

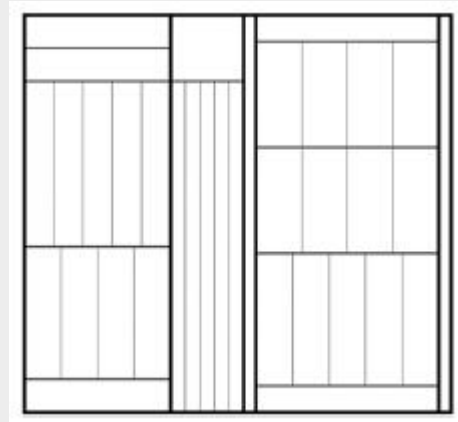
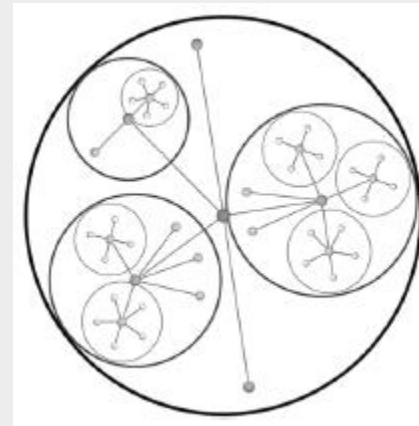
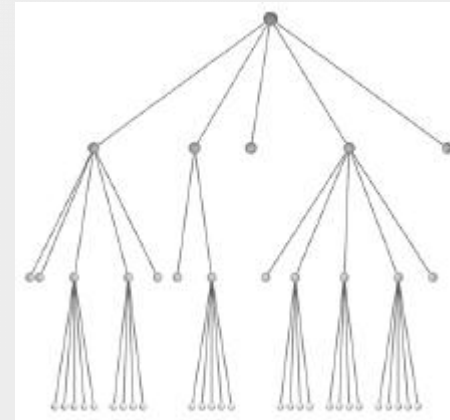
Visualizing what geeks cannot see

서울대학교, VPLab

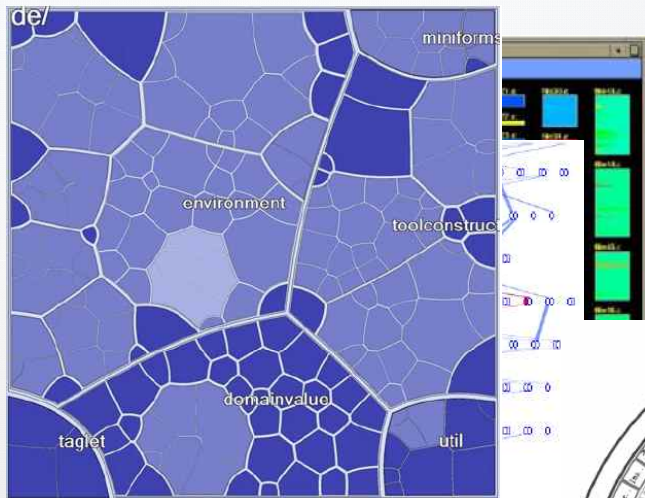
이형민

Software Visualization Topics

- Understanding
- Testing and Debugging
- Maintenance
- Interaction & Layout
- Algorithm



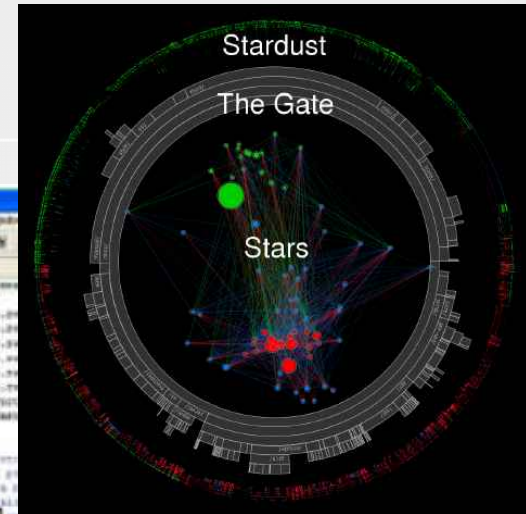
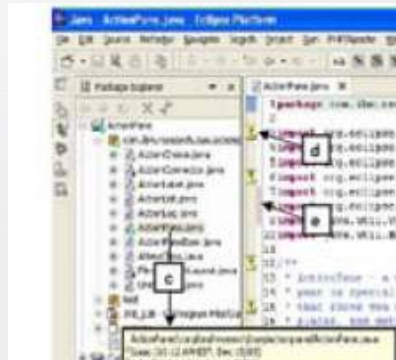
Some SoftVis Stuff?



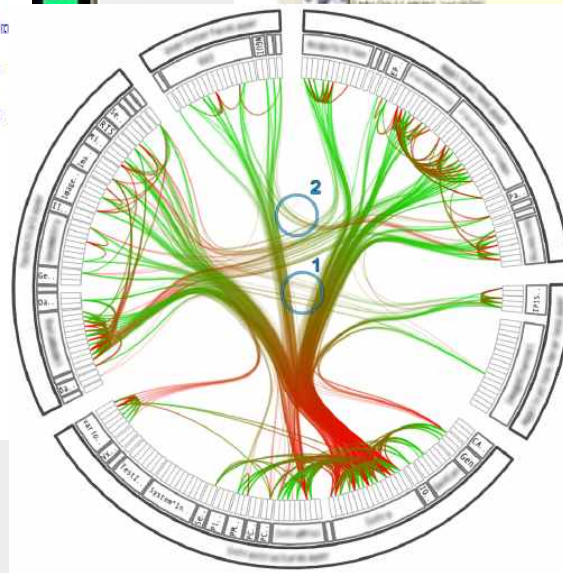
Balzer et al., 2005



Ogawa et al., 2007



StarGate (Ogawa et al., 2008)



Holten, 2006



Lupfer et al., 2004

Jimmer and Haake, 2001

What's going on?

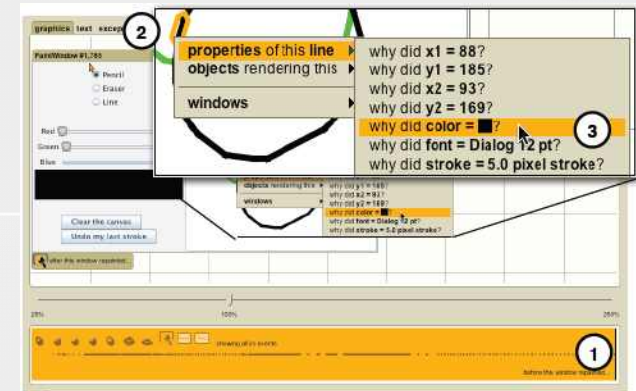
- Potential software bugs
 - memory leak, buffer overrun, null dereferencing, ...

```
375         after.setImage(setAppliedImage(currentAlgorithm), currentW
376     }
377
378     private function setAppliedImage(AlgorithmIndex:int):Array
379     {
380         var appliedImage:Array;
381         var aaa:ArrayCollection;
382
383         // copy currentImage to generate new Image
384         var newImage:Array = new Array(currentHeight);
385
386         for (var i:int=0; i < currentHeight; i++)
387         {
388             newImage[i] = new Array(currentWidth);
389             for (var j:int=0; j < currentWidth; j++)
390             {
391                 newImage[i][j] = currentImage[i][j];
392             }
393         }
394
395         // algorithm selecting routine
396         switch (AlgorithmIndex)
397         {
398             case 0:
399                 appliedImage = null;
400                 aaa = newImage;
401                 break;
402             case 1:
403                 appliedImage = erosion(newImage, currentWidth, cur
404                 break;
405             case 2:
```

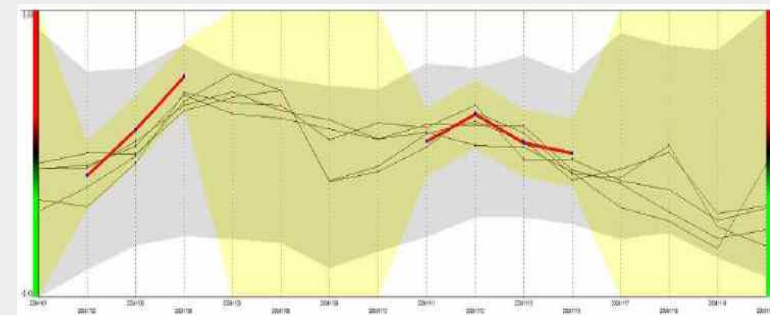
**Marking
Line # is
simple &
intuitive
approach**

What should be done?

- Path-tracking visualization
 - cool idea rather than link tracking?
- Social visualization
 - facilitate discussing with other developers
 - ex) sharing ideas whether code alarm is false positive?
- Time-series visualization
 - Controlling source code history



Whyline (Ko and Myers, 2009)



Time-series visualization