CLAIMS

[Claim 1]

A data integration apparatus comprising a platform configured to automatically perform a type conversion of objects, wherein

the platform is provided in a controller of the data integration apparatus, and includes an interpreter and an integrator, and

the controller is operated so that

the interpreter generates information of a language format in which objects are associated with words, from a graph representing a relationship of the objects of the platform; and

the integrator holds the information, and performs creation and conversion of the graph so as to reflect the information on the graph.

[Claim 2]

The data integration apparatus as claimed in claim 1, wherein the integrator

reflects on the graph, in addition to the information generated by the interpreter, information of the language format input by a user, so as to integrate the information generated by the interpreter and the information of the language format input by the user.

[Claim 3]

The data integration apparatus as claimed in claim 1 or 2, wherein the interpreter

converts a structure of the graph representing the

relationship of the objects of the platform, based on a hypernymy-hyponymy relationship of the objects, so that constituent elements of the graph are converted into a type more on the hyponymy-side.

[Claim 4]

The data integration apparatus as claimed in any one of claims 1 to 3, wherein the integrator

performs an inference process with respect to the information of the language format held by the integrator, by taking into consideration a hypernymy-hyponymy relationship of the objects, so as to convert the information held by the integrator.

[Claim 5]

The data integration apparatus as claimed in any one of claims 1 to 4, wherein the information of the language format is similar to a natural language, and the controller

generates an output to a user, according to the natural language or a word or sentence similar to the natural language input by the user.

[Claim 6]

A data integration method using a platform configured to automatically performing a type conversion of objects, wherein

the platform is provided in a controller of a computer, and includes an interpreter and an integrator, and

performs a process comprising steps of:

generating, by the interpreter, information of a language format in which objects are associated with words,

from a graph representing a relationship of the objects of the platform; and

holding, by the integrator, the information, to perform creation and conversion of the graph so as to reflect the information on the graph.

[Claim 7]

A program to be executed by a computer, wherein

a platform is provided in a controller of the computer, and includes an interpreter and an integrator, and automatically performs a type conversion of objects, and

the program causes the controller of the computer to perform a process comprising steps of:

generating, by the interpreter, information of a language format in which objects are associated with words, from a graph representing a relationship of the objects of the platform; and

holding, by the integrator, the information, to perform creation and conversion of the graph so as to reflect the information on the graph.

[Claim 8]

A digital city building system comprising a platform for automatically performing a type conversion of objects, and element programs, wherein

the platform implements a loose coupling of the element programs by abstracting an input format of the element programs and extending an application range, by path search and automatic execution of a type conversion based on a hypernymy-hyponymy relationship of the objects.

[Claim 9]

The digital city building system as claimed in claim 8, wherein

the platform is provided in a controller of the system, and includes an interpreter and an integrator, and

the controller is operated so that

the interpreter generates information of a language format in which objects are associated with words, from a graph representing a relationship of the objects of the platform; and

the integrator holds the information, and performs creation and conversion of the graph so as to reflect the information on the graph.

[Claim 10]

The digital city building system as claimed in claim 8 or 9, wherein an expression target of the data integrated by the interpreter and the integrator of the platform is a city or a structure.

[claim 11]

A communication interface configured to connect the data integration apparatus, according to any one of claims 1 to 4, to an external network.

[claim 12]

A communication interface configured to receive data to be input to the digital city building system according to any one of claims 8 to 10.