

Interaction Design for the Real World
A new Selection Tool for GIMP
Documentation

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Contens

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1. Our challenge

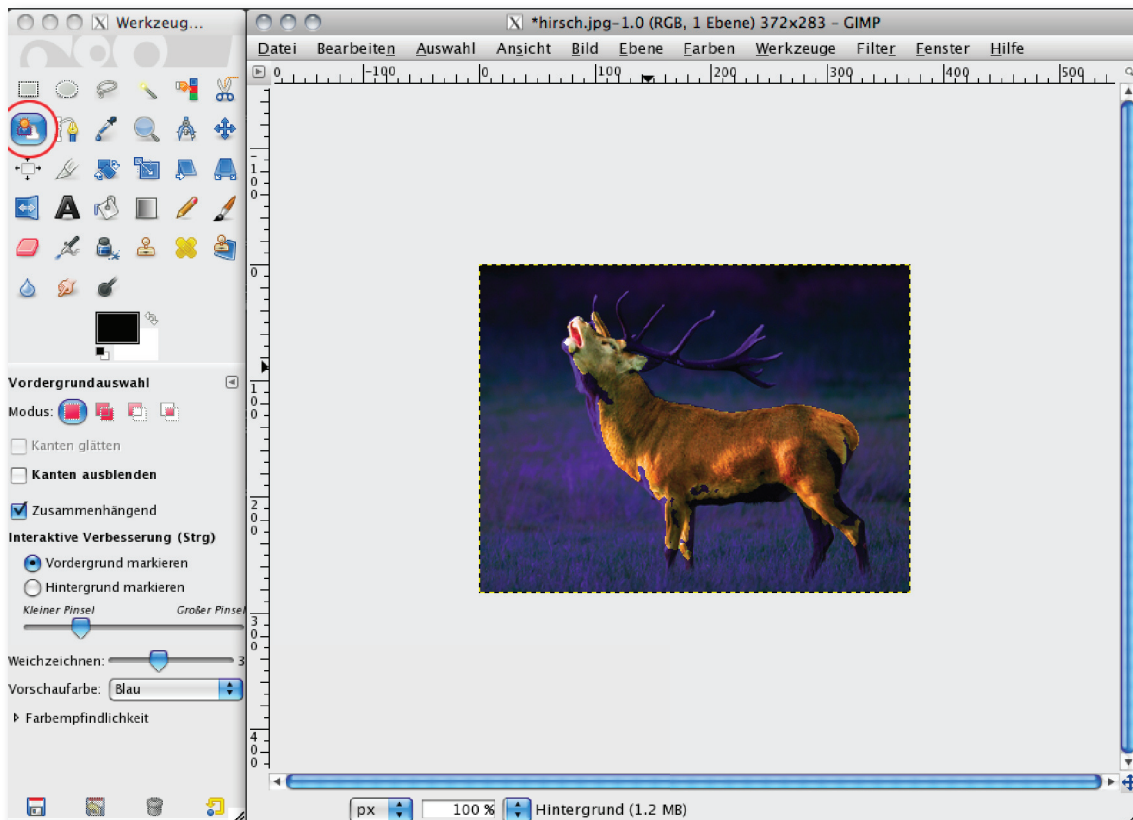
Our challenge for the „design for the real word“ course was to turn four selection tools into one tool. The new tool would have to comprise all the skills of the old four, these tools being Fuzzy Select, By Color Select, Intelligent Scissors and Foreground Select. The new tool would have to be much faster and easier to use than the old ones. For example, the user shouldn't have to go out of the image in the menu bar to change the options. It also must be easy to use for all users, not only the professionals. Moreover, we have to think about how the new tool can work with and without shortcuts. The first step was looking at the existing tool and see what the possibilities of these tools were and how they work. Also it was very important to see which tool managed which challenge and which challenge the tools aren't able to overcome.

2. The current selection tool

Before we could start brainstorming for our new selection tool we had to look at the old four selections tools to see what they are for and how they work.

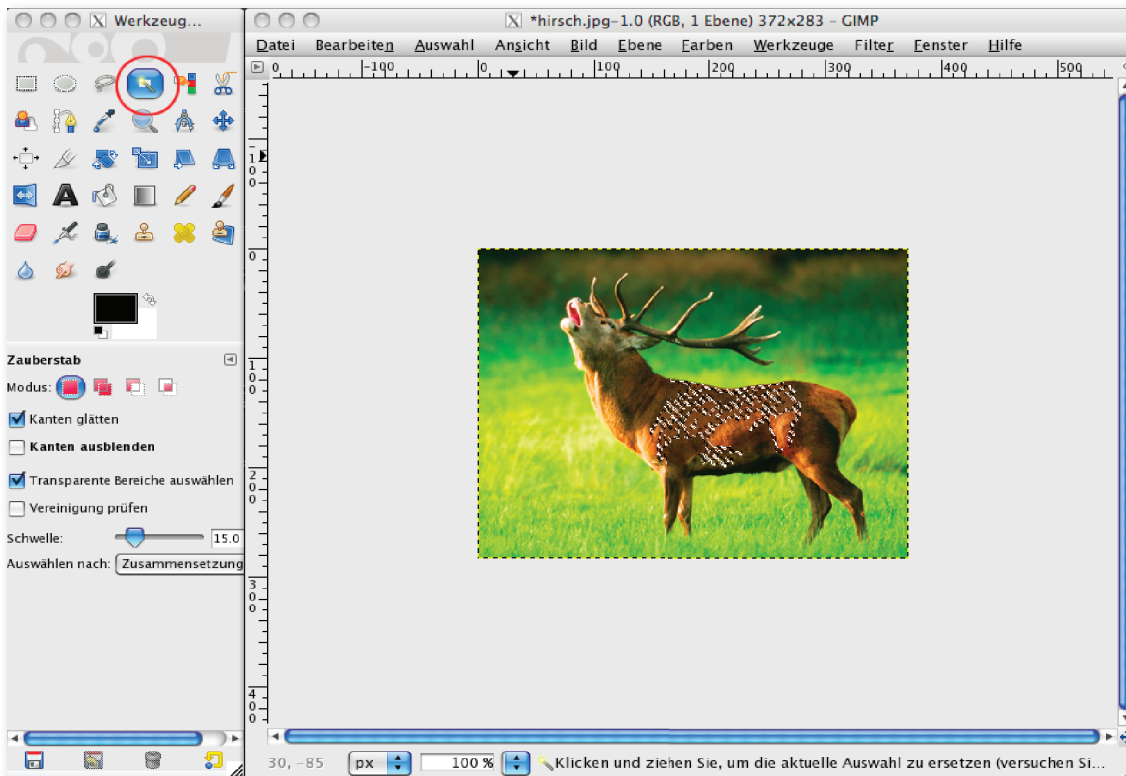
2.1 Foreground Select

This tool lets you extract the foreground from the active layer or from a selection. By drawing with a paintbrush, whose size can be changed over a area the foreground can be selected. Draw a continuous line in the selected foreground going over colors which will be kept for the extraction.



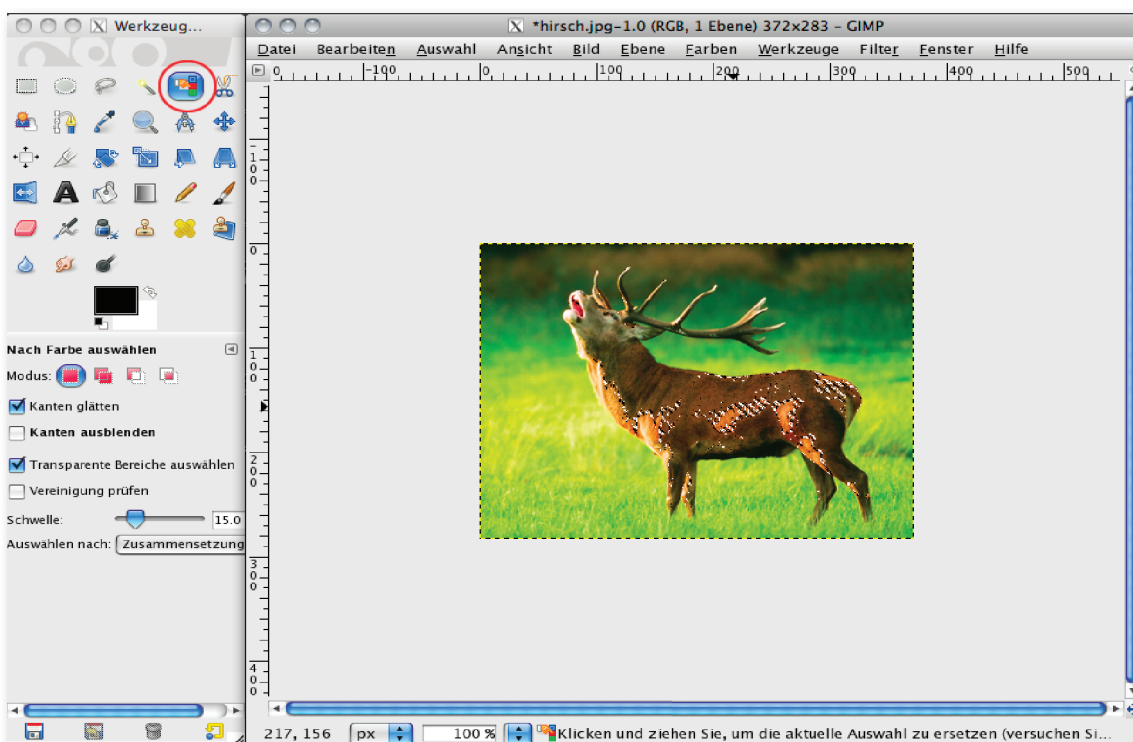
2.2 The Magic Wand/ Fuzzy Select

This tool is designed to select areas of the current layer or image based on color similarity. It works very well when selecting objects with sharp edges. You get the selection only on one area and not on the whole image.



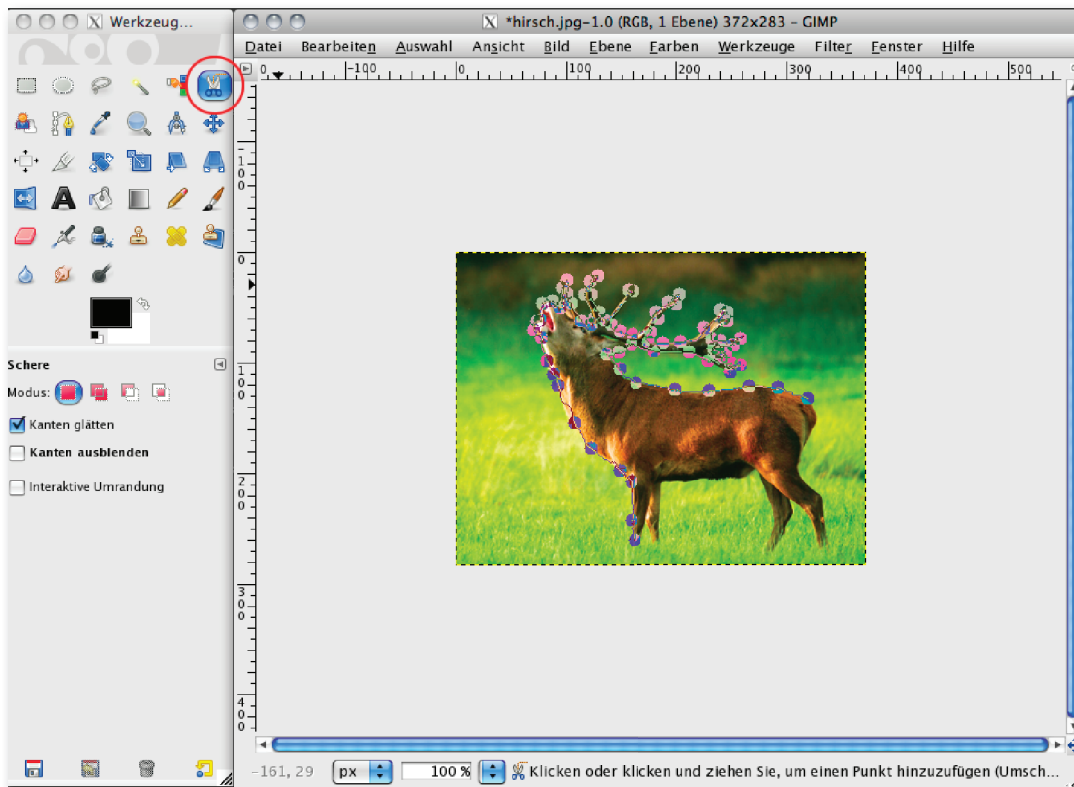
2.3 Select by Color tool

This tool selects areas of an image based on color similarity. It works nearly like the Magic Wand. The main difference between them is that the Magic Wand selects contiguous regions, with all parts connected to the starting point by paths containing no large gaps. The Select by Color tool selects all pixels that are sufficiently similar in color to the pixel you click on



2.4 Select Shapes from Image / Intelligent Scissors

This tool has some features from the Lasso, some features in commons with the Path tool and some features on his own. It is useful when you are trying to select a region defined by strong color-changes at the edges. So with this tool you can place your own selection points. It can be quickly seen that this is very manual, so the user has to do the most work to get a selection in comparison the other 3 tools. However this tool gives you the possibility to create a more exact selection.

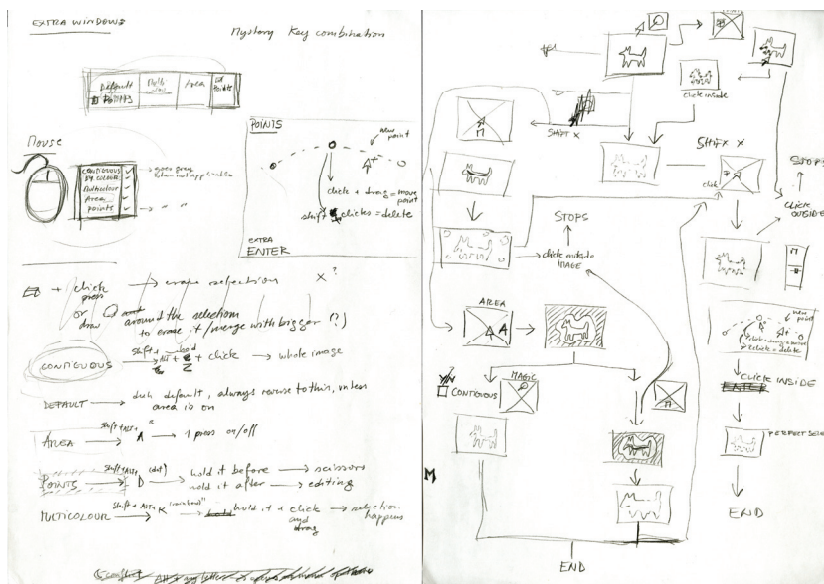
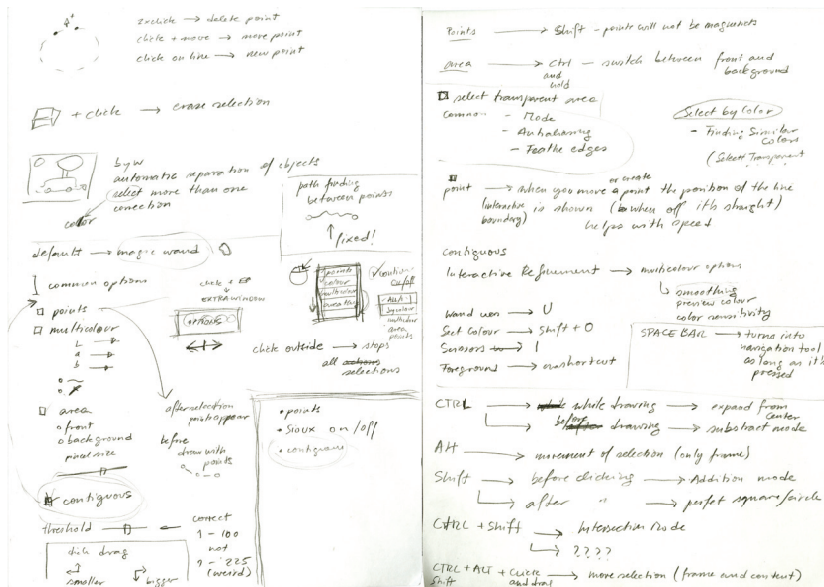


After we had a look at these four selection tools we could see that while they work quite well, it is very bothersome to switch between the different selection tools. Also, some of the selection tools are for the most part nearly identical. Now the challenge made sense to us and we could start brainstorming for our all-in-one selection tool.

3. Brainstorming

At the beginning it was specially important to define everything that had to be included in our new selection tool. We had to make sure that at the end the new tool works well for both the professional and amateur user, with a short learning stage.

We did a lot of drawings and experiments. Most of them looked very crazy and unfeasible, but that's the point of a brainstorming: to bring all ideas, as they may help later to create the new selection tool.



Often it was difficult to be sure that the new tool was actually better and faster than the old ones. It was also hard to create a really innovative thing, because we are so used to Adobe from working every day with it.

On the third day we were supposed to bring all our ideas “down to earth,” but when we arrived we realized that all of our papers and first drawings had been thrown by someone. We were very unhappy about this situation because we lost a bunch of work and ideas. However, we tried to remember the drawings and recreate some of the most important ones, as can be seen here.

3. Brainstorming

CSO MONTIGUERO

ENTREGA

9 July (1)

1 report per team
if you cast it before,
you can have it corrected (recommended)

- No history of GIMP and only go GIMP.org ~ check old reports ~
- bullshitted
- some order as the method (order)
- functionality (what will it do)
 - action strategies
 - parameters (arguments)
- "expert evaluation" of the old tasks
- awareness (half page ~)
 - what was wrong with it?
- knowledge transfer
 - several strategies were made
 - in what did we concentrate on
 - SIMPLE
- explaining the concept
 - how is this gonna work
 - just

keep it short
~12 (with images)
(0-0)

TH.

"ALL THE SOURCE OPTIONS ARE THERE"

KEY COMBINATION = whenever the mouse is, a window appears

SHIFT + X

ARE ALL PARTS ACCOUNTED FOR?

HAVE YOU THOUGHT OF EVERYTHING?

(or at least look (like you do))

- X Selection
- Color Selection
- Magic Selection
- Fast Selection

Selection Types

- By colour
- Multicolour / **StroX** (area selection)
- high contrast ~ manual

SIMPLE → **COMPLEX**

beginner → **magic wand** → **multicolour** → **manual**

By Colour (default)

E

- Common (mode, anti-aliasing features)
- Find Similar Colors
- Select transparency (does work with StroX)
- E (contiguous (dots on))
- Corrected Threshold
- Added Smoothing (areas less than x pixels not selected)

Area

- Front
- Back ground (ctrl) out
- size of brush
- pen color
- size etc

Multicolour (StroX)

- color sensitivity
- contiguous
- Threshold
- Anti-aliasing similar colors

By Colour

selects 1 clicked colour

Points

Common things + selected part "open"

not minimized by

- Area
- Multicolour
- Points

Selection Methods

Area

brush

color

erase the pixels it covers, and the selection mode that follows doesn't consider them.

Multicolour (StroX)

selected

it can be combined with Area

color sensitivity

By Colour

selects 1 clicked colour

Points

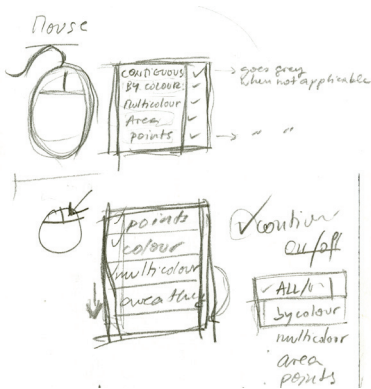
Common things + selected part "open"

not minimized by

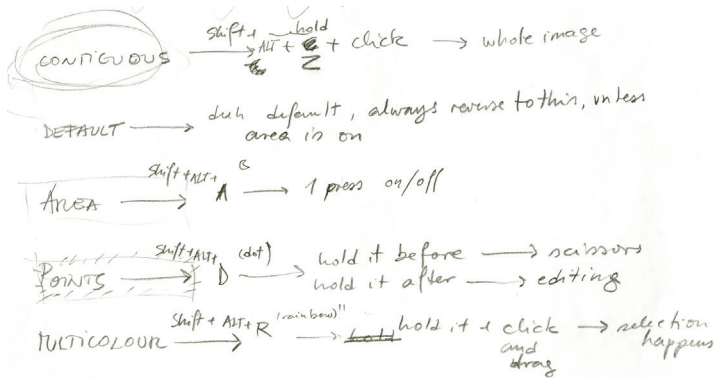
- Area
- Multicolour
- Points

4. Unsuitable ideas

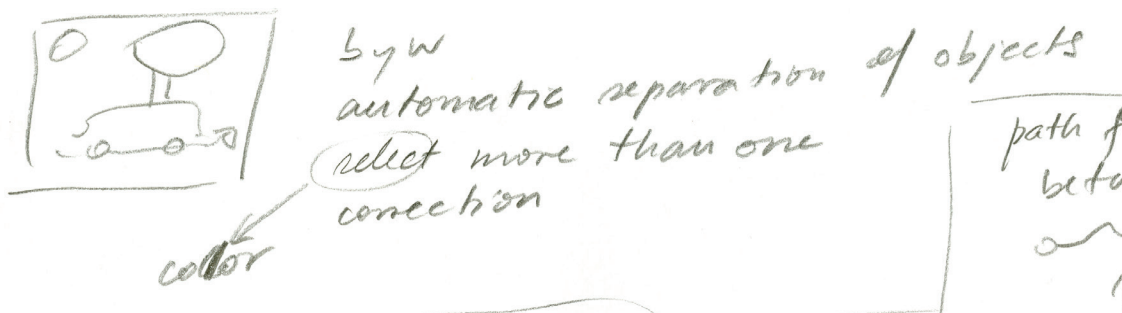
Some ideas we discarded for being too slow or too complex. For example, using the right click to change modes was deemed too slow and cumbersome.



On the other hand, using different key combinations was too complicated and limiting, since most combinations are already occupied and the user would have to memorize too many things.



Or one idea were a whole new window would open and the program would recognize big one-colour areas and divide them, and where the user would then correct and select the areas he needed. This last one was considered too complex and not truly a combination of the four tools.



5. Description of our concept

We named the new tool Magic Selection, to fit in with the other tools and to give some familiarity to new users coming from other programs.

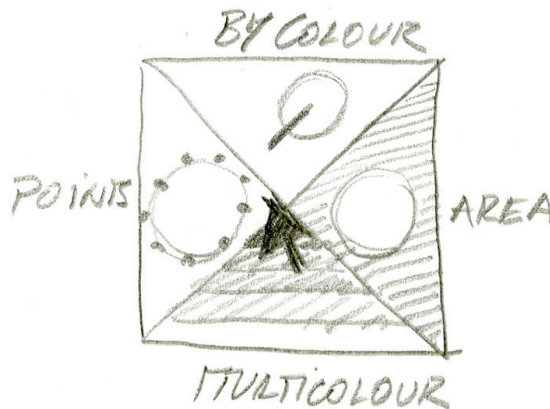
Magic Selection



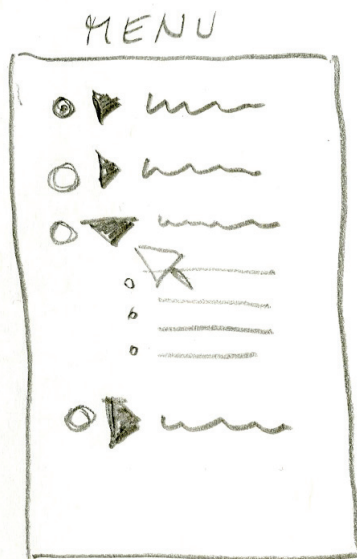
SHORT CUT : U

The tool has four modes, going from the most basic to the most complex: By Colour, Area, Multiple Colours and Points. When first selected, the tool is in the mode of selection By Colour (equivalent to the Magic Wand). To change modes, one can go to the menu and select the option, or press SHIFT+X to make a small window appear under the mouse where the mode can be quickly selected.

SHIFT + X



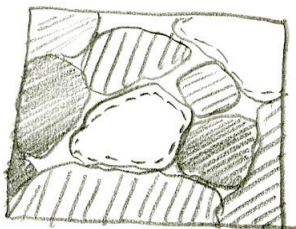
The menu will only show the options available for the currently selected mode; the options corresponding to other modes will remain hidden until the mode is changed or the options revealed by mouse click.



By Colour

Selects an area according to colour similarity. This can be adjusted with the Threshold option. The user can choose whether to limit the selection to contiguous zones (default) or to select all appearances of the colour in the image. Clicking outside the image or pressing ESC will stop the selection.

By Colour



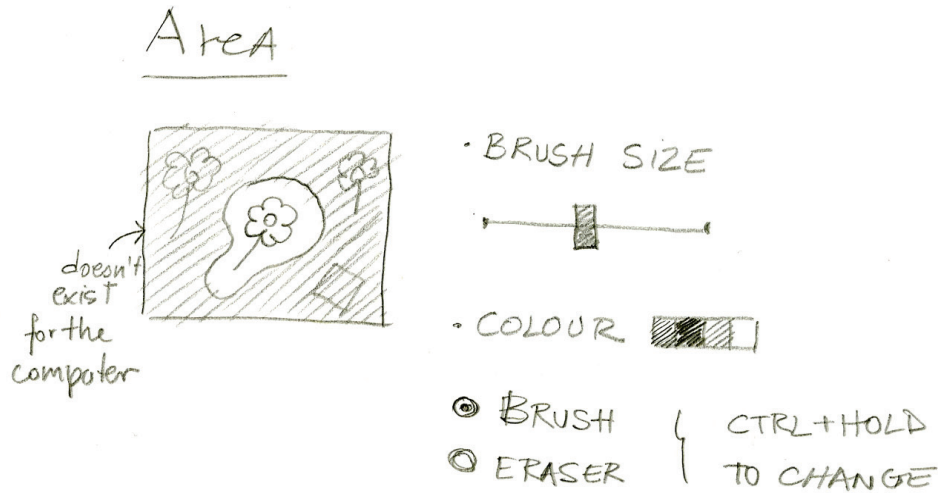
☐ CONTIGUOUS

THRESHOLD



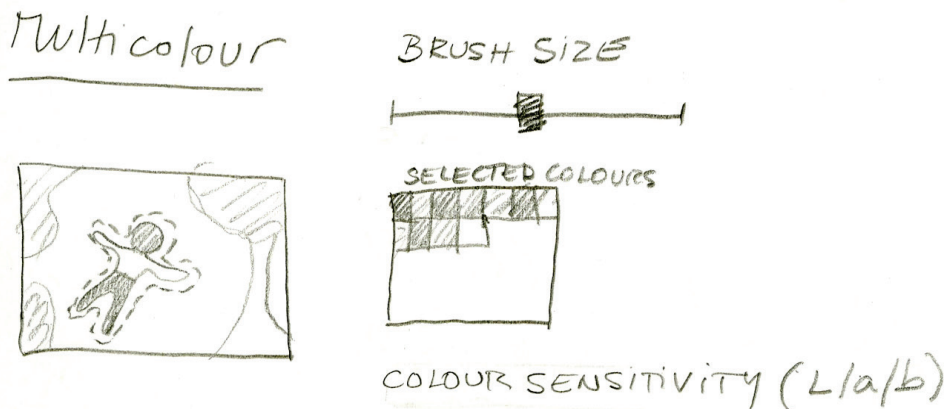
Area

This allows to limit the area that will be affected by the next selection. This can be combined with other selection tools and it doesn't erase previous selections. Clicking outside the image or pressing ESC will stop the selection.



Multicolour

Permits the selection of more than one colour by moving a brush over the chosen areas. Works well with Area. Clicking outside the image or pressing ESC will stop the selection.



Points

This mode allows both to correct and to manually create selections. If this mode is activated after having created a selection, a number of mobile points will appear, allowing for editing. If the mode is selected first, then the user can create a selection by placing points on the contour of the object. The lines between the points move automatically to follow the nearest line of most contrast. Points can be created, moved or deleted easily with the mouse. Clicking outside the image or pressing ESC will stop the selection.

Points

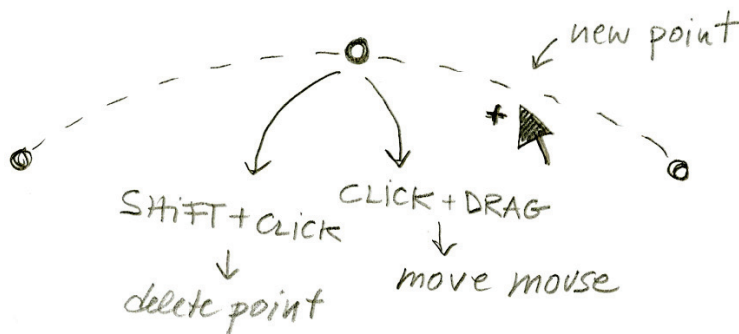


☐ PREVIEW

☐ MAGNETIC POINTS (SHIFT → OFF)

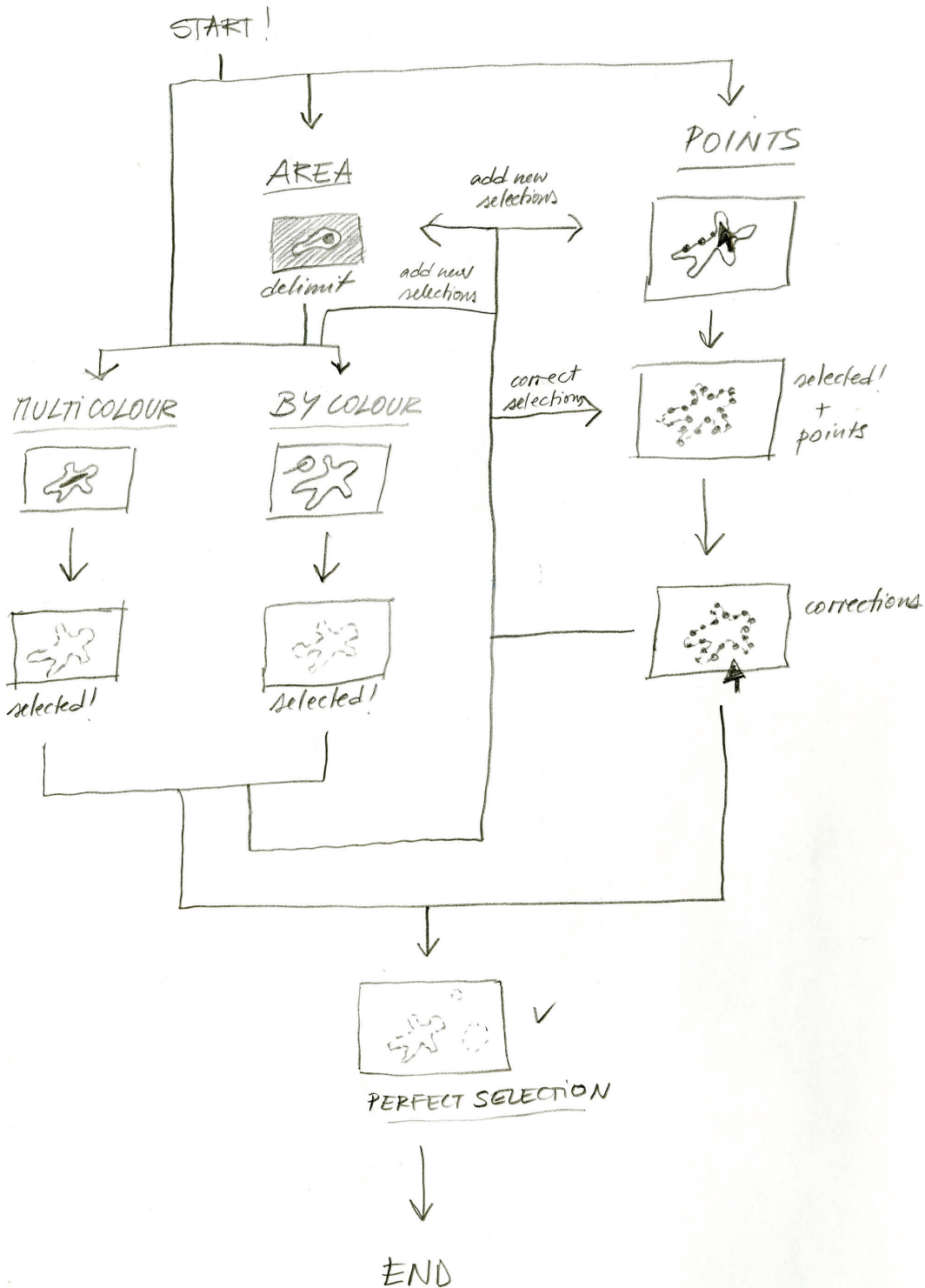
· COLOUR 

· POINTS PER DPI



Workflow

While no one really knows what the user will utilize the tool for, one can predict the most common paths that will be taken and plan accordingly.



6. Conclusion

At the end we have to say that they were some hard but informative three days. It was interesting to be able to create a tool like this, since we use this kind of program ourselves. Sometimes it was also hard to put yourself in someone else's place, to think like an rookie just starting to learn to use this software. Overall, it was a really interesting experience, and we hope our ideas are able to help future users of GIMP.