

Embodiments of the present invention provide a display device, a display method, a control device, and a computer program that, in the case of monitoring or the like of a target object from multiple state quantities, enable an operation state and the like of the target object to be evaluated in tiers with respect to a plurality of evaluation elements and that enable a state quantity that is an evaluation factor of a certain evaluation element to be easily specified.

Solution to Problem

[0009]

According to a first aspect of the present disclosure, there is provided a display device configured to display: a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object; a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score; and a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score, wherein the first group is different from the second group, and the second element is capable of identifying an abnormality cause that is independent of the third element.

[0010]

Here, a "score" such as the "first score" or the "second score" is not limited to a numerical value and may be information indicating a level, a stage, or a degree. The "score" includes an index.

[0011]

In an embodiment of the above aspect, the display device is configured to display the first score, the second score, and the third score on a screen.

[0012]

In an embodiment of the above aspect, the display device is configured to further display a fourth score indicating a state quantity of a fourth element belonging to a third level from the state quantity of a third group that is a part of the first group.

[0013]

In an embodiment of the above aspect, the display device is configured to display the second score and the fourth score on a second screen, and make a transition from the screen displaying the first score, the second score, and the third score to the second screen.

[0014]

In an embodiment of the above aspect, the display device is configured to display at least one state quantity among the plurality of types of state quantities.

[0015]

In an embodiment of the above aspect, the target object is a plant, and the state quantity is process data.

[0016]

According to a second aspect of the present disclosure, there is provided a display method including:

a step of displaying a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object; a step of displaying a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score; and a step of displaying a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score, wherein the first group is different from the second group, and the second element is capable of identifying an abnormality cause that is independent of the third element.

[0017]

According to a third aspect of the present disclosure, there is provided a control device that controls a display device to: display a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object on the display device; display a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score on the display device; and display a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score

on the display device, wherein the first group is different from the second group, and the second element is capable of identifying an abnormality cause that is independent of the third element.

[0018]

According to a fourth aspect of the present disclosure, there is provided a recording medium storing a computer program causing a computer to generate a control instruction to: display a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object on a display device; display a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score on the display device; and display a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score on the display device, wherein the first group is different from the second group, and the second element is capable of identifying an abnormality cause that is independent of the third element.

[0019]

Embodiments of the present disclosure provide a monitoring method that is a monitoring method of monitoring a plant based on, for example, 50 or more pieces of process data and that

CLAIMS

1. A display device configured to display:
 - a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object;
 - a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score; and
 - a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score,
 - wherein the first group is different from the second group, and
 - the second element is capable of identifying an abnormality cause that is independent of the third element.
2. The display device according to claim 1,
 - wherein the display device is configured to display the first score, the second score, and the third score on a screen.
3. The display device according to claim 1 or 2,
 - wherein the display device is configured to further display a fourth score indicating a state quantity of a fourth element belonging to a third level from the state quantity of a third group that is a part of the first group.
4. The display device according to claim 3 citing claim 2,
 - wherein the display device is configured to:
 - display the second score and the fourth score on a second screen; and
 - make a transition from the screen displaying the first score, the second score, and the third score to the second screen.
5. The display device according to any one of claims 1 to 4,
 - wherein the first score is acquired based on the second score and on the third score.
6. The display device according to any one of claims 1 to 5,

wherein the display device is configured to display at least one state quantity among the plurality of types of state quantities.

7. The display device according to any one of claims 1 to 6,
wherein the target object is a plant, and
the state quantity is process data.

8. A display method comprising:
a step of displaying a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object;
a step of displaying a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score; and
a step of displaying a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score,
wherein the first group is different from the second group, and
the second element is capable of identifying an abnormality cause that is independent of the third element.

9. A control device that controls a display device to:
display a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object on the display device;
display a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score on the display device; and
display a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score on the display device,
wherein the first group is different from the second group, and
the second element is capable of identifying an abnormality cause that is independent of the third element.

10. A recording medium storing a computer program causing a computer to generate a control instruction to:

display a first score indicating a state quantity of a first element belonging to a first level from a plurality of types of state quantities of a target object on a display device;

display a second score indicating a state quantity of a second element belonging to a second level from the state quantity of the plurality of types belonging to a first group in the plurality of types indicating the first score on the display device; and

display a third score indicating a state quantity of a third element belonging to the second level from the state quantity of the plurality of types belonging to a second group in the plurality of types indicating the first score on the display device,

wherein the first group is different from the second group, and

the second element is capable of identifying an abnormality cause that is independent of the third element.