

15

reference adjusting each change in said second memory change log according to each change in said disk change log;

reference adjusting each change in said disk change log according to each change in said second memory change log; and

determining whether any two changes in said second memory change log and said disk change log cannot exist simultaneously.

14. The system of claim 12 wherein said second computer is further operative to identify a losing change by displaying a dialog box on a display screen of said second computer identifying the conflicting changes and allowing said second user to select the losing change.

15. The system of claim 12 wherein said second computer is further operative to identify a losing change by said second computer automatically selecting the change that occurred first in time as the losing change.

16. The system of claim 12 wherein if said losing change is located in said second memory change log, said second computer is operative to merge the changes by:

- generating an inverse change associated with the losing change;
- apply said inverse change to said second memory image; and
- removing said losing change from said second memory change log.

17. The system of claim 16, wherein said second computer is further operative to overwrite said disk image with said second memory image.

18. The system of claim 12 wherein if said losing change is located in said disk change log, said second computer is operative to merge the changes by:

- generating an inverse change associated with said losing change; and
- storing said inverse change in a disk undo log.

19. The system of claim 18, wherein said second computer is further operative to copy said disk undo log to said disk file.

20. A memory storage device for a computer program, said memory storage device storing a computer program that provides a method for simultaneously editing a spreadsheet stored in a disk file of a computer, said disk file including a disk image of said spreadsheet and a disk change log for maintaining a list of changes to said spreadsheet stored in the disk file, said method comprising the steps of:

- (a) allowing a first user using a first computer, said first computer being functionally connected to said computer by a first network connection, to access and edit said spreadsheet over said first network connection to create a first memory image of said spreadsheet;
- (b) storing said first user's changes in a first memory change log;
- (c) in response to performing a save operation, copying over said first network connection, said first memory change log to said disk change log stored in said disk file;
- (d) allowing a second user using a second computer, said second computer being functionally connected to said computer by a second network connection, to access and edit said spreadsheet over said first network connection, simultaneously with said first user to create a second memory image of said spreadsheet;

16

(e) storing said second user's changes in a second memory change log; and

(f) in response performing a save operation, identifying, over said first network connection, whether any intervening changes from said first user exist in said disk file, merging the changes in said second memory change log with said intervening changes and storing said merged changes in said second memory change log, and copying said second memory change log over said first network connection to said disk change log.

21. The memory storage device of claim 20 wherein said step of merging comprises:

- determining whether any conflicting changes exist between the changes in said second memory change log and said intervening changes of said first user;
- resolving all conflicting changes by identifying a losing change for each said conflicting change.

22. The memory storage device of claim 21 wherein said step of determining whether any conflicting changes exist comprises:

- copying the portion of said disk change log containing said first user's changes to the memory of said second computer;
- reference adjusting each change in said second memory change log according to each change in said disk change log;
- reference adjusting each change in said disk change log according to each change in said second memory change log; and
- determining whether any two changes in said second memory change log and said disk change log cannot exist simultaneously.

23. The memory storage device of claim 21 wherein said step of resolving comprises displaying a dialog box on a display screen of said second computer identifying the conflicting changes and allowing said second user to select the losing change.

24. The memory storage device of claim 21 wherein said step of resolving comprises said second computer automatically selecting the change that occurred first in time as the losing change.

25. The memory storage device of claim 21 wherein if said losing change is located in said second memory change log:

- generating an inverse change associated with the losing change;
- applying said inverse change to said second memory image; and
- removing said losing change from said second memory change log.

26. Then memory storage device of claim 25 further comprising overwriting said disk image with said second memory image.

27. The memory storage device of claim 21 wherein if said losing change is located in said disk change log:

- generating an inverse change associated with said losing change; and
- storing said inverse change in a disk undo log.

28. The memory storage device of claim 27 further comprising copying said disk undo log to said disk file.