focus+context 2

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Review

- *Recall Chia-Ning Chiang's March 22nd presentation*
- Spatial methods
  - Fisheye views, hyperbolic trees, the document lens, stretchable rubber sheets, and other distortion-oriented methods.
- Dimensional methods
  - Magic lenses, tool glasses
- Cue methods
  - Color saturation, brightness

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1. *fisheye menus*

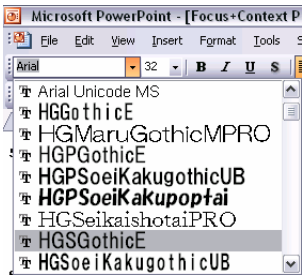
2. *distortion-oriented displays*

3. *zoomscapes*

Fisheye menus

Fisheye Menus Benjamin B. Bederson (UIST 2000)

- Motivation: big menus are hard to navigate
- Current solutions
  - Arrow bar
  - Scroll bar
  - Hierarchy



- Idea: use fisheye distortion instead
- Online demo…

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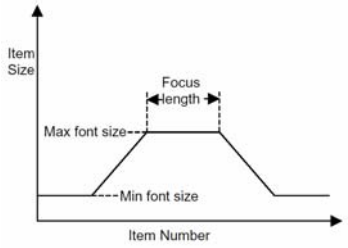
Implementation

- Very simple DOI function
  - Considers only distance from focus point
  - Rest of items are reduced in size until min reached
- If not enough room
  - Focus length reduced
  - Then max font size reduced
- Lazy rendering of focus area



Interesting problems

- Even this simple an innovation raises interesting problems
- Shifting a problem at extremes
  - Increase focus area at ends for visual stability
- Difficulty in selecting items
  - Considered special button, mouse speed
  - Created affordance instead
- Lock mode
  - Addresses the problem, but evaluation indicated that it wasn't a success

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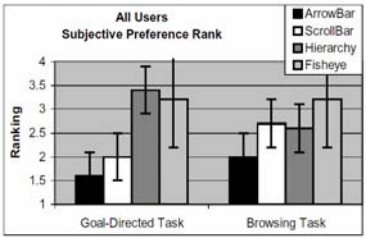
Evaluation

- Goal of study
  - Get rough idea of user's preferences
  - Inform future evaluations
- Setup
  - 5 student programmers
  - 5 admin staff
  - Similar system to demo
  - Data was menu 100 web sites
- Results
  - Programmers liked fisheye more than non-programmers
  - Only one figured out "focus lock"



Critique

- Paper
  - Clear discussion of design issues
  - Reproducible results, tricky problems raised
  - Satisfactory evaluation
- Idea
  - Small scope
  - In all of MS Office, how many menus lend themselves well to this?
  - No discussion of how this might scale to data with no obvious sorting

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1. *fisheye menus*

2. ***distortion-oriented displays***

3. *zoomscapes*

WYSIWIS groupware

- Using Distortion-Oriented Displays to Support Workspace Awareness Saul Greenberg, Carl Gutwin, Andy Cockburn (HCI 1996)
- Need support for workspace awareness
  - See the big picture of the work
  - What parts of the whole others are working on
- Use distortion-oriented displays
  - Magnification views
  - Distortion views

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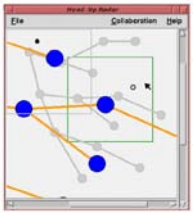
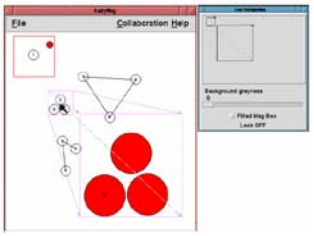
Groupware tools

- Head-up lens
  - Multiple points of focus
  - [video 3:50]
- Offset lens
  - Others' focus visible with less clutter
  - [video 5:30]
- Fisheye text view
  - Supports coupling of views
  - But unlike others no global context (scrolls out of view, scroll context could help)
  - [video 7:40]





critiques

- Paper
  - Clear report of implementation and tradeoffs
  - Discussion of should inform future work
  - Lacks evaluation
- Ideas
  - Multi-user applications need UIs that support awareness and give global context
  - Compelling prototype implementations
  - But magnification views were not grounded in compelling use cases
  - Fisheye text view seemed to be relevant to real-world word processing applications

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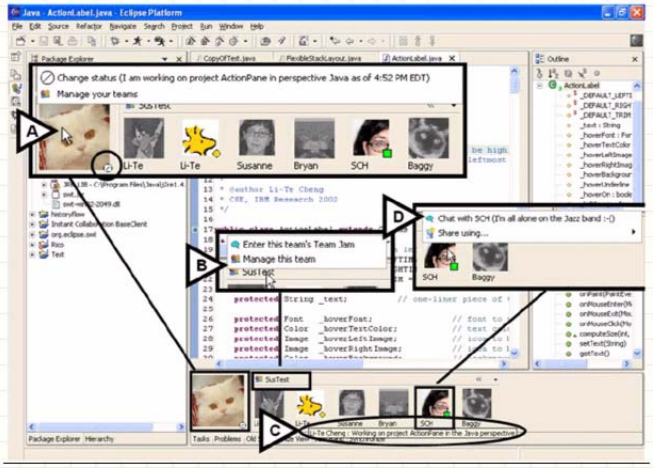
Related work

- Development environments are collaborative tools
- Jazz for Eclipse



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ZoomScapes

- Guimbretière, F., Stone, M., and Winograd, T. Fluid Interaction with High-resolution Wall-Size Displays (UIST 2001)
- Different approach to focus+context
  - Fisheye menus and DateLens seem great, but..
  - We don't always work with contiguous 2D spaces, but rather with multiple windows/files

Big displays

- Motivation: large displays
  - Gesture-based interaction
  - Working with multiple "sheets" can cause clutter
  - Use ZoomScapes to maintain workspace context

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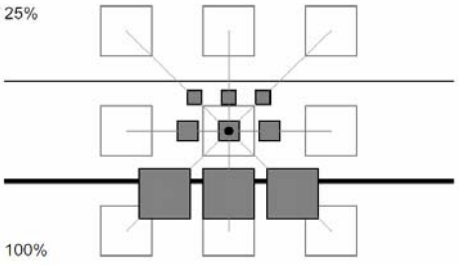
Implementation

- Gradually transform geometry of sheet group
- Considerations
  - When to scale members of a group
  - Abruptness of scaling (make continuous)
- Cursor determines scaling when on boundary
  - Emergent feature
- [video 4:00]



Critique

- Paper
  - Well-grounded in brainstorming use case
  - Excellent design discussion
  - Lacks formal evaluation, but the practical approach is convincing
- Ideas
  - Innovative technology & medium
  - Simple, predictable, user-driven distortion
  - Preserves physical metaphor
  - Lacks discussion of scaling alternatives

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Related work

- 9 Megapixels are expensive
  - Patrick Baudisch's focus+context screens
- Halo

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wrap-up

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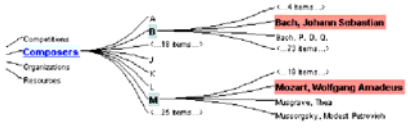
Challenges

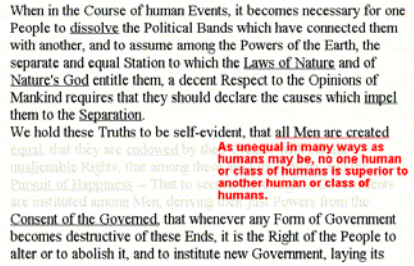
- Physical zooming
  - Is it the right metaphor for all applications?
  - Leverage semantic information
    - Greenberg et al. hinted at resolving call links
- Groupware
  - Offline collaboration?
- Active selection vs. passive browsing
  - Fisheyes worked well for browsing task
  - Visual Thesaurus demo…

Other ideas

- Better DOI functions (Card et al.)



- Fluid Documents (Zellweger et al.)



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