CLAIMS

What is claimed is:

1. A method to generate a visualization of data from a data source based on a contract, the method comprising:

receiving input effective to select a visualization type of a plurality of different visualization types to apply to a visualization of data, wherein:

the selected visualization type is associated with a contract;

each of the plurality of different visualization types is associated with a specific contract of a plurality of contracts; and

each corresponding contract includes a corresponding schema that specifies a set of data fields and one or more relationships between the data fields in the set of data fields to generate and display a corresponding visualization having a corresponding visualization type;

mapping at least some data of a data source to the contract such that the contract is satisfied, the contract specifying that the data of the data source be in a graph format; and

displaying the visualization of the at least some data of the data source based on the contract, the displayed visualization having the selected visualization type.

2. The method of claim 1, wherein:

the mapping comprises identifying a plurality of specific data from a plurality of different data collections extracted from the data source, at least some of the specific data satisfying a first data field of the set of data fields specified by the schema of the contract and at least some other data of the specific data satisfying a second data field of the set of data fields specified by the schema of the contract; and

when combined, the plurality of specific data from the plurality of different data collections form a set of data having a structure necessary to produce the visualization with the selected visualization type.

3. The method of claim 1, wherein:

the data source comprises a first data source;

mapping the at least some data of the data source to the contract comprises identifying at least first data extracted from the first data source and second data extracted from a second data source;

the first data satisfies a first data field of the set of data fields specified by the schema of the contract and the second data satisfies a second data field of the set of data fields specified by the schema of the contract; and

when combined, the first data and the second data form at least part of a set of data having a structure necessary to produce the visualization with the selected visualization type.

4. The method of claim 1, wherein the at least some data of the data source includes graph data, the method further comprising converting at least a portion of the graph data to a standardized graph format.

5. The method of claim 1, wherein the at least some data of the data source includes graph data comprising a plurality of nodes and one or more edges, each edge of the one or more edges indicating a relationship between two nodes of the plurality of nodes, the method further comprising, in response to receiving user input indicating that only related nodes of a particular node are to be displayed in the visualization:

filtering information from the graph data based on the relationships indicated by the one or more edges; and

updating the visualization based on the filtered graph data such that the visualization only includes data that is related to the particular node.

6. The method of claim 1, further comprising:

receiving user input effective to update at least a portion of the visualization, the user input indicating that data associated with one or more nodes or one or more edges are to be updated; and

updating the data of the data source associated with the portion of the visualization that is to be updated based on the user input, including updating a portion of the data of the data source that corresponds to data of the data source that is not displayed in the visualization.

7. The method of claim 1, wherein the contract comprises a first contract and the at least some data of the data source comprises a first portion of the data of the data source, the method further comprising, mapping a second portion of the data of the data source to a second contract such that the second contract is satisfied, the second contract specifying that the second portion of the data of the data source be in a tabular format, the visualization is displayed such that the second portion of the data of the data source is also displayed.

8. The method of claim 1, further comprising, prior to the mapping, translating the data of the data source from a first format to a standardized graph format.

9. The method of claim 8, wherein translating the data to the standardized format comprises translating the data of the data source to graph data.

10. The method of claim 8, wherein the first format comprises a tabular format.

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

receiving input effective to select a visualization type of a plurality of different visualization types to apply to a visualization of data, wherein:

the selected visualization type is associated with a contract;

each of the plurality of different visualization types is associated with a specific contract of a plurality of contracts; and

each corresponding contract includes a corresponding schema that specifies a set of data fields and one or more relationships between data fields in the set to generate and display a corresponding visualization having a corresponding visualization type and each corresponding contract includes a corresponding graph constraint indicating structural constraints of the corresponding visualization;

converting at least some data of a data source to meet the graph constraint;

mapping at least some data of ~~a~~the data source to the contract such that the contract is satisfied, the contract specifying that the data of the data source be in a graph format; and

displaying the visualization of the at least some data of the data source based on the contract, the displayed visualization having the selected visualization type.

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

the mapping comprises identifying a plurality of specific data from a plurality of different data collections extracted from the data source, at least some of the specific data satisfying a first data field of the set of data fields specified by the schema of the contract and at least some other data of the specific data satisfying a second data field of the set of data fields specified by the schema of the contract; and

when combined, the plurality of specific data from the plurality of different data collections form a set of data having a structure necessary to produce the visualization with the selected visualization type.

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

the data source comprises a first data source;

mapping the at least some data of the data source to the contract comprises identifying at least first data extracted from the first data source and second data extracted from a second data source;

the first data satisfies a first data field of the set of data fields specified by the schema of the contract and the second data satisfies a second data field of the set of data fields specified by the schema of the contract; and

when combined, the first data and the second data form at least part of a set of data having a structure necessary to produce the visualization with the selected visualization type.

14. The non-transitory computer-readable storage medium of claim 11, wherein the at least some data of the data source includes graph data, the operations further comprising converting at least a portion of the graph data to a standardized graph format.

15. The non-transitory computer-readable storage medium of claim 11, wherein the at least some data of the data source includes graph data comprising a plurality of nodes and one or more edges, each edge of the one or more edges indicating a relationship between two nodes of the plurality of nodes, the operations further comprising, in response to receiving user input indicating that only related nodes of a particular node are to be displayed in the visualization:

filtering information from the graph data based on the relationships indicated by the one or more edges; and

updating the visualization based on the filtered graph data such that the visualization only includes data that is related to the particular node.

16. The non-transitory computer-readable storage medium of claim 11, the operations further comprising:

receiving user input effective to update at least a portion of the visualization, the user input indicating that data associated with one or more nodes or one or more edges are to be updated; and

updating the data of the data source associated with the portion of the visualization that is to be updated based on the user input including updating a portion of the data of the data source that corresponds to data of the data source that is not displayed in the visualization.

17. The non-transitory computer-readable storage medium of claim 11, wherein the contract comprises a first contract and the at least some data of the data source comprises a first portion of the data of the data source, further comprising, mapping a second portion of the data of the data source to a second contract such that the second contract is satisfied, the second contract specifying that the second portion of the data of the data source be in a tabular format, the visualization is displayed such that the second portion of the data of the data source is also displayed.

18. The non-transitory computer-readable storage medium of claim 11, the operations further comprising, prior to the mapping, translating the data of the data source from a first format to a standardized graph format.

19. The non-transitory computer-readable storage medium of claim 18, wherein translating the data to the standardized format comprises translating the data of the data source to graph data.

20. The non-transitory computer-readable storage medium of claim 18, wherein the first format comprises a tabular format.