progress data obtained by integrating the inspection schedules and records are provided. In the progress management, a progress confirmation system that transmits construction progress data obtained by converting an inspection progress status into a physical quantity of construction progress to the construction plan support system is combined, and section-classified processes and the previous construction progress data are integrated, to display a process chart with a chart progress line indicating the construction progress (e.g., Patent Literature 3).

CITATION LIST

PATENT LITERATURE

[0006] Patent Literature 1: JP 2004-227307 A

Patent Literature 2: JP 2013-45308 A

Patent Literature 3: JP 2010-282496 A

SUMMARY

[0006a] In an aspect, the present disclosure refers to a construction management method executed by a computer, the construction management method comprising:

by an information processing unit of the computer, reading, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in a database, and creating two or more task management tables by storing the task information based on the management function;

inputting, by an information input unit of the computer, record information for each task to the specific task management table;

reflecting, by the information processing unit, the record information acquired from the information input unit in any one, or two or more of the other task management tables; and

presenting, by an information presentation unit of the computer, any one, or two or more of the task management tables indicating transition of the record information.

[0006b] In an aspect, the present disclosure refers to a construction management system comprising:

a database configured to store two or more pieces of task information;

an information processing unit configured to read, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in the database, and create two or more task management tables by storing the task information based on the management function; and

an information input unit configured to input record information for each task to the specific task management table,

wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

[0006c] In an aspect, the present disclosure refers to a program, which is executed by a computer, for causing the computer to execute:

a function to read, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in a database, and create two or more task management tables by storing the task information based on the management function;

a function to acquire record information for each task input to the specific task management table by an information input unit;

a function to reflect the record information acquired from the information input unit in any one, or two or more of the other task management tables; and

a function to present any one, or two or more of the task management tables indicating transition of the record information on an information presentation unit.

[0006d] In an aspect, the present disclosure refers to a construction management device that manages construction work using a computer, the construction management device comprising:

a device housing;

a memory unit including a database configured to store two or more pieces of task information;

an information processing unit configured to read, from all pieces of task information with which one or both of machinery information and information for specifying a management

function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in the database, and create two or more task management tables by storing the task information based on the management function; and

an information input unit configured to input record information for each task to the specific task management table,

wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

[0006e] In an aspect, the present disclosure refers to a recording medium storing the program according to the above aspects.

[0007] In the regular repair work and the like of the heat exchange system included in the oil refining plant, an orderer is the owner company that operates the plant, and an order receiver is the partner company that undertakes construction processing and management thereof. The heat exchange system as a target of the regular repair work includes a plurality of heat exchangers having different specifications and the like, and a large number of related machinery. Since the regular repair work is performed by stopping the heat exchange system, a construction period for minimizing the stop period is required. In addition, elements such as system specifications and regular repair cost are also added as matters to be considered.

[0008] For the orderer of the regular repair work, management of progress, inspection according to the progress, and the like are main processing matters. On the other hand, the order receiver is required to grasp the concept of the orderer and the entire image of the system as the regular repair target, establish a regular repair plan, execute the construction processing, and receive the inspection of the orderer as required, to complete the regular repair work.

The regular repair work includes a plurality of processes such as construction progress, reporting, inspection permission, and confirmation. For example, when the regular repair work of one piece of machinery is completed, the inspection permission is given from the orderer who has received a report on the completion. If the inspection result does not reach an acceptance range, for example, does not meet a standard, the process cannot proceed to a next process. This management is excellent from the viewpoint of safety, but there is also a problem in that the construction progress is entrusted to an inspector of the orderer. Information sharing between the orderer and the order receiver is essential. Insufficient information sharing causes a

problem in that a temporal loss between the processes is induced in terms of basic points such as search for a position of inspection machinery.

[0009] In the management of the regular repair work, for example, there are management types such as a process, a progress status, and construction quality, and a management sheet created for each type is used. Therefore, even when the management is performed for one work item, it is necessary to find the management sheet for each management type and enter the same or related items in each management sheet. In addition, in order to link together the management sheets separately created as described above, it is necessary to manually perform a large number of processes. Since the management sheets are used for each of a large number of pieces of equipment, machinery, or management points in the oil refining plant, a huge amount of labor is required to search for and set the relevance.

In addition, since there are a large number of work items in the management of the regular repair work, there is a problem in that human errors are more likely to occur in reading the plurality of management sheets.

There is another problem in that construction work is delayed if a constructor or a manager takes time to confirm construction progress in addition to status information such as construction progress.

[0010] With regard to such problems, the configurations disclosed in Patent Literature 1 to Patent Literature 3 cannot solve the problems presented in the present disclosure.

[0011] The inventors of the technology of the present disclosure have found that, regarding management of regular repair work of a heat exchange system and the like, it is possible to reduce the load of progress management and the like, shorten a regular repair time, and improve reliability by sharing record information for each task among a plurality of management functions.

[0012] In view of the above problems and findings, an object of the technology of the present disclosure is to improve the efficiency and work quality of regular repair work, inspection, and the like.

[0013] In order to achieve the above object, one example of a construction management method of the present disclosure is a construction management method using a computer and including: creating, by an information processing unit, two or more task management tables each specified by a management function by using task information recorded in a database; inputting, by an information input unit, record information for each task to the specific task management table; reflecting, by the information processing unit, the record information acquired from the information input unit in any one, or two or more of the other task management tables; and presenting, by an information presentation unit, any one, or two or more of the task management

tables indicating transition of the record information.

[0014] The construction management method may include setting, by the information processing unit, authority to permit at least browsing, input, and revision processing with respect to the task management tables, and associating the authority with rank information of a manager.

[0015] The construction management method may include inputting, by the information processing unit, the record information or information generated based on the record information to task information in the other task management table(s) associated with task information in the specific task management table.

[0016] In order to achieve the above object, one example of a construction management system of the present disclosure is a construction management system including: a database configured to store two or more pieces of task information; an information processing unit configured to create two or more task management tables each specified by a management function by using the task information recorded in the database; and an information input unit configured to input record information for each task to the specific task management table, wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

In the construction management system, the information processing unit may further set authority to permit at least browsing, input, and revision with respect to the task management tables, and associate the authority with a rank of a manager.

[0017] The construction management system may further include an information presentation unit configured to present any one, or two or more of the task management tables indicating transition of the record information.

[0018] In order to achieve the above object, one example of a program of the present disclosure is a program, which is executed by a computer, causing the computer to execute: a function to create two or more task management tables each specified by a management function by using task information recorded in a database; a function to acquire record information for each task input to the specific task management table by an information input unit; a function to reflect the record information acquired from the information input unit in any one, or two or more of the other task management tables; and a function to present any one, or two or more of the task management tables indicating transition of the record information on an information presentation unit.

[0019] The program may cause the computer to execute a function to set authority to permit at least browsing, input, and revision processing with respect to the task management tables, and associate the authority with rank information of a manager.

[0020] The program may cause the computer to execute: a function to read task information in

the other task management table(s) associated with task information in the specific task management table; a function to read the record information or generate input information based on the record information; and a function to input the record information or the input information to the other task management table(s).

[0021] In order to achieve the above object, one example of a construction management device of the present disclosure is a construction management device that manages construction work using a computer and includes: a device housing; a memory unit including a database configured to store two or more pieces of task information; an information processing unit configured to create two or more task management tables each specified by a management function by using the task information recorded in the database; and an information input unit configured to input record information for each task to the specific task management table, wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

[0022] In order to achieve the above object, one example of a recording medium of the present disclosure is a recording medium storing any one, or two or more of the database and the task management tables included in the construction management method, the database and the task management tables included in the construction management system, and the program.

[0023] According to the present disclosure, the following effects can be obtained.

[0024] (1) Among the task management tables for each automatically generated management function, the record information input to the specific task management table is reflected in the other task management table(s). As a result, the workload of information input can be reduced, a time loss between tasks of regular repair work and inspection of a plant can be eliminated, and work efficiency can be improved.

[0025] (2) By automatically reflecting a management result of one task between the associated task management tables, it is possible to reduce the workload of search processing of the task management tables, confirmation processing of an input target, and the like.

[0026] (3) A time required for preparation for the regular repair work and the inspection can be shortened, process progress information and the like can be easily grasped, and the work quality of the construction work and the inspection can be improved by speeding up the processing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0027] FIG. 1 is a diagram illustrating a configuration example of a construction management system according to a first embodiment;

FIG. 2 is a diagram illustrating a generation function of task management tables;

FIG. 3 is a diagram illustrating a function of reflecting record information by a

What is claimed is:

1. A construction management method executed by a computer, the construction management method comprising:

by an information processing unit of the computer, reading, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in a database, and creating two or more task management tables by storing the task information based on the management function;;

inputting, by an information input unit of the computer, record information for each task to the specific task management table;

reflecting, by the information processing unit, the record information acquired from the information input unit in any one, or two or more of the other task management tables; and

presenting, by an information presentation unit of the computer, any one, or two or more of the task management tables indicating transition of the record information.

2. The construction management method according to claim 1, comprising setting, by the information processing unit, authority to permit at least browsing, input, and revision processing with respect to the task management tables, associating the authority with rank information of managers, and presenting the task management tables for each management function to terminal devices of the managers.

3. The construction management method according to claim 1 or 2, comprising inputting, by the information processing unit, the record information or information generated based on the record information to task information in the other task management table(s) associated with task information in the specific task management table to which the record information is inputted by one manager, and presenting the other task management table(s) in which the record information is reflected, or information indicating the transition of the record information to another manager.

4. A construction management system comprising:

a database configured to store two or more pieces of task information;

an information processing unit configured to read, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in the database, and create two or more task management tables by storing the task information based on the management function; and

an information input unit configured to input record information for each task to the specific task management table,

wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

5. The construction management system according to claim 4, wherein the information processing unit further sets authority to permit at least browsing, input, and revision with respect to the task management tables, associates the authority with a rank of managers, and presents the task management tables for each management function to terminal devices of the managers.

6. The construction management system according to claim 4 or 5, further comprising an information presentation unit configured to present any one, or two or more of the task management tables indicating transition of the record information.

7. A program, which is executed by a computer, for causing the computer to execute:

a function to read, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in a database, and create two or more task management tables by storing the task information based on the management function;

a function to acquire record information for each task input to the specific task management table by an information input unit;

a function to reflect the record information acquired from the information input unit in

any one, or two or more of the other task management tables; and

a function to present any one, or two or more of the task management tables indicating transition of the record information on an information presentation unit.

8. The program according to claim 7, for causing the computer to execute a function to set authority to permit at least browsing, input, and revision processing with respect to the task management tables, associate the authority with rank information of managers, and present the task management tables for each management function to terminal devices of the managers.

9. The program according to claim 7 or 8, for causing the computer to execute:

a function to read task information in the other task management table(s) associated with task information in the specific task management table to which the record information is inputted by one manager;

a function to read the record information or generate input information based on the record information; and

a function to input the record information or the input information to the other task management table(s) and present the other task management table(s) in which the record information is reflected, or information indicating the transition of the record information to another manager.

10. A construction management device that manages construction work using a computer, the construction management device comprising:

a device housing;

a memory unit including a database configured to store two or more pieces of task information;

an information processing unit configured to read, from all pieces of task information with which one or both of machinery information and information for specifying a management function are associated, task information specified as a management target for each management function, based on inputted or set one or both of the machinery information and the information for specifying the management function, the one or both of the machinery information and the information corresponding to the task information, the task information being recorded in the database, and create two or more task management tables by storing the task information based on the management function; and

an information input unit configured to input record information for each task to the specific task management table,

wherein the information processing unit reflects the record information acquired from the information input unit in any one, or two or more of the other task management tables.

11. A recording medium storing the program according to any one of claims 7 to 9.