DESCRIPTION

BIOLOGICAL INFORMATION MANAGEMENT APPARATUS, BIOLOGICAL INFORMATION MANAGEMENT METHOD, PROGRAM, AND RECORDING MEDIUM

TECHNICAL FIELD

[0001] The present invention relates to a biological information management apparatus, a biological information management method, a program, and a recording medium.

BACKGROUND ART

[0002] In food factories and the like, thorough hygiene management is necessary, and the entry of a worker into the factory is restricted, for example, in the case where he/she suffers a cold. However, the restriction on the entry only relies on, for example, self-reporting of the physical condition of the worker himself/herself.

[0003] By providing a thermometer such as that installed in the airport quarantine at the entrance of the factory, a worker having a higher body temperature than a certain level may be controlled to enter. However, since the body temperature differs among individuals, even if a certain threshold value is set, it is unknown, in fact, whether the body temperature is the body temperature affected by a bad physical condition or is the normal body temperature. For this reason, there is no other choice but to set the threshold value which is considered to be obviously abnormal temperature as in the case of influenza accompanied by high fever. The same applies to biological information other than the body temperature.

SUMMARY

[0004] With the foregoing in mind, it is an object of the present invention to provide a new system for managing biological information on an individual basis to detect an abnormality in biological information

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[0005] In order to achieve the aforementioned object, in a first aspect, the present disclosure provides a biological information management apparatus including: an information acquisition unit; an identification unit; a storage unit; a first determination unit; a second determination unit; and an output unit, wherein the information acquisition unit acquires a face image of a subject and a sensed biological information value of the subject, which are acquired at the same time, in association with each other, the identification unit performs face image authentication for the face image to identify the subject of the face image, the storage unit stores the biological information value associated with the face image in association with the subject, the first

determination unit determines a normal range of biological information values by cluster analysis from accumulated biological information values stored in the storage unit for each subject, the second determination unit determines whether or not a latest biological information value stored in the storage unit falls within the normal range, and the output unit outputs that the latest biological information value is abnormal when the latest biological information value falls outside the normal range and controls entry of the subject into a predetermined area.

[0006] In a second aspect, ~~The~~the present disclosure also provides a biological information management method, including the steps of: acquiring information; identifying; storing; first determining; second determining; and outputting, wherein the information-acquiring acquires a face image of a subject and a sensed biological information value of the subject, which are acquired at the same time, in association with each other, the identifying performs face image authentication for the face image to identify the subject of the face image, the storing stores the biological information value associated with the face image in association with the subject, the first determining determines a normal range of biological information values by cluster analysis from accumulated biological information values stored in the storing for each subject, the second determining determines whether or not a latest biological information value stored in the storing falls within the normal range, and the outputting outputs that the latest biological information value is abnormal when the latest biological information value falls outside the normal range and controls entry of the subject into a predetermined area.

[0007] In a third aspect, t~~T~~he present disclosure also provides a program for a computer to execute the biological information management method according to the second aspect of the present disclosure.

[0008] In a fourth aspect, t~~T~~he present disclosure also provides a computer readable recording medium with the program according to the third aspect of the present disclosure.

[0009] According to the present disclosure, biological information is managed on an individual basis to detect an abnormality in biological information. Therefore, according to the present disclosure , an abnormality in a body temperature in consideration of the individual difference can be detected in a simpler manner.

BRIEF DESCRIPTION OF DRAWINGS

[0010] [FIG. 1] FIG. 1 is a block diagram showing an example of a body temperature management apparatus according to the first example embodiment.

[FIG. 2] FIG. 2 is a block diagram showing an example of the body temperature management apparatus according to the first example embodiment.

[FIG. 3] FIG. 3 is a flowchart showing an example of a body temperature management method according to the first example embodiment.

Claims

1. A biological information management apparatus comprising:

an information acquisition unit;

an identification unit;

a storage unit;

a first determination unit;

a second determination unit; and

an output unit, wherein

the information acquisition unit acquires a face image of a subject and a sensed biological information value of the subject, which are acquired at the same time, in association with each other,

the identification unit performs face image authentication for the face image to identify the subject of the face image,

the storage unit stores the biological information value associated with the face image in association with the subject,

the first determination unit determines a normal range of biological information values by cluster analysis from accumulated biological information values stored in the storage unit for each subject,

the second determination unit determines whether or not a latest biological information value stored in the storage unit falls within the normal range, and

the output unit outputs that the latest biological information value is abnormal when the latest biological information value falls outside the normal range and controls entry of the subject into a predetermined area.

2. The biological information management apparatus according to claim 1, wherein

the information acquisition unit acquires at least one selected from the group consisting of a body temperature, a pulse, a heart rate, a blood glucose level, and a blood pressure as the biological information value.

3. The biological information management apparatus according to claim 1 or 2, wherein

the information acquisition unit acquires a body temperature as the biological information value.

4. The biological information management apparatus according to claim 3, wherein

the information acquisition unit includes a thermo camera, and

the thermo camera senses a body temperature of the subject.

5. The biological information management apparatus according to any one of claims 1 to 4, wherein

the information acquisition unit acquires a face image of a subject, a sensed biological information value of the subject, and an acquisition date and time, which are acquired at the same time, in association with each other, and

the storage unit stores the biological information value and the acquisition date and time associated with the face image in association with the subject.

6. The biological information management apparatus according to any one of claims 1 to 5, wherein

~~output by the output unit is at least one selected from the group consisting of generation of an alarm sound, display of a warning, and control of entry of the subject into a predetermined area.~~control of entry by the output unit

unlocks an entrance to the area when the latest biological information value falls within the normal range; and

keeps locking the entrance to the area when the latest biological information value falls outside the normal range.

7. The biological information management apparatus according to any one of claims 1 to 6, wherein

the area is at least one of a factory or an airport.

8. A biological information management method, comprising the steps of:

acquiring information;

identifying;

storing;

first determining;

second determining; and

outputting, wherein

the information-acquiring acquires a face image of a subject and a sensed biological information value of the subject, which are acquired at the same time, in association with

each other,

the identifying performs face image authentication for the face image to identify the subject of the face image,

the storing stores the biological information value associated with the face image in association with the subject,

the first determining determines a normal range of biological information values by cluster analysis from accumulated biological information values stored in the storing for each subject,

the second determining determines whether or not a latest biological information value stored in the storing falls within the normal range, and

the outputting outputs that the latest biological information value is abnormal when the latest biological information value falls outside the normal range and controls entry of the subject into a predetermined area.

9. ~~The biological information management method according to claim 8, wherein in the information-acquiring, at least one selected from the group consisting of a body temperature, a pulse, a heart rate, a blood glucose level, and a blood pressure is selected as the biological information value~~A program for a computer to execute the biological information management method according to claim 8.

10. A computer readable recording medium with a program ~~for a computer to execute the method~~ according to claim ~~8 or~~ 9.