[DESCRIPTION]

[Title of Invention]

INFORMATION PROCESSING APPARATUS, INFORMATION PROCESSING METHOD, AND STORAGE MEDIUM

[Technical Field]

[0001]

The present invention relates to an information processing apparatus, an information processing method, and a storage medium.

[Background Art]

[0002]

Patent Literature 1 discloses a ticketless boarding system to perform procedures on a passenger by using biometric authentication at a plurality of check points (a check-in lobby, a security inspection site, a boarding gate, and the like). Further, Patent Literature 2 discloses a cardless payment system to perform a payment process on a customer for an item by using biometric authentication at a cash register of a shop.

[Citation List]

[Patent Literature]

[0003]

PTL 1: Japanese Patent Application Laid-Open No. 2007-79656

PTL 2: Japanese Patent Application Laid-Open No. 2016-126749

~~[~~Summary~~ of Invention]~~

~~[Technical Problem]~~

[0004]

As illustrated in Patent Literature 1 and Patent Literature 2, procedures involving use of biometric authentication have been automated in various fields. In currently provided procedure areas, users may often perform a procedure after selecting one of an automated lane where biometric authentication is used to perform the procedure and a manned lane where a staff member is

deployed. In a procedure area where a procedural scheme involving use of biometric authentication or a procedural scheme involving use of an authentication method other than biometric authentication can be selected, however, if a user makes a mistake in selection of the procedural scheme, the throughput in the procedure area will be reduced.

[0005]

Accordingly, in view of the problem described above, the present ~~invention~~disclosure intends to provide an information processing apparatus, an information processing method, and a storage medium that can improve the throughput in a procedure area where a procedural scheme involving use of biometric authentication or a procedural scheme involving use of an authentication method other than biometric authentication can be selected.

~~[Solution to Problem]~~

[0006]

In one aspect~~According to one example aspect of the present invention~~, provided is an information processing apparatus including: an acquisition means for acquiring~~unit that acquires~~ biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure; a matching means for matching~~unit that matches~~ the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determines whether or not the user is the registrant; and a guidance means for~~unit that~~, when it is determined by the matching means~~unit~~ that the user is the registrant, guiding~~es~~ the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, generating~~es~~ guidance

information about a way to a procedure place corresponding to the

second scheme.

[0007]

In another aspect~~According to another example aspect of the present invention~~, provided is an information processing method comprising: acquiring biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure; matching the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determining whether or not the user is the registrant; and when it is determined that the user is the registrant, guiding the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, guiding the user about a procedure place corresponding to the second scheme.

[0008]

In another aspect~~According to yet another example aspect of the present invention~~, provided is a storage medium storing a program that causes a computer to perform: acquiring biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure; matching the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determining whether or not the user is the registrant; and when it is determined that the user is the registrant, guiding the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, guiding the user about a procedure place corresponding to the second scheme.

~~[Advantageous Effects of Invention]~~

[0009]

According to the present ~~invention~~disclosure, it is possible to provide an information processing apparatus, an information processing method, and a storage medium that can improve the throughput in a procedure area where a procedural scheme involving use of biometric authentication or a procedural scheme involving use of an authentication method other than biometric authentication can be selected.

[Brief Description of Drawings]

[0010]

[Fig. 1]

Fig. 1 is a schematic diagram illustrating an example of an overall configuration of an information processing system according to a first example embodiment.

[Fig. 2]

Fig. 2 is a diagram illustrating an example of information stored in a boarding reservation information DB according to the first example embodiment.

[Fig. 3]

Fig. 3 is a diagram illustrating an example of information stored in a user information DB according to the first example embodiment.

[Fig. 4]

Fig. 4 is a diagram illustrating an example of information stored in a passage history information DB according to the first example embodiment.

[Fig. 5]

Fig. 5 is a block diagram illustrating an example of a hardware configuration of a management server according to the first example embodiment.

[Fig. 6]

Fig. 6 is a block diagram illustrating an example of a hardware configuration of a signage terminal

[0011]

In Fig. 10, the screen displays a face image of the user U2, a message to guide the user U2 to the face-to-face lane with the staff member S ("Your face image is not registered in the authentication system. Please move to the face-to-face lane and complete the security inspection procedure."), and an arrow A2 indicating the direction of the face-to-face lane.

[0012]

The message of Fig. 10 is displayed when a result of matching between the face image of the user U2 captured at the signage terminal 70 and a registered face image of a registrant registered in the user information DB 11b is that the matching is unsuccessful (that is, when the management server 10 determines that the user U2 is not a registrant).

[0013]

Further, when a face image is detected from a captured image in which a procedure area is captured, the management server 10 (the guidance unit 15) may generate a screen to superimpose and displays the guidance information on the detected region of the face image in the captured image.

[0014]

In Fig. 11, a plurality of users U3 to U6 are included in the screen, and arrows A3 to A6 indicating procedure places for respective persons are superimposed and displayed on detected regions of respective face images of the users U3 to U6. In the case of Fig. ~~10~~9 and Fig. 10~~1~~, the guidance information is output for each user U. In contrast, in the case of Fig. 11, there is an advantage that the guidance information can be provided to a plurality of persons at the same time.

[Inquiry Process about Procedure Status]

[0015]

Fig. 12 is a sequence chart illustrating an

[CLAIMS]

[Claim 1]

An information processing apparatus comprising:

an acquisition means for acquiring~~unit that acquires~~ biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure;

a matching means for matching~~unit that matches~~ the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determines whether or not the user is the registrant; and

a guidance means for~~unit that~~, when it is determined by the matching unit that the user is the registrant, guiding~~es~~ the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, generating~~es~~ guidance information about a way to a procedure place corresponding to the second scheme.

[Claim 2]

The information processing apparatus according to claim 1, wherein the biometric information is a face image.

[Claim 3]

The information processing apparatus according to claim 1 or 2, wherein in the first scheme, the procedure is automatically performed based on a result of a process of matching between new biometric information on the user acquired at the procedure place and the registered biometric information.

[Claim 4]

The information processing apparatus according to any one of claims 1 to 3, wherein in the second scheme, the procedure is performed based on a medium carried by the user in a state where the user and a staff member

face each other.

[Claim 5]

The information processing apparatus according to any one of claims 1 to 4, wherein the guidance meansunit causes a display terminal to display the guidance information.

[Claim 6]

The information processing apparatus according to claim 2, wherein when the face image is detected from a captured image in which the procedure area is captured, the guidance meansunit generates a screen that superimposes and displays the guidance information on a detected region of the face image in the captured image.

[Claim 7]

The information processing apparatus according to any one of claims 1 to 6 further comprising an add-up means for addingunit that adds up and outputs each of the number of users who completed the procedure by using the first scheme and the number of users who completed the procedure by using the second scheme in the procedure area.

[Claim 8]

The information processing apparatus according to any one of claims 1 to 7, wherein the guidance meansunit guides the user to the procedure place corresponding to attribute information on the user associated with the registered biometric information.

[Claim 9]

The information processing apparatus according to any one of claims 1 to 8, wherein the procedure includes an inspection procedure performed on the user during travel in an airport.

[Claim 10]

The information processing apparatus according to claim 9, wherein the inspection procedure includes at least one of a security inspection procedure, a departure inspection procedure, an immigration

procedure, and a custom inspection procedure.

[Claim 11]

The information processing apparatus according to any one of claims 1 to 10, wherein the procedure includes a payment procedure performed on the user who purchases an item in a shop or the user who receives a service.

[Claim 12]

An information processing method comprising:

acquiring biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure;

matching the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determining whether or not the user is the registrant; and

when it is determined that the user is the registrant, guiding the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, guiding the user about a procedure place corresponding to the second scheme.

[Claim 13]

A storage medium storing a program that causes a computer to perform:

acquiring biometric information on a user in a procedure area where the user is able to select a first scheme involving use of biometric authentication in a procedure or a second scheme not involving use of the biometric authentication in the procedure;

matching the biometric information with registered biometric information on a registrant, the registrant being allowed to use the first scheme, and determining whether or not the user is the registrant;

and

when it is determined that the user is the registrant, guiding the user for a procedure place corresponding to the first scheme and, when it is determined that the user is not the registrant, guiding the user about a procedure place corresponding to the second scheme.