

DESCRIPTION

TITLE OF THE INVENTION:

INFORMATION PROCESSING DEVICE, INFORMATION PROCESSING
5 METHOD, AND INFORMATION PROCESSING PROGRAM

Field

[0001] The present invention relates to an information
processing device, an information processing method, and an
10 information processing program.

Background

[0002] A technique for supporting a change to a body
shape that is a goal of a user has been proposed. A
technique of presenting a behavior plan suitable to a
15 facility user of a training facility has been proposed as
an example of such a technique.

Citation List

Patent Literature

[0003] Patent Literature 1: Japanese Patent No. 6644290
20 Summary

Technical Problem

[0004] With the above-described technique, however, it
is not necessarily possible to present appropriate coaching
according to the goal of the user.

25 [0005] For example, the above-described technique only
creates a behavior plan for a facility user in a training
facility and does not necessarily present appropriate
coaching according to the goal of the user.

[0006] The present application was filed according to
30 the above-described circumstances, and an object of the
present application is to present appropriate coaching
according to a goal of a user.

Solution to Problem

[0007] An information processing device, includes a receiving unit that receives a goal of training from a subject user, and a provision unit that provides the subject user with suggestion information on a suggestion of coaching according to the goal based on a relationship of body shape change information on a change between body shapes of the user before and after training and coaching information on coaching in the training.

Advantageous Effects of Invention

10 [0008] According to a mode of an embodiment, an effect that it is possible to present appropriate coaching according to a goal of a user is achieved.

Brief Description of Drawings

15 [0009] FIG. 1 is a diagram illustrating an example of a configuration of an information processing system 1 according to an embodiment.

FIG. 2 is a diagram illustrating an example of information processing according to the embodiment.

20 FIG. 3 is a diagram illustrating an example of a configuration of an information processing device 10 according to the embodiment.

FIG. 4 is a diagram illustrating an example of a coach information database 31 according to the embodiment.

25 FIG. 5 is a diagram illustrating an example of a user information database 32 according to the embodiment.

FIG. 6 is a flowchart illustrating an example of a procedure of the information processing according to the embodiment.

30 FIG. 7 is a hardware configuration diagram illustrating an example of a computer that implements functions of the information processing device 10.

Description of Embodiments

[0010] A mode for carrying out an information processing

device, an information processing method, and an information processing program (referred to as "embodiment" below) according to the present application will be described in detail below with reference to the accompanying drawings. Note that the embodiment does not limit the information processing device, the information processing method, and the information processing program according to the present application. It is possible to combine each embodiment as appropriate as long as no inconsistency is caused in the content of a process. In each embodiment below, the same parts are denoted with the same reference numerals and redundant description will be omitted.

[0011] Embodiment

15 1. Configuration of Information Processing

First of all, an information processing system 1 according to an embodiment will be described. FIG. 1 is a diagram illustrating an example of a configuration of the information processing system 1 according to the embodiment. As illustrated in FIG. 1, the information processing system 1 includes an information processing device 10, a user terminal device 100, and a coach terminal device 200. The information processing device 10, the user terminal device 100, and the coach terminal device 200 are connected in a wired or wireless manner via a given communication network (network N) such that communication is enabled. Note that a plurality of the information processing devices 10, a plurality of the user terminal devices 100, and a plurality of the coach terminal devices 200 may be included in the information processing system 1 illustrated in FIG. 1.

[0012] The information processing device 10 is an information processing device that receives a goal of

training (also referred to as exercises or fitness) of a user (subject user) and that provides suggestion information on suggestion of coaching according to the goal and, for example, is realized using a server device, a
5 could system, etc. For example, the information processing device 10 provides a platform on matching between a user and a coach who does coaching on the user in training and provides suggestion information via the platform.

[0013] The information processing device 10 may be a
10 device that distributes, to the user terminal device 100 and the coach terminal device 200, information to be displayed on an application that is on a service on the aforementioned platform and on other various types of services and that is installed in the user terminal device
15 100 and the coach terminal device 200. The information processing device 10 may be a server that distributes the data of the application itself.

[0014] The information processing device 10 may function as a distribution device that distributes control
20 information to the user terminal device 100 and the coach terminal device 200. The control information, for example, is described in a script language, such as JavaScript (trademark), or a style sheet language, such as CSS (Cascading Style Sheets). Note that the application that
25 is distributed from the information processing device 10 itself may be regarded as control information.

[0015] The user terminal device 100 is an information processing device that is used by the user. The user terminal device 100 is realized using, for example, a
30 smartphone, a tablet terminal device, a laptop PC (Personal Computer), a desktop PC, a mobile phone, a PDA (Personal Digital Assistant), or the like. Using a web browser or an application, the user terminal device 100 displays

information that is distributed by the information processing device 10 or a server device that provides a given service. The example illustrated in FIG. 2 represents the case where the user terminal device 100 is a smartphone.

[0016] The coach terminal device 200 is an information processing device that is used by a coach who does coaching on the user in training. The coach terminal device 200 is realized using, for example, a smartphone, a tablet terminal device, a laptop PC, a desktop PC, a mobile phone, a PDA, or the like. Using a web browser or an application, the coach terminal device 200 displays information that is distributed by the information processing device 10 or a server device that provides a given service. The example illustrated in FIG. 2 represents the case where the coach terminal device 200 is a smartphone.

[0017] 2. Example of Information Processing

Using FIG. 2, an example of information processing that is realized by the information processing device according to the present embodiment, or the like, will be described. FIG. 2 is a diagram illustrating the example of the information processing according to the embodiment. Note that, in the following description, the user terminal device 100 is described as user terminal devices 100-1 to 100-N (N is any natural number) according to users who use the user terminal device 100. For example, a user terminal device 100-1 is the user terminal device 100 that is used by a user (a user U1) who is identified by a user ID "U1". When not particularly distinguished and described, the user terminal devices 100-1 to 100-N are described as the user terminal device 100 below.

[0018] In the example illustrated in FIG. 2, the coach terminal device 200 is described as coach terminal devices

200-1 to 200-N (N is any natural number) according to users who use the coach terminal device 200. For example, a coach terminal device 200-1 is the coach terminal device 200 that is used by a coach (a coach C1) who is identified
5 by a coach ID "C1". When not particularly distinguished and described, the coach terminal devices 200-1 to 200-N are described as the coach terminal device 200 below.

[0019] In the following description, the user terminal device 100 is equated with the user and the coach terminal
10 device 200 is equated with the coach in some cases. In other words, the user U1 is readable as the user terminal device 100-1 and the coach C1 is readable as the coach terminal device 200-1 below.

[0020] First of all, a coach does coaching in training
15 on a user who applies for training via the platform that the information processing device 10 provides (step S1). For example, the coach receives the application for coaching, an attribute of the user, physical information representing the current body shape of the user, and
20 information, such as a goal body shape that is set by the user, via the platform. The coach transmits and receives information to and from the user by chatting on the platform and makes instructions on the content of training based on the received information, thereby doing coaching.
25 The coach also does coaching directly on the user in a facility, such as a gym.

[0021] In a specific example, the coach receives a body model (for example, a 3D model) of the user that is generated based on dots (markers) on a cloth for body size
30 measurement by capturing an image (video) of the body wearing the cloth for body size measurement (body shape size measurement) and the surroundings with the user terminal device 100, a height and a weight that are input

by the user, and a body fat percentage that is measured from the body model (neckline and a waistline), the height and weight, etc., as the physical information on the body of the user.

5 [0022] The coach previously creates content that is a captured image or video of the content of training (for example, a captured video of workout by the coach) and uploads the content to the information processing device 10. The coach then makes instructions on the content of training by transmitting the created content to the user when transmitting or receiving information to and from the user by chatting.

[0023] Subsequently, the information processing device 10 receives body shape change information on a change between the body shapes before and after the training and coaching information on the coaching in the training from the user having had coaching (step S2). For example, the information processing device 10 receives body shape change information representing physical information on the user before having coaching and physical information on the user after having coaching (for example, after a given period that is set as a period of having coaching elapses). Note that the information processing device 10 may receive body shape change information representing an amount of change between physical information on the user before having coaching and physical information on the user after having coaching.

[0024] The information processing device 10 also receives, as the coaching information, identification information (coach ID) that identifies the coach, attribute information representing an attribute of the coach, information representing a strong suit of the coach, the information that is transmitted and received to and from

the coach via the platform (for example, the content of chats and the content transmitted from the coach), etc. Note that the information processing device 10 may receive all or part of the coaching information on the coaching in training from the coach who did coaching.

5 [0025] The information processing device 10 receives, from the user having had coaching, goal information representing the goal body shape that is set by the user when having coaching. The information processing device 10 receives evaluation information representing an evaluation of the user having had coaching on the coaching from the user.

[0026] As described above, the information processing device 10 receives, from each of users having had coaching from the coaches C1, C2, C3..., the body shape change information, the coaching information, and the goal that is set by the user (goal information) and accumulates the information in the storage unit of the information processing device 10.

20 [0027] Subsequently, the information processing device 10 receives a goal of training from the user U1 who wants to have coaching in training (step S3). For example, the information processing device 10 receives goal information representing a goal body shape of the user U1. The information processing device 10 also receives attribute information representing an attribute of the user U1, personality information representing personality of the user U1, preference information representing preference of the user U1, and information representing physical information representing the current body shape of the user U1, and the like.

[0028] Subsequently, the information processing device 10 provides, to the user U1, suggestion information on a

suggestion on coaching according to the goal of training of the user U1 based on a relationship of the body shape change information that is accumulated at step S2 and the coaching information (for example, the identification information of the coach who did coaching, the attribute information on the coach, the strong suit of the coach (such as being good at losing weight, being good at enhancing muscles, being good at coaching middle-aged people, being good at coaching females, being good at coaching users who get bored easily, and being good at users who are food fans), the personality of the coach (such as getting bored easily), ability of the coach (such as being familiar with supplements), experience of the coach (such as the number of people on which coaching was done or years), coaching policy of the coach (such as adopting various exercises or adopting dietary counseling), content of chats, the content to be transmitted from the coach, the timing of transmission of the content, timing of cheer up, etc.) (step S4). For example, in the case where accumulated body shape change information on a user, goal information on the user, and coaching information on the coaching in training that the user had are input, the information processing device 10 trains a model such that the model outputs a higher score when the body shape of the user after having the coaching represented by the coaching information is closer to the goal that is set by the user than before having the coaching. The current body shape of the user U1, the goal information on the user U1, and the accumulated coaching information are then input to the trained model and suggestion information on suggestion of coaching based on coaching information with which the score that is output from the model is at or above a given threshold is provided. In a specific example, the

information processing device 10 provides suggestion
information suggesting coaching by the coach represented by
the coaching information with which the score is at or
above the given threshold and suggestion information
5 suggesting coaching by a coach capable of doing he coaching
represented by the coaching information. In a more
specific example, the information processing device 10
provides suggestion information suggesting coaching by a
coach whose strong suit is coaching relating to the goal of
10 the user U1 (for example, losing weight, enhancing muscles,
and the like) (for example, registered as the strong suit
in the platform), a coach who transmitted information on
the coaching to the user by chatting, and a coach who
uploaded the content on the coaching to the information
15 processing device 10 among coaches represented by sets of
coaching information with which the score is at or above
the given threshold.

[0029] Note that, in the case where accumulated body
shape change information on a user, goal information on the
20 user, and coaching information on coaching in training that
the user had are input, the information processing device
10 may train a model such that the model outputs a higher
score when a goal attainment degree representing how much
the body shape after having the coaching represented by the
25 coaching information attains the goal that is set by the
user (in other words, an objective evaluation on coaching)
is higher.

[0030] Based on the relationship of the accumulated body
shape change information, the coaching information, and the
30 evaluation information representing the evaluation from the
user having had the coaching represented by the coaching
information (in other words, a subjective evaluation of the
user on the coaching), the information processing device 10

may provide the suggestion information on the suggestion of coaching according to the goal of training of the user U1. For example, in the case where accumulated body shape change information on a user, goal information on the user, coaching information on coaching in training that the user had, and the evaluation information from the user are input, the information processing device 10 may train a model such that the model outputs a higher score when the evaluation of the user having had the coaching represented by the coaching information is higher.

[0031] The information processing device 10 may provide the suggestion information on suggestion of coaching to the user U1 based on the objective evaluation on the coaching. For example, in the case where accumulated body shape change information on a user, goal information on the user, and coaching information on coaching in training that the user had are input, the information processing device 10 may train a model such that the model outputs a lower score when there are more inquiries from the user about the content transmitted from the coach (in other words, content unclear to the user is generated). In the case where accumulated body shape change information on a user, goal information on the user, and coaching information on coaching in training that the user had are input, the information processing device 10 may train a model such that the model outputs a higher score when replies by the coach to chats (inquiries on training, and the like) transmitted from the user are frequent (in other words, responds politely to the user).

[0032] The information processing device 10 may train the model with respect to each goal that is set by a user having had coaching. For example, the information processing device 10 trains the model with, with respect to

each goal, a relationship of body shape change information that is received from a user who sets a similar goal and the coaching information. In other words, the model is trained with the relationship of the goal information on the user, the body shape change information on the user, and the coaching information. In a specific example, in the case where coaching information on coaching in training that a user who set a goal of "losing 10 kilograms in two months" or a user who set a goal similar to the goal had and body shape change information on the user are input, the information processing device 10 trains a model #1 such that the model outputs a higher score when the body shape after having the coaching represented by the coaching information is closer to the goal that is set by the user than before having the coaching. In the case where coaching information on coaching in training that a user who set a goal of "losing 10 kilograms in two months" or a user who set a goal similar to the goal had and body shape change information on the user are input, the information processing device 10 may train the model #1 such that the model outputs a higher score when a goal attainment degree representing how much the body shape after having the coaching represented by the coaching information attains the goal that is set by the user is higher. In the case where coaching information on coaching in training that a user who set a goal of "losing 10 kilograms in two months" or a user who set a goal similar to the goal had, body shape change information on the user, and evaluation information from the user are input, the information processing device 10 may train the model #1 such that the model outputs a higher score when an evaluation of the user is higher. In other words, the information processing device 10 may train the model with the relationship of the

goal information on the user, the body shape change information on the user, the coaching information, and evaluation information representing an evaluation from the user having had the coaching represented by the coaching information. When the user U1 sets a goal of "losing 10 kilograms in two months" or sets a goal similar to the goal, the information processing device 10 provides suggestion information on a suggestion of coating based on the coaching information with which the score that is output from the model #1 is at or above the given threshold.

[0033] The information processing device 10 may train the model with respect to each of attributes a user having had coaching. For example, the information processing device 10 trains the model with, with respect to each attribute, a relationship of body shape change information that is received from a user who has a similar attribute and the coaching information. In other words, the model is trained with the relationship of the attribute information on the user, the body shape change information on the user, and the coaching information. In a specific example, in the case where coaching information on coaching in training that a user who has an attribute of "middle-aged male" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 trains a model #2 such that the model outputs a higher score when the body shape after having the coaching represented by the coaching information is closer to the goal that is set by the user than before having the coaching. In the case where coaching information on coaching in training that a user who has an attribute of "middle-aged male" had, body shape change information on the user, and goal information on the user are input, the

information processing device 10 may train the model #2 such that the model outputs a higher score when a goal attainment degree representing how much the body shape after having the coaching represented by the coaching information attains the goal that is set by the user is higher. In the case where coaching information on coaching in training that a user who has an attribute of "middle-aged male" had, body shape change information on the user, goal information on the user, and evaluation information from the user are input, the information processing device 10 may train the model #2 such that a higher score is output when the evaluation on the user is higher. In other words, the model may be trained with a relationship of the attribute information on the user, the body shape change information on the user, the coaching information, and evaluation information representing an evaluation from the user having had the training represented by the coaching information. When the user U1 has the attribute of "middle-aged male", the information processing device 10 provides suggestion information on a suggestion of coaching (for example, information suggesting a coach who is a middle-aged male and who is able to understand problems of middle-aged males or information suggesting a coach who is good at coaching middle-aged males) based on coaching information with which the score that is output from the model #2 is at or above the given threshold.

[0034] The information processing device 10 may train the model with respect to each personality of a user having had coaching. For example, the information processing device 10 trains the model with, with respect to each personality of a user, a relationship of body shape change information that is received from a user who has a similar personality and the coaching information. In other words,

the model is trained with the relationship of the personality information on the user, the body shape change information on the user, and the coaching information. In a specific example, in the case where coaching information on coaching in training that a user who has a personality of "getting bored easily" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train a model #3 such that the model outputs a higher score when the body shape after having the coaching is closer to the goal that is set by the user than before having the coaching. In the case where coaching information on coaching in training that a user who has a personality of "getting bored easily" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train the model #3 such that the model outputs a higher score when a goal attainment degree representing how much the body shape after having the coaching represented by the coaching information attains the goal that is set by the user is higher. In the case where coaching information on coaching in training that a user who has a personality of "getting bored easily" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train the model #3 such that the model outputs a higher score when an evaluation of the user is higher. In other words, the model may be trained with a relationship of the personality information on the user, the body shape change information on the user, the coaching information, and evaluation information representing an evaluation from the user having had the training represented by the coaching information. When the user U1 has a personality of "getting bored

easily", the information processing device 10 provides suggestion information on a suggestion of coaching (for example, information suggesting a coach who has a personality of getting bored easily who is able to understand problems of the user who gets bored easily, information suggesting a coach who is good at coaching users who get bored easily, or information suggesting a coach who adopts various exercises not to make the user bored) based on coaching information with which the score that is output from the model #3 is at or above the given threshold. In an example, the information processing device 10 provides suggestion information on a suggestion of a coach who does coaching adopting various exercises not to make users bored.

[0035] The information processing device 10 may train the model with respect to each preference of a user having had coaching. For example, the information processing device 10 trains the model with, with respect to each preference of a user, a relationship of body shape change information that is received from a user who has similar preference and the coaching information. In other words, the model is trained with the relationship of the preference information on the user, the body shape change information on the user, and the coaching information. In a specific example, in the case where coaching information on coaching in training that a user who has preference of "being a food fan" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train a model #4 such that the model outputs a higher score when the body shape after having the coaching is closer to the goal that is set by the user than before having the coaching. In the case where coaching information on coaching in training that a

user who has preference of "being a food fan" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train the model #4 such that the model outputs a higher score when a goal attainment degree representing how much the body shape after having the coaching represented by the coaching information attains the goal that is set by the user is higher. In the case where coaching information on coaching in training that a user who has preference of "being a food fan" had, body shape change information on the user, and goal information on the user are input, the information processing device 10 may train the model #4 such that the model outputs a higher score when an evaluation of the user is higher. In other words, the model may be trained with a relationship of the preference information on the user, the body shape change information on the user, the coaching information, and evaluation information representing an evaluation from the user having had the training represented by the coaching information. When the user U1 has preference of "being a food fan", the information processing device 10 provides suggestion information on a suggestion of coaching (for example, information suggesting a coach who is good at coaching users who are food fans and information suggesting a coach who is good at coaching users who get bored easily, or information suggesting a coach who adopts dietary counseling) based on coaching information with which the score that is output from the model #4 is at or above the given threshold. In an example, the information processing device 10 provides suggestion information on a suggestion of a coach who is good at dietary counseling.

[0036] Any known technique is applicable to training a model, and a training method that is selected appropriately

according to related information that is used as training data may be used. For example, a model may be trained using various conventional techniques on machine learning (for example, a technique on machine learning of supervised
5 learning, such as a SVM (Support Vector Machine)). A deep learning technique may be used to train a model. For example, various deep learning techniques, such as RNN (Recurrent Neural Network) or CNN (Convolutional Neural Network) may be used to train a model.

10 [0037] Subsequently, the information processing device 10 receives a request for coaching from the user via the platform (step S5). For example, the information processing device 10 receives a request for coaching from the user U1 to the coach C1 represented by the suggestion
15 information.

[0038] Subsequently, the information processing device 10 outputs information on a suggestion of content of coaching to the user U1 to the coach C1 (step S6). For example, based on coaching information with which a score
20 that is stored from any one of the above-described model is at or above the given threshold, the information processing device 10 outputs information on a suggestion of content of coaching to the user (content of chats, content to be transmitted from the coach, timing of transmission of
25 content, timing of cheer up). Based on the goal that is set by the user U1 or the coaching information on the coaching on which an evaluation from a user who sets the goal that is set by the user U1 or a goal similar to the goal is at or above a threshold, the information processing
30 device 10 outputs information on a suggestion of content of coaching to the user U1 (for example, content of chats, content to be transmitted from the coach, timing of transmission of content, timing of cheer up). The

information processing device 10 outputs information on a suggestion of content of coaching to the user U1 based on coaching information on coaching on which an evaluation from a user who has an attribute, personality and
5 preference similar to those of the user U1 is at or above the given threshold.

[0039] In an example, when the user U1 has an attribute of "middle-aged male", the information processing device 10 outputs information on a suggestion of content on coaching
10 on which an evaluation from a user who has the attribute of "middle-aged male" is at or above the given threshold. When the personality of the user U1 is "getting bored easily", the information processing device 10 outputs information on a suggestion of coaching adopting various
15 exercises. When the preference of the user U1 is "being a food fan", the information processing device 10 outputs information on a suggestion of coaching including dietary counseling.

[0040] Note that the information processing device 10
20 may output information on a suggestion of content of coaching to the user U1 to the coach C1 at given timing. For example, in coaching on which an evaluation from a user who sets the goal that is set by the user U1 or a goal similar to the goal is at or above the given threshold, at
25 timing of performing cheer up, the information processing device 10 outputs information suggesting to perform cheer up to the user U1. In coaching on which an evaluation from a user having an attribute, personality and preference similar to those of the user U1 is at or above the given
30 threshold, at timing of performing cheer up, the information processing device 10 outputs information suggesting to perform cheer up to the user U1.

[0041] The information processing device 10 may output

information on a suggestion of content of coaching to the user U1 to the coach C1 according to the attribute information and the strong suit of the coach C1. For example, when the preference of the user U1 and the coach C1 is "being a food fan", the information processing device 10 outputs information suggesting to do dietary counseling to the coach C1.

[0042] Subsequently, the coach C1 does coaching on the user U1 in training (step S7). For example, the coach C1 does coaching on the user U1 in training based on the information that is output from the information processing device 10.

[0043] As described above, based on the relationship between the accumulated body shape change information and the coaching information, the information processing device 10 according to the embodiment provides suggestion information on a suggestion of coaching according to the goal of training of the user. Accordingly, the information processing device 10 according to the embodiment is able to provide information on a coach according to the goal of the user and thus is able to preset appropriate coaching according to the goal of the user.

[0044] 3. Other examples of processing

The above-described process is an example only, and the information processing device 10 may perform various processes using various sets of information. In this respect, exemplifications are listed below.

[0045] 3-1. About Coach

In the example in FIG. 2, the coach may be a coach who belongs to a given facility (such as a personal gym) or may be a coach who does not belong to a given facility and does coaching online. The coach may do coaching on a user who visits the facility. In this case, the information

processing device 10 may provide suggestion information on a suggestion of coaching by a coach who belongs to a facility existing in a given area from a hub (for example, a habitat, a place of work or a place of school) of the user. When no appropriate facility exists in the given area from the hub of the user, the information processing device 10 may provide suggestion information on a suggestion of coaching by a coach who does coaching online.

[0046] The coach may be a gig worker. In this case, the information processing device 10 may provide suggestion information on a suggestion of coaching by a coach who is able to visit the hub of the user, a coach who is able to visit a facility existing in the given area from the hub of the user, or a coach who is allowed to do coaching in the facility.

[0047] 3-2. About Provision Information

In the example in FIG. 2, the information processing device 10 may provide content representing coaching in training (for example, a video representing a method of training) via the platform. In such a case, the information processing device 10 receives the body shape change information on the user who has browsed the content, the coaching information, the goal that is set by the user, the evaluation information on the content, etc., and accumulates them in a storage unit of the information processing device 10. Based on the relationship between the body shape change information and the coaching information that are accumulated, the information processing device 10 provides suggestion information on a suggestion of content according to the goal of the training of the user U1.

[0048] The information processing device 10 may provide suggestion information on a suggestion of a facility where

coaching is to be done. For example, the information processing device 10 provides suggestion information on a facility to which a coach represented by the coaching information with which a score that is output from the
5 above-described model is at or above the given threshold belongs and a facility enabling the coaching represented by the coaching information.

[0049] Based on the relationship of the body shape change information on the user and the coaching information
10 (also referred to as facility information) representing a facility used for training (for example, training equipment), the information processing device 10 may provide suggestion information on a suggestion of coaching according to the goal of training of the user. For
15 example, in the case where coaching information representing a facility used for training that a user had, body shape change information on the user, and goal information on the user are input, using a model that is trained to output a higher score when the body shape of the
20 user after having the coaching is closer to the goal set by the user than before having the coaching, the information processing device 10 provides suggestion information on a suggestion of coaching based on a facility represented by coaching information with which a score that is output from
25 the model is at or above the given threshold. In a specific example, the information processing device 10 provides information on a facility having a facility represented by facility information with which the score is at or above the given threshold, information on a coach who belongs to the facility, information on a coach who is able
30 to visit the facility and do coaching, etc.

[0050] Note that, in the case where coaching information representing a facility used for training that a user had,

body shape change information on the user, and goal information on the user are input, the information processing device 10 may train a model such that the model outputs a higher score when a goal attainment degree representing how much the body shape after having the coaching represented by the coaching information attains the goal that is set by the user is higher. In the case where coaching information representing a facility used for training that a user had, body shape change information on the user, goal information on the user, and evaluation information from the user are input, the information processing device 10 may train the model such that the model outputs a higher score when the evaluation of the user is higher.

15 [0051] About Sensing a situation of Training

In the example in FIG. 2, the user who has coaching may wear a wearable device (biological sensor) capable of communicating with the user terminal device 100, and the like. The wearable device transmits sensing information obtained by sensing a situation of training of the user (for example, the heart rate, body temperature, perspiration, and the like) to the user terminal device 100. Then, based on the relationship of the body shape change information on the user having had the coaching, the coaching information representing the content of the coaching, and the situation of the training of the user represented by the sensing information received by the user terminal device 100, the information processing device 10 provides suggestion information on a suggestion of coaching according to the goal of training of the user U1 to the user U1. For example, when the training situation represented by the sensing information represents that the user does not do training according to the coaching from

the coach (for example, when an amount of exercise is at or under a given threshold), the information processing device 10 trains the model with a weight of training data on the user that is lower than the case where the training is done according to the coaching.

[0052] Note that the training situation of the user that the sensing information represents may be determined on whether the user is doing training according to the coaching from the user based on given information. For example, in the case where a change of the body shape of the user from that before having the coaching is at or under the threshold (in other words, the body shape has not changed from that before having coaching) or the body shape has changed in a direction opposite to the goal of the user (for example, although losing weight is a goal, weight has gained compared to the weight before coaching) although the coach is encouraging training by chats, the information processing device 10 determines that the user has not done training according to the coaching from the coach and trains the model with a weight of training data on the user that is set lower than the case where the user has done the training according to the coaching. In the case where the change of the body shape of the user from that before having the coaching is at or under the threshold or the body shape changes in a direction opposite to the goal of the user although the coach is providing content on the training, the information processing device 10 determines that the user has not done training according to the coaching from the coach and trains the model with a weight of training data on the user that is set lower than the case where the user has done the training according to the coaching.

[0053] 4. Configuration of Information Processing Device

Using FIG. 3, a configuration of the information processing device 10 will be described next. FIG. 3 is a diagram illustrating an example of a configuration of the information processing device 10 according to the embodiment. As illustrated in FIG. 3, the information processing device 10 includes a communication unit 20, a storage unit 30, and a control unit 40.

[0054] About Communication Unit 20

The communication unit 20, for example, is realized using a network interface card (NIC), or the like. The communication unit 20 is connected to the network N in a wired or wireless manner and transmits and receives information to and from the user terminal device 100, the coach terminal device 200, etc.

15 [0055] Storage Unit 30

The storage unit 30, for example, is realized using a semiconductor memory device, such as a random access memory (RAM) or a flash memory, or a storage device, such as a hard disk or an optical disk. As illustrated in FIG. 3, the storage unit 30 includes a coach information database 31, a user information database 32, and a model database 33.

[0056] Coach Information Database 31

The coach information database 31 stores various types of information on the coach. Using FIG. 4, an example of the information that the coach information database 31 stores will be described. FIG. 4 is a diagram illustrating an example of the coach information database 31 according to the embodiment. In the example in FIG. 4, the coach information database 31 has items of "coach ID", "attribute information", "strong suit", and "facility information".

[0057] A "coach ID" represents identification information for identifying a coach. "Attribute

information" represents an attribute (a demographic attribute or a psychographic attribute) of a coach. A "strong suit" represents a strong suit of a coach in coaching and, for example, information registered by the coach, information represented by content uploaded to the information processing device 10, information that is estimated based on information that is transmitted and received to and from a user by chats, etc., are stored. "Facility information" represents a facility to which a coach belongs, a facility that the coach is able to visit, and a facility where coaching is allowed, or the like.

[0058] In other words, FIG. 4 illustrates an example where the attribute information on a coach that is identified by a coach ID "CID#" is "attribute information #1", a strong suit is "strong suit #1", and facility information is "facility information #1".

[0059] In addition to the aforementioned information, the coach information database 31 may have items of "personality information" representing personality of a coach, "ability information" representing ability of a coach (for example, content of training on which coaching can be done, whether a user who was coached attained a goal, a degree of attainment of a goal by a user who was coached, or the like), "experience information" representing experiences of a coach (for example, information on users who were coached), and "coaching policy information" representing coaching policy of a coach (for example, coaching policy of aiming at attainment of a goal in a short term, coaching policy of aiming at attainment of a goal in a medium-to-long term, or the like).

[0060] Note that the information processing device 10 may estimate a strong suit of a coach based on at least one

of attribute information, personality information, preference information, body shape change information, goal information, a period of coaching, and goal attainment degree information representing how much a body shape after having coaching attains a goal that is set by a user on the user on which the coach did coaching in the past and store the strong suit in the coach information database 31.

[0061] For example, in the case where attribute information on a user on which a coach did coaching is middle-aged male and a goal attainment degree of the user is at or above a given threshold (for example, 80% or higher) as a result of the coaching, the information processing device 10 estimates that the coaching suits middle-aged males and the coach is good at coaching middle-aged males. In the case where a user on which a coach did coaching has a personality of "getting bored easily" and a goal attainment degree of the user is at or above the given threshold as a result of the coaching, the information processing device 10 estimates that the coaching suits users having a personality of "getting bored easily" and the coach is good at coaching users having a personality of "getting bored easily". In the case where a user on which a coach did coaching has preference of "being a food fan" and a goal attainment degree of the user is at or above the given threshold as a result of the coaching, the information processing device 10 estimates that the coaching suits users having preference of "being a food fan" and the coach is good at coaching users having preference of "being a food fan". In the case where a goal attainment degree of a user in a given period (for example, one month) is 80% or higher as a result of coaching on the user, the information processing device 10 estimates that the coach is good at training to attain a progress in short

time.

[0062] About User Information Database 32

 The user information database 32 stores various types of information on the user. Using FIG. 5, an example of the information that the user information database 32 stores will be described here. FIG. 5 is a diagram illustrating an example of the user information database 32 according to the embodiment. In the example in FIG. 5, the user information database 32 has items of "user ID", "hub information", "physical information", "attribute information", "personality information", "preference information" and "training information".

[0063] A "user ID" represents identification information for identifying a user. "Hub information" represents a hub of a user. "Physical information" represents information on the body of the user and, for example, information, such as the height, the weight, and the physical model of the user, is stored. An attribute of a user (a demographic attribute or a psychographic attribute) is stored as "attribute information". "Personality information" represents preference of a user.

[0064] "Training information" represents information on training in which a user had coaching from a coach and has items of "coach ID", "goal information", "body shape change information", "coaching information", "evaluation information", "sensing information", etc. A "coach ID" represents identification information for identifying a coach by which a user is coached. "Goal information" represents information that is set by a user when having coaching. "Body shape change information" represents information on a change between body shapes before and after training. "Coaching information" represents information on coaching in training. Note that coaching

information includes all or part of the above-described coaching information ("attribute information", "strong suit", "facility information", "personality information", "ability information", "experience information", and
5 "coaching policy information"). "Evaluation information" represents an evaluation of a user on a coach. "Sensing information" represents a situation of training of a user that is sensed by a wearable device, or the like.

[0065] Thus, FIG. 5 illustrates an example where hub
10 information on a user who is identified by a user ID of "UID#1" is "hub information #1", physical information is "physical information #1", attribute information is "attribute information #1", personality information is "personality information #1", preference information is "
15 preference information #1" and a coach who did coaching on the user is identified by a coach ID "CID#1" and a goal of training is "goal information #1", body shapes before and after training is "body shape change information #1", content of coaching is "coaching information #1", an
20 evaluation on the coach is "evaluation information #1", and sensing information in training is "sensing information #1".

[0066] About Model Database 33

The model database 33 stores a model that is trained
25 with a relationship of the body shape change information and coaching information.

[0067] About Control unit 40

The control unit 40 is a controller and, for example,
is realized in a way that various types of programs that
30 are stored in a storage device in the information processing device 10 are executed by a central processing unit (CPU), a micro processing unit (MPU), or the like, using a RAM as a work area. The control unit 40 is a

controller and, for example, is realized using an integrated circuit, such as an application specific integrated circuit (ASIC), or a field programmable gate array (FPGA). As illustrated in FIG. 3, the control unit
5 40 according to the embodiment includes a receiving unit 41, a provision unit 42, an output unit 43, and a training unit 44 and implements or executes the functions and effects of the information processing described below.

[0068] About Receiving Unit 41

10 The receiving unit 41 receives a goal of training from a subject user. For example, in the example in FIG. 2, the receiving unit 41 receives a goal of training from the user U1 who wants to have coaching in training.

[0069] About Provision Unit 42

15 The provision unit provides suggestion information on a suggestion of coaching according to a goal to the subject user based on a relationship of body shape change information on a change between body shapes of the user before and after training and coaching information on
20 coaching in the training. For example, in the example in FIG. 2, the provision unit 42 refers to the coach information database 31 and the user information database 32 and, based on the relationship between the accumulated body shape change information and the coaching information,
25 provides suggestion information on a suggestion of coaching according to a goal of training of the user U1 to the user U1.

[0070] The provision unit 42 may further provides suggestion information based on the goal of training of the
30 user. For example, in the example in FIG. 2, in the case where the body shape change information on the user, the goal information on the user, and the coaching information on the coaching in training that the user had are input,

using a model that is trained to output a higher score when the body shape of the user after having the coaching represented by the coaching information is closer to the goal that is set by the user than before having the coaching, the provision unit 42 provides suggestion information on a suggestion of coaching based on coaching information with which a score that is output from the model is at or above the given threshold. The provision unit 42 trains, with respect to each goal, the model with a relationship of body shape change information and training information that are received from a user who sets a similar goal and provides suggestion information using the model.

[0071] The provision unit 42 may provide suggestion information on a suggestion of a coach who does coaching. For example, in the example in FIG. 2, the provision unit 42 provides suggestion information suggesting coaching by a coach who is registered in the platform as having a strong suit in coaching represented by coaching information with which a score that is output from the model is at or above the given threshold, a coach who transmitted information on the coaching to a user by chats, a coach who uploaded content on the coaching to the information processing device 10, or the like.

[0072] The provision unit 42 may provide suggestion information based on coaching information representing information on a coach who does coaching. For example, in the example in FIG. 2, based on the relationship of the accumulated body shape change information, the attribute information on the coach who did coaching, and the coaching information representing the strong suit, the provision unit 42 provides the user U1 with suggestion information on a suggestion of coaching according to the goal of training

of the user U1.

[0073] The provision unit 42 may provide suggestion information on a suggestion of content of coaching. For example, in the example in FIG. 2, based on the relationship between the accumulated body shape change information and the coaching information, the provision unit 42 provides the user U1 with suggestion information on a suggestion of content according to the goal of training of the user U1 at timing according to the user U1.

10 [0074] The provision unit 42 may provide suggestion information on a suggestion of coaching not via a coach (human) (for example coaching using AI). For example, the provision unit 42 provides suggestion information on a suggestion of coaching in training via AI. When a user wants training, the provision unit 42 provides content on coaching in training using AI. In a specific example, the provision unit 42 provides content representing content of training represented by coaching information with which a score that is output from any one of the above-described models is at or above the given threshold or content that cheers up the user at timing of cheer up that is represented by the training information. In a more specific example, the provision unit 42 provides content by which information on training is output using a character representing a coach, or the like.

25 [0075] The provision unit 42 may provide suggestion information on a suggestion of a facility where coaching is done. For example, in the example in FIG. 2, the provision unit 42 provides the user U1 with suggestion information on a suggestion of a facility according to the goal of training of the user U1 based on the relationship of the accumulated body shape change information and the coaching information.

[0076] The provision unit 42 may further provide suggestion information based on an evaluation of a user on the coaching represented by the coaching information. For example, in the example in FIG. 2, based on a relationship of the accumulated body shape change information, the coaching information, and the evaluation information representing an evaluation from a user who had the coaching represented by the coaching information, the provision unit 42 provides the user U1 with suggestion information on a suggestion of coaching according to the goal of training of the user U1.

[0077] The provision unit 42 may provide provision information based on coaching information representing information on communication between a user and a coach who did coaching on the user in a given service. For example, in the example in FIG. 2, based on a relationship of the accumulated body shape change information, the content of chats made on the platform, and the coaching information representing content transmitted from the coach, the provision unit 42 provides the user U1 with suggestion information on a suggestion of coaching according to the goal of training of the user U1.

[0078] The provision unit 42 may further provide suggestion information based on sensing information obtained by sensing the situation of training of the user. For example, based on a relationship of the body shape change information on the user who had coaching, the coaching information representing the content of the coaching, the situation of training of the user represented by the sensing information, etc., the provision unit 42 provides the user U1 with suggestion information on a suggestion of coaching according to the goal of training of the user U1.

[0079] About Output Unit 43

Based on information on a subject user, the output unit outputs information on a suggestion of content of coaching to a coach who does coaching on the subject user.

5 For example, in the example in FIG. 2, the output unit 43 outputs information on a suggestion of content of coaching on the user U1 based on coaching information on coaching on which an evaluation from a user who sets a goal that is set by the user U1 or a goal similar to the goal is at or above
10 the given threshold. The output unit 43 outputs information on a suggestion of content of coaching on the user U1 based on coaching information on coaching on which an evaluation from a user who has an attribute, a personality, and preference similar to those of the user U1
15 is at or above the given threshold.

[0080] About Training Unit

The training unit 44 trains a model with a relationship between body shape change information and coaching information.

20 [0081] 5. Flow of Information Processing

Using FIG. 6, a procedure of information processing by the information processing device 10 according to the embodiment will be described. FIG. 6 is a flowchart illustrating an example of the procedure of the information
25 processing according to the embodiment.

[0082] As illustrated in FIG. 6, the information processing device 10 determines whether a goal of training is received (step S101). When a goal of training is not received (No at step S101), the information processing
30 device 10 waits until a goal of training is received.

[0083] On the other hand, when a goal of training is received (Yes at step S101), the information processing device 10 provides suggestion information on a suggestion

of coaching according to the goal based on a relationship of body shape change information on a change between body shapes of a user before and after training, and coaching information on coaching in the training (step S102) and
5 ends the process.

[0084] 6. Modification

The above-described embodiment presents an example only and various changes and applications can be made.

[0085] 6-1. About Mode of Process

10 Among the processes described in the above-described embodiment, all or part of processes that are described as being performed automatically can be performed manually or all or part of processes that are described as being performed manually can be performed automatically by a
15 known method. Furthermore, the process procedures, specific names, and information including various types of data and parameters that are presented in the description above and the drawings are changeable optionally except as otherwise provided. For example, the various types of
20 information presented in each drawing is not limited to the information presented in the drawings.

[0086] Each of the components of each of the devices illustrated in the drawings is of functional concepts and need not necessarily be configured physically as
25 illustrated in the drawings. In other words, specific modes of distribution and integration of each device are not limited to those illustrated in the drawings, and all or part of the devices may be configured by being distributed or integrated functionally or physically in any
30 unit and according to various types of load and usage.

[0087] It is also possible to combine each embodiment described above as appropriate as long as no inconsistency is caused in the content of the processes.

[0088] 7. Effect

As described above, the information processing device 10 according to the embodiment includes the receiving unit 41, the provision unit 42, the output unit 43, and the training unit 44. The receiving unit 41 receives a goal of training from a subject user. The provision unit 42 provides the subject user with suggestion information on a suggestion of coaching according to the goal based on a relationship of body shape change information on a change between body shapes of the user before and after the training and coaching information on coaching in the training. The provision unit 42 also provides suggestion information on a suggestion of a coach who does coaching. The provision unit 42 also provides suggestion information on a suggestion of content of coaching. The provision unit 42 also provides suggestion information on a suggestion of a facility where coaching is done. The output unit 43 outputs information on the suggestion of content of coaching to the coach who does coaching on the subject user based on information on the subject user. The training unit 44 trains a model with a relationship of the body shape change information and the coaching information.

[0089] Accordingly, because the information processing device 10 according to the embodiment provides suggestion information on a suggestion of coaching according to a goal of training of a user based on a relationship of accumulated body shape change information and coaching information and thus the information processing device 10 according to the embodiment is able to provide information on a coach according to the goal of the user, it is possible to present appropriate coaching according to the goal of the user.

[0090] In the information processing device 10 according

to the embodiment, for example, the provision unit 42 further provides suggestion information based on the goal of training of the user. The provision unit 42 provides suggestion information based on coaching information representing information on a coach who does coaching. The provision unit 42 further provides suggestion information based on an evaluation of the user on coaching represented by the coaching information. The provision unit 42 provides suggestion information based on coaching information representing information on communication between the user and a coach who did coaching on the user on a given service. The provision unit 42 further provides suggestion information based on sensing information obtained by sensing a situation of training of the user.

[0091] Accordingly, the information processing device 10 according to the embodiment is able to provide information on a coach according to a goal of a user based on various types of information and thus it is possible to increase accuracy of information provided to the user.

[0092] 8. Hardware Configuration

The information processing device 10 according each embodiment described above is realized by, for example, a computer 1000 having a configuration like that illustrated in FIG. 7. Description will be given below exemplifying the information processing device 10. FIG. 7 is a hardware configuration diagram illustrating an example of a computer that implements the functions of the information processing device 10. The computer 1000 includes a CPU 1100, a ROM 1200, a RAM 1300, a HDD 1400, a communication interface (I/F) 1500, an input/output interface (I/F) 1600, and a media interface (I/F) 1700.

[0093] According to programs that are stored in the ROM 1200 or the HDD 1400, the CPU 1100 operates and controls

each unit. The ROM 1200 stores a boot program that is executed by the CPU 1100 when starting the computer 1000, a program dependent on hardware of the computer 1000, etc.

[0094] The HDD 1400 stores a program that is executed by
5 the CPU 1100, data that is used according to the program,
etc. The communication interface 1500 receives data from
another device via a communication network 500
(corresponding to the network N of the embodiment),
transmits the data to the CPU 1100, and transmits data that
10 is generated by the CPU 1100 to another device via the
communication network 500.

[0095] The CPU 1100 controls an output device, such as a
display or a printer, and an input device, such as a
keyboard or a mouse, via the input/output interface 1600.
15 The CPU 1100 acquires data from the input device via the
input/output interface 1600. The CPU 1100 outputs
generated data to the output device via the input/output
interface 1600.

[0096] The media interface 1700 reads the program or
20 data that is stored in a recording medium 1800 and provides
the program or data to the CPU 1100 via the RAM 1300. The
CPU 1100 loads the program from the recording medium 1800
into the RAM 1300 via the media interface 1700 and executes
the loaded program. The recording medium 1800 is, for
25 example, an optical recording medium, such as a DVD
(Digital Versatile Disc) or a phase change rewritable disk
(PD), a magneto-optical recording medium, such as a
magneto-optical disk (MO), a tape medium, a magnetic
recording medium, a semiconductor memory, or the like.

30 [0097] For example, when the computer 1000 functions as
the information processing device 10, the CPU 1100 of the
computer 1000 executes the program that is loaded into the
RAM 1300, thereby implementing the function of the control

unit 40. In the HDD 1400, each set of data in the storage device of the information processing device 10 is stored. The CPU 1100 of the computer 1000 reads these programs from the recording medium 1800 and executes the programs;

5 however, these programs may be acquired from another device via a communication network as another example.

[0098] 9. Remarks

Some embodiments of the present application have been described in detail based on the drawings; however, they
10 are exemplifications and it is possible to carry out the present invention, starting with the mode described in the disclosure part, in other modes where various modifications and improvements are made based on the knowledge of those skilled in the art.

15 [0099] It is possible to flexibly change the configuration of the information processing device 10 described above by, depending on the function, implementing the function by calling an external platform, or the like, using an API (Application Programming Interface) network or
20 network computing, or the like.

[0100] Furthermore, "unit" in CLAIMS can be read as "means", "circuitry" or the like. For example, the receiving unit can be read as a receiving means or receiving circuitry.

25 Reference Signs List

[0101] 10 INFORMATION PROCESSING DEVICE
20 COMMUNICATION UNIT
30 STORAGE UNIT
31 COACH INFORMATION DATABASE
30 32 USER INFORMATION DATABASE
33 MODEL DATABASE
40 CONTROL UNIT
41 RECEIVING UNIT

	42	PROVISION UNIT
	43	OUTPUT UNIT
	44	TRAINING UNIT
	100	USER TERMINAL DEVICE
5	200	COACH TERMINAL DEVICE

CLAIMS

Claim 1. An information processing device comprising:

a receiving unit that receives a goal of training from a subject user; and

5 a provision unit that provides the subject user with suggestion information on a suggestion of coaching according to the goal based on a relationship of body shape change information on a change between body shapes of the user before and after training and coaching information on
10 coaching in the training.

Claim 2. The information processing device according to claim 1, wherein the provision unit further provides the provision information based on the goal of training of the
15 user.

Claim 3. The information processing device according to claim 1, wherein the provision unit provides the suggestion information on a suggestion of a coach who does coaching.
20

Claim 4. The information processing device according to claim 3, wherein the provision unit provides the suggestion information based on the coaching information representing information on a coach who does coaching.
25

Claim 5. The information processing device according to claim 1, wherein the provision unit provides the provision information on a suggestion of content of coaching.

30 Claim 6. The information processing device according to claim 1, wherein the provision unit provides the suggestion information on a suggestion of a facility where coaching is done.

Claim 7. The information processing device according to claim 1, wherein the provision unit provides the provision information based on an evaluation of the user on coaching
5 that the coaching information represents.

Claim 8. The information processing device according to claim 1, wherein the provision unit provides the provision information based on the coaching information representing
10 information on communication between the user and a coach who did coaching on the user.

Claim 9. The information processing device according to claim 1, wherein the provision unit provides the provision
15 information based on sensing information obtained by sensing a situation of training of the user.

Claim 10. The information processing device according to claim 1, further comprising an output unit that outputs
20 information on a suggestion of content of coaching to a coach who does coaching on the user based on information on the subject user.

Claim 11. An information processing method executed by a
25 computer, the method comprising:

 a receiving step of receiving a goal of training from a subject user; and

 a providing step of providing the subject user with suggestion information on a suggestion of coaching
30 according to the goal based on a relationship of body shape change information on a change between body shapes of the user before and after training and coaching information on coaching in the training.

Claim 12. An information processing program that causes a computer to execute:

5 a receiving procedure of receiving a goal of training from a subject user; and

10 a providing procedure of providing the subject user with suggestion information on a suggestion of coaching according to the goal based on a relationship of body shape change information on a change between body shapes of the user before and after training and coaching information on coaching in the training.