

21. A system for facilitating collaboration between visually impaired and sighted users including a computer-based device, said device providing representations to said visually impaired users of a multi-part information page's visual appearance by way of auditory and tactile feedback references indicating content layout and meta-information of content in a visually displayed multi-part information page, as per claim 20, wherein said electronic input device and said tactile output device is combined as an electronic touch pad, said touch pad generating said input position coordinates from user finger movements over various areas of a touch surface of said touch pad, said touch pad providing said tactile feedback in the form of vibrations.

22. A system for facilitating collaboration between visually impaired and sighted users including a computer-based device, said device providing representations to said visually impaired users of a multi-part information page's visual appearance by way of auditory and tactile feedback references indicating content layout and meta-information of content in a visually displayed multi-part information page, as per claim 20, wherein said tactile output device comprises any one of a bracelet, a necklace or a laser pointer.

23. A system for facilitating collaboration between visually impaired and sighted users including a computer-based device, said device providing representations to said visually impaired users of a multi-part information page's visual appearance by way of auditory and tactile feedback references indicating content layout and meta-information of content in a visually displayed multi-part information page, as per claim 20, wherein said multi-part information page is a web page containing frames.

24. An article of manufacture comprising a computer usable storage medium having computer readable data and instructions embodied therein for non-visually displaying a multi-part information page containing two or more spatially located areas of separate content, said computer readable data and instructions comprising:

computer readable data and instructions for maintaining a non-visual, abstract representation of said multi-part information page, said non-visual, abstract representation comprising non-visual display coordinates, said non-visual display coordinates comprising:

boundary coordinates defining boundaries between said two or more spatially located areas, said boundary coordinates associated with tactile feedback;

content coordinates defining said two or more spatially located areas, said content coordinates associated with auditory feedback, said auditory feedback representative of content meta-information;

computer readable data and instructions for receiving input position coordinates;

computer readable data and instructions for mapping said position input coordinates to said non-visual display coordinates;

computer readable data and instructions for generating a tactile output to cause a tactile output device to generate said tactile feedback for position input coordinates mapped to said boundary coordinates, and

computer readable data and instructions for generating an auditory output to cause an auditory output device to generate said auditory feedback for position input coordinates mapped to said content coordinates.

25. A method of non-visually representing graphical images by mapping included content sections and associated boundaries to non-visual feedback parameters, said image comprising a multiplicity of content sections and associated boundaries, said method comprising:

receiving a request from a requester to represent a specific instance of one of said graphical images;

generating a non-visual coordinate representation of said specific instance, said representation including specific content sections and associated boundaries;

instantiating said non-visual feedback parameters in one or more user input/output devices such that the requestor recognizes, non-visually, specific content sections and associated boundaries of said graphical image.

26. A method of non-visually representing graphical images by mapping included content sections and associated boundaries to non-visual feedback parameters, said image comprising a multiplicity of content sections and associated boundaries, as per claim 25, wherein said physically recognized feedback parameters comprise tactile feedback for boundaries and specific sounds for content locations.

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