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 and the selected visualization type is stored in a specific visualization file;

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 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, wherein a resulting contract map is stored in the specific visualization file;

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;

receiving input effective to alter a first graphical object in the displayed visualization;

saving the alteration to the first graphical object in the displayed visualization in a differential log, wherein the differential log is stored in the specific visualization file; and

updating the at least some data of the data source to include a change implicated by the alteration of the first graphical object in the displayed visualization.

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, further comprising, in response to an update at the data source resulting in an alteration of a portion of the at least some data of the data source, updating the visualization to reflect the alteration.

5. The method of claim 1, further comprising, prior to displaying the visualization, generating a semantic layout of the visualization based on the contract associated with the selected visualization type, wherein the semantic layout specifies one or more of relative locations, arrangement, and relationships of a plurality of data objects to represent in the visualization.

6. The method of claim 1, wherein the at least some data of the data source does not have a schema that matches the corresponding schema of the contract until the at least some data of the data source is mapped to the contract.

7. The method of claim 1, wherein the selected visualization type comprises a first selected visualization type, the visualization comprises a first visualization, 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:

receiving input effective to select a second visualization type of the plurality of different visualization types to apply to a second visualization of the data from the data source, the second selected visualization type associated with a second contract of the plurality of contracts, wherein the second contract is different than the first contract;

mapping a second portion of the data of the data source to the second contract such that the second contract is satisfied; and

displaying the second visualization of the second portion of the data of the data source, the displayed second visualization having the second selected visualization type that is different than the first selected visualization type.

8. The method of claim 1, wherein the selected visualization type comprises a first selected visualization type and the visualization comprises a first visualization, the method further comprising:

receiving input effective to select a second visualization type of the plurality of different visualization types to apply to a second visualization of the data from the data source, the second selected visualization type associated with the same contract as the first selected visualization type; and

displaying the second visualization of the at least some data of the data source, the displayed second visualization having the second selected visualization type that is different than the first selected visualization type.

9. 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 format.

10. The method of claim 9, wherein translating the data to the standardized format comprises translating the data to normalized tabular data.

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 and the selected visualization type is stored in a specific visualization file;

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;

mapping at least some data of a data source to the contract such that the contract is satisfied, wherein a resulting contract map is stored in the specific visualization file;

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;

receiving input effective to alter a first graphical object in the displayed visualization;

saving the alteration to the first graphical object in the displayed visualization in a differential log, wherein the differential log is stored in the specific visualization file; and

updating the at least some data of the data source to include a change implicated by the alteration of the first graphical object in the displayed visualization.

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, the operations further comprising, in response to an update at the data source resulting in an alteration of a portion of the at least some data of the data source, updating the visualization to reflect the alteration.

15. The non-transitory computer-readable storage medium of claim 11, the operations further comprising, prior to displaying the visualization, generating a semantic layout of the visualization based on the contract associated with the selected visualization type, wherein the semantic layout specifies one or more of relative locations, arrangement, and relationships of a plurality of data objects to represent in the visualization.

16. The non-transitory computer-readable storage medium of claim 11, wherein the at least some data of the data source does not have a schema that matches the corresponding schema of the contract until the at least some data of the data source is mapped to the contract.

17. The non-transitory computer-readable storage medium of claim 11, wherein the selected visualization type comprises a first selected visualization type, the visualization comprises a first visualization, 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 operations further comprising:

receiving input effective to select a second visualization type of the plurality of different visualization types to apply to a second visualization of the data from the data source, the second selected visualization type associated with a second contract of the plurality of contracts, wherein the second contract is different than the first contract;

mapping a second portion of the data of the data source to the second contract such that the second contract is satisfied; and

displaying the second visualization of the second portion of the data of the data source, the displayed second visualization having the second selected visualization type that is different than the first selected visualization type.

18. The non-transitory computer-readable storage medium of claim 11, wherein the selected visualization type comprises a first selected visualization type and the visualization comprises a first visualization, the operations further comprising:

receiving input effective to select a second visualization type of the plurality of different visualization types to apply to a second visualization of the data from the data source, the second selected visualization type associated with the same contract as the first selected visualization type; and

displaying the second visualization of the at least some data of the data source, the displayed second visualization having the second selected visualization type that is different than the first selected visualization type.

19. 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 format.

20. The non-transitory computer-readable storage medium of claim 19, wherein translating the data to the standardized format comprises translating the data to normalized tabular data.