# CUSTOMIZABLE SPREADSHEET TABLE STYLES

## Field of Invention

The present invention relates to a method; at least one computer-readable storage medium comprising an article of manufacture that includes executable-instructions that, when executed by a computing device, cause the computing device to display a graphical user interface on display device; and at least one computer-readable storage medium containing executable instructions.

## Background of Invention

[0001] Tables can be used in a spreadsheet application to display and summarize data to a reader in an organized, comprehendible and attractive manner. To accomplish this, spreadsheet tables may include – in addition to listing data – distinct sections such as header rows, subtotals rows, totals rows, highlighted columns and/or rows, shaded columns and/or rows, borders, linear delineations, etc.

[0002] One way to accomplish such table formatting is for a user to manually format different sections of a table to create a functional and attractive look. However, if a spreadsheet or set of spreadsheets contains multiple tables, such manual formatting becomes tedious and time consuming. To ease this burden somewhat, a spreadsheet application may include a function that predefines a table format. Then, a user must merely apply a predefined format to a table.

[0003] However, predefined table formats may not suit a user's exact requirements. If a user wants to create a customized table format with current spreadsheet applications, the user must either manually format spreadsheet tables from scratch or apply manual alterations to a predefined table format. Either method requires significant time and effort. For example, if a user prepares a spreadsheet that includes ten tables and the user wants all the tables to look alike, the user must either manually format all ten tables or format each table according to a predefined table format and then manually modify each of the ten tables.

[0003a] It is generally desirable to overcome or ameliorate one or more of the above described difficulties, or to at least provide a useful alternative.

## Summary of Invention

[0004] In accordance with one aspect of the present invention, there is provided a method, comprising :

displaying a table style user interface configured to present a table style for a table

comprising a plurality of cells;

receiving a selection of the table style, wherein the table style includes a plurality of table elements, and wherein each table element represents a group of cells of the plurality of cells, and wherein the plurality of table elements is ordered in an order of precedence, and wherein the order of precedence is user-customizable;

receiving formatting instructions based on the selection of the table style;

formatting the table according to the received formatting instructions, wherein any incompatible formatting of a cell of the table is resolved according to the order of precedence of the plurality of table elements, and wherein the incompatible formatting results from at least two of the plurality of table elements overlapping the cell; and

wherein the method is performed by a computing device.

[ 0004a] In accordance with another aspect of the present invention, there is provided at least one computer-readable storage medium comprising an article of manufacture that includes executable-instructions that, when executed by a computing device, cause the computing device to display a graphical user interface on display device, the graphical user interface comprising :

a table styles toolbar configured to display a selectable thumbnail image of a table style, wherein the table style includes a plurality of table elements, and wherein each table element represents at least one cell of the plurality of cells;

a selectable modify option ; and

a dialog comprising a list of the plurality of table elements, wherein a selected table element is selected from a list of the plurality of table elements, and wherein the list of the plurality of table elements is arranged in an order of precedence, and wherein formatting cells of a higher precedence table element takes precedence over formatting of cells of a lower precedence table element.

[0004b] In accordance with another aspect of the present invention, there is provided at least one computer-readable storage medium containing executable instructions that, when executed by a computing device, cause the computing device to implement the following steps :

receiving a user selection of a table style, wherein the table style includes a plurality of table elements, and wherein each table element represents a group of cells of a plurality of cells of a table ;

receiving at least one formatting modifications;

receiving a selection of a table element of the plurality of table elements, wherein the selected table element is selected from a list of the plurality of table elements, and wherein the list of the plurality of table elements is arranged in an order of precedence, and wherein

formatting of cells of a higher precedence table elements takes precedence over formatting of cells of a lower precedence table element;

applying the at least one formatting modifications to the table element.

[0004c] The present disclosure describes a framework that allows users to create a customized table style that can be saved and easily applied to any number of tables in one or more spreadsheets. Like predefined table formats, once a user has created a customized table style, the format of the customized table style can be applied to tables of data with a minimum of effort to instantly transform the data tables into easily readable and recognizable tables.

[0005] When creating a customized table style, distinct sections of a table can be formatted separately from other sections of the table and such sections may be formatted as a single element. Therefore, individual cells in a table do not have to be formatted separately. A row of header cells, for example, can be formatted separately from other table cells. A precedence order of table elements may be established and/or modified to indicate which table element format takes precedence when two or more table elements intersect.

[0006] Also described herein are one or more graphical user interfaces through which a user can easily create, save and apply customized table styles.

**Brief Description of the Drawings**

[0007] Preferred embodiments of the present invention are hereafter described, by way of non-limiting example only, with reference to the accompanying drawings, in which :

[0008] Figure 1 depicts an exemplary table styles toolbar in accordance with the present description.

[0009] Figure 2 depicts an exemplary menu associated with the table styles toolbar of Fig. 1, the menu including an option to modify an existing table style.

[0010] Figure 3 depicts an exemplary dialog for modifying a table style.

[0011] Figure 4 is an exemplary non-exhaustive listing of table elements that may be formatted via the exemplary dialog shown in Figure 3.

[0012] Figure 5 depicts a dialog for modifying a pivot table style.

[0013] Figure 6 is an exemplary non-exhaustive listing of pivot table elements that may be formatted via the exemplary dialog shown in Figure 5.

[0014] Figure 7 is a flow diagram depicting an exemplary methodological implementation of creating a customized table style.

[0015] Figure 8 is a block diagram depicting an exemplary general purpose computing device that may be used in conjunction with one or more implementations described herein.

## Detailed Description of Preferred Embodiments of the Invention

### Overview

[0016] The presently described subject matter relates to techniques for creating customized spreadsheet table styles. As used herein, the term "table style" includes any type of table style such as, for example pivot table styles. Pivot table styles and/or pivot table reports are typically more complicated than standard spreadsheet styles and reports and may include subtotal row(s), a grand total row, row subheadings, column subheadings, etc. Pivot table reports allow a user to view table data from various axes and provide a useful tool for viewing data.

[0017] One way that is described herein to create a custom table style is to access a previously defined table style, such as a predefined table format or another custom table style. Modifications are made to the previously defined table style and the modified table style is saved under a unique table style name. Thereafter, a user may create a table of the new table style or may reformat existing tables according to the new table style and the user does not have to manually format each table to achieve a particular appearance.

[0018] One feature that is described herein is one that separates a table style into separate areas, or elements. Each of the separate elements can be formatted apart from other areas. This allows all cells in an area to be formatted together instead of having to format each cell separately, thus saving significant time and effort. This is useful, for example, to apply a color gradient across a range of cells. Typically, color gradients have only been applied at a cell level, which cannot be properly applied to a group pf cells such as a header row. When making modifications to the format of an existing table style, a user must only indicate to which table element subsequent formatting commands apply.

[0019] Formattable spreadsheet table elements are also described in U.S. Patent Application Serial No. 11/214,682, filed contemporaneously herewith by the present applicants, entitled "Formattable Spreadsheet Table Elements with Automatic Updating". Said application is assigned to Microsoft Corp., the assignee of the present invention.

[0020] Customizing spreadsheet table styles is accomplished using a graphical user interface that is described in greater detail below. Through the graphical user interface, a user

other appropriate mechanism. In a networked environment, program modules depicted relative to the computer 810, or portions thereof, may be stored in the remote memory storage device. By way of example, and not limitation, Fig. 8 illustrates remote application programs 885 as residing on memory device 881. It will be appreciated that the network connections shown are exemplary and other means of establishing a communications link between the computers may be used.

## Conclusion

[00104] While one or more exemplary implementations have been illustrated and described, it will be appreciated that various changes can be made therein without departing from the spirit and scope of the claims appended hereto.

[00105] Throughout this specification and the claims which follow, unless the context requires otherwise, the word “comprise”, and variations such as “comprises” and “comprising”, will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.

[00106] The reference in this specification to any prior publication (or information derived from it), or to any matter which is known, is not, and should not be taken as an acknowledgment or admission or any form of suggestion that that prior publication (or information derived from it) or known matter forms part of the common general knowledge in the field of endeavor to which this specification relates.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS :

1. A method comprising :

displaying a table style user interface configured to present a table style for a table comprising a plurality of cells;

receiving a selection of the table style, wherein the table style includes a plurality of table elements, and wherein each table element represents a group of cells of the plurality of cells, and wherein the plurality of table elements is ordered in an order of precedence, and wherein the order of precedence is user-customizable;

receiving formatting instructions based on the selection of the table style;

formatting the table according to the received formatting instructions, wherein any incompatible formatting of a cell of the table is resolved according to the order of precedence of the plurality of table elements, and wherein the incompatible formatting results from at least two of the plurality of table elements overlapping the cell; and

wherein the method is performed by a computing device.

2. The method as recited in claim 1, further comprising identifying whether formatting instructions of a cell of a lower precedence table element is compatible with formatting instructions of a cell of higher precedence table element.

3. The method as recited in claim 1, further comprising displaying a preview thumbnail image that shows an exemplary table formatted according to the received formatting instructions.

4. At least one computer-readable storage medium comprising an article of manufacture that includes executable-instructions that, when executed by a computing device, cause the computing device to display a graphical user interface on display device, the graphical user interface comprising :

a table style toolbar configured to display a selectable thumbnail image of a table style, wherein the table style includes a plurality of table elements, and wherein each table element represents at least one cell of the plurality of cells ;

a selectable modify option; and

a dialog comprising a list of the plurality of table elements, wherein a selected table element is selected from a list of the plurality of table elements, and wherein the list of the plurality of table elements is arranged in an order of precedence, and wherein formatting of cells of a higher precedence table element takes precedence over formatting of cells of a lower precedence table element.

5. The at least one computer-readable storage medium as recited in claim 4, the graphical user interface further comprising the table styles tool bar further configured to, after a selection of the selectable thumbnail image, temporarily apply the table style to a selected table.

6. The at least one computer-readable storage medium as recited in claim 4, the graphical user interface further comprising a table name field configured to receive a name of a table and to associate the table via the name with the table style.

7. The at least one computer-readable storage medium containing executable instructions that, when executed by a computing device, cause the computing device to implement the following steps :

receiving a user selection of a table style, wherein the table style includes a plurality of table elements, and wherein each table element represents a group of cells of a plurality of cells of a table;

receiving at least one formatting modifications;

receiving a selection of a table element of the plurality of table elements, wherein the selected table element is selected from a list of the plurality of table elements, and wherein the list of the plurality of table elements is arranged in an order of precedence, and wherein

formatting of cells of a higher precedence table element takes precedence over formatting of cells of a lower precedence table element;

applying the at least one formatting modifications to the table element.

8. The at least one computer-readable storage medium as recited in claim 7, wherein the user selection of the table style is made by selecting the table style from a table style toolbar of a user interface.

9. The at least one computer-readable storage medium as recited in claim 7, wherein the applying the at least one formatting modifications to the table element includes applying the at least one formatting modifications according to overlap of the table element with any other table element and the order of precedence of the plurality of table elements.

10. The at least one computer-readable storage medium as recited in claim 9, further comprising determining if formatting of overlapping table elements is compatible.

11. The method as recited in claim 1, further comprising displaying a table styles tool bar that includes a plurality of thumbnail images, wherein each of the plurality of thumbnail images illustrates a corresponding one of a plurality of table styles that includes the table style.

12. The method as recited in claim 11, wherein the receiving the selection of the table style is based on a user selecting a thumbnail image of the plurality of thumbnail images, and wherein the selected thumbnail image corresponds to the table style.

13. The method as recited in claim 12, further comprising temporarily applying the selected table style to the table.

14. The method as recited in claim 1, wherein formatting cells of a higher precedence table element takes precedence over formatting cells of a lower precedence table

element based on at least a portion of the cells of the higher precedence table element overlapping at least a portion of the cells of the lower precedence table element.

15. The method as recited in claim 1, wherein the selection of the table style is made by selecting the table style from a table styles toolbar of the table style user interface.

16. The method as recited in claim 1, further comprising applying formatting modifications to the table according to cell overlap of a table element with any others of the plurality of table elements and according to the order of precedence.

17. The at least one computer-readable storage medium as recited in claim 4, wherein the order or precedence is customizable.

18. The at least one computer-readable storage medium as recited in claim 4, wherein each of the plurality of table elements includes a customizable formatting specification.

19. The at least one computer-readable storage medium as recited in claim 4, wherein the formatting of the cells of the higher precedence table element takes precedence over the formatting of cells of the lower precedence table element in response to at least a portion of the cells of the higher precedence table element overlapping at least a portion of the cells of the lower precedence table element.

20. The at least one computer-readable storage medium as recited in claim 7, wherein the order or precedence is customizable.

21. The at least one computer-readable storage medium as recited in claim 7, wherein each of the plurality of table elements includes a customizable formatting specification.

22. The at least one computer-readable storage medium as recited in claim 7, wherein the formatting of the cells of the higher precedence table element takes precedence over the formatting of cells of the lower precedence table element in response to at least a portion of the

cells of the higher precedence table element overlapping at least a portion of the cells of the lower precedence table element.

23. A method substantially as hereinbefore described, with reference to the accompanying drawings.

24. At least one computer-readable storage medium comprising an article of manufacture that includes executable-instructions that, when executed by a computing device, cause the computing device to display a graphical user interface on display device substantially as hereinbefore described, with reference to the accompanying drawings.

25. At least one computer-readable storage medium containing executable instructions substantially as hereinbefore described, with reference to the accompanying drawings.