

WHAT IS CLAIMED IS:

1. A method of providing data included in a building information modeling (BIM) data file using a server, which comprises a database storing the BIM data file including a plurality of entities in a hierarchical structure and mapping data mapped to at least one of the plurality of the entities, the method comprising:

receiving a user request from a client;

retrieving mapping data corresponding to the user request from the database based on the user request;

extracting data corresponding to at least one entity mapped to the mapping data from the BIM data file; and

transmitting the extracted data to the client.

2. The method of claim 1, wherein the at least one entity mapped to the mapping data comprises an upper entity and a lower entity associated with the upper entity, and the upper entity and the lower entity are in the hierarchical structure.

3. The method of claim 1, wherein the user request comprises application information regarding an application executed by the client, and the mapping data is retrieved based on the application information.

4. The method of claim 1, wherein the at least one entity mapped to the mapping data comprises a plurality of first lower entities associated with a first upper entity and a plurality of second lower entities associated with a second upper entity, and

wherein the extracting comprises comparing the first lower entities with the second lower entities, and data corresponding to an overlapping lower entity between the first and the second lower entities according to a comparison result is not extracted repeatedly.

5. The method of claim 1, further comprising:

generating an industry foundation classes (IFC) file comprising the extracted data, wherein the transmitting comprises transmitting the IFC file to the client.

6. A non-transitory computer readable medium storing a computer program for performing the method of claim 1.

7. A building information modeling (BIM) data providing system comprising:
a client configured to generate a user request comprising application information
regarding an application to be executed; and

5 a server configured to transmit a response corresponding to the user request to the
client, the server comprises,

a database configured to store a BIM data file comprising a plurality of entities in a
hierarchical structure and mapping data mapped to at least one of the plurality of the entities;

a receiving module configured to receive the user request from the client;

10 a mapping module configured to retrieve mapping data corresponding to the user
request from the database based on the application information included in the user request
received from the receiving module;

15 data extraction module configured to receive the mapping data from the mapping
module and configured to extract data corresponding to at least one entity mapped to the
mapping data from the BIM data file; and

a transmission module configured to receive the extracted data from the data
extraction module and configured to transmit the data to the client.

20 8. The BIM data providing system of claim 7, wherein the at least one entity
mapped to the mapping data comprises an upper entity and a lower entity associated with the
upper entity, and the upper entity and the lower entity are in the hierarchical structure.

25 9. The BIM data providing system of claim 7, further comprising a file
generating module configured to generate an industry foundation classes (IFC) file
comprising the extracted data, wherein the transmission module transmits the IFC file
received from the file generating module to the client.

30 10. The BIM data providing system of claim 7, wherein the at least one entity
mapped to the mapping data comprises a plurality of first lower entities associated with a first
upper entity and a plurality of second lower entities associated with a second upper entity,
and

wherein the data extraction module compares the first lower entities with the second
lower entities, and when an overlapping lower entity exists between the first and the second

lower entities, the data extraction module does not repeatedly extract data corresponding to the overlapping lower entity.

11. A method of providing data using a building information modeling (BIM) server, the method comprising:

receiving building information regarding a target building and simulation type information regarding a type of a wanted simulation from a client;

searching for data corresponding to the building information and the simulation type information in a BIM data file stored in a database;

selecting an application provider computer corresponding to the simulation type information among a plurality of application provider computers, each performing different simulations;

transmitting the searched data to the selected application provider computer; and

receiving result data corresponding to a result of running the simulation based on the searched data from the application provider computer and transmitting the result data to the client.

12. The method of claim 11, further comprising, after the selecting the application provider computer:

generating a list of data additionally needed by the application provider computer to run the simulation and transmitting the list to the client; and

receiving data corresponding to the list from the client,

wherein the transmitting the searched data comprises transmitting the searched data and the data received from the client to the application provider computer.

13. The method of claim 11, wherein the transmitting the result data comprises converting a format of the result data and transmitting the result data in the converted format to the client.

14. The method of claim 11, wherein the simulation is related to at least one of a design, a construction, and a maintenance of the target building corresponding to the searched data.

15. The method of claim 11, wherein the BIM data file is in at least one of an industry foundation classes (IFC) format and a text format.

WHAT IS CLAIMED IS:

1. A method of providing data included in a first building information modeling (BIM) data file using a server, which comprises a database storing the first BIM data file including a plurality of entities in a hierarchical structure and mapping data mapped to at least one of the plurality of the entities, the method comprising:

receiving, by the server, a user request which includes application information from the client that is configured to communicate remotely with the server over a network;

retrieving mapping data corresponding to the user request from the database based on the application information included in the user request;

extracting data corresponding to at least one entity mapped to the mapping data from the first BIM data file;

generating a second BIM data file based on the extracted data, the second BIM data file being smaller than the first BIM data file; and

transmitting the second BIM data file to the client over the network,

wherein the application information includes a type of an application executed by the client,

wherein the at least one entity mapped to the mapping data comprises a plurality of first lower entities associated with a first upper entity and a plurality of second lower entities associated with a second upper entity, and

wherein the extracting comprises comparing the first lower entities with the second lower entities, and data corresponding to an overlapping lower entity between the first and the second lower entities according to a comparison result is not extracted repeatedly.

2. The method of claim 1, wherein the first upper entity and the plurality of the first lower entities are in the hierarchical structure, and

wherein the second upper entity and the plurality of the second lower entities are in the hierarchical structure.

3. The method of claim 1, wherein the first and second BIM data files are industry foundation classes (IFC) files.

4. A non-transitory computer readable medium storing a computer program for performing the method of claim 1.

5. A building information modeling (BIM) data providing system comprising:
a client configured to communicate remotely with a server over a network and
configured to generate a user request comprising application information regarding an
5 application to be executed; and
the server configured to transmit a response corresponding to the user request to
the client over the network, the server comprising:
a database configured to store a first BIM data file comprising a plurality of
entities in a hierarchical structure and mapping data mapped to at least one of the plurality
10 of the entities;
a receiving module configured to receive the user request from the client over the
network;
a mapping module configured to retrieve mapping data corresponding to the user
request from the database based on the application information included in the user
15 request received from the receiving module;
a data extraction module configured to receive the mapping data from the mapping
module and configured to extract data corresponding to at least one entity mapped to the
mapping data from the first BIM data file;
a file generating module configured to receive the extracted data from the
20 mapping module and configured to generate a second BIM data file based on the extracted
data, the second BIM data file being smaller than the first BIM data file; and
a transmission module configured to receive the second BIM data file from the file
generation module and configured to transmit the data to the client over the network,
wherein the application information includes a type of the application to be
25 executed by the client,
wherein the mapping data is related to the application information,
wherein the at least one entity mapped to the mapping data comprises a plurality of
first lower entities associated with a first upper entity and a plurality of second lower
entities associated with a second upper entity, and
30 wherein the data extraction module compares the first lower entities with the
second lower entities, and when an overlapping lower entity exists between the first and
the second lower entities, the data extraction module does not repeatedly extract data
corresponding to the overlapping lower entity.

6. The BIM data providing system of claim 5, wherein the first upper entity and the plurality of the first lower entities are in the hierarchical structure,

5 wherein the second upper entity and the plurality of the second lower entities are in the hierarchical structure.

7. The BIM data providing system of claim 5, wherein the first and second BIM data files are industry foundation classes (IFC) files.