

CHAPTER 12:

Advancing the User Experience



*Designing the User Interface:
Strategies for Effective Human-Computer Interaction*

Sixth Edition

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Addison Wesley
is an imprint of



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View (Window) Management

- Design considerations
 - Users need to consult multiple sources rapidly
 - Minimally disrupt user's task
 - With large displays, eye-head movement and visibility are problems
 - With small displays, windows can too small to be effective
 - Need to offer users sufficient information and flexibility to accomplish task, while reducing *window housekeeping* actions, distracting clutter, eye-head movement
 - opening, closing, moving, changing size
 - time spent manipulating windows instead of on task
 - Can apply direct-manipulation strategy to windows
 - Rooms - a form of window macro that enables users to specify actions on several windows at once

View (Window) Management (continued)

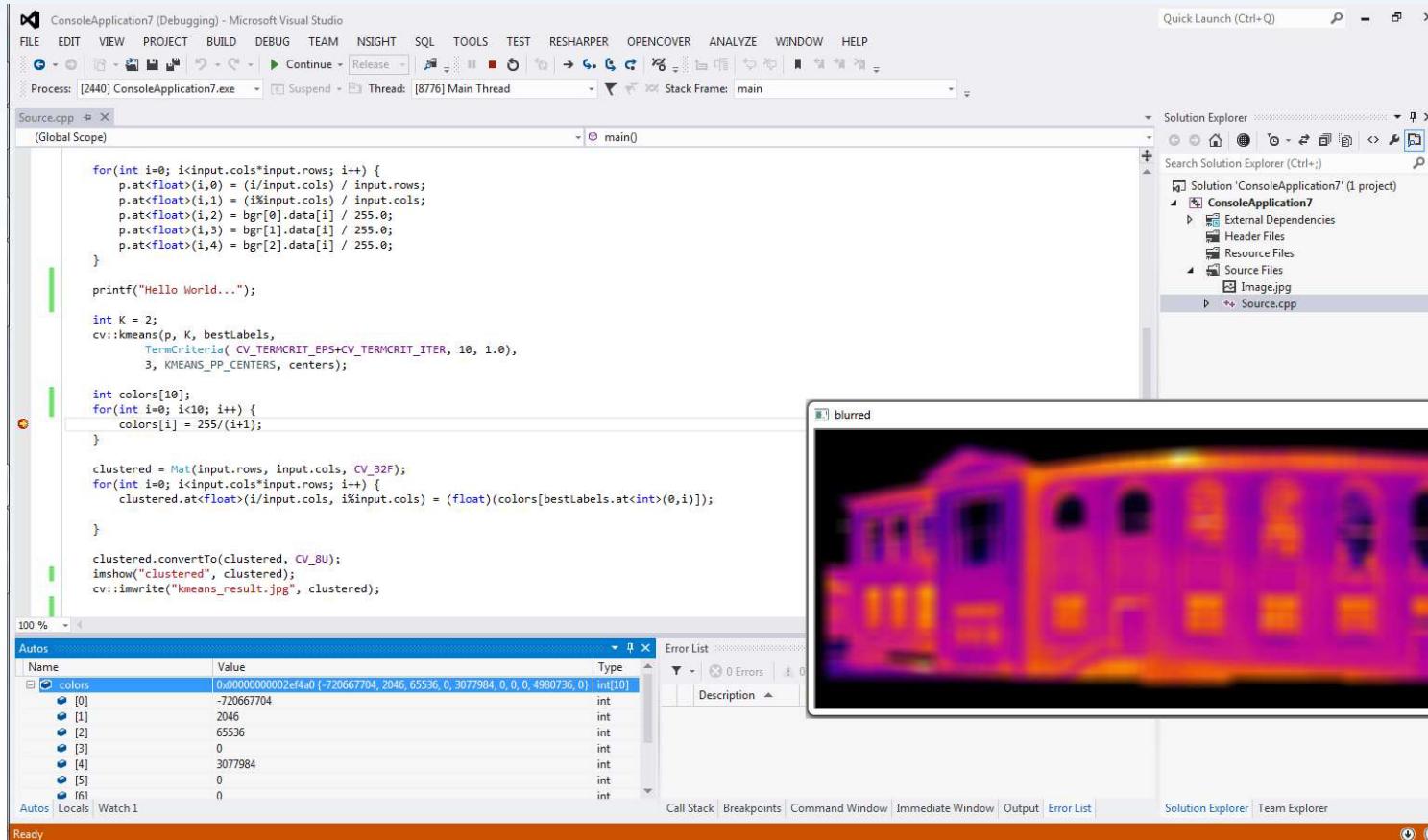
- Coordinating multiple windows
 - Designers may break through to the next generation of window managers by developing *coordinated windows*, in which windows appear, change contents, and close as a direct result of user actions in the task domain
 - A careful study of user tasks can lead to task-specific coordination
 - Consider these factors in interface design:
 - Synchronized scrolling
 - Hierarchical browsing
 - Opening/closing of dependent windows
 - Saving/opening of window state
 - Tabbed browsing
 - Tiled or overlapping windows
 - Ribbon interface
 - Design patterns
 - Start menu

View (Window) Management (continued)

The screenshot shows the ShareLaTeX interface. On the left, a sidebar displays a hierarchical list of document sections and files. The 'sections' section is expanded, showing subsections like '0_abstract.tex', '1_introductio...', '2_related_work.tex', etc. The '1_introductio...' section is selected and highlighted in red. In the main editing area, the text of this section is visible, with line numbers 2 through 12. Lines 8 and 9 are highlighted in red, indicating they are currently selected. To the right, a preview window shows the PDF output of the document. The title of the paper is 'Coping with Volume and Variety in Temporal Event Sequences: Strategies for Sharpening Analytic Focus'. The abstract, author information, and index terms are also visible in the preview.

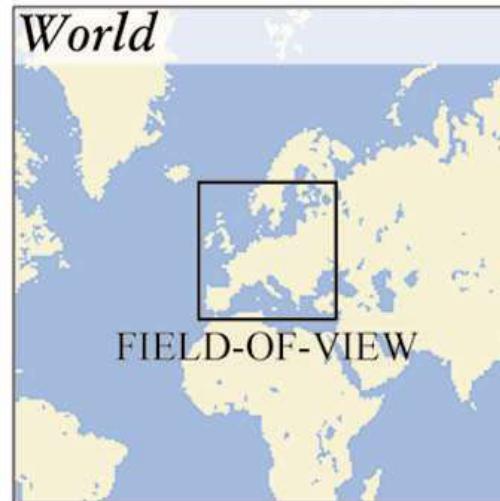
- **Hierarchical browsing:** ShareLaTeX allows users to edit a structured LaTeX document and see the resulting formatted document
 - On the left is the hierarchical list of document sections
 - The “1. Introduction” section is selected and highlighted in red, and its text can be edited in the middle
 - The preview of the output is shown on the right
 - After selecting a passage in one view it is possible to see the corresponding location on the other view

View (Window) Management (continued)



- Example of Visual Studio Integrated Development Environment illustrating **coordinated window views**
 - The project files are listed on the right, in a hierarchical browser
 - The selected file (i.e. “source .cpp”) is highlighted in the list and displayed on the left
 - A breakpoint was set in the code (red dot) at the line starting with “color[i]” so the bottom left window shows the values of the color array of the break point
 - All windows are titled, except for the output window (the colorful image of heat sensor data) which overlaps all the other windows

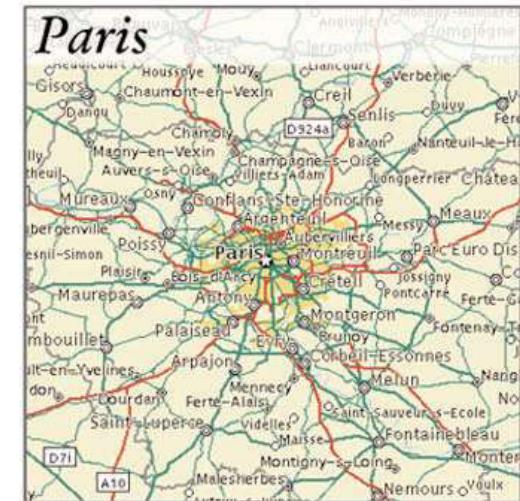
GLOBAL VIEW



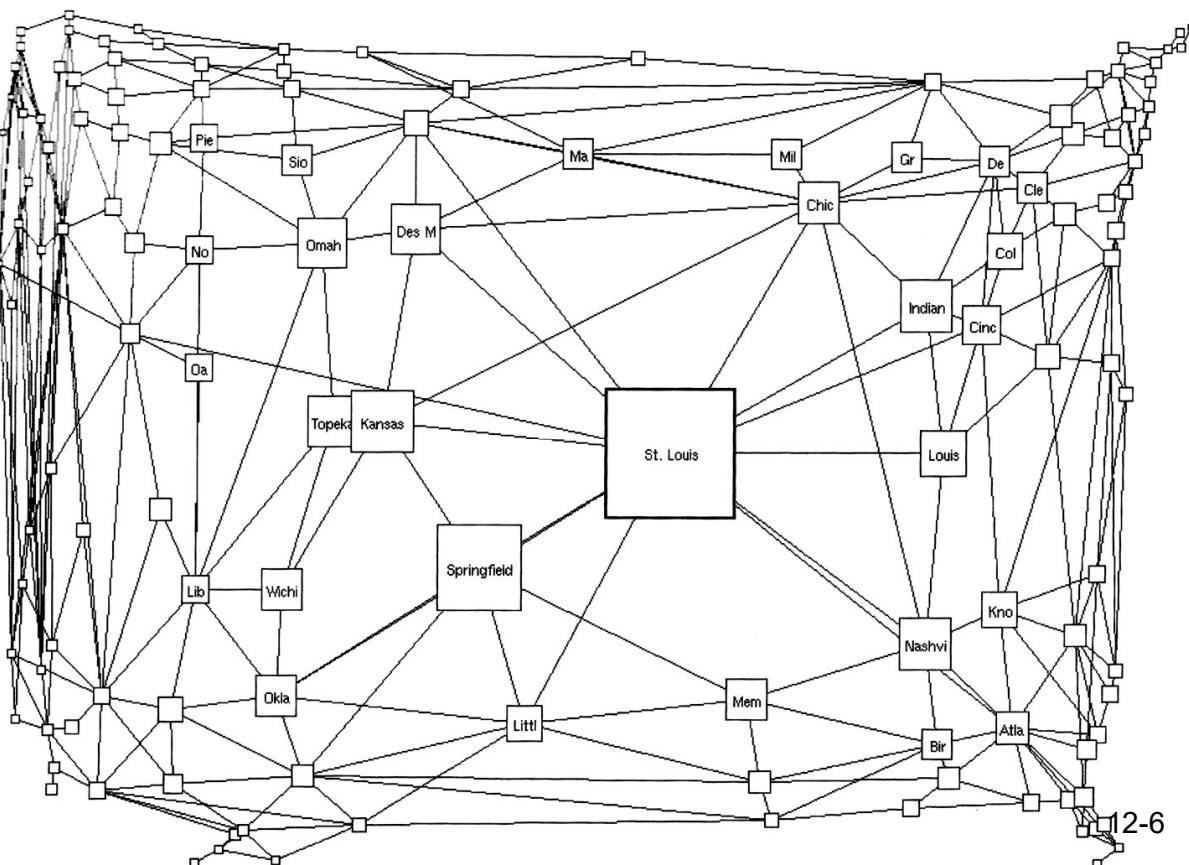
INTERMEDIATE VIEWS



DETAIL VIEW



COORDINATED PAIRS



Browsing large views:

- Zoom factors: 5-30
 - Larger suggests an intermediate view is needed
- Semantic zooming
- Side by side placement, versus fisheye view

View (Window) Management (concluded)

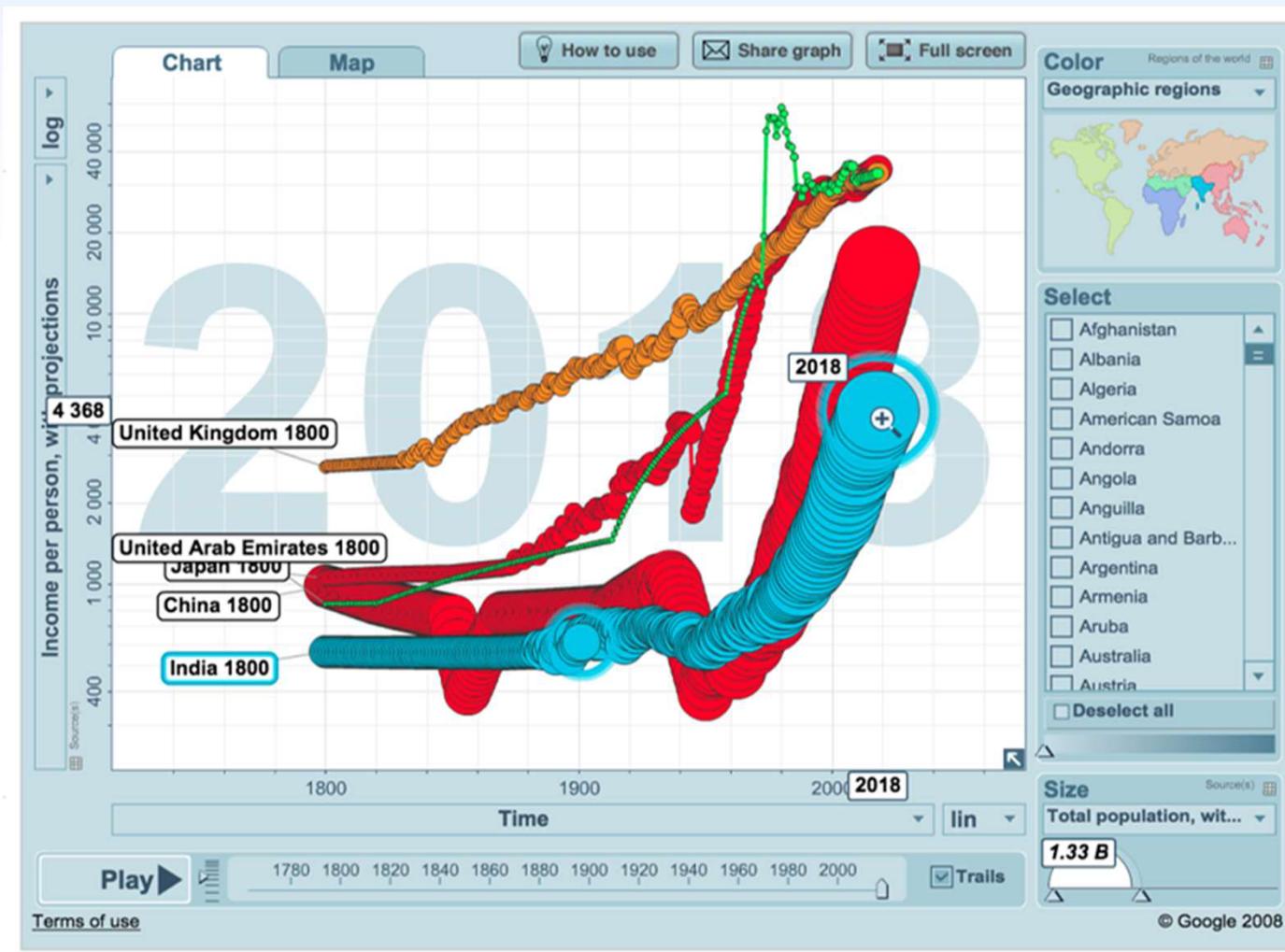
- **Image browsing**
 - The design of image browsers should be governed by the users' tasks, which can be classified as follows:
 - Image generation
 - Open-ended exploration
 - Diagnostics
 - Navigation
 - Monitoring

Animation

- The use of animation has grown significantly
- Examples include:
 - Keeping user oriented during transition
 - Indicating an affordance, inviting interaction
 - Entertaining
 - Indicating background activity (e.g. progress bar)
 - Storytelling
 - Alerting
 - Providing a virtual tour (e.g. for architectural designs)
 - Explaining a process

https://www.youtube.com/watch?v=swT_YMjU7B8

Animation (concluded)



- Gapminder uses animation to compare the income per person of 5 countries changed over time
 - The round markers leave a trace behind so we can see it in the printed as well
 - Here the user has selected India and is replaying the animation for that country
(Gapminder.org)