

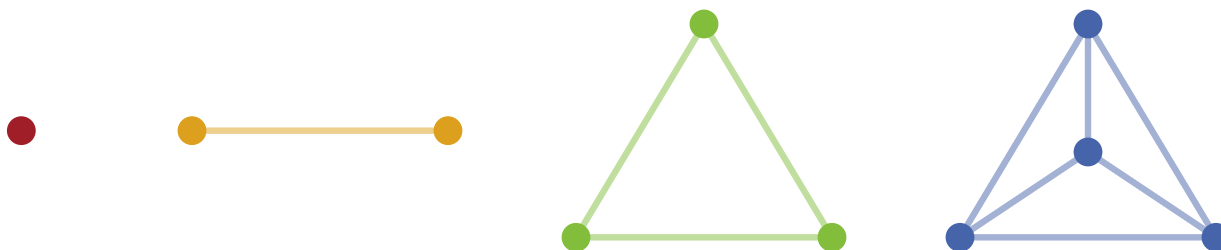
Template and Ipe Tutorial

Darren Strash
24. April 2015

L^AT_EX



Institute of Theoretical Informatics – Algorithmics



Write-up Template

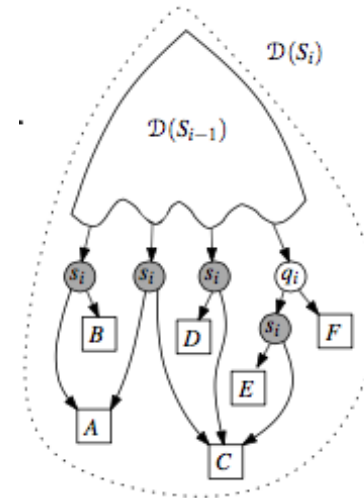
L^AT_EX class SNSEMINAR, same basic constructs as ARTICLE class:

- title, author, section, subsection, subsubsection, paragraph
- abstract, document environments
- amsmath and many custom theorems included
 - theorem
 - proof
 - lemma
 - corollary
 - definition
 - example
 - observation

Ipe Extensible Drawing Editor

Developed by Otfried Cheong (Professor at KAIST)

- Tools for drawing vector graphics
- Designed for computational geometry book:



- Conjecture: Ipe is the most-used graphics editor in algorithms articles.

Ipe Extensible Drawing Editor

Why use Ipe?

- WYSIWYG
- Designed for scientific publications
- Creates editable pdf files
- Supports presentations (including this one)
- \LaTeX integration
- Snapping and alignment
- Customizable *style sheets* and *Ipelets*
- It's free

Drawbacks

- Cumbersome to install on non *nix machines
- Learning curve

A Note on Beamer

Beamer is another popular presentation tool

- A \LaTeX package
- There are existing templates for KIT-style slides

Major drawback: It can be difficult to get images to align between slides.

I often see this:

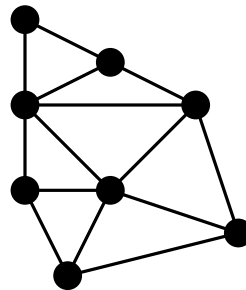
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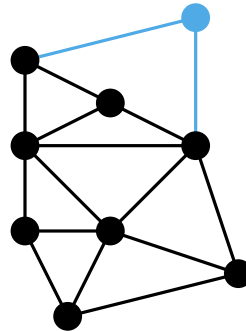
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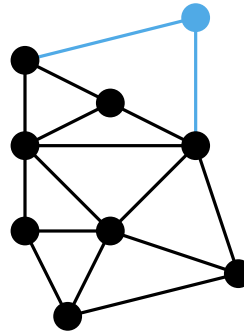
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The bounding box changed

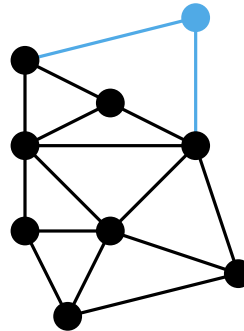
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This does not happen in Ipe!

Style sheets

- Style sheets provide *symbols* (named drawable objects)
- Presentation—Frame title, titlepage

Style sheets

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- KIT colors—Full range of colors



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Ipelets

- `presentation.lua` → Boxes!



This is a different box

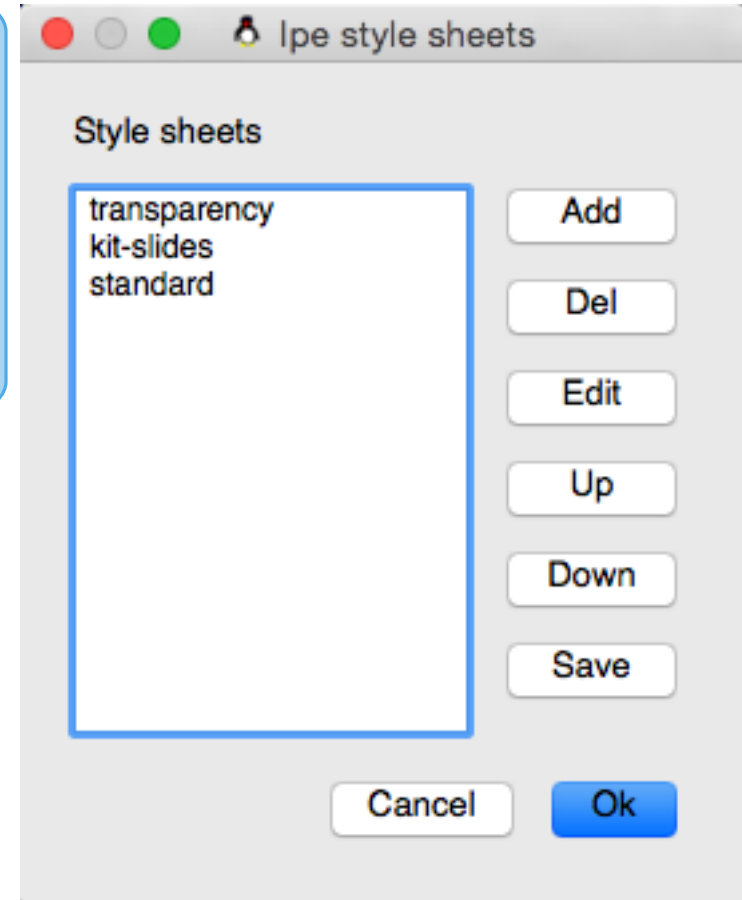
Yes it is

Style sheets

Style sheets

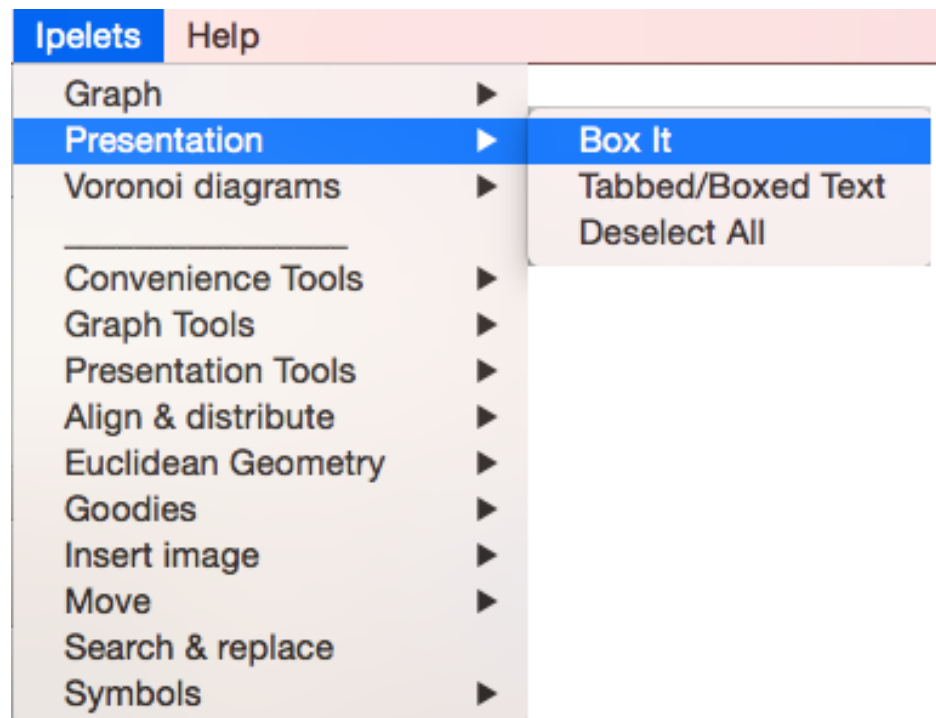
- Written in Ipe's XML format
- Load through Edit → Style sheets
- Specify colors, shapes, dashes, etc.
- Example: `kit-slides.isy`

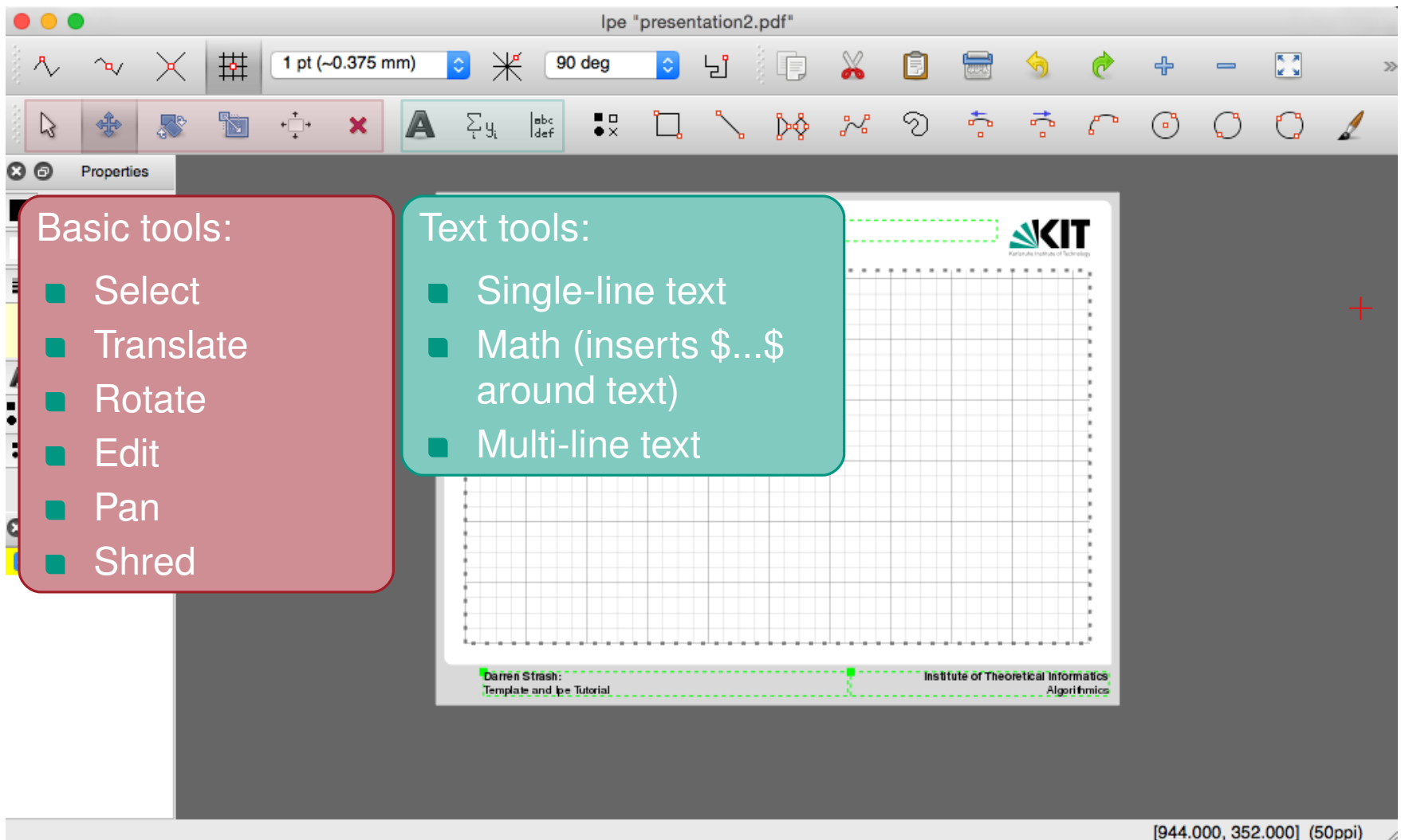
Edit	Properties	Snap	Mode
	⋮		
	Document properties		⇧⌘P
	Style sheets		⇧⌘S
	Update style sheets		⇧⌘U
	Check symbolic attributes		



Ipelets

- Written as a Lua plugin
- Put in `~/.ipe/ipelets/`, available in Ipelets menu
- Example: `tools_presentation.lua`





The screenshot shows the Ipe software interface with a grid and various toolbars. The top toolbar includes icons for selection, translation, rotation, and other basic tools. The middle toolbar contains text and math tools. The bottom toolbar shows a properties panel. The main canvas displays a grid with a red crosshair and a dashed green box. The text 'Darren Strash: Template and Ipe Tutorial' and 'Institute of Theoretical Informatics Algorithmics' is visible at the bottom of the grid.

Basic tools:

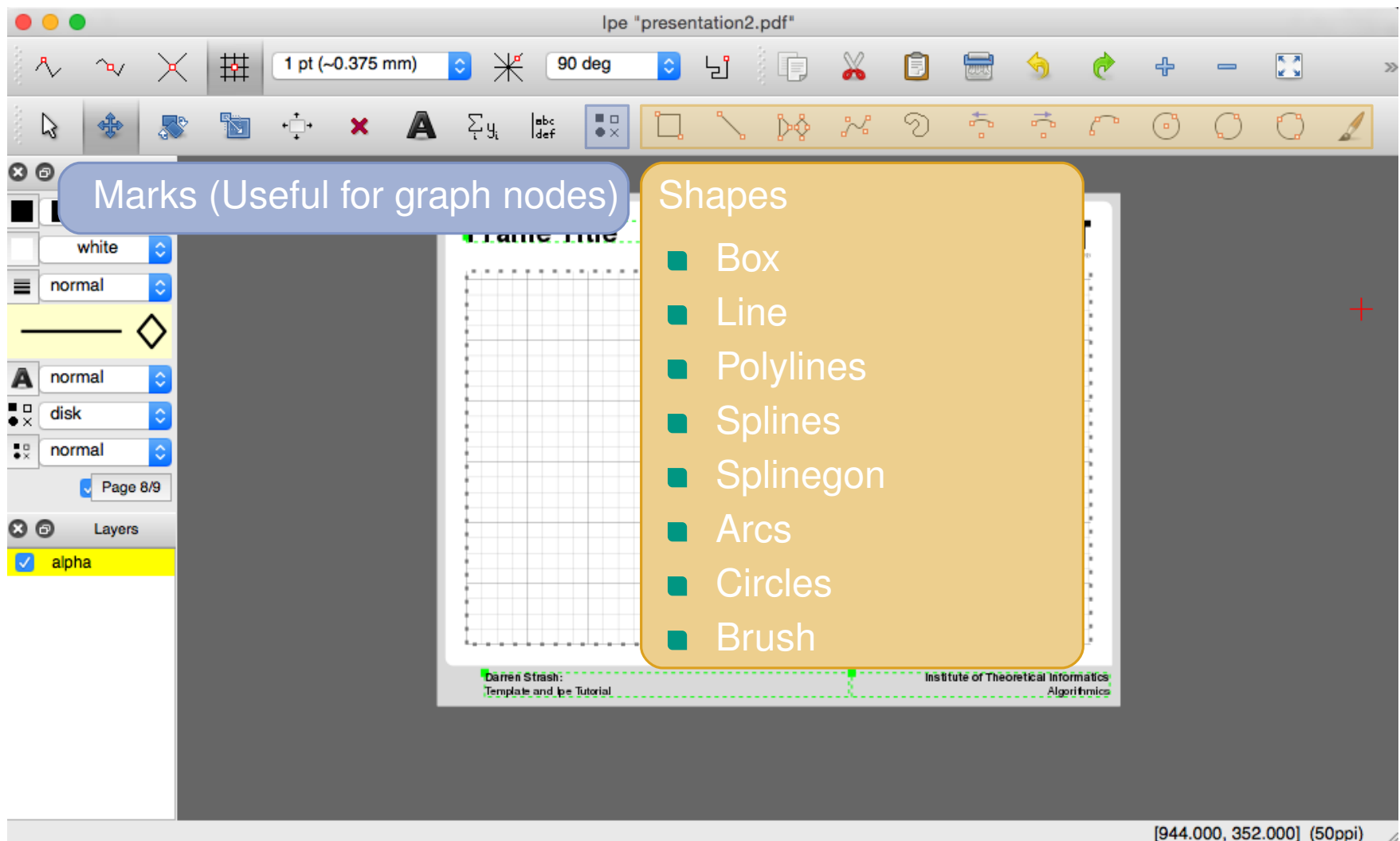
- Select
- Translate
- Rotate
- Edit
- Pan
- Shred

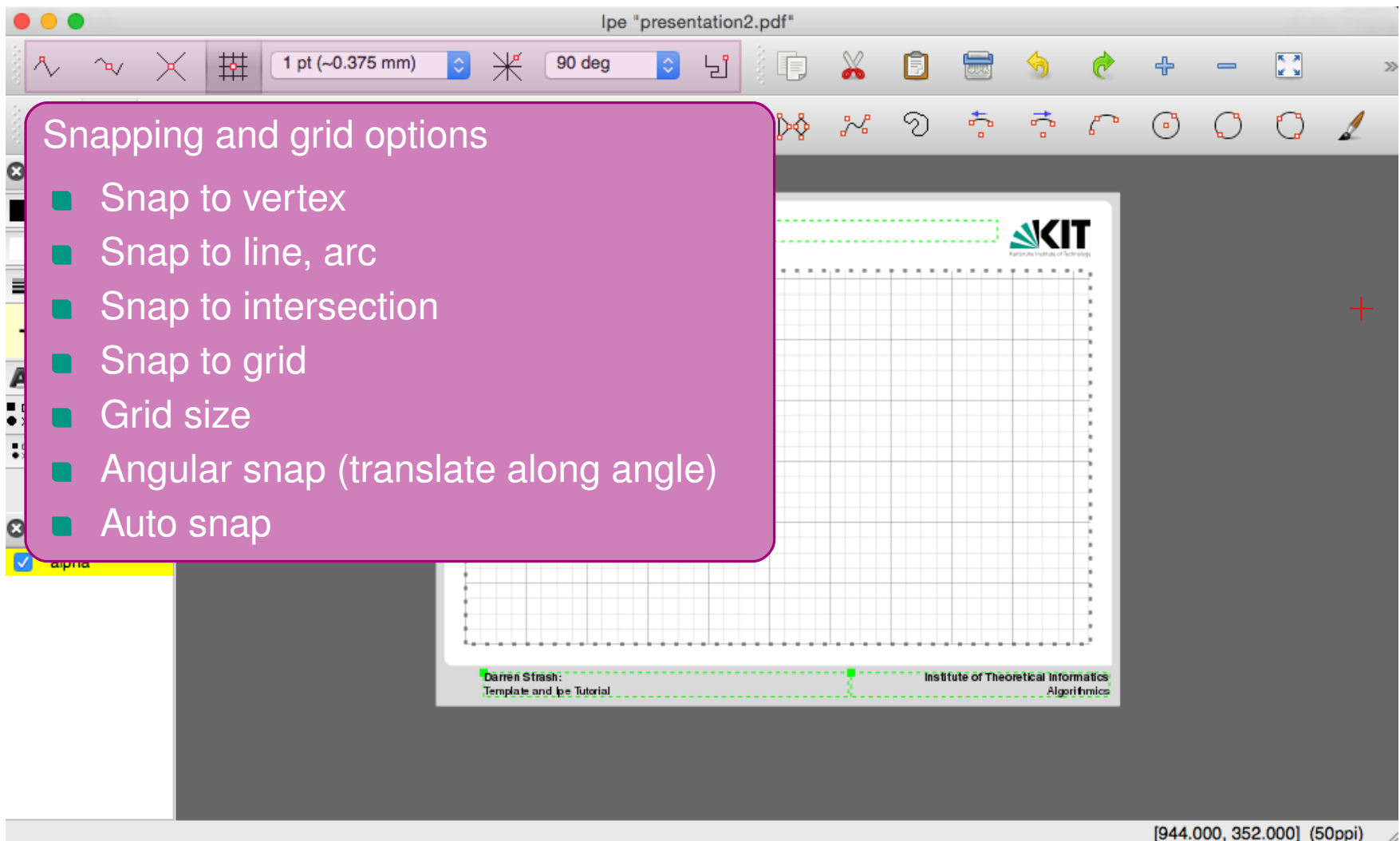
Text tools:

- Single-line text
- Math (inserts $\$...\$$ around text)
- Multi-line text

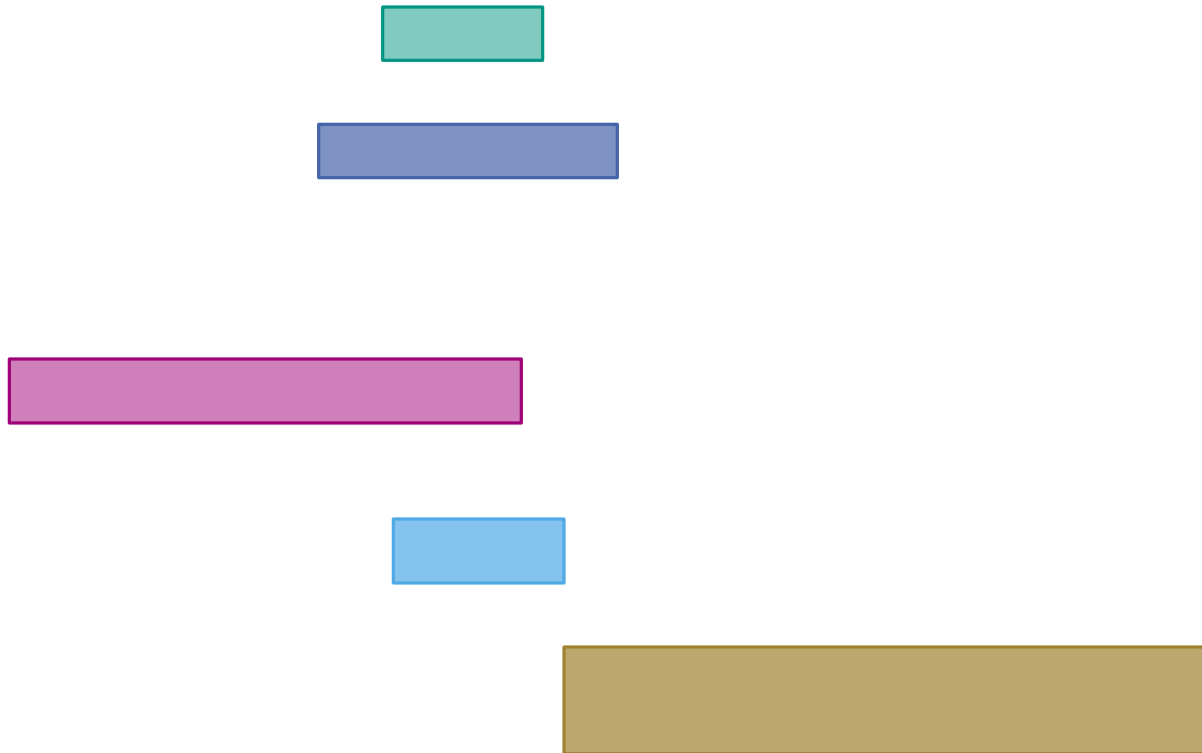
[944.000, 352.000] (50ppi)

Tools



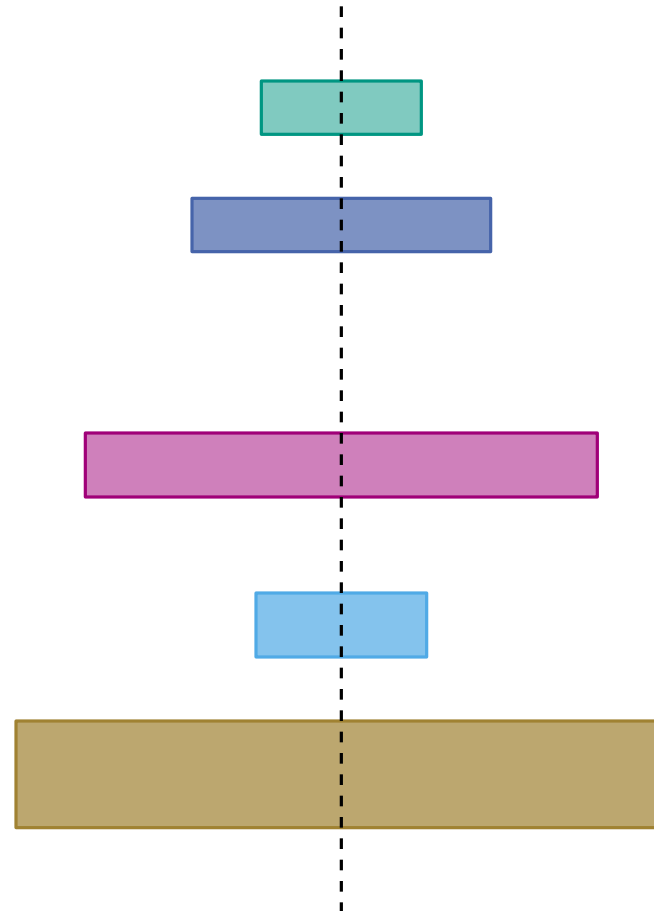


Built-in Ipelet: Align & Distribute



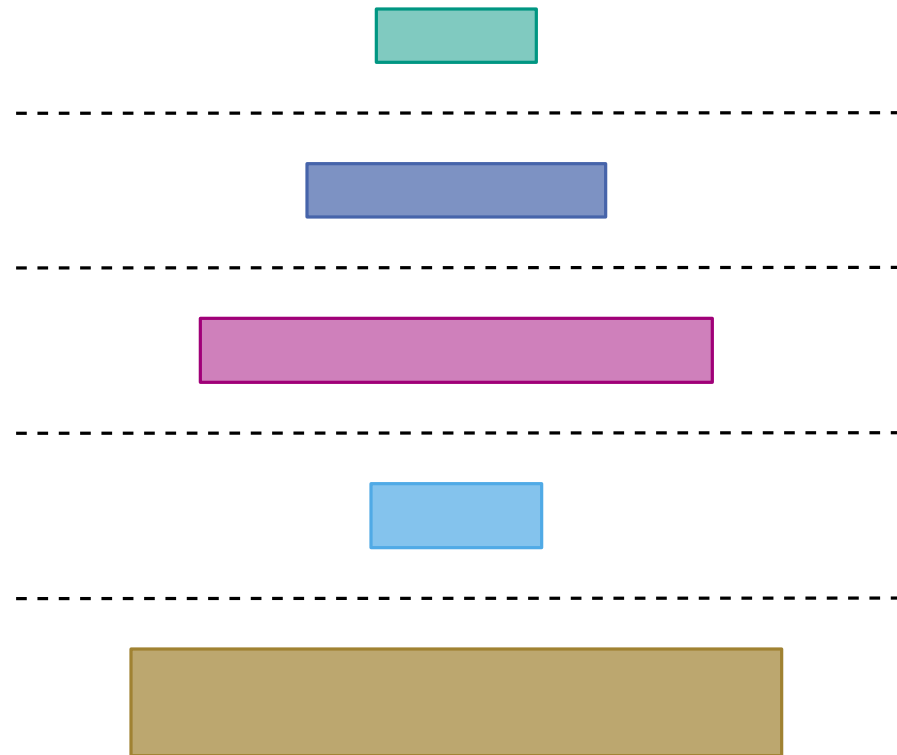
Built-in Ipelet: Align & Distribute

Align H Center



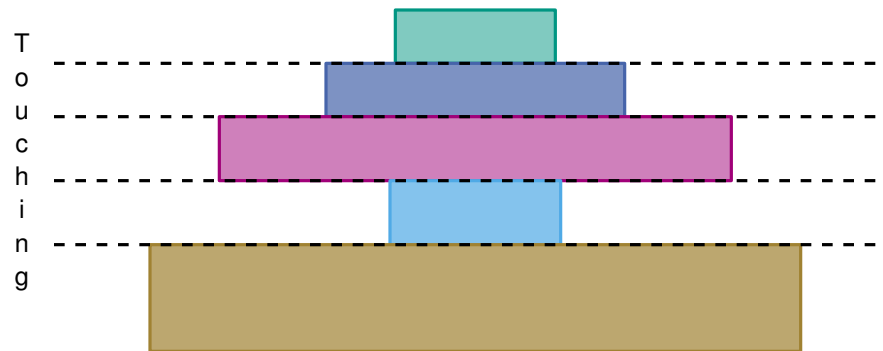
Built-in Ipelet: Align & Distribute

Distribute Vertically



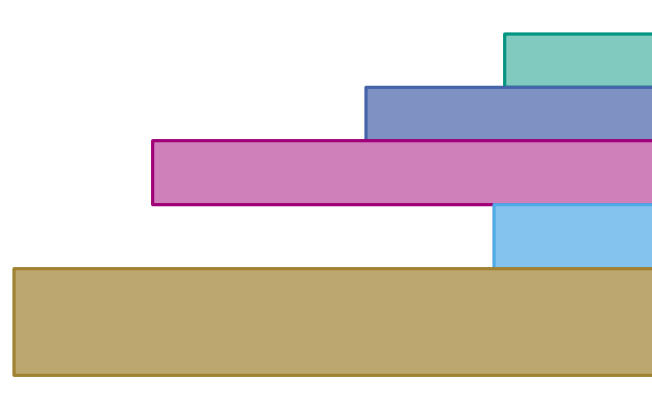
Built-in Ipelet: Align & Distribute

Distribute Top to Bottom



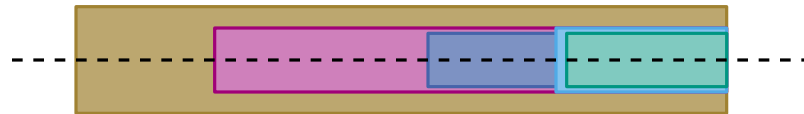
Built-in Ipelet: Align & Distribute

Align Right



Built-in Ipelet: Align & Distribute

Align V Center



Layers, Views, & Pages

Layers

Layers

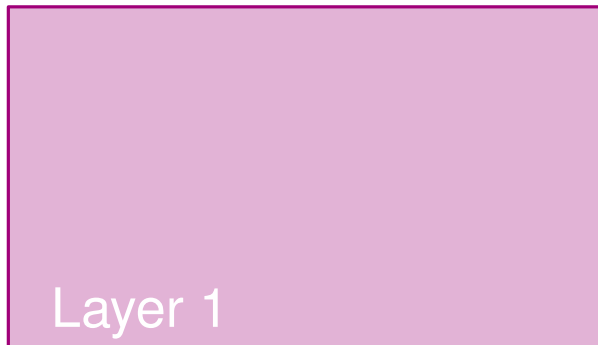
- Collection of objects
- Can hide and show layers
- The *active* layer is currently being edited
- *Not necessarily in depth order*

Layers, Views, & Pages

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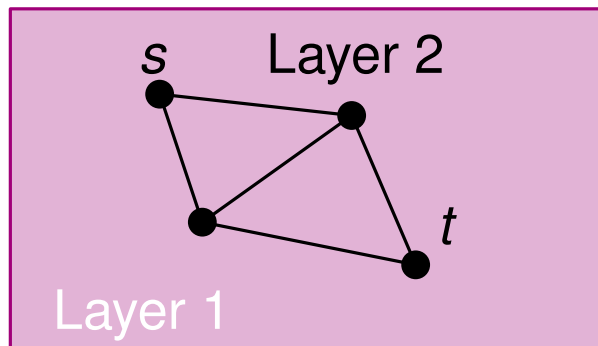


Layers, Views, & Pages

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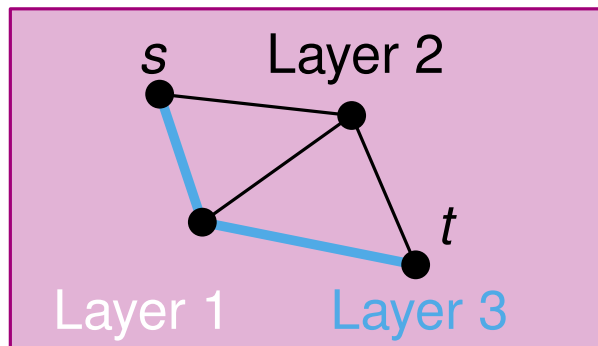


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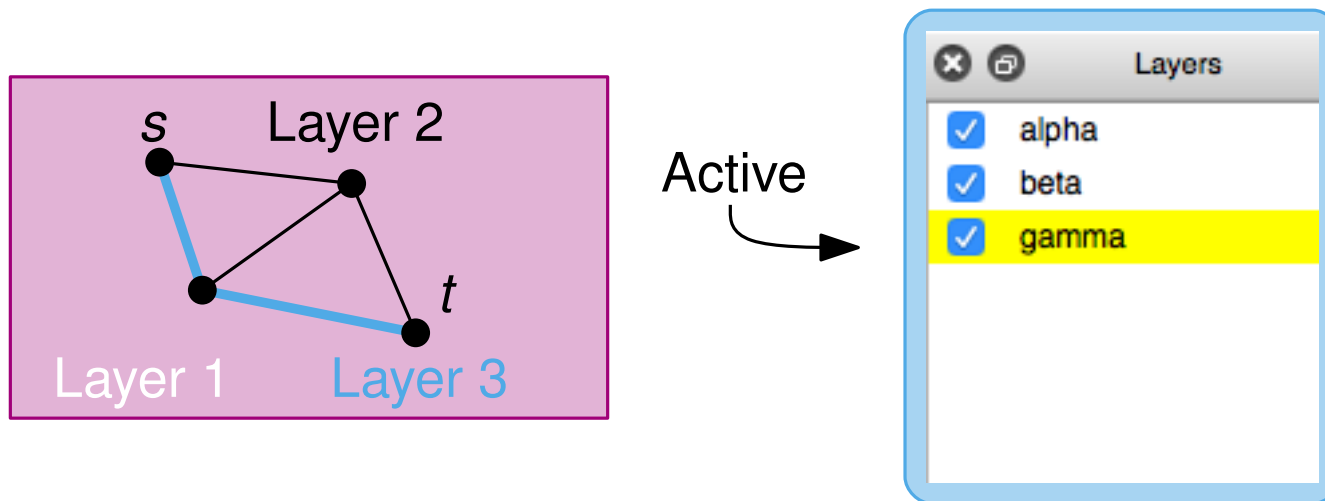


Layers, Views, & Pages

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Layers, Views, & Pages

Views

A view is...

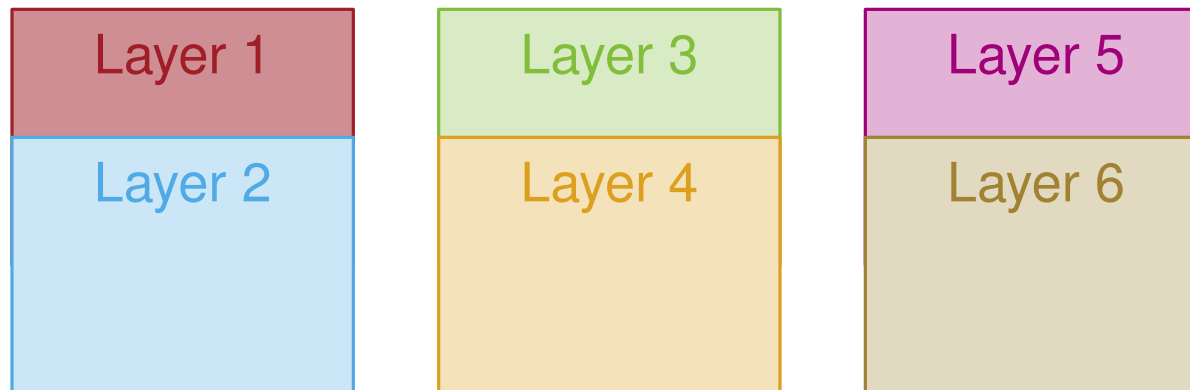
- a collection of visible layers
- helpful for presentations
- used to create *animations*
- associated with one page in the PDF

Layers, Views, & Pages

Views

A view is...

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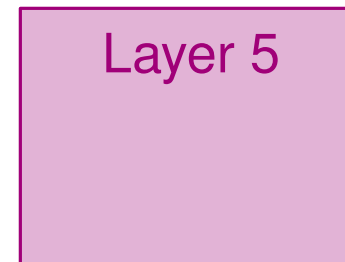
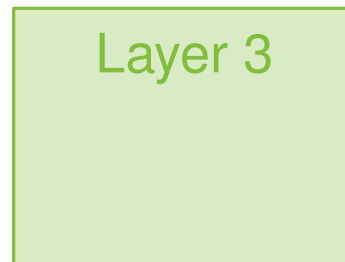
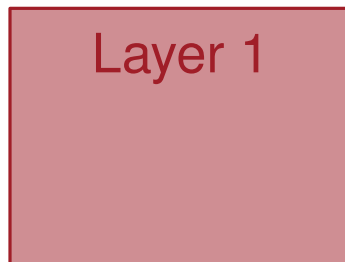
View 1

Layers, Views, & Pages

Views

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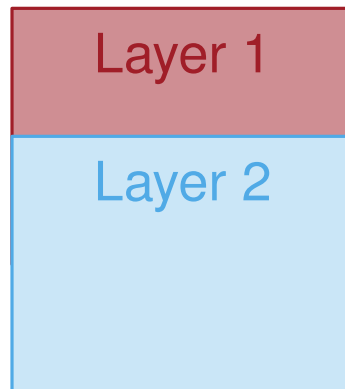
View 2

Layers, Views, & Pages

Views

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- associated with one page in the PDF



View 3

Layers, Views, & Pages

Pages

A page is...

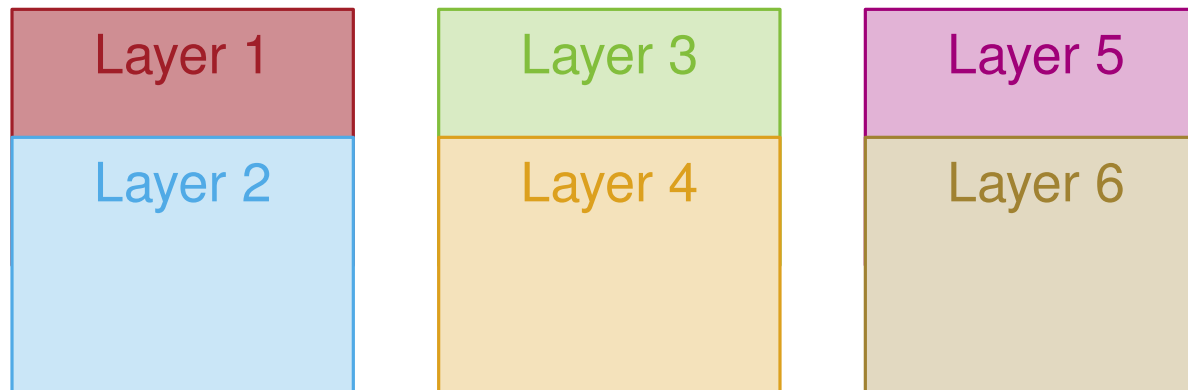
- a collection of views
- one or more pages in the PDF output
- each slide of a presentation

Layers, Views, & Pages

Pages

A page is...

- a collection of views
- one or more pages in the PDF output
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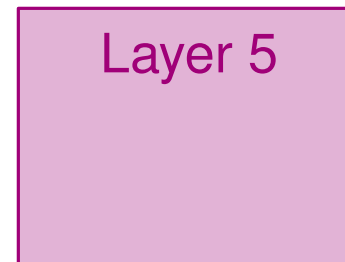
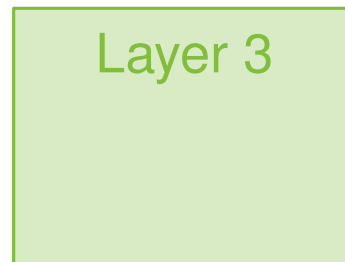
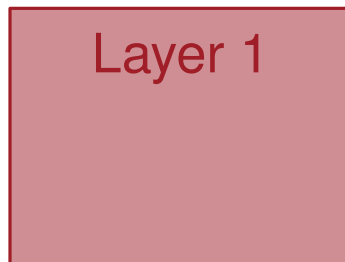
View 1 / Page 1

Layers, Views, & Pages

Pages

A page is...

- a collection of views
- one or more pages in the PDF output
- each slide of a presentation



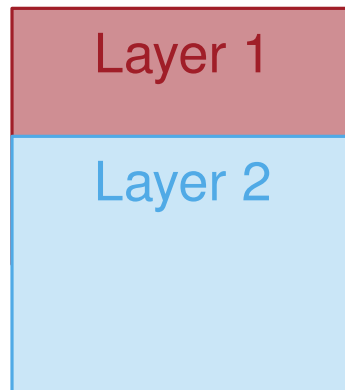
View 2 / Page 1

Layers, Views, & Pages

Pages

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- a collection of views
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View 3 / Page 1

Setup

- Move ipelets to `~/.ipe/ipelets/`
- Start by opening an existing presentation (included)
- Load style sheets (KIT colors, transparency)

Presentation elements

- Most are stored as symbols, to be *cloned*:
Ipelets → Symbols → Clone Symbol
- Title page: Clone Titlepage
- Frame title: Clone FrameTitle
- Frame subtitle: Clone FrameSubtitle
- Frame numbers:
Presentation Tools → update frame numbers

Getting Started

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KIT/ITI Template

Boxes

Box: Ipelets → Presentation → Box It

Tabbed Box

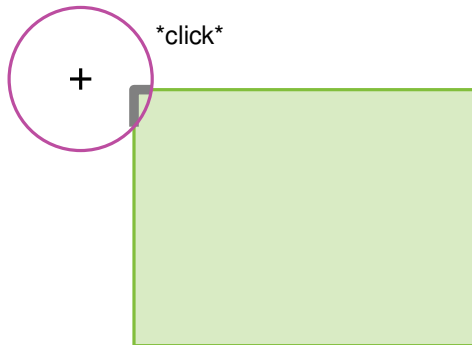
Ipelets → Presentation → Tabbed Box

KIT Boxes

Ipelets → Presentation Tools → create KIT Box *

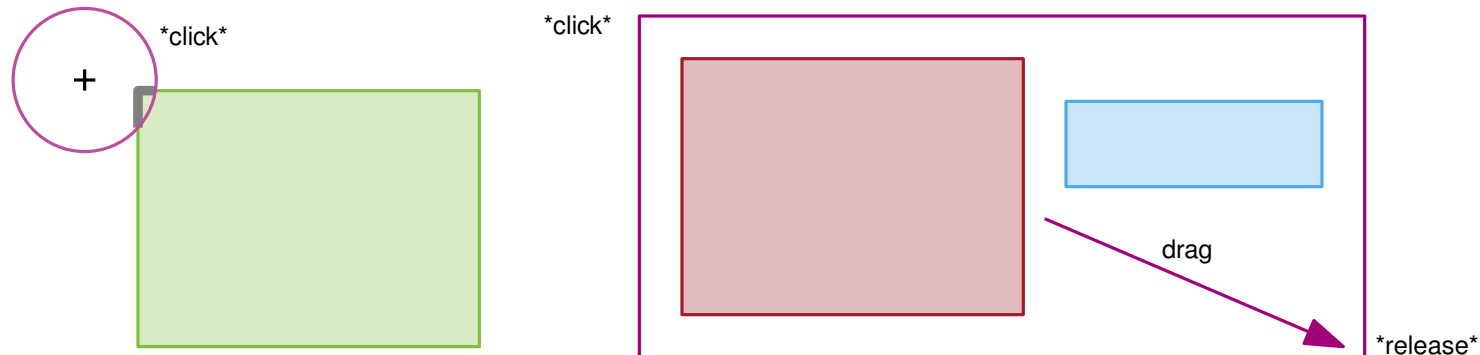
Selecting a single object

- Need to click the boundary of an object
- Hard to select marks (use space to select from multiple objects)



Selecting a single object

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- Hard to select marks (use space to select from multiple objects)



Selecting multiple objects

- Selection box must contain the items completely!
- Makes it hard to select a few objects that overlap other objects
- **Solution:** Use layers to hide objects you don't want to select

Pasting from other Ipe files

- Make sure you have the same style sheets
- If missing colors, etc., objects will not look the same
- Can be difficult to troubleshoot. Wait for the planets to align...

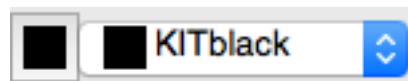
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Object properties

- UI elements don't match the current selection
- UI always shows the last property picked
- **Recommendation:** Make similar objects together

Fill color displayed:



Selected:



More Resources

- Download and open this presentation in Ipe!
- See the Ipe manual
[<http://ipe7.sourceforge.net/manual/manual.pdf>]
- Examples, walk-throughs, and guides on the ITI webpage
[<http://i11www.iti.uni-karlsruhe.de/information/scripts>]
- Ipe showcase [<http://sourceforge.net/p/ipe7/wiki/Home/#showcase>]