

Information Visualization

Exercises

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Lesson V

Fisheye and magnifying glass

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Fisheye and magnifying glass

Exercise I

Fisheye distortion

Exercise II

Bifocal distortion

Exercise I

Fisheye distortion



Package `prefuse.action.distortion`
Class `FisheyeDistortion`

Computes a graphical fisheye distortion of a graph view. This distortion allocates more space to items near the layout anchor and less space to items further away, magnifying space near the anchor and demagnifying distant space in a continuous fashion.

Manojit Sarkar and Marc H. Brown, Graphical Fisheye Views of Graphs, in Proceedings of CHI'92, Human Factors in Computing Systems, p. 83-91, 1992, <http://portal.acm.org/citation.cfm?id=142763>

Exercise I

Fisheye distortion

`FisheyeDistortion (double dx = 4, double dy = 4)`

Create a new `FisheyeDistortion` with the given distortion factors along the x and y directions.

Parameters

`double dx (default = 4)` — the distortion factor along the x axis (0 for none)

`double dy (default = 4)` — the distortion factor along the y axis (0 for none)

Exercise I

Fisheye distortion

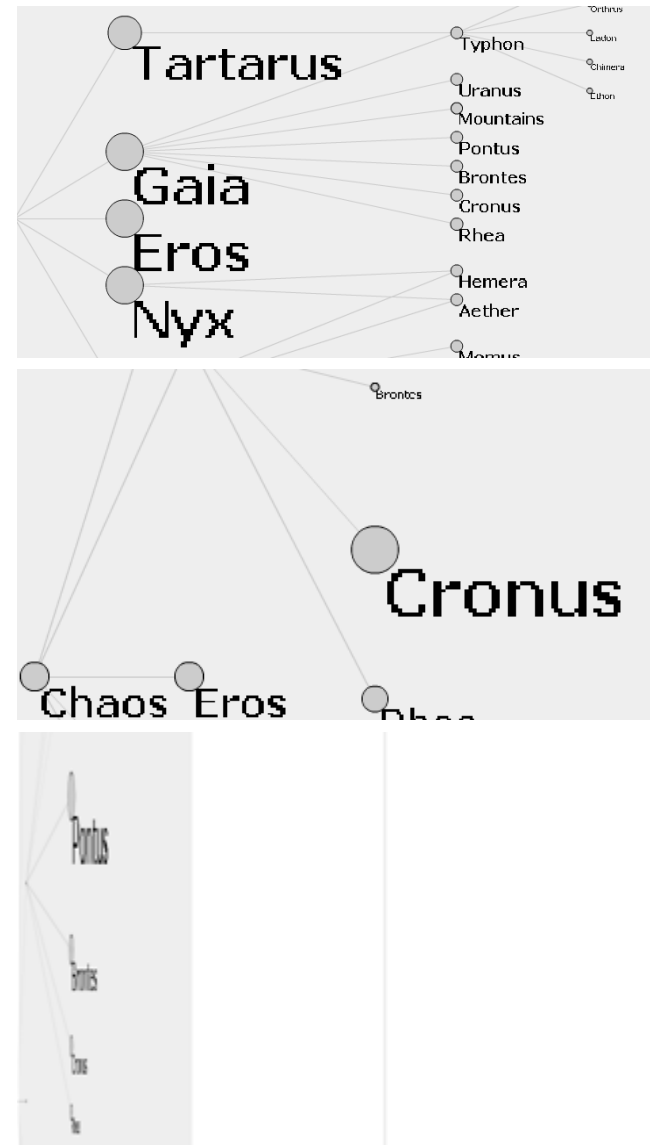
Read the paper from Sarkar et al.

Build one dimensional fisheye distortions

Along the x axis

Along the y axis

Build a two dimensional fisheye distortion



Exercise I

Fisheye distortion

Steps to include Distortion:

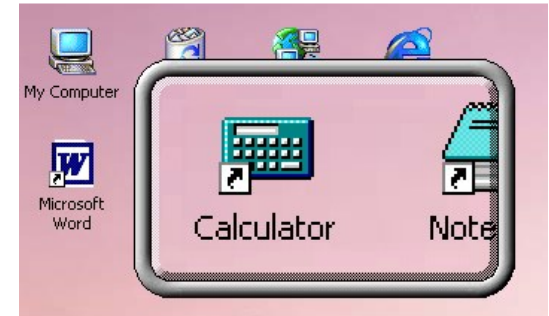
- Create new Distortion
- Create new ActionListener with Distortion and Repaint
- Register the ActionListener with a name at the visualization
- Create new AnchorUpdateControl
- Attach MouseMotionListener with AnchorUpdateControl to Display

Exercise II

Magnifying glass

Package `prefuse.action.distortion`

Class `BifocalDistortion`



Computes a bifocal distortion of space, magnifying a focus region of space and uniformly demagnifying the rest of the space. The affect is akin to passing a magnifying glass over the data.

Y. K. Leung and M. D. Apperley, A Review and Taxonomy of Distortion-Oriented Presentation Techniques, in Transactions of Computer-Human Interaction (TOCHI), 1(2): 126-160 (1994), portal.acm.org/citation.cfm?id=180173&dl=ACM

Exercise II

Magnifying glass

```
BifocalDistortion(double xRange = 0.1, double xMagnify = 3, double  
yRange = 0.1, double yMagnify = 3)
```

Create a new **BifocalDistortion** with the specified range and magnification along both axes.

Parameters

xRange:Number (default = 0.1) — the range around the focus that should be magnified along the x direction.

xMagnify:Number (default = 3) — how much magnification along the x direction should be used in the focal area

yRange:Number (default = 0.1) — the range around the focus that should be magnified along the y direction.

yMagnify:Number (default = 3) — how much magnification along the y direction should be used in the focal area

Exercise II

Magnifying glass

Read the paper from Leung et al.

Build one dimensional bifocal distortions

Along the x axis

Along the y axis

Build a two dimensional bifocal distortion

