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(54) **GAME APPARATUS, COMPUTER PROGRAM, AND STORAGE MEDIUM**

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(57) **ABSTRACT**

A game apparatus includes a processor and a memory. The memory stores question-and-answer data that includes first data and second data. The processor selectively executes a process of assigning the first data to setting a question and the second data to checking an answer to the question and a process of assigning the second data to setting a question and the first data to checking an answer to the question, and performs a question-and-answer process according to the result of assignment. Therefore, the game apparatus can make a plurality of questions by using identical question-and-answer data.

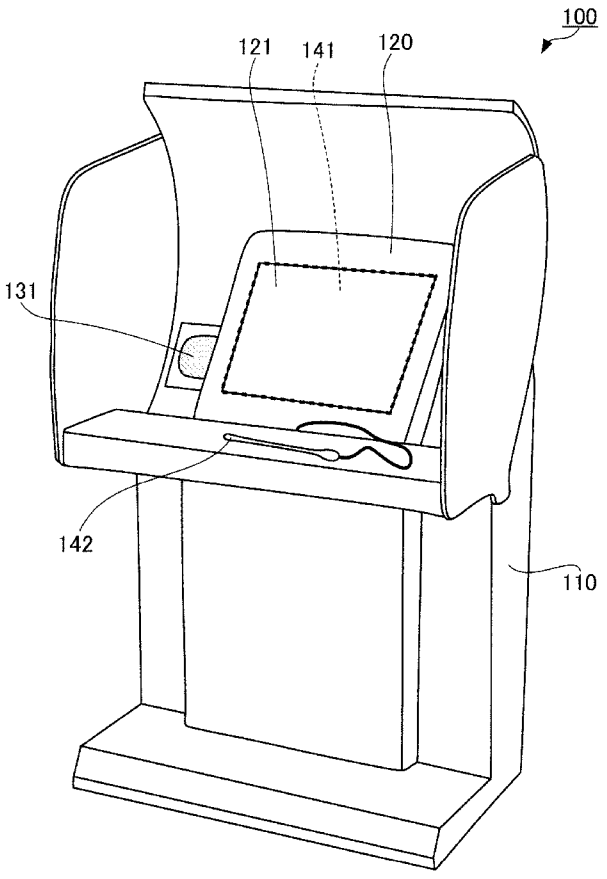


Fig. 1

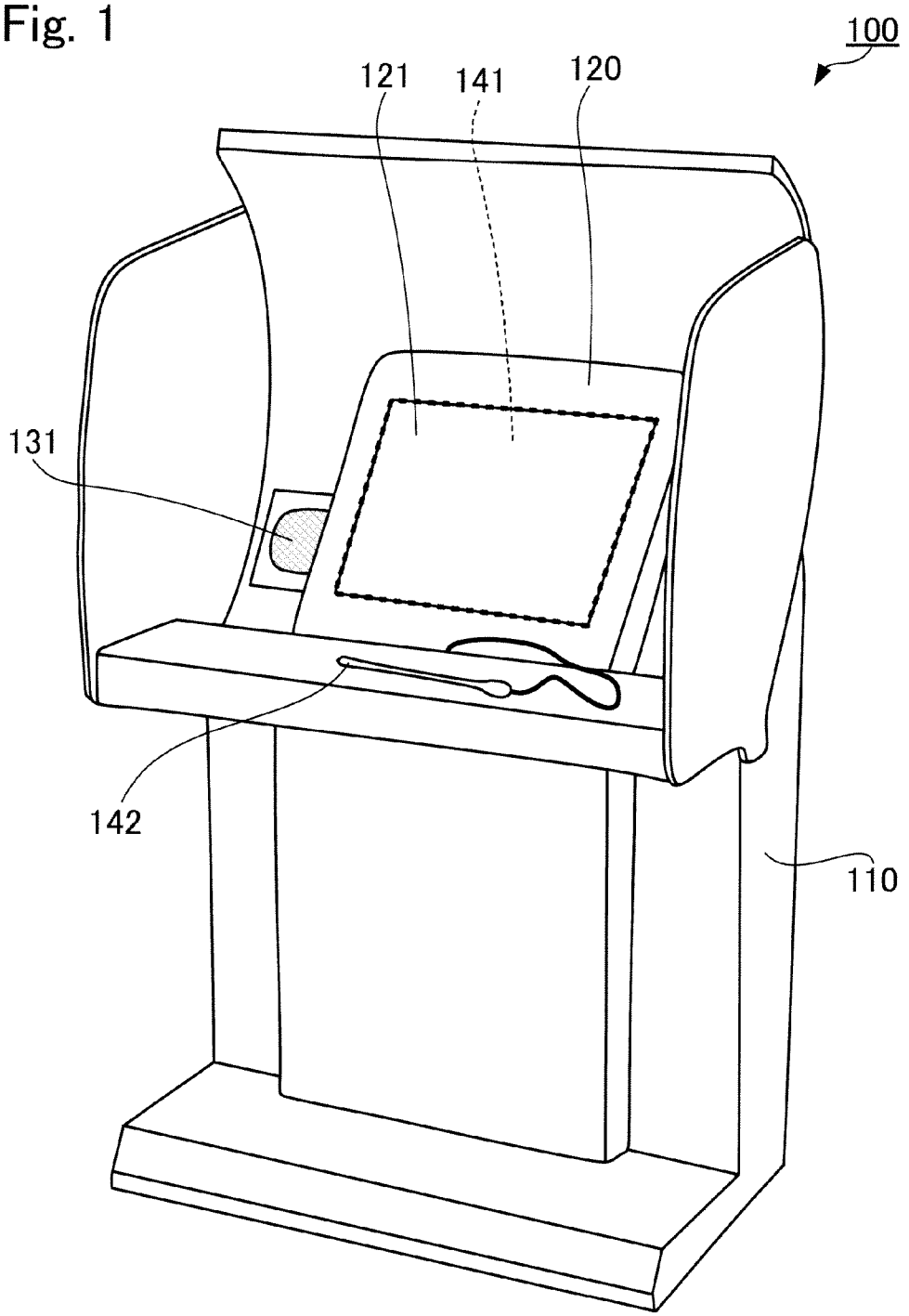


Fig. 2

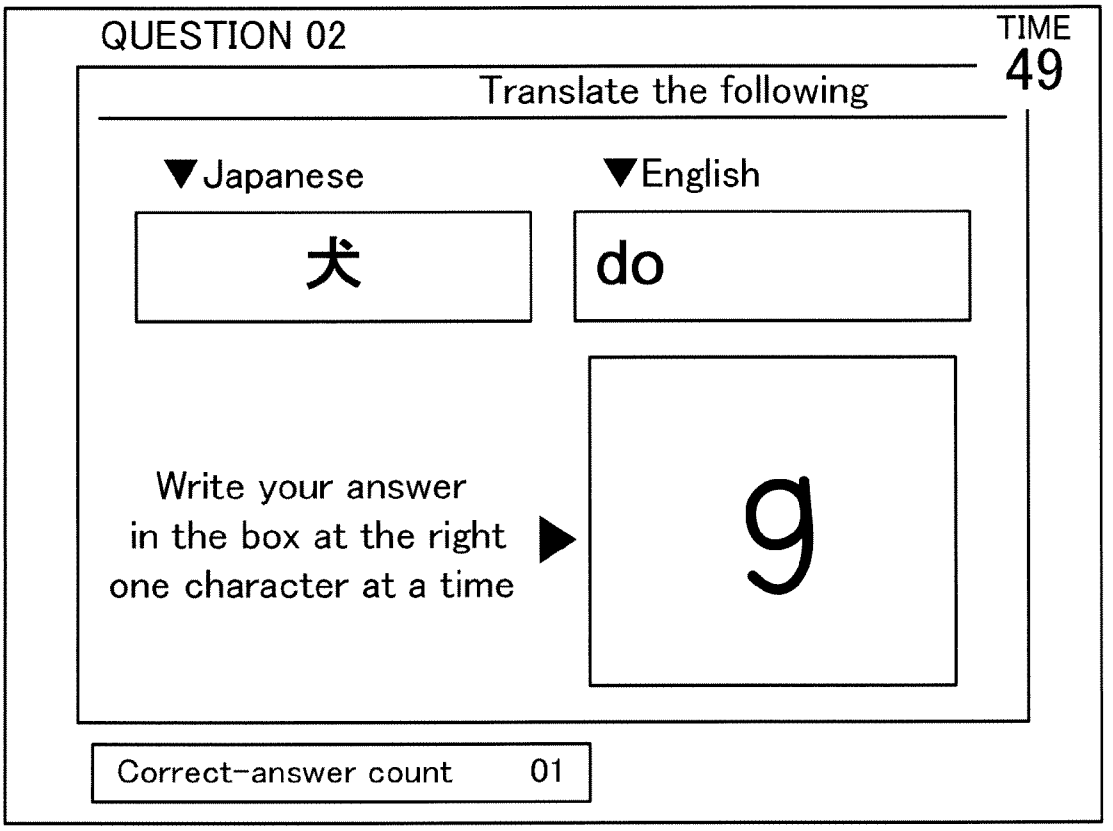

QUESTION 02
TIME
49
Translate the following
▼Japanese
▼English
犬
do
Write your answer
in the box at the right
one character at a time
g
Correct-answer count 01

Fig. 3

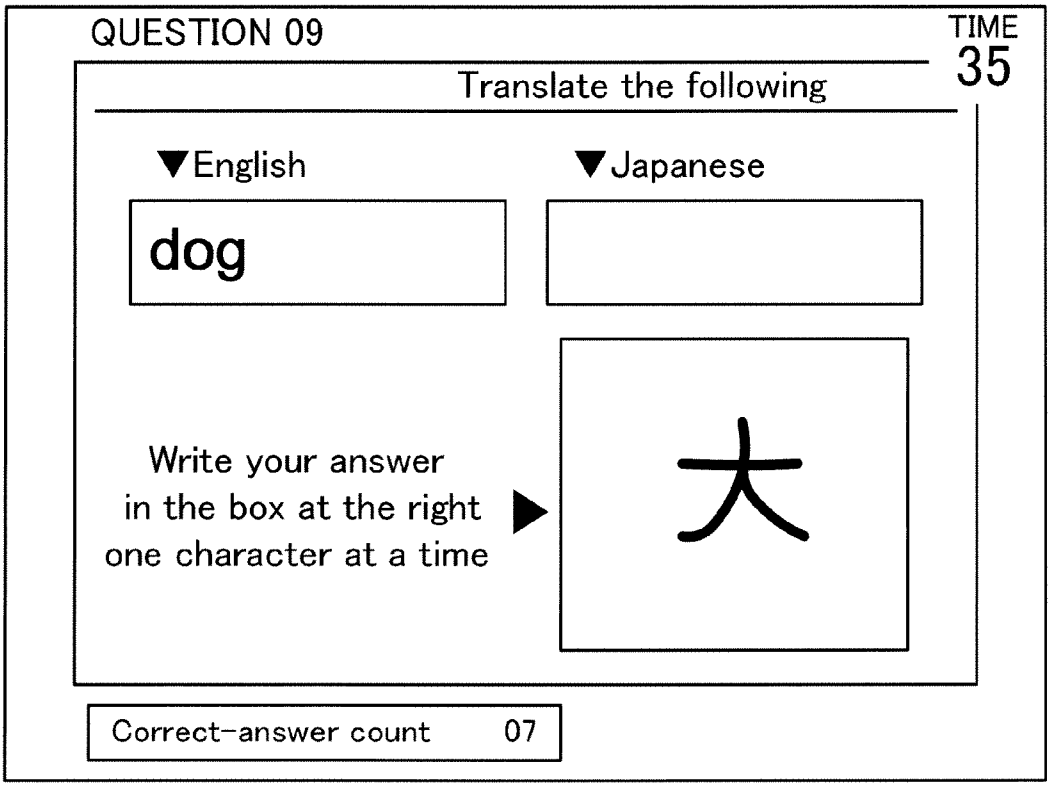

QUESTION 09
TIME
35
Translate the following
▼English
▼Japanese
dog
Write your answer
in the box at the right
one character at a time
大
Correct-answer count 07

Fig. 4

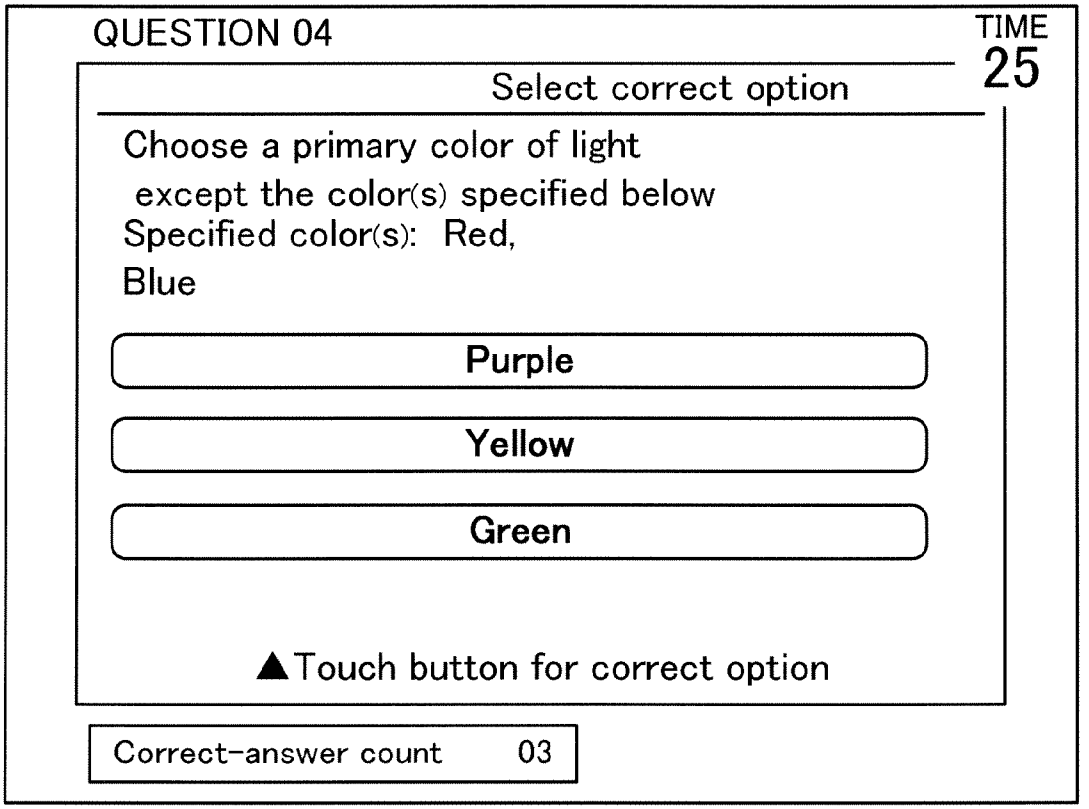
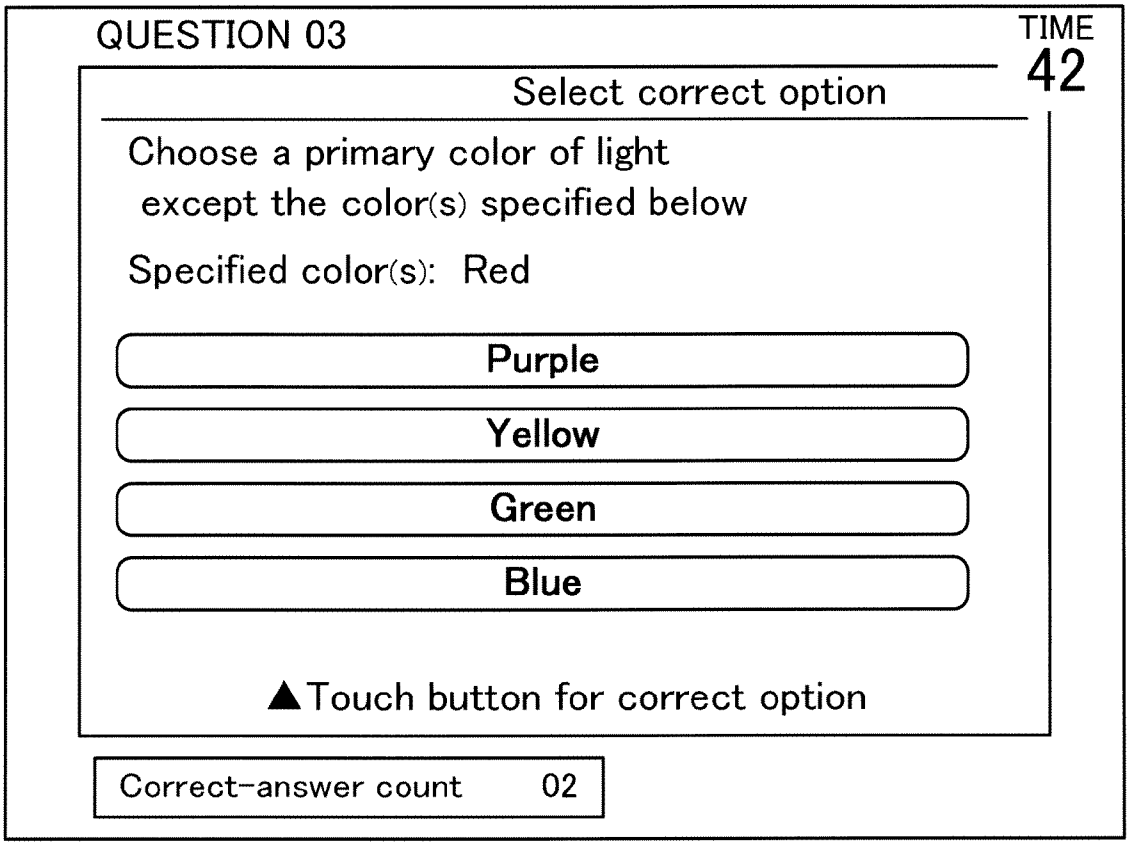

QUESTION 04
TIME
25
Select correct option
Choose a primary color of light
except the color(s) specified below
Specified color(s): Red,
Blue
Purple
Yellow
Green
▲Touch button for correct option
Correct-answer count 03

Fig. 5


QUESTION 03
TIME
42
Select correct option
Choose a primary color of light
except the color(s) specified below
Specified color(s): Red
Purple
Yellow
Green
Blue
▲Touch button for correct option
Correct-answer count 02

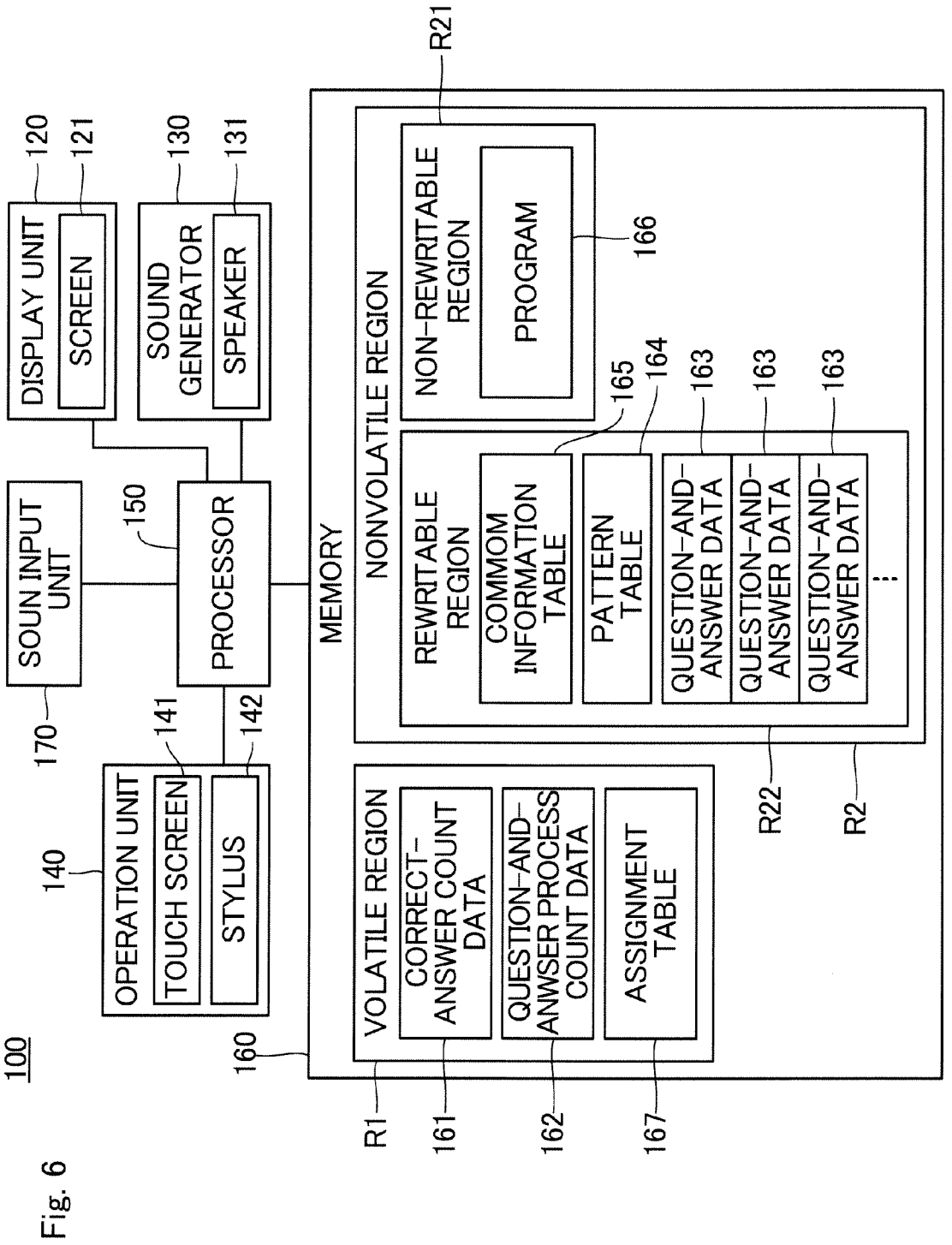

100
DISPLAY UNIT
120
SCREEN
121
SOUND GENERATOR
130
SPEAKER
131
SOUN INPUT UNIT
170
PROCESSOR
150
OPERATION UNIT
140
TOUCH SCREEN
141
STYLUS
142
MEMORY
160
VOLATILE REGION
R1
CORRECT-ANSWER COUNT DATA
161
QUESTION-AND-ANWSER PROCESS COUNT DATA
162
ASSIGNMENT TABLE
167
NONVOLATILE REGION
R21
NON-REWRITABLE REGION
PROGRAM
166
REWRITABLE REGION
R22
COMMOM INFORMATION TABLE
165
PATTERN TABLE
164
QUESTION-AND-ANSWER DATA
163
QUESTION-AND-ANSWER DATA
163
QUESTION-AND-ANSWER DATA
163
...
R2

Fig. 6

Fig. 7

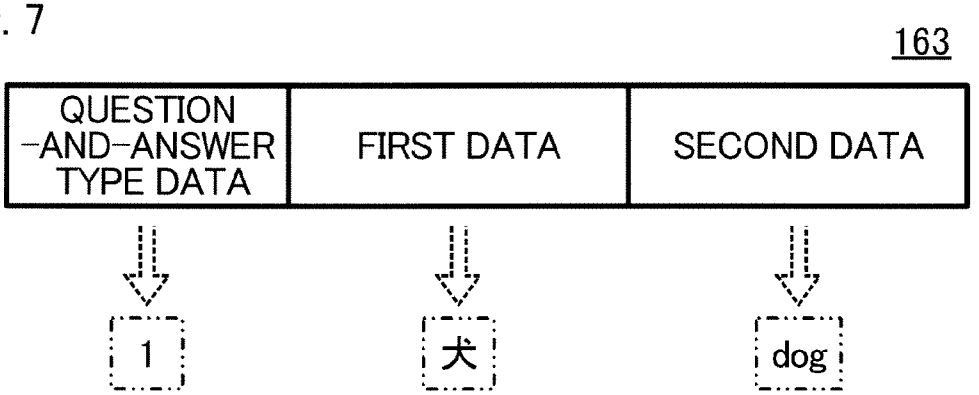

163
QUESTION -AND-ANSWER TYPE DATA
FIRST DATA
SECOND DATA
1
犬
dog

Fig. 8

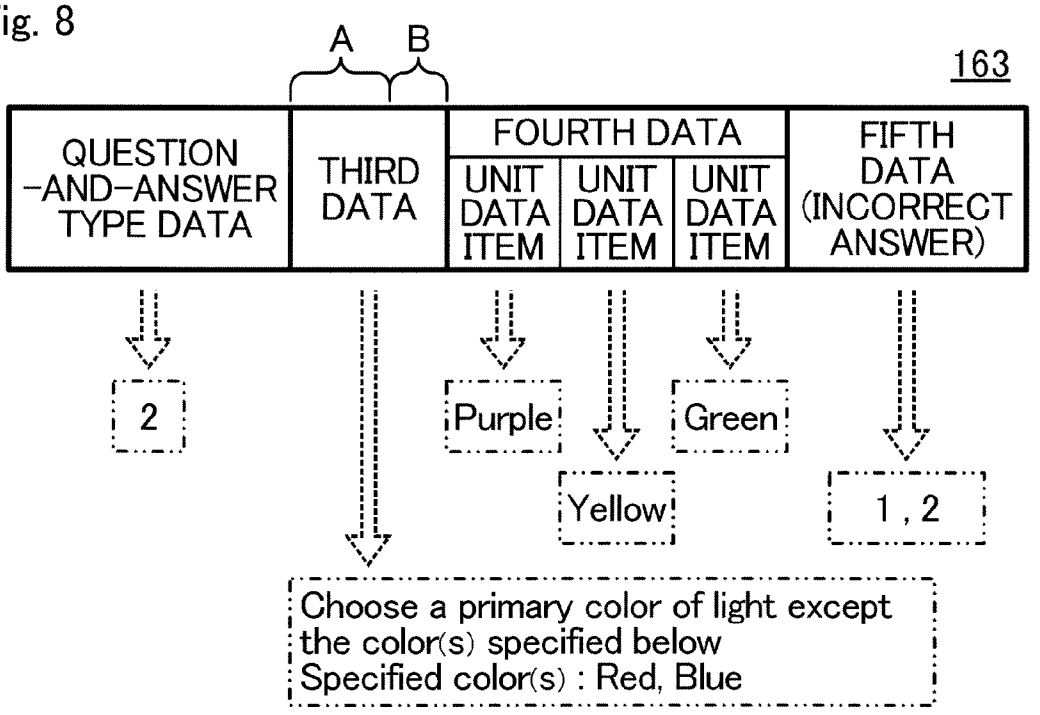

A
B
163
QUESTION -AND-ANSWER TYPE DATA
THIRD DATA
FOURTH DATA
UNIT DATA ITEM
UNIT DATA ITEM
UNIT DATA ITEM
FIFTH DATA (INCORRECT ANSWER)
2
Purple
Green
Yellow
1 , 2
Choose a primary color of light except the color(s) specified below
Specified color(s) : Red, Blue

Fig. 9

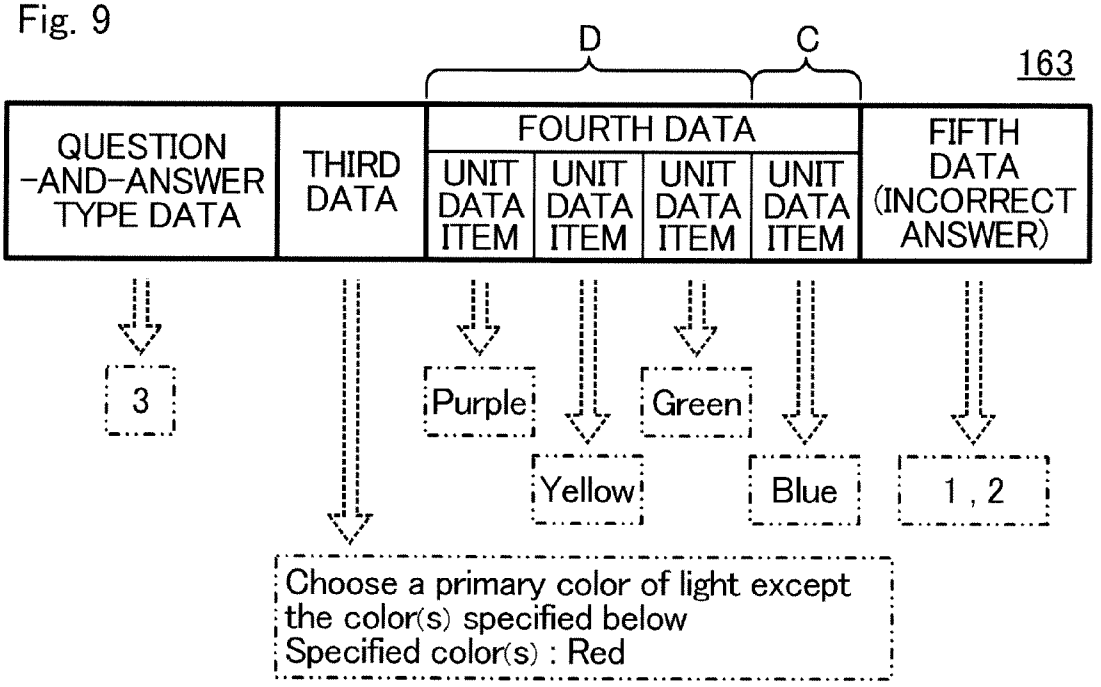

D
C
163
QUESTION -AND-ANSWER TYPE DATA
THIRD DATA
FOURTH DATA
UNIT DATA ITEM
UNIT DATA ITEM
UNIT DATA ITEM
UNIT DATA ITEM
FIFTH DATA (INCORRECT ANSWER)
3
Purple
Green
Yellow
Blue
1 , 2
Choose a primary color of light except the color(s) specified below
Specified color(s) : Red

Fig. 10

164

QUESTION-AND-ANSWER TYPE	PATTERN TYPE	USE ASSIGNMENT PATTERN
1	1	FIRST DATA ← SETTING QUESTION SECOND DATA ← CHECKING ANSWER
1	2	FIRST DATA ← CHECKING ANSWER SECOND DATA ← SETTING QUESTION
2	1	THIRD DATA ← SETTING QUESTION FOURTH DATA ← PRESENTING ANSWER OPTIONS FIFTH DATA ← CHECKING ANSWER
2	2	PART A OF THIRD DATA ← SETTING QUESTION PART B OF THIRD DATA ← PRESENTING ANSWER OPTIONS FOURTH DATA ← PRESENTING ANSWER OPTIONS FIFTH DATA ← CHECKING ANSWER
3	1	THIRD DATA ← SETTING QUESTION FOURTH DATA ← PRESENTING ANSWER OPTIONS FIFTH DATA ← CHECKING ANSWER
3	2	THIRD DATA ← SETTING QUESTION PART C OF FOURTH DATA ← SETTING QUESTION PART D OF FOURTH DATA ← PRESENTING ANSWER OPTIONS FIFTH DATA ← CHECKING ANSWER

Fig. 11

165

QUESTION-AND-ANSWER TYPE	COMMON INFORMATION
1	
2	
3	

Fig. 12

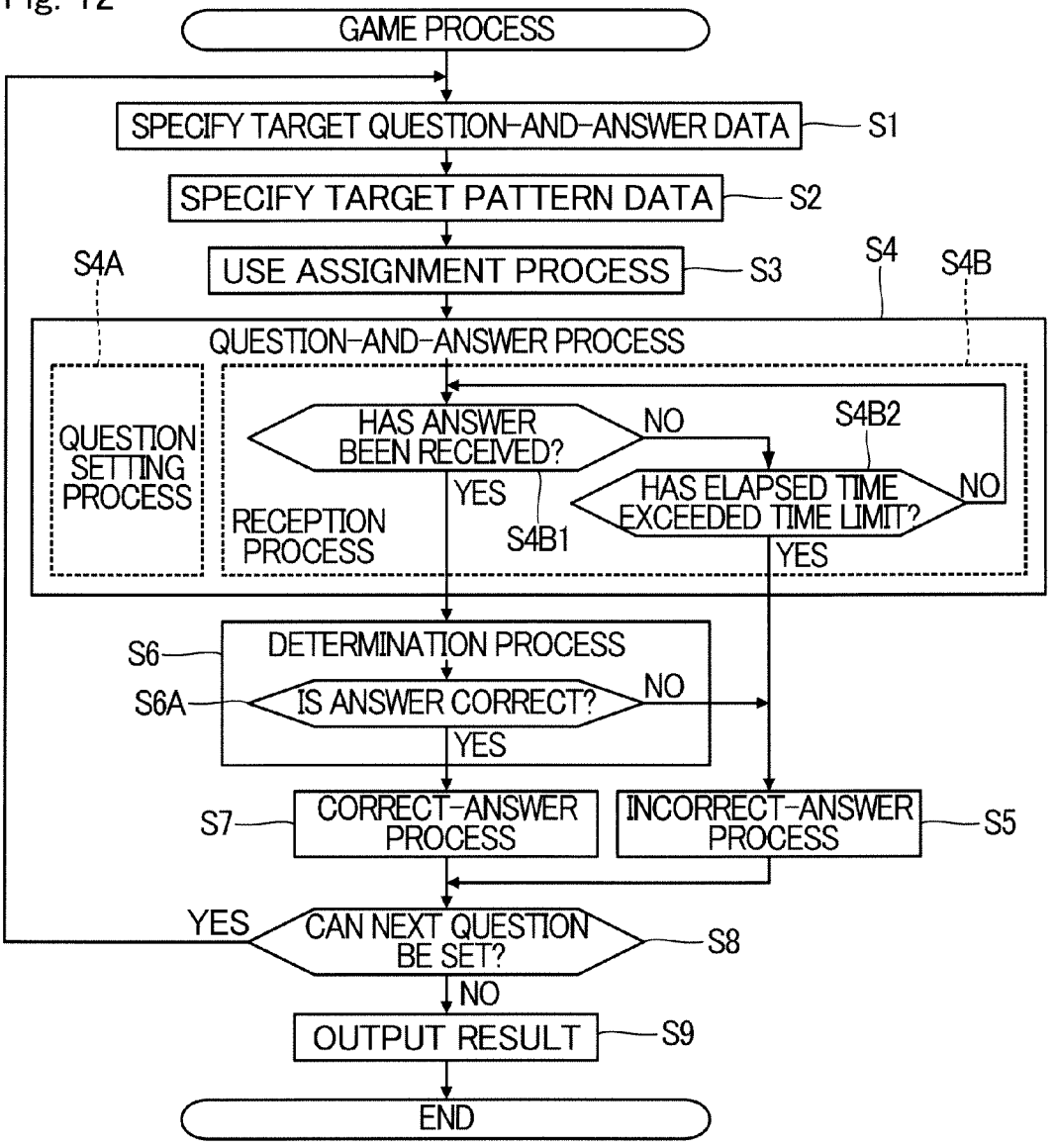

GAME PROCESS
SPECIFY TARGET QUESTION-AND-ANSWER DATA
S1
SPECIFY TARGET PATTERN DATA
S2
USE ASSIGNMENT PROCESS
S3
S4A
S4
S4B
QUESTION-AND-ANSWER PROCESS
QUESTION SETTING PROCESS
HAS ANSWER BEEN RECEIVED?
NO
S4B2
YES
HAS ELAPSED TIME EXCEEDED TIME LIMIT?
NO
RECEPTION PROCESS
S4B1
YES
S6
DETERMINATION PROCESS
S6A
IS ANSWER CORRECT?
NO
YES
S7
CORRECT-ANSWER PROCESS
INCORRECT-ANSWER PROCESS
S5
YES
CAN NEXT QUESTION BE SET?
S8
NO
OUTPUT RESULT
S9
END

Fig. 13

167

DATA	USE
FIRST DATA	SETTING QUESTION
SECOND DATA	CHECKING ANSWER

Fig. 14

167

DATA	USE
FIRST DATA	CHECKING ANSWER
SECOND DATA	SETTING QUESTION

Fig. 15

167

DATA	USE
THIRD DATA	SETTING QUESTION
FOURTH DATA	PRESENTING ANSWER OPTIONS
FIFTH DATA	CHECKING ANSWER

Fig. 16

167

DATA	USE
PART A OF THIRD DATA	SETTING QUESTION
PART B OF THIRD DATA	PRESENTING ANSWER OPTIONS
FOURTH DATA	PRESENTING ANSWER OPTIONS
FIFTH DATA	CHECKING ANSWER

Fig. 17

167

DATA	USE
THIRD DATA	SETTING QUESTION
FOURTH DATA	PRESENTING ANSWER OPTIONS
FIFTH DATA	CHECKING ANSWER

Fig. 18

167

DATA	USE
THIRD DATA	SETTING QUESTION
PART C OF FOURTH DATA	SETTING QUESTION
PART D OF FOURTH DATA	PRESENTING ANSWER OPTIONS
FIFTH DATA	CHECKING ANSWER

GAME APPARATUS, COMPUTER PROGRAM, AND STORAGE MEDIUM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to game apparatuses, computer programs, and storage media.

[0003] 2. Related Art

[0004] A game apparatus of a question-and-answer game type sets a question for a player, receives an answer to the set question from the player, determines whether the received answer is correct, and makes a judgment in accordance with the determination. If data for setting the question and determining whether the answer is correct (hereafter, question-and-answer data) is prepared for each question and answer, the required storage capacity of a memory for storing the question-and-answer data will increase with an increasing number of questions that can be set.

[0005] Japanese Patent No. 3709513 discloses a game apparatus for a game whose scenario depends on the player's choice among a plurality of options. In the game apparatus, the number of presented options decreases as time passes from when the player is prompted to select one from the plurality of options. This technology will make it possible to set a plurality of questions having different numbers of options in accordance with identical question-and-answer data. Japanese Unexamined Patent Application Publication No. 2005-338372 discloses a study support apparatus that can display or hide a part of a sentence concerning a set question in units of words. The technology will make it possible to set a plurality of questions by displaying or hiding different words of a sentence concerning a question in accordance with identical question-and-answer data. With those technologies, it is possible to reduce the storage capacity required for the number of questions that can be set.

SUMMARY OF THE INVENTION

[0006] With the above-described technologies and their applications, question-and-answer data used to set a plurality of questions should still include data that will not be required by a particular question and answer. For example, in an application of the technology disclosed in Japanese Patent No. 3709513, question-and-answer data must contain data of options that will not be needed by a question and answer presenting a small number of options. The technology disclosed in Japanese Unexamined Patent Application Publication No. 2005-338372 requires question-and-answer data containing correct-answer data that will not be needed in a particular question and answer.

[0007] In view of the problems described above, it is an object of the present invention to provide a game apparatus of a question-and-answer game type, a computer program, and a storage medium in which a plurality of questions can be set by using identical question-and-answer data and in which it is sufficient if the question-and-answer data includes just data used in common for a question-and-answer session with a plurality of questions.

[0008] Terms used in this description will be explained first.

[0009] A game is an activity having several rules concerning the result of a session. The game may be a multi-player game, in which two or more participating players or participating teams compete or cooperate with one another; a single-player game or a one-person game, in which a single participating player plays for pleasure or to achieve a goal; or a puzzle. In this description, the single-player game will be described as an example. The present invention, however, is not limited to single-player games and covers many other types of games. The multi-player games include individual evaluation games, in which the result of each session is evaluated for each participating player, and team evaluation games, in which the result of each session is evaluated for each participating team formed by participating players. The multi-player games include competition games, in which the participating players or participating teams compete with one another in each session, and cooperation games, in which the participating players cooperate with one another. The competition games include fighting games, in which the participating players or participating teams play against one another.

[0010] A session of a game is a single series of actions carried out by the player in the game. In a single game, the same player may repeat a plurality of sessions, and a plurality of players may have a plurality of sessions concurrently. A person that can participate in each session is called a player of the session or the game. A person who is not playing or has never played the game may be called a player in the sense that the person can be a player. A player who is actually playing the game or actually played the game is called a participating player of the game. The result of each session is a judgment given to the participating player in the session. The result of the session may be victory or defeat, a ranking, or a score.

[0011] A computer game is a game implemented by a computer. The computer used to implement each computer game is called a game apparatus of the computer game. The game apparatus of the computer game having a user interface with the player of the computer game for operations in the game is called a game terminal. The game terminal can implement a single computer game or can implement a plurality of computer games. A system having game apparatuses of each computer game is generically referred to as a game system of the computer game.

[0012] A place where the game terminal is provided is called a game place. Game places include facilities (such as game arcades) where visitors can use the game terminal at a charge and private houses where the game terminal is provided. In the former game place, the visitors mainly become the users of the game terminal and the players of the computer game. In the latter game place, the residents mainly become the users of the game terminal and the players of the computer game. The game terminal provided in the former game place (a type of arcade game apparatus) generally has a function to collect the fee from the users. The game terminal provided in the latter game place (a type of home game apparatus) does not generally have the fee collection function.

[0013] The game apparatuses or game systems can implement a single computer game or a plurality of computer games. The game systems may have a single game terminal or a plurality of game terminals or may have a plurality of game apparatuses. The game systems having a plurality of game apparatuses include a game system that uses a single network containing all the game apparatuses as nodes (network game system).

[0014] Network is a general term for systems which have terminals and are structured to allow data exchange among a plurality of terminal nodes included. The network may have terminal nodes assigned internally unique communication addresses (such as Internet Protocol (IP) addresses) to allow

data exchange among the terminal nodes by using the communication addresses. The terminal node is a general term for nodes which belong to the network and function as terminals on the network. Node is a general term for apparatuses or systems that perform transmission or reception in the network containing the node. The node can be a computer or a network. A network containing a plurality of networks as nodes is called an inter-network. An example of the inter-network is the Internet.

[0015] The network game systems having a plurality of game terminals include master-slave game systems, server-client game systems, and peer-to-peer game systems. A game terminal serving as a master and a game terminal serving as a slave are determined statically in some master-slave game systems and dynamically in other master-slave game systems. A game apparatus serving as a server and a game terminal serving as a client are determined statically in some server-client game systems and dynamically in other server-client game systems, or a single game terminal functions as both the server and the client in some other server-client game systems.

[0016] Computer is a general term for data processing apparatuses that have a memory for storing data and a processor for executing a computer program saved in the memory. Data is a general term for information expressed in a form that can be recognized by machines such as computers. The data include information expressed electrically, information expressed magnetically, and information expressed optically. Information is a general term for things that can be expressed as data. Memory is a general term for devices that keep written data in such a manner that they can be read out. The memories include semiconductor memories, magnetic memories, and optical memories. Computer program is a general term for sets of data that express instructions and indicate a processing procedure. One type of computer program has the computer execute a computer game. Processor is a general term for devices that include a set of instructions and execute a computer program, which is a set of data expressing instructions of the included set of instructions, by performing processes for executing the instructions expressed by the data in the computer program, in the procedure indicated in the computer program. The processor can be a single central processing unit (CPU) or a group of CPUs.

[0017] The computer may have an interface to the outside. The interface to the outside may have an input unit for inputting information or data from the outside and an output unit for outputting information or data to the outside. Input of information is a general term for actions to generate data expressing external information by detection or measurement. The input unit may be a sensor, a button, or a keyboard. Output of information is a general term for actions to give information expressed as data in a form that can be perceived by humans. The forms that can be perceived by humans include light, sound, and vibration. Information output as light includes a displayed image and the blinking of a light. Information output as sound includes sound produced by a speaker or a sound producing mechanism driven by a solenoid, such as ringing of a bell. Information output as vibration includes the vibration of an oscillator.

[0018] The present invention will be described next.

[0019] The present invention provides a game apparatus that includes a first memory for storing first data and second data in association with each other; a first data assigner for selectively executing a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question, and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question; and a first question-and-answer processor for setting a question for a player on the basis of the first data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the second data, when the first data assigner executes the first assigning process, and for setting a question for the player on the basis of the second data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the first data, when the first data assigner executes the second assigning process.

[0020] With this game apparatus, when a correct answer to a question made by using the first data is included in the second data, and when a correct answer to a question made by using the second data is included in the first data, a plurality of questions can be made by using question-and-answer data that includes the first data and the second data.

[0021] In addition, with this game apparatus, when the first data assigner executes the first assigning process, a question is made by using the first data, and whether the answer to the question is correct is determined based on the answer and the second data; and when the first data assigner executes the second assigning process, a question is made by using the second data, and whether the answer to the question is correct is determined based on the answer and the first data. Therefore, it is sufficient if the question-and-answer data includes the first data and the second data, which are used in common for a question-and-answer session with a plurality of questions.

[0022] In a game method according to the present invention, first data and second data are stored in a first memory in association with each other; a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question, and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question are executed selectively; and, when the first data assigning process is executed, a question is set on the basis of the first data, an answer to the set question is received, and whether the received answer is correct is determined on the basis of the second data, and, when the second assigning process is executed, a question is set on the basis of the second data, an answer to the set question is received, and whether the received answer is correct is determined on the basis of the first data.

[0023] The present invention also provides a game apparatus that includes a second memory for storing third data, fourth data, and fifth data in association with each other; a second data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question; and a second question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data

assigner executes the third assigning process, and for setting a question for the player on the basis of the part of the third data, presenting a plurality of answer options for the player on the basis of the remainder of the third data and the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the fourth assigning process.

[0024] With this game apparatus, when a correct answer to a question made by using a part of the third data is included in the fifth data and an incorrect answer to the question is included in the remainder of the third data, or when an incorrect answer to a question made by using a part of the third data is included in the fifth data and a correct answer to the question is included in the remainder of the third data, a plurality of questions can be made by using question-and-answer data that includes the third data, the fourth data, and the fifth data.

[0025] In addition, with this game apparatus, when the second data assigner executes the third assigning process, a question is set on the basis of the third data, a plurality of answer options to the question is presented on the basis of the fourth data, and, on the basis of a choice made among the plurality of answer options and the fifth data, whether the choice is correct is determined; and, when the second data assigner executes the fourth assigning process, a question is set on the basis of a part of the third data, a plurality of answer options to the question is presented on the basis of the remainder of the third data and the fourth data, and, on the basis of a choice made among the plurality of answer options and the fifth data, whether the choice is correct is determined. Therefore, it is sufficient if the question-and-answer data includes the third data, the fourth data, and the fifth data, which are used in common for a question-and-answer session with a plurality of questions.

[0026] In a game method according to the present invention, third data, fourth data, and fifth data are stored in a second memory in association with each other; a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question are executed selectively; and, when the third assigning process is executed, a question is set for a player on the basis of the third data, a plurality of answer options to the question is presented for the player on the basis of the fourth data, a choice made by the player from among the plurality of answer options is received, and whether the choice is correct is determined on the basis of the fifth data, and, when the fourth assigning process is executed, a question is set for the player on the basis of the part of the third data, a plurality of answer options to the question is presented for the player on the basis of the remainder of the third data and the fourth data, a choice made by the player from among the plurality of answer options is received, and whether the choice is correct is determined on the basis of the fifth data.

[0027] The present invention also provides a game apparatus that includes a second memory for storing third data, fourth data, and fifth data in association with each other; a third data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question; and a third question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the third assigning process, and for setting a question for the player on the basis of the third data and the part of the fourth data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the fifth assigning process.

[0028] With this game apparatus, when a correct answer to a question made by using the third data is included in the fifth data, an incorrect answer to the question is included in a part of the fourth data, and an incorrect answer to the question is included in the remainder of the fourth data; or when an incorrect answer to a question made by using the third data is included in the fifth data, a correct answer to the question is included in a part of the fourth data, and a correct answer to the question is included in the remainder of the fourth data; a plurality of questions can be made by using question-and-answer data that includes the third data, the fourth data, and the fifth data.

[0029] In addition, with this game apparatus, when the third data assigner executes the third assigning process, a question is set on the basis of the third data, a plurality of answer options to the question is presented on the basis of the fourth data, and, on the basis of a choice made among the plurality of answer options and the fifth data, whether the choice is correct is determined; and, when the third data assigner executes the fifth assigning process, a question is set on the basis of the whole of the third data and a part of the fourth data, a plurality of answer options to the question is presented on the basis of the remainder of the fourth data, and, on the basis of a choice made among the plurality of answer options and the fifth data, whether the choice is correct is determined. Therefore, it is sufficient if the question-and-answer data includes the third data, the fourth data, and the fifth data, which are used in common for a question-and-answer session with a plurality of questions.

[0030] In a game method according to the present invention, third data, fourth data, and fifth data are stored in a second memory in association with each other; a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question are executed selectively; and, when the third assigning process is executed, a question is set for a player on the basis of the third data, a plurality of answer options to the question is presented for the player on the basis of the fourth data, a choice made by the player from among the plurality of answer options is received, and whether the choice is correct is determined on the basis of the fifth data, and, when the fifth assigning process is executed, a question is set for the player on the basis of the

whole of the third data and a part of the fourth data, a plurality of answer options to the question is presented for the player on the basis of the remainder of the fourth data, a choice made by the player from among the plurality of answer options is received, and whether the choice is correct is determined on the basis of the fifth data.

[0031] The present invention also provides a computer program and a computer-readable storage medium having the computer program recorded thereon. The computer program makes a game apparatus that includes a first memory for storing first data and second data in association with each other function as: a first data assigner for selectively executing a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question, and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question; and a first question-and-answer processor for setting a question for a player on the basis of the first data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the second data, when the first data assigner executes the first assigning process, and for setting a question to the player on the basis of the second data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the first data, when the first data assigner executes the second assigning process.

[0032] The present invention also provides a computer program and a computer-readable storage medium having the computer program recorded thereon. The computer program makes a game apparatus that includes a second memory for storing third data, fourth data, and fifth data in association with each other function as: a second data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question; and a second question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the third assigning process, and for setting a question for the player on the basis of the part of the third data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the third data and the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the fourth assigning process.

[0033] The present invention also provides a computer program and a computer-readable storage medium having the computer program recorded thereon. The computer program makes a game apparatus that includes a second memory for storing third data, fourth data, and fifth data in association with each other function as: a third data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question; and a third question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the third assigning process, and for setting a question for the player on the basis of the third data and the part of the fourth data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the fifth assigning process.

[0034] A computer that executes each of the above-described computer programs can make a plurality of questions by using identical question-and-answer data. In addition, it is sufficient if the question-and-answer data includes data that is used in common for a question-and-answer session with the plurality of questions. Instead of a computer-readable storage medium, a transfer medium (data carrier) that transfers each of the above-described computer programs can be provided.

ADVANTAGES OF THE PRESENT INVENTION

[0035] The present invention provides a game apparatus for a question-and-answer game, a computer program therefor, and a storage medium therefor which allow a plurality of questions to be made by using identical question-and-answer data and in which it is sufficient if the question-and-answer data includes data that is used in common for a question-and-answer session with the plurality of questions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036] FIG. **1** is a view showing the appearance of a game apparatus according to an embodiment of the present invention.

[0037] FIG. **2** is a view showing an image displayed on a screen of the game apparatus shown in FIG. **1**.

[0038] FIG. **3** is a view showing an image displayed on the screen of the game apparatus shown in FIG. **1**.

[0039] FIG. **4** is a view showing an image displayed on the screen of the game apparatus shown in FIG. **1**.

[0040] FIG. **5** is a view showing an image displayed on the screen of the game apparatus shown in FIG. **1**.

[0041] FIG. **6** is a block diagram showing the structure of the game apparatus shown in FIG. **1**.

[0042] FIG. **7** is a diagram showing the structure of question-and-answer data used in the game apparatus shown in FIG. **1**.

[0043] FIG. **8** is a diagram showing the structure of question-and-answer data used in the game apparatus shown in FIG. **1**.

[0044] FIG. **9** is a diagram showing the structure of question-and-answer data used in the game apparatus shown in FIG. **1**.

[0045] FIG. **10** is a diagram showing the contents of a pattern table used in the game apparatus shown in FIG. **1**.

[0046] FIG. **11** is a diagram showing the structure of a common information table used in the game apparatus shown in FIG. **1**.

[0047] FIG. **12** is a flowchart illustrating a game process performed by the game apparatus shown in FIG. **1**.

[0048] FIG. **13** is a diagram showing example contents of an assignment table used in the game apparatus shown in FIG. **1**.

[0049] FIG. **14** is a diagram showing example contents of the assignment table used in the game apparatus shown in FIG. **1**.

[0050] FIG. **15** is a diagram showing example contents of the assignment table used in the game apparatus shown in FIG. **1**.

[0051] FIG. **16** is a diagram showing example contents of the assignment table used in the game apparatus shown in FIG. **1**.

[0052] FIG. **17** is a diagram showing example contents of the assignment table used in the game apparatus shown in FIG. **1**.

[0053] FIG. **18** is a diagram showing example contents of the assignment table used in the game apparatus shown in FIG. **1**.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0054] Preferred embodiments of the present invention will be described below with reference to the drawings. Specific structures that will be described below are given merely as examples, and embodiments obtained by modifying the specific structures will also be included in the scope of the invention.

[0055] FIG. **1** is a view showing the appearance of a game apparatus **100** according to an embodiment of the present invention. The figure shows the appearance of the game apparatus **100** provided as an arcade game apparatus. The game apparatus **100** may be implemented as a home game apparatus. The game apparatus **100** is a game terminal for a question-and-answer game and implements the question-and-answer game by performing a game process, which will be described later. In the game process, a question-and-answer process for setting a question and receiving an answer to the set question and a determination process for determining whether the received answer is correct are performed repeatedly for a plurality of questions. This will be described later in detail.

[0056] In front of a housing **110** of the game apparatus **100**, the player of the question-and-answer game obtains a set question by watching an image displayed on a screen **121** of a display unit **120** (more specifically, a monitor) provided in the housing **110** and by listening to sound output from a speaker **131** provided in the housing **110**. The player then answers the question by bringing a stylus **142** attached to the housing **110** into contact with the screen **121**. The screen **121** is covered with a transparent touch screen **141**, so that the answer can be given by using the stylus **142**.

[0057] FIGS. **2** to **5** are views showing example images displayed on the screen **121** of the game apparatus **100**. FIG. **2** shows an image of a question requiring translation of "dog" from Japanese to English. In the shown example, "dog" in Japanese (inu) corresponds to the set question. FIG. **3** shows an image of a question requiring translation of "dog" from English to Japanese. In the example, "dog" in English corresponds to the set question.

[0058] FIG. **4** shows an image of a question requiring selection of one option indicating a primary color of light, except red or blue, from three options. In the example, the set question corresponds to two parts: "Choose a primary color of light except the color(s) specified below" and "Specified color(s): Red, Blue". FIG. **5** shows an image of a question requiring selection of one option indicating a primary color of light, except red, from four options. In the example, the set question corresponds to two parts: "Choose a primary color of light except the color(s) specified below" and "Specified color(s): Red".

[0059] In the examples shown in FIGS. **4** and **5**, when the player of the question-and-answer game brings the stylus **142** into contact with images of buttons corresponding to a plurality of options (for example, "Purple", "Yellow", and "Green" in FIG. **4**) at any position, the game apparatus **100** receives the selection of the option corresponding to the image of the button touched by the stylus **142**. The images of the buttons corresponding to the options present the options.

[0060] FIG. **6** is a block diagram showing the structure of the game apparatus **100**. As shown in the figure, the game apparatus **100** includes a processor **150** for performing various data processes (a first data assigner, a first question-and-answer processor, a second data assigner, a second question-and-answer processor, a third data assigner, and a third question-and-answer processor), an operation unit **140** for supplying the processor **150** with operation data corresponding to an operation performed by the player, the display unit **120** for displaying an image on the screen **121** by using image data supplied from the processor **150**, a sound generator **130** for emitting sound from a speaker **131** by using sound data supplied from the processor **150**, and a memory **160** for storing various types of data (a first memory and a second memory).

[0061] The operation unit **140** has the touch screen **141** and the stylus **142**.

[0062] The touch screen **141** supplies the processor **150** with the operation data corresponding to the position touched by the stylus **142**. The operation unit **140** is an input unit for entering information from the outside. The display unit **120** and the sound generator **130** are output units for outputting information to the outside. In a different embodiment, a video projector may be provided as an output unit, instead of the display unit **120**. In that case, the screen **121** will be a screen onto which an image is projected.

[0063] The storage area of the memory **160** is divided into a volatile region R**1**, which requires power to maintain the stored information, and a nonvolatile region R**2**, which does not require power. The nonvolatile region R**2** is divided into a non-rewritable region R**21**, where stored information cannot be rewritten, and a rewritable region R**22**, where stored information can be rewritten. The volatile region R**1** is implemented by a random access memory (RAM), the non-rewritable region R**21** is implemented by a read only memory (ROM), and the rewritable region R**22** is implemented by a hard disk, for instance.

[0064] Written into the volatile region R**1** are correct-answer count data **161**, which indicates the number of correct answers made by a single player in a single session of a question-and-answer game, and question-and-answer-process count data **162**, which indicates the number of question-and-answer processes completed in a single session. The correct-answer count data **161** is used to display the number of correct answers, and the question-and-answer-process count data **162** is used to display a set question number ("**02**" in FIG. **2**). The set question number indicates the position of a set question in a session of the question-and-answer game,

and the number can be obtained by adding '1' to the question-and-answer process count. In the volatile region R1, an assignment table **167**, which will be described later, is provided.

[0065] In the non-rewritable region R21, a computer program **166** is kept. The computer program **166** is a computer program for having the game apparatus **100** execute a game process, which will be described later, and is executed by the processor **150**. In the rewritable region R22, a large number of pieces of question-and-answer data **163** are written. A pattern table **164** and a common information table **165** are also held in the rewritable region R22.

[0066] FIGS. **7** to **9** are diagrams showing the structures of the question-and-answer data **163** used by the game apparatus **100**. As shown in the figures, each piece of question-and-answer data **163** includes a question-and-answer type data, which indicates a question-and-answer type. FIG. **7** shows the structure of the question-and-answer data **163** having the question-and-answer type data indicating a question-and-answer type **1**. FIG. **8** shows the structure of the question-and-answer data **163** having the question-and-answer type data indicating a question-and-answer type **2**. FIG. **9** shows the structure of the question-and-answer data **163** having the question-and-answer type data indicating a question-and-answer type **3**. As clearly shown by the figures, the structure of the question-and-answer data **163** depends on the question-and-answer type. The structure shown in FIG. **7** will be referred to as a first structure, the structure shown in FIG. **8** will be referred to as a second structure, and the structure shown in FIG. **9** will be referred to as a third structure.

[0067] The question-and-answer data **163** having the first structure shown in FIG. **7** corresponds to a type of question-and-answer which requires a word corresponding to another word given in a set question as an answer (such as a question requiring translation of a word given in the set question into a different language), as shown in FIGS. **2** and **3**, and the data is used to set the question and to determine whether a correct answer is made. In the session of the question-and-answer game, the question-and-answer data **163** of the first structure is used to set the question and to determine whether the answer is correct. The question-and-answer data **163** of the first structure includes first data and second data, as well as the question-and-answer type data. The memory **160** is a first memory which stores the first data and the second data and associates them with each other. The first data is text data representing a Japanese word. The second data is text data representing an English word.

[0068] The question-and-answer data **163** of the second structure shown in FIG. **8** corresponds to a type of question-and-answer which demands the player to select one answer option to the set question from a plurality of answer options, as shown in FIGS. **4** and **5**. The data is used to set the question, to present answer options, and to determine whether the answer is correct. In the session of the question-and-answer game, the question-and-answer data **163** of the second structure is used to set the question, to present answer options, and to determine whether the answer is correct. The question-and-answer data **163** of the second structure includes third data, fourth data, and fifth data, as well as the question-and-answer type data. The third data is text data indicating the text of a question. The fourth data is a set of three unit data items representing different answer options. Each unit data item is a text data item. The fifth data is data indicating an incorrect answer option among the answer options.

[0069] The question-and-answer data **163** of the third structure shown in FIG. **9** corresponds to a type of question-and-answer which demands the player to select one answer option to the set question from a plurality of answer options, as shown in FIGS. **4** and **5**. The use of the data is the same as the question-and-answer data **163** of the second structure. The third structure is similar to the second structure, but the fourth data included in the question-and-answer data **163** of the third structure is a set of four unit data items. As shown in FIGS. **8** and **9**, the memory **160** is a second memory which stores the third data, the fourth data, and the fifth data in association with one another.

[0070] FIG. **10** is a diagram showing the contents of the pattern table **164** used in the game apparatus **100**. As shown in the figure, the pattern table **164** is a data table listing combinations of question-and-answer types and pattern types with use assignment patterns in a one-to-one relationship. The pattern table **164** includes the question-and-answer type data, pattern-type data representing the pattern type, and pattern data representing a use assignment pattern.

[0071] The use assignment pattern is a combination (pattern) of a plurality of sets of data except the question-and-answer type data in the question-and-answer data **163** and uses assigned to the sets of data. The sets of data to which uses are assigned by the use assignment pattern are the first data and the second data in the question-and-answer data **163** of the first structure shown in FIG. **7** and the third data, the fourth data, and the fifth data in the question-and-answer data **163** of the second structure shown in FIG. **8** or the question-and-answer data **163** of the third structure shown in FIG. **9**.

[0072] Each question-and-answer type is assigned a plurality of different use assignment patterns. The plurality of use assignment patterns associated with the single question-and-answer type are identified by different pattern types. Details of the use assignment patterns are as shown in FIG. **10**. For example, in the use assignment pattern of pattern type **1** for question-and-answer type **1**, the first data shown in FIG. **7** is assigned to setting a question, and the second data shown in FIG. **7** is assigned to checking an answer to the question. In the use assignment pattern of pattern type **2** for question-and-answer type **1**, the second data shown in FIG. **7** is assigned to setting a question and the first data shown in FIG. **7** is assigned to checking an answer to the question.

[0073] FIG. **11** is a diagram showing the structure of the common information table **165** used in the game apparatus **100**. As shown in the figure, the common information table **165** is a data table associating question-and-answer types with common information in a one-to-one relationship. The common information table **165** stores the question-and-answer type data and common information data representing common information. Common information is information (such as a phrase) used in common in a plurality of questions and answers of the same question-and-answer type. For example, the common information of question-and-answer type **1** includes character strings such as "Translate the following", "Japanese", "English", and "Write your answer in the box at the right one character at a time" in the image shown in FIG. **2**.

[0074] FIG. **12** is a flowchart illustrating the game process performed by the game apparatus **100**. The game period of each session of the question-and-answer game starts with the start of the game process implementing the session and ends before the game process ends. Prior to the start of the game process, the processor **150** initializes the correct-answer

count data **161** and the question-and-answer-process count data **162**. The correct-answer count and the question-and-answer-process count are both '0' at the start of the game process. The game process will be described below in detail.

[0075] The processor **150** first saves the assignment table **167** in the volatile region R**1** and specifies one piece of question-and-answer data **163** to be used in the next question-and-answer process (hereafter, target question-and-answer data) among the plurality of pieces of question-and-answer data **163** (step S**1**). The processor **150** specifies the target question-and-answer data by selecting that data from the large number of pieces of question-and-answer data **163** retained in the rewritable region R**22** and reading that data. The rule for selecting the target question-and-answer data can be changed. For example, the processor **150** may select one piece of question-and-answer data **163** at random or may select one on the basis of the operation data from the operation unit **140**. Selection of identical question-and-answer data **163** may be avoided in a single session.

[0076] The processor **150** then references the pattern table **164** and specifies pattern data to be used in the next question-and-answer process (hereafter, target pattern data) (step S**2**). More specifically, as the target pattern data, the processor **150** selects one of the plurality of sets of pattern data (data representing use assignment patterns) associated with the question-and-answer type represented by the question-and-answer type data of the target question-and-answer data in the pattern table **164**, and reads that set of data. The rule for selecting the target pattern data can be changed. For example, the processor **150** may select one of the plurality of sets of pattern data at random or may select one target pattern data on the basis of the operation data from the operation unit **140**.

[0077] Then, the processor **150** performs a use assignment process for assigning uses to a plurality of sets of data other than the question-and-answer type data in the target question-and-answer data (step S**3**). More specifically, the processor **150** associates the plurality of sets of data in the target question-and-answer data with use data representing the uses of the data in a one-to-one relationship and stores them in the assignment table **167**. After storing them, the contents of the assignment table **167** depend on the question-and-answer type (structure) of the target question-and-answer data and the pattern type of the target pattern data. The individual data of the target question-and-answer data is assigned the uses specified by the target pattern data selected in step S**2**.

[0078] FIGS. **13** to **18** are diagrams showing the contents of the assignment table **167** used in the game apparatus **100**. FIGS. **13** and **14** show the assignment table **167** obtained when the question-and-answer type in the target question-and-answer data is '1' (when the target question-and-answer data has the first structure (see FIG. **7**)). The assignment table **167** shown in FIG. **13** can be obtained when the pattern type in the target pattern data is '1' (see FIG. **10**). The first data is assigned to setting a question, and the second data is assigned to checking an answer to the question. The assignment table **167** shown in FIG. **14** is obtained when the pattern type in the target pattern data is '2'. The second data is assigned to setting a question and the first data is assigned to checking an answer to the question.

[0079] In step S**3**, if the question-and-answer type in the target question-and-answer data is '1', the processor **150** functions as a first data assigner, which selectively performs a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question (FIG. **13**) and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question (FIG. **14**), in accordance with the pattern type in the target pattern data.

[0080] FIGS. **15** and **16** show the assignment table **167** that can be obtained when the question-and-answer type is '2' in the target question-and-answer data (when the target question-and-answer data has the second structure (see FIG. **8**)). The assignment table **167** shown in FIG. **15** is obtained when the pattern type in the target pattern data is '1'. The third data is assigned to setting a question, and the fourth data is assigned to presenting answer options to the question. The assignment table **167** shown in FIG. **16** is obtained when the pattern type in the target pattern data is '2'. Part A of the third data (see FIG. **8**) is assigned to setting a question, and part B of the third data (see FIG. **8**) and the fourth data are assigned to presenting answer options to the question. Part A in the third data corresponds to data representing "Choose a primary color of light except the color(s) specified below" and "Specified color(s): Red". Part B corresponds to data representing "Blue". As shown in FIG. **15** or **16**, if the question-and-answer type in the target question-and-answer data is '2', the fifth data is assigned to checking an answer to the question, irrespective of the pattern type in the target pattern data.

[0081] In step S**3**, if the question-and-answer type in the target question-and-answer data is '2', the processor **150** functions as a second data assigner, which selectively performs a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question (FIG. **15**) and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question (FIG. **16**), in accordance with the pattern type in the target pattern data, as shown in FIGS. **15** and **16**.

[0082] FIGS. **17** and **18** show the assignment table **167** that can be obtained when the question-and-answer type is '3' in the target question-and-answer data (when the target question-and-answer data has the third structure (see FIG. **9**)). The assignment table **167** shown in FIG. **17** can be obtained when the pattern type in the target pattern data is '1'. The third data is assigned to setting a question, and the fourth data is assigned to presenting answer options to the question. The assignment table **167** shown in FIG. **18** can be obtained when the pattern type in the target pattern data is '2'. The third data and part C of the fourth data (see FIG. **9**) are assigned to setting a question, and part D of the fourth data (see FIG. **9**) is assigned to presenting answer options to the question. Part D in the fourth data corresponds to data representing "Purple", "Yellow", and "Green". Part C corresponds to data representing "Blue". As shown in FIG. **17** or **18**, if the question-and-answer type in the target question-and-answer data is '3', the fifth data is assigned to checking an answer to the question, irrespective of the pattern type in the target pattern data.

[0083] In step S**3**, if the question-and-answer type in the target question-and-answer data is '3', the processor **150** functions as a third data assigner, which selectively performs a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question (FIG. **17**) and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question

(FIG. **18**), as shown in FIGS. **17** and **18**. In the use assignment in this embodiment, the presented answer options include at least one correct option.

[0084] The processor **150** next performs the question-and-answer process (step S**4**). In the question-and-answer process, the processor **150** performs a question setting process for setting a question (step S**4**A) and a reception process for receiving an answer to the set question from the player (step S**4**B) in parallel. In the question setting process, the processor **150** references the assignment table **167** and sets a question by using the data assigned to setting a question in step S**3**, among a plurality of sets of data in the target question-and-answer data. For example, if the first data is assigned to setting a question, as shown in FIG. **13**, in a session of the question-and-answer game, the processor **150** functions as a question setting unit for setting a question by using the first data (such as the question requiring translation of a word represented by the first data, as shown in FIG. **2**). If the assignment shown in FIG. **18** is executed, the processor **150** sets a question on the basis of the third data and part C of the fourth data, of the target question-and-answer data. In the question setting process, common information (a phrase) associated with the question-and-answer type of the target question-and-answer data in the common information table **165** stored in the memory **160** is used as common text in a plurality of questions of the same question-and-answer type.

[0085] If the question-and-answer type of the target question-and-answer data is '2' or '3', the processor **150** functions as a presenting unit for presenting a plurality of answer options in the question setting process, using the data assigned to presenting answer options to the question in step S**3**, among the plurality of sets of data in the target question-and-answer data. For example, if the fourth data is assigned to presenting answer options to the question, as shown in FIG. **15**, the processor **150** displays the plurality of options represented by a plurality of unit data items of the fourth data together with the question, on the screen **121** of the display unit **120**. If the assignment shown in FIG. **16** is executed, the processor **150** presents the plurality of answer options to the question on the basis of part B of the third data and the fourth data of the target question-and-answer data.

[0086] In the reception process in step S**4**B, the processor **150** determines whether the answer from the player has been received (step S**4**B**1**). If the result is negative, the processor **150** determines whether the elapsed time since the start of the reception process has exceeded a time limit (step S**4**B**2**). If the result is negative, the process returns to step S**4**B**1**. In other words, the processor **150** continues to function as a reception unit for receiving an answer to the set question until the answer from the player is received or until the elapsed time exceeds the time limit. The time limit is a period of time specified beforehand to limit the period for receiving the answer from the player, which can be 60 seconds, for instance. The start point of the question setting process agrees with the start point of the reception process in the present embodiment, but that is not a requirement.

[0087] The determination made in step S**4**B**1** depends on the question-and-answer type of the target question-and-answer data. For example, if the question-and-answer type of the target question-and-answer data is '1', the determination becomes affirmative when the predetermined period of time has elapsed since the stylus **142** last touches the touch screen **141**. Otherwise, the determination becomes negative. If the question-and-answer type of the target question-and-answer data is '2' or '3', when the stylus **142** touches any position in the plurality of images of buttons corresponding to the answer options (when one option is selected from the plurality of presented answer options), the determination becomes affirmative. Otherwise, the determination becomes negative.

[0088] An image displayed on the screen **121** in the question-and-answer process depends on a combination of target question-and-answer data, its question-and-answer type, and the pattern type of the target pattern data. For example, if the question-and-answer type of the target question-and-answer data selected in step S**1** is '1', when the pattern type is '1', the image shown in FIG. **2** is displayed. When the pattern type is '2', the image shown in FIG. **3** is displayed. If the question-and-answer type of the target question-and-answer data is '2', when the pattern type is '1', the image shown in FIG. **4** is displayed.

[0089] When the pattern type is '2', the image shown in FIG. **5** is displayed. If the question-and-answer type of the target question-and-answer data is '3', when the pattern type is '2', the image shown in FIG. **5** is displayed. When the pattern type is '1', the image shown in FIG. **4** is displayed. As shown in those figures, in the question-and-answer process, the correct-answer count ('**01**' in FIG. **2**), the set question number ('**02**' in FIG. **2**), and the time left before the time limit ('**49**' in FIG. **2**) are also displayed on the screen **121**.

[0090] When the determination made in step S**4**B**1** or S**4**B**2** in the reception process becomes affirmative, the processor **150** ends the question-and-answer process and goes to the next process.

[0091] If the question-and-answer process has ended with an affirmative determination in step S**4**B**2**, that is, if the question-and-answer process has ended because the elapsed time has exceeded the time limit, the processor **150** performs an incorrect-answer process (step S**5**). The processor **150** supplies the display unit **120** with image data for reporting that the answer is incorrect and supplies the sound generator **130** with sound data for reporting that the answer is incorrect. Then, the fact that the answer is incorrect is reported to the player by information displayed by the display unit **120** and sound generated by the sound generator **130**. In the incorrect-answer process, the processor **150** updates the question-and-answer-process count data **162** to increment the question-and-answer-process count by '1'.

[0092] If the question-and-answer process has ended with an affirmative determination in step S**4**B**1**, that is, if the question-and-answer process has ended because the answer has been received, the processor **150** determines whether the answer is correct on the basis of the received answer and the data assigned to checking the answer, of the plurality of sets of data in the target question-and-answer data (step S**6**). If the second data is assigned to checking an answer, as shown in FIG. **13**, the processor **150** determines whether the answer is correct on the basis of the second data of the target question-and-answer data. If the question-and-answer type of the target question-and-answer data is '2' or '3' (as shown in FIGS. **15** to **18**), the processor **150** determines whether the answer option selected by the player is correct, on the basis of the fifth data of the target question-and-answer data. If the determination in step S**6** is negative, the process goes to step S**5**.

[0093] If the determination in step S**6** is affirmative, the processor **150** performs a correct-answer process (step S**7**). In the correct-answer process, the processor **150** supplies the display unit **120** with image data reporting the player that the answer is correct and supplies the sound generator **130** with

sound data reporting that the answer is correct. Then, the fact that the answer is correct is reported to the player by information displayed by the display unit **120** and sound generated by the sound generator **130**. In the correct-answer process, the processor **150** also updates the question-and-answer-process count data **162** to increment the question-and-answer-process count by '1' and updates the correct-answer count data **161** to increment the correct-answer count by '1'.

[0094] As has been described clearly above, in the session of the question-and-answer game, if the question-and-answer type of the target question-and-answer data is '1', the processor **150** functions as a first question-and-answer processor for setting a question by using the first data, receiving an answer to the set question, and determining whether the answer is correct on the basis of the received answer and the second data, when the first assigning process is executed (when the first data is assigned to setting a question), and for setting a question by using the second data, receiving an answer to the set question, and determining whether the answer is correct on the basis of the received answer and the first data, when the second assigning process is executed (when the first data is assigned to checking an answer).

[0095] As has been clearly described above, in the session of the question-and-answer game, if the question-and-answer type of the target question-and-answer data is '2', the processor **150** functions as a second question-and-answer processor for setting a question by using the third data, presenting a plurality of answer options by using the fourth data, receiving an option selected from the plurality of presented answer options, and determining whether the selected option is a correct option on the basis of the received option and the fifth data, when the third assigning process is executed (when the whole of the third data is assigned to setting a question), and for setting a question by using a part of the third data, presenting a plurality of answer options by using the remainder of the third data and the fourth data, receiving an option selected from the plurality of presented answer options, and determining whether the selected option is a correct option on the basis of the received option and the fifth data, when the fourth assigning process is executed (when a part of the third data is assigned to setting a question and the remainder is assigned to presenting answer options).

[0096] As has been clearly described above, in the session of the question-and-answer game, if the question-and-answer type of the target question-and-answer data is '3', the processor **150** functions as a third question-and-answer processor for setting a question by using the third data, presenting a plurality of answer options by using the fourth data, receiving an option selected from the presented answer options, and determining whether the selected option is a correct option on the basis of the received option and fifth data, when the third assigning process is executed (when the whole of the third data is assigned to setting a question), and for setting a question by using the whole of the third data and a part of the fourth data, presenting a plurality of answer options by using the remainder of the fourth data, receiving an option selected from the presented answer options, and determining whether the selected option is a correct option on the basis of the received option and the fifth data, when the fifth assigning process is executed (when a part of the fourth data is assigned to setting a question).

[0097] After finishing the correct-answer process or the incorrect-answer process, the processor **150** determines whether the next question can be set (step **S8**). The determination should be specified in accordance with the rules of the question-and-answer game. For example, if a single session of the question-and-answer game ends after a predetermined number of question-and-answer processes is executed, it is checked in step **S8** whether the question-and-answer process count reaches the predetermined number. If a single session of the question-and-answer game ends within a predetermined period of time, it is checked in step **S8** whether the period of time left after subtracting the elapsed time since the start of the session from the predetermined period of time is greater than or equal to a predetermined time limit. If the determination made in step **S8** is affirmative, the game process returns to step **S1**. Then, the processes described above are repeated. In the game process, the question-and-answer process and the determination process are repeatedly executed for a plurality of questions. If the determination made in step **S8** becomes negative, the processor **150** outputs the result of the play (such as the number of correct answers) via the display unit **120** and the sound generator **130**.

[0098] As has been described above, if the target question-and-answer data has the first structure, the game apparatus **100** sets a question by using the first data, and determines whether an answer to the set question is correct, on the basis of the answer to the question and the second data, when the first data assigner performs the first assigning process, and sets a question by using the second data and determines whether an answer to the set question is correct, on the basis of the answer and the first data, when the first data assigner performs the second assigning process. Therefore, the game apparatus **100** can set a plurality of questions by using the question-and-answer data **163** having the first structure, in which the second data indicates a correct answer to the question indicated by the first data and the first data indicates a correct answer to the question indicated by the second data.

[0099] If the target question-and-answer data has the second structure, the game apparatus **100** sets a question by using the third data, presents a plurality of answer options by using the fourth data, and determines whether an option selected from the presented answer options is a correct option on the basis of the selected option and the fifth data, when the second data assigner executes the third assigning process, and sets a question by using a part of the third data, presents a plurality of answer options by using the remainder of the third data and the fourth data, and determines whether an option selected from the presented answer options is a correct option on the basis of the selected option and the fifth data, when the second data assigner executes the fourth assigning process. Therefore, the game apparatus **100** can set a plurality of questions by using the question-and-answer data **163** having the second structure, in which the fifth data indicates an incorrect answer option to the question indicated by the third data and the remainder of the third data (part B in FIG. **8**, for example) corresponds to an incorrect answer option of the question.

[0100] In a different embodiment using the question-and-answer data **163** having the second structure, where the fifth data indicates a correct answer option to the question indicated by a part of the third data and the remainder (part B) of the third data corresponds to an incorrect answer option, a plurality of questions can be set from the identical question-and-answer data **163**.

[0101] If the target question-and-answer data has the third structure, the game apparatus **100** sets a question by using the third data, presents a plurality of answer options by using the fourth data, and determines whether an option selected from

the presented answer options is a correct option on the basis of the selected option and the fifth data, when the third data assigner executes the third assigning process, and sets a question by using the whole of the third data and a part of the fourth data, presents a plurality of answer options by using the remainder of the fourth data, and determines whether an option selected from the presented answer options is a correct option on the basis of the selected option and the fifth data, when the third data assigner executes the fifth assigning process. Therefore, the game apparatus **100** can set a plurality of questions by using the question-and-answer data **163** having the third structure, where the fifth data indicates an incorrect answer option to the question indicated by the third data, a part of the fourth data (part C in FIG. **9**, for instance) corresponds to a correct answer option to the question, and the remainder of the fourth data (part D in FIG. **9**, for instance) includes a correct answer option to the question.

[0102] In a different embodiment using the question-and-answer data **163** having the third structure, where the fifth data indicates a correct answer option to the question indicated by the third data, a part of the fourth data (part C in FIG. **9**, for instance) corresponds to an incorrect answer option to the question, and the remainder of the fourth data (part D in FIG. **9**, for instance) includes an incorrect answer option to the question, a plurality of questions can be set from the identical question-and-answer data **163**. As has been described above, in an embodiment where the fifth data in the question-and-answer data **163** of the second or third structure indicates a correct answer option, data of which the use can be changed (such as part B in the question-and-answer data **163** of the second structure and part C in the question-and-answer data **163** of the third structure) is used as data indicating an incorrect answer option.

[0103] Questions set in the present embodiment require a reading ability rather than a listening comprehension ability or require a writing ability rather than a speaking ability. In other embodiments, questions requiring a listening comprehension ability rather than a reading ability or questions requiring a speaking ability rather than a writing ability may be set. For example, in the question-and-answer data of the first structure shown in FIG. **7**, the first data or the second data may be sound data. Suppose that the first data is sound data expressing a word or a phrase and that the second data is text data expressing a word or a phrase. If the first data is assigned to setting a question and the second data is assigned to checking an answer to the question, the processor **150** can set an audio question by supplying the first data to the sound generator **130**. When the player gives an answer to the word or phrase expressed by the sound, the processor **150** determines whether the answer is correct on the basis of the second data assigned to checking the answer. If the second data is assigned to setting a question and the first data is assigned to checking an answer to the question, the processor **150** sets a visual question by supplying the second data to the display unit **120**. The game apparatus **100** has a sound input unit **170** for inputting sound, as shown in FIG. **2**. When the player gives an answer by reading the word or phrase displayed on the display unit **120** aloud into the sound input unit **170**, the processor **150** determines whether the answer is correct on the basis of the sound recognized from the input answer and the first data. Moreover, the question-and-answer data of the second structure shown in FIG. **8** or of the third structure shown in FIG. **9** may have sound data as the third data or the fourth data. As has been described above, at least one piece of data among the first to fourth data can be non-text data.

[0104] In a different embodiment, the question-and-answer data **163** of the third structure shown in FIG. **9** may use sound data assigned to setting a question as the third data and English text data as the fourth data. For the fourth data, the third assigning process of assigning the whole of the fourth data to presenting answer options and the fifth assigning process of assigning a part of the fourth data to setting a question and the remainder to presenting answer options are executed selectively.

[0105] Some embodiments of the present invention have been described. The present invention can also be implemented as a computer program that includes a sequence of computer-readable instructions describing the methods of the game apparatus **100** described above or as a program package bearing the computer program. The program package can be a computer-readable information storage medium having the computer program recorded thereon or a data carrier that transmits the computer program. The information storage medium can be any type of disk, tape, chip, or stick, as well as any form mentioned in the embodiments described above. The data carrier can be any type of network, wireless or wired. The computer program may or may not be compiled.

1. A game apparatus comprising:

a first memory for storing first data and second data in association with each other;

a first data assigner for selectively executing a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question, and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question; and

a first question-and-answer processor for setting a question for a player on the basis of the first data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the second data, when the first data assigner executes the first assigning process, and for setting a question for the player on the basis of the second data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the first data, when the first data assigner executes the second assigning process

2. A game apparatus comprising:

a second memory for storing third data, fourth data, and fifth data in association with each other;

a second data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question; and

a second question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the third assigning process, and for setting a question for the player on the basis of the part of the third data, presenting

a plurality of answer options for the player on the basis of the remainder of the third data and the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the fourth assigning process.

3. The game apparatus according to claim **2**,

wherein the fifth data indicates only an incorrect option irrespective of whether the second data assigner executes the third assigning process or the fourth assigning process.

4. A game apparatus comprising:

a second memory for storing third data, fourth data, and fifth data in association with each other;

a third data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question; and

a third question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the third assigning process, and for setting a question for the player on the basis of the third data and the part of the fourth data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the fifth assigning process.

5. A game apparatus according to claim **4**,

wherein the fifth data indicates only an incorrect option irrespective of whether the third data assigner executes the third assigning process or the fifth assigning process.

6. A computer program for a game apparatus comprising a first memory for storing first data and second data in association with each other, the computer program making the game apparatus function as:

a first data assigner for selectively executing a first assigning process of assigning the first data to setting a question and the second data to checking an answer to the question, and a second assigning process of assigning the second data to setting a question and the first data to checking an answer to the question;

and a first question-and-answer processor for setting a question for a player on the basis of the first data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the second data, when the first data assigner executes the first assigning process, and for setting a question to the player on the basis of the second data, receiving an answer to the set question from the player, and determining whether the received answer is correct on the basis of the first data, when the first data assigner executes the second assigning process

7. A computer program for a game apparatus comprising a second memory for storing third data, fourth data, and fifth data in association with each other, the computer program making the game apparatus function as:

a second data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fourth assigning process of assigning a part of the third data to setting a question and the remainder of the third data and the whole of the fourth data to presenting answer options to the question; and

a second question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the third assigning process, and for setting a question for the player on the basis of the part of the third data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the third data and the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the second data assigner executes the fourth assigning process.

8. A computer program for a game apparatus comprising a second memory for storing third data, fourth data, and fifth data in association with each other, the computer program making the game apparatus function as:

a third data assigner for selectively executing a third assigning process of assigning the whole of the third data to setting a question and the whole of the fourth data to presenting answer options to the question, and a fifth assigning process of assigning the whole of the third data and a part of the fourth data to setting a question and the remainder of the fourth data to presenting answer options to the question; and

a third question-and-answer processor for setting a question for a player on the basis of the third data, presenting a plurality of answer options to the question for the player on the basis of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the third assigning process, and for setting a question for the player on the basis of the third data and the part of the fourth data, presenting a plurality of answer options to the question for the player on the basis of the remainder of the fourth data, receiving a choice made by the player from among the plurality of answer options, and determining whether the choice is correct on the basis of the fifth data, when the third data assigner executes the fifth assigning process.

9. A computer-readable storage medium storing a computer program according to claim **6**.

10. A computer-readable storage medium storing a computer program according to claim **7**.

11. A computer-readable storage medium storing a computer program according to claim **8**.

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