export everything in the document area.

Select the “Drawing” tab in the Export dialog to export everything in the file, even things outside of the document area.

Select the “Selection” tab in the Export dialog to export only the objects / drawings you have selected.

Files are saved out in PNG format, which you can upload anywhere online.

Questions?



Thanks to my Fedora Design Team pal María 'Tatica' Leando for designing the cute characters throughout these slides. :)