CLAIMS

1. A computer-implemented method to display graphical diagrams, the method comprising:

displaying, on a display device, a graphical diagram with a plurality of graphical objects;

receiving input effective to modify a hierarchy of the graphical diagram, the hierarchy including two or more hierarchical levels; and

rearranging the graphical diagram according to the modified hierarchy, including rearranging at least some of the plurality of graphical objects according to the modified hierarchy.

2. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable or enable a group category at a first hierarchical level of the two or more hierarchical levels; and

rearranging the graphical diagram according to the modified hierarchy includes one of:

removing from the first hierarchical level of the graphical diagram on the display device one or more graphical containers that respectively represent one or more groups of the group category in response to receiving input effective to disable the group category; or

adding to the first hierarchical level of the graphical diagram on the display device one or more graphical containers that respectively represent one or more groups of the group category in response to receiving input effective to enable the group category;

3. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable a first group category at a first hierarchical level of the two or more hierarchical levels;

the first group category includes one or more first groups;

one or more first subsets of the plurality of graphical objects respectively belong to the one or more first groups;

rearranging the graphical diagram according to the modified hierarchy includes removing from the first hierarchical level of the graphical diagram on the display device one or more first graphical containers that respectively represent the one or more first groups of the first group category; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes rearranging graphical objects of the one or more first subsets on the display device according to their membership in one or more second groups of a second group category that is different than the first group category.

4. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to enable a group category at a first hierarchical level of the two or more hierarchical levels;

the group category includes one or more groups;

one or more subsets of the plurality of graphical objects respectively belong to the one or more groups;

rearranging the graphical diagram according to the modified hierarchy includes adding one or more graphical containers to the graphical diagram on the display device arranged in the graphical diagram at the first hierarchical level;

the one or more graphical containers respectively represent the one or more groups of the group category; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes rearranging graphical objects of the one or more subsets into the one or more graphical containers on the display device according to their membership in the one or more groups.

5. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable or enable a cross-layout in which first and second group categories at a first hierarchical level of the two or more hierarchical levels are both enabled simultaneously; and

rearranging the graphical diagram according to the modified hierarchy includes one of:

in response to receiving the input effective to enable the cross-layout, displaying on the display device intersecting first and second containers respectively representing first and second groups of the first and second group categories and rearranging graphical objects in intersection areas or non-intersection areas of the first and second graphical containers according to their membership in one or both of a corresponding first or second group; or

in response to receiving the input effective to disable the cross-layout, removing from the first hierarchical level of the graphical diagram on the display device one or more first graphical containers that respectively represent one or more first groups of the first group category and rearranging on the display device graphical objects belonging to the one or more first groups according to their membership in one or more other groups represented by one or more other currently displayed graphical containers.

6. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to enable a cross-layout in which first and second group categories at a first hierarchical level of the two or more hierarchical levels are both enabled simultaneously;

rearranging the graphical diagram according to the modified hierarchy includes displaying on the display device a row of one or more first graphical containers that represent one or more first groups of the first group category and a column of one or more second graphical containers that represent one or more second groups of the second group category, the row of one or more first graphical containers and the column of one or more second graphical containers arranged to intersect each other; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes positioning the at least some of the graphical objects in intersection areas or non-intersection areas of the one or more first graphical containers and the one or more second graphical containers according to their membership in one or both of a corresponding first or second group.

7. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable a cross-layout in which first and second

group categories at a first hierarchical level of the two or more hierarchical levels are both enabled simultaneously;

rearranging the graphical diagram according to the modified hierarchy includes removing from the first hierarchical level of the graphical diagram on the display device one or more first graphical containers that respectively represent one or more first groups of the first group category, the one or more first graphical containers prior to removal arranged in a row or column that intersects a column or row of one or more second graphical containers that respectively represent one or more second groups of the second group category; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes positioning on the display device graphical objects belonging to the one or more first groups within or without one or more other currently displayed graphical containers according to their membership in one or more other groups represented by the one or more other currently displayed graphical containers.

8. The computer-implemented method of claim 1, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to move a first group category from a first hierarchical level of the two or more hierarchical levels to a second hierarchical level of the two or more hierarchical levels; and

rearranging the graphical diagram according to the modified hierarchy includes one of:

expanding a first graphical container that represents a first group of the first group category to surround a second graphical container that represents a second group of a second group category at a lower hierarchical level in the modified hierarchy than the first group category, the second graphical container surrounding the first graphical container prior to the rearranging and the second group category at a higher hierarchical level than the first group category prior to the modifying; or

reducing a first graphical container that represents a first group of the first group category to be surrounded by a second graphical container that represents a second group of a second group category at a higher hierarchical level in the modified hierarchy than the first group category, the second graphical container being surrounded by the first graphical container prior to the

rearranging and the second group category at a lower hierarchical level than the first group category prior to the modifying.

9. The computer-implemented method of claim 1, wherein the plurality of graphical objects represent a plurality of data objects in structured source data, the method further comprising enforcing semantic constraints derived from the structured source data when rearranging the graphical diagram according to the modified hierarchy.

10. The computer-implemented method of claim 1, further comprising receiving second input effective to switch between two different visualization techniques, wherein the two different visualization techniques include:

a containment visualization technique in which graphical objects that are associated with a group in a group category at a higher hierarchical level than the graphical objects are displayed within a graphical container that represents the group; and

an association visualization technique in which graphical objects that are associated with a group in a group category at a higher hierarchical level than the graphical objects are displayed with a graphical badge that indicates a given graphical object is associated with a given group.

11. A non-transitory computer-readable medium having computer-readable instructions stored thereon that are executable by a processor to perform or control performance of operations comprising:

displaying, on a display device, a graphical diagram with a plurality of graphical objects;

receiving input effective to modify a hierarchy of the graphical diagram, the hierarchy including two or more hierarchical levels; and

rearranging the graphical diagram according to the modified hierarchy, including rearranging at least some of the plurality of graphical objects according to the modified hierarchy.

12. The non-transitory computer-readable medium of claim 11, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable or enable a group category at a first hierarchical level of the two or more hierarchical levels; and

rearranging the graphical diagram according to the modified hierarchy includes one of:

removing from the first hierarchical level of the graphical diagram on the display device one or more graphical containers that respectively represent one or more groups of the group category in response to receiving input effective to disable the group category; or

adding to the first hierarchical level of the graphical diagram on the display device one or more graphical containers that respectively represent one or more groups of the group category in response to receiving input effective to enable the group category.

13. The non-transitory computer-readable medium of claim 11, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to disable a first group category at a first hierarchical level of the two or more hierarchical levels;

the first group category includes one or more first groups;

one or more first subsets of the plurality of graphical objects respectively belong to the one or more first groups;

rearranging the graphical diagram according to the modified hierarchy includes removing from the first hierarchical level of the graphical diagram on the display device one or more first graphical containers that respectively represent the one or more first groups of the first group category; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes rearranging graphical objects of the one or more first subsets on the display device according to their membership in one or more second groups of a second group category that is different than the first group category.

14. The non-transitory computer-readable medium of claim 11, wherein:

receiving the input effective to modify the hierarchy of the graphical diagram includes receiving input effective to enable a cross-layout in which first and second

group categories at a first hierarchical level of the two or more hierarchical levels are both enabled simultaneously;

rearranging the graphical diagram according to the modified hierarchy includes displaying on the display device a row of one or more first graphical containers that represent one or more first groups of the first group category and a column of one or more second graphical containers that represent one or more second groups of the second group category, the row of one or more first graphical containers and the column of one or more second graphical containers arranged to intersect each other; and

rearranging the at least some of the plurality of graphical objects according to the modified hierarchy includes positioning the at least some of the graphical objects in intersection areas or non-intersection areas of the one or more first graphical containers and the one or more second graphical containers according to their membership in one or both of a corresponding first or second group.

15. The non-transitory computer-readable medium of claim 11, wherein the plurality of graphical objects represent a plurality of data objects in structured source data, the operations further comprising enforcing semantic constraints derived from the structured source data when rearranging the graphical diagram according to the modified hierarchy.