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(54) **METHODS AND SYSTEMS FOR ALGORITHMICALLY SELECTED TRIVIA GAMING CONTENT**

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(57) **ABSTRACT**

Various embodiments are described herein for methods and systems for operating a gaming management system. The gaming management system is configured to interface with at least one client system. In one example embodiment, the gaming management system includes a processor configured to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions; store the database of participant records in a memory; establish a database of trivia gaming content; store the database of trivia gaming content in the memory; receive, from the at least one client system, a request to participate in the current trivia gaming session; and dynamically generate a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.
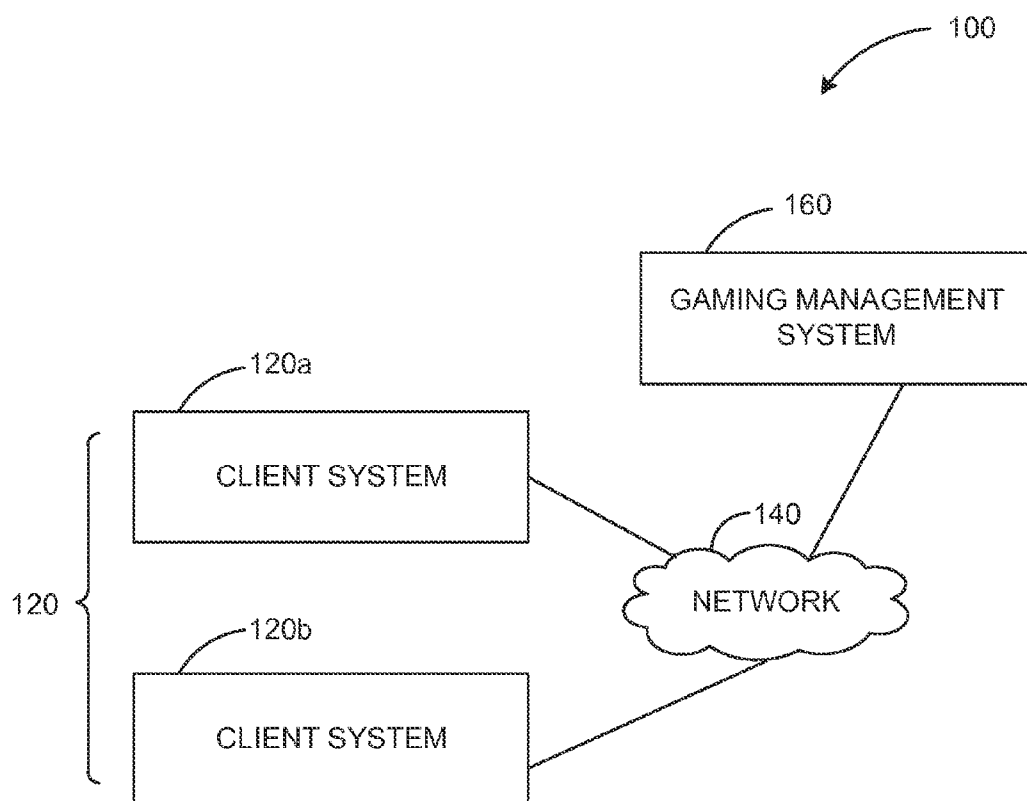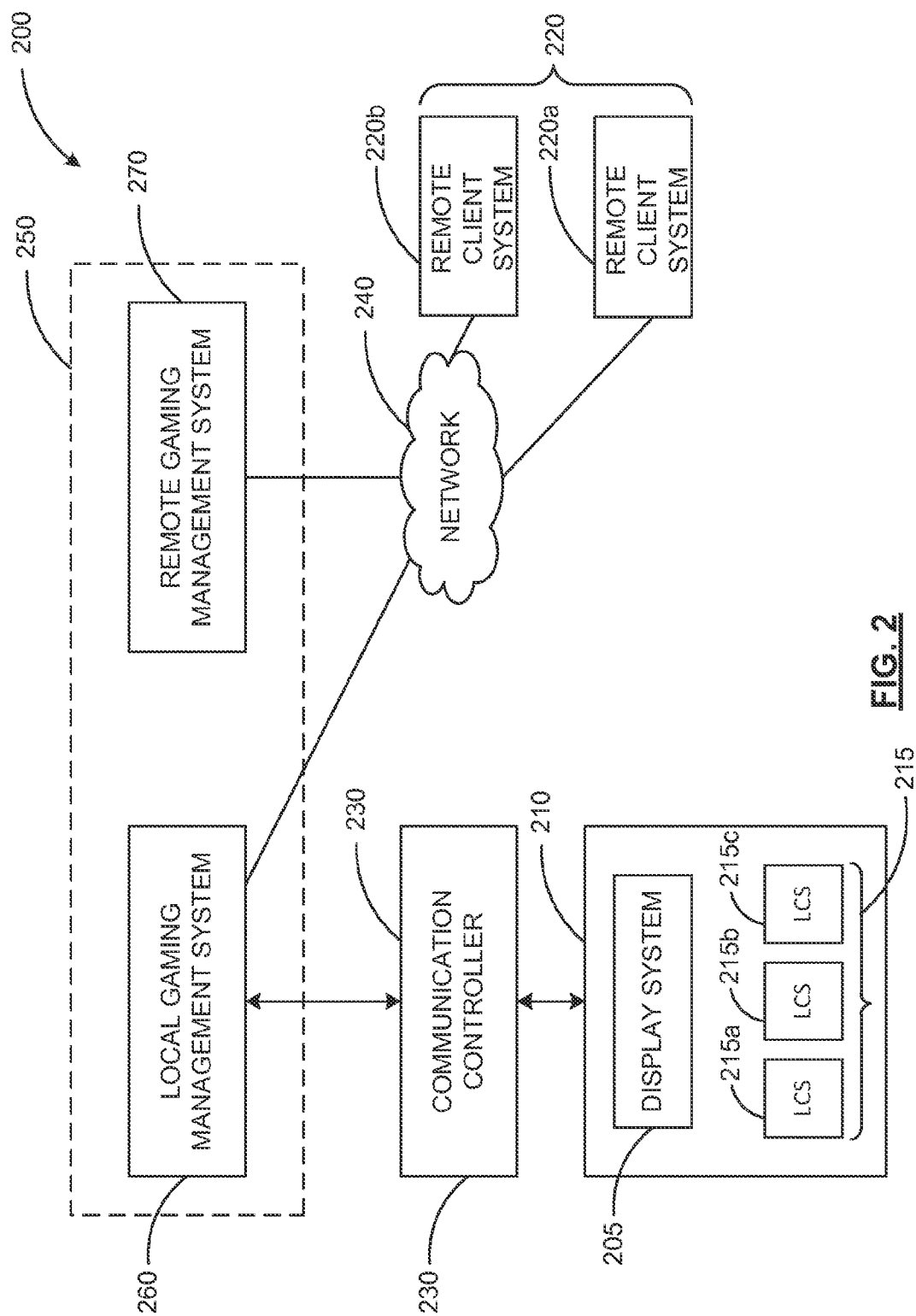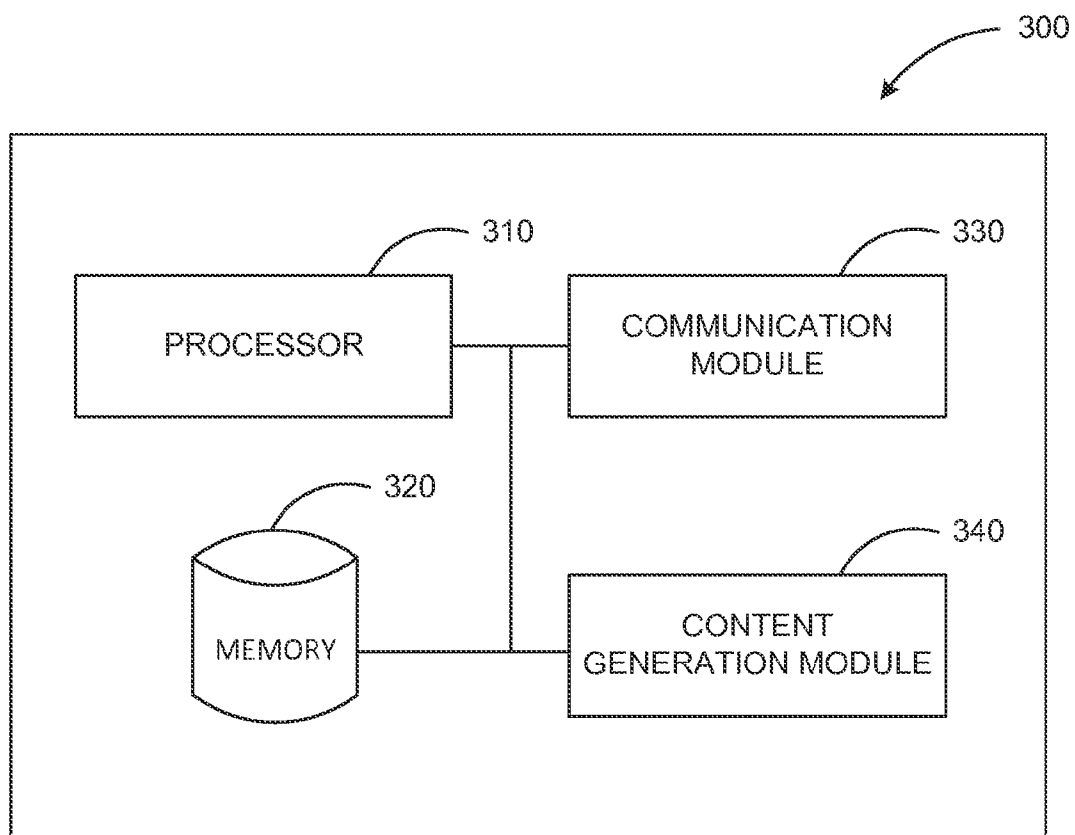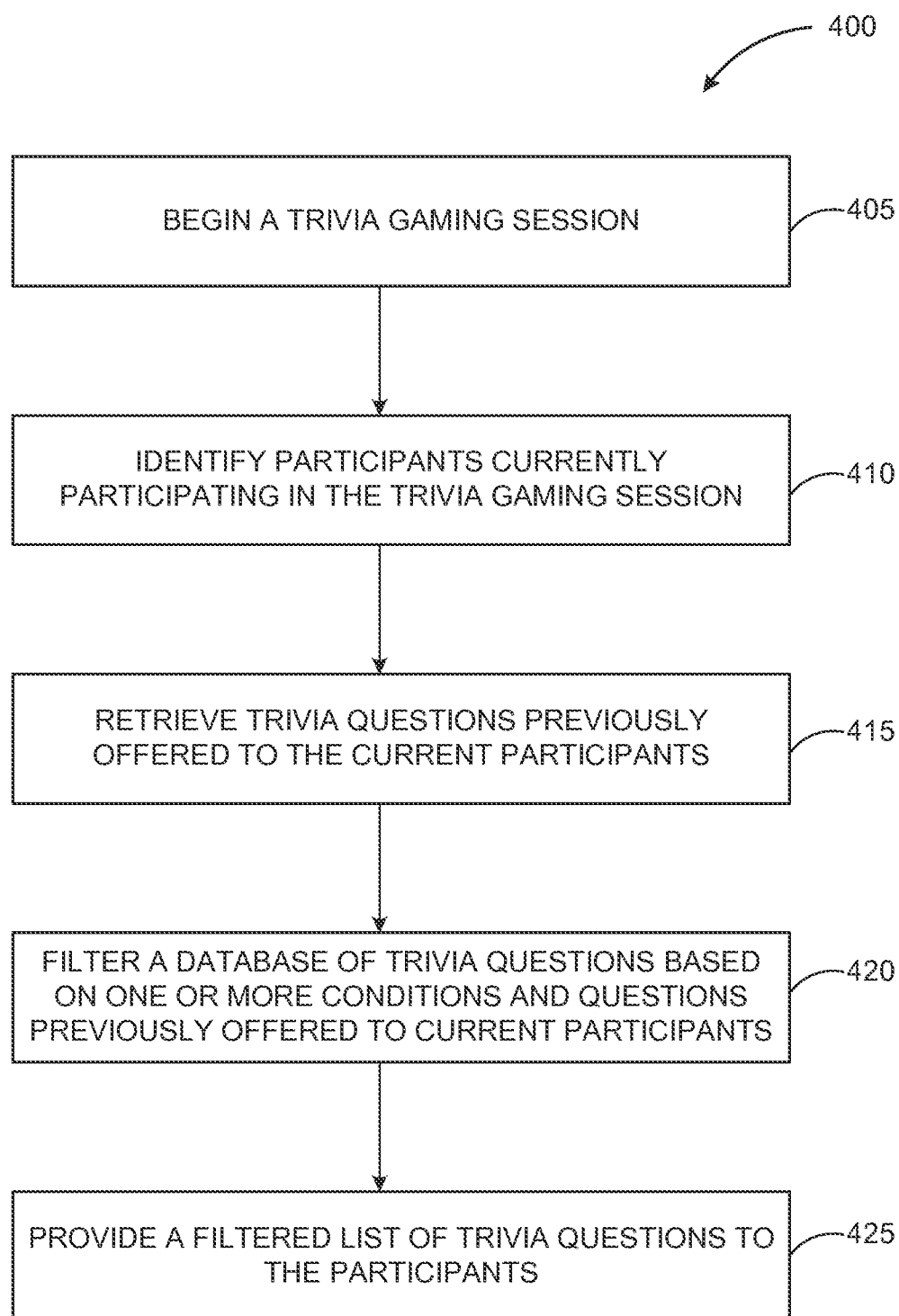
100

160

GAMING MANAGEMENT
SYSTEM

120a

CLIENT SYSTEM

120

140

NETWORK

120b

CLIENT SYSTEM

FIG. 1

FIG. 2

300

310

PROCESSOR

330

COMMUNICATION
MODULE

320

MEMORY

340

CONTENT
GENERATION MODULE

FIG. 3

400

BEGIN A TRIVIA GAMING SESSION — 405

IDENTIFY PARTICIPANTS CURRENTLY PARTICIPATING IN THE TRIVIA GAMING SESSION — 410

RETRIEVE TRIVIA QUESTIONS PREVIOUSLY OFFERED TO THE CURRENT PARTICIPANTS — 415

FILTER A DATABASE OF TRIVIA QUESTIONS BASED ON ONE OR MORE CONDITIONS AND QUESTIONS PREVIOUSLY OFFERED TO CURRENT PARTICIPANTS — 420

PROVIDE A FILTERED LIST OF TRIVIA QUESTIONS TO THE PARTICIPANTS — 425

FIG. 4

500

BEGIN A TRIVIA GAMING SESSION — 505

PROVIDE A TRIVIA GAME SELECTED FROM A DATABASE OF TRIVIA GAMES — 510

PROVIDE A PLURALITY OF TRIVIA QUESTIONS — 515

PROVIDE ONE OR MORE ADVERTISEMENTS TO THE CURRENT PARTICIPANTS — 520

HAS THE TRIVIA GAME ENDED? — 525

No

Yes

PROVIDE A REWARD TO THE WINNER — 530

END THE TRIVIA GAMING SESSION — 535
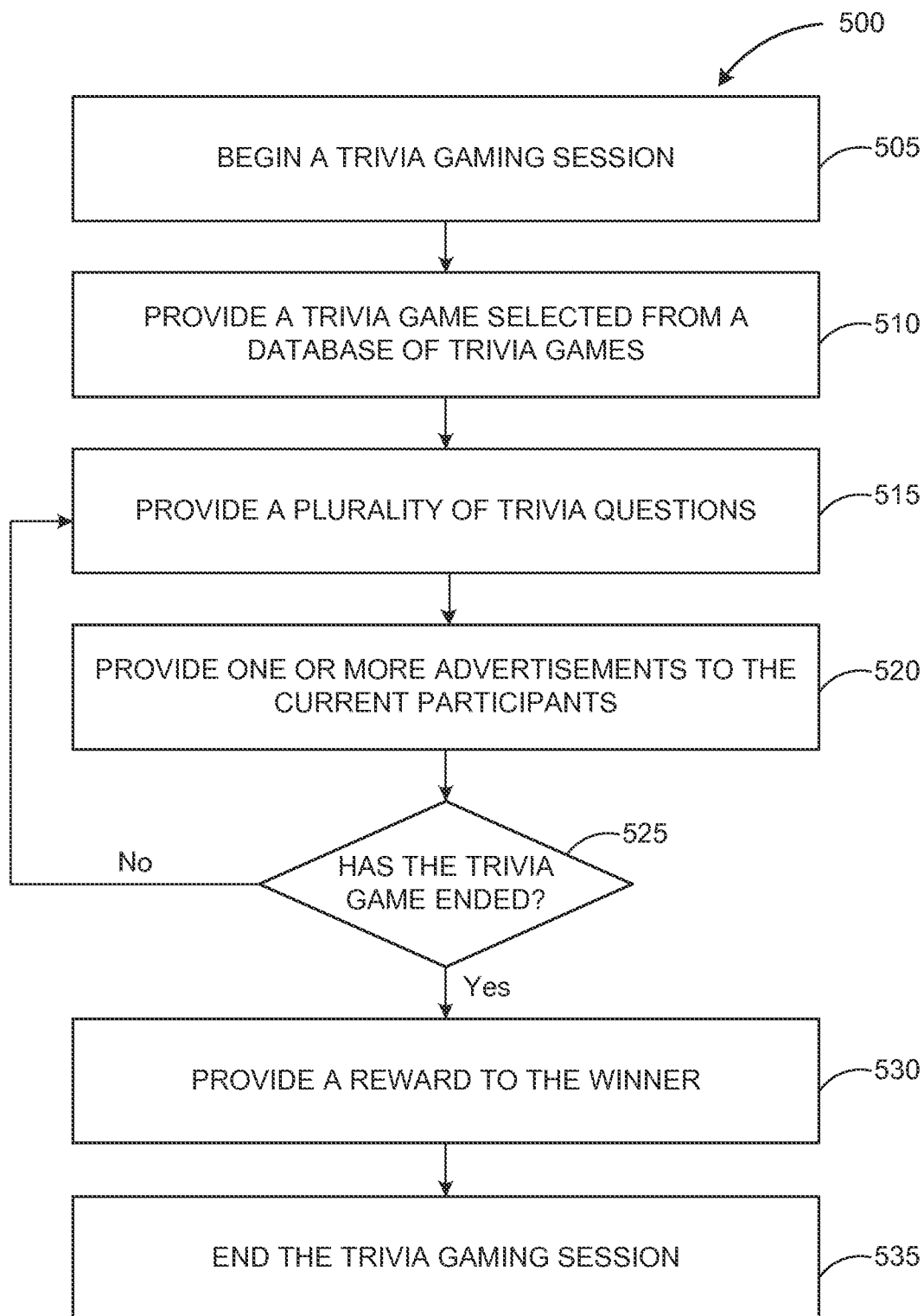
FIG. 5

METHODS AND SYSTEMS FOR ALGORITHMICALLY SELECTED TRIVIA GAMING CONTENT

FIELD

[0001] The described embodiments relate to methods and systems for providing algorithmically selected content, and in particular, to methods and systems for providing algorithmically selected content in a multi-person interactive trivia gaming session.

BACKGROUND

[0002] In a trivia gaming session, such as in a multi-player or single-player trivia session, the content offered to the participants is typically pre-determined and fixed. Consequently, many participants are offered repeated content irrespective of the number of times the content has been previously seen by these participants. This may provide an unfair advantage to those participants in a shared session who have been previously offered the same questions.

[0003] In some cases, the questions are retired after a pre-determined condition is met, such as the questions appearing a pre-determined number of times, or after a duration of 3 months, 6 months, 1 year etc. Even though this appears to keep the trivia gaming session fair for all participants, during the time while particular questions are active, there is a probability of unfair advantage for frequent players or players who coincidentally see some content in multiple sessions.

[0004] Another disadvantage of offering the fixed content for a duration of time is the minimization of interest in the gaming session. As content becomes predictable, there is a reduced level of curiosity and excitement among the participants, thereby making the experience less satisfactory.

SUMMARY

[0005] In a broad aspect, at least one embodiment described herein provides a method of operating a gaming management system, the gaming management system being configured to interface with at least one client system. The method comprises operating at least one processor to establish a database of operating at least one processor to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions; storing the database of participant records in a memory; operating the at least one processor to establish a database of trivia gaming content; storing the database of trivia gaming content in the memory; receiving, from the at least one client system, a request to participate in the current trivia gaming session; and dynamically generating a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

[0006] In various embodiments, the participant record may be associated with a particular client system, with a group of client systems or with a particular user. A user account associated with a particular user may include authentication information such as a user account name and a password, biometric credentials or other information, which must be provided by the user in order to use or access the participant record. In embodiments where a participant record is associated with a user, the user may be able to access the participant record from a variety of client systems and may request to participate in a trivia gaming session from any such client system.

[0007] In some embodiments, the trivia gaming content offered to the participants in the current trivia gaming session comprises trivia questions.

[0008] In some other embodiments, the trivia gaming content offered to the participants in the current trivia gaming session comprises trivia games of different types.

[0009] In some further embodiments, the trivia gaming content offered to the participants in the current trivia gaming session comprises an advertisement related to a trivia question offered during the trivia gaming session. The advertisement may be offered either before, during or after each trivia game within the trivia gaming session.

[0010] In some other embodiments, the trivia gaming content offered to the participants in the current trivia gaming session comprises a reward offered to a winner or winners of each trivia game within the trivia gaming session. In some cases, the rewards may be offered to the participants based on other criteria, such as, for example, the participant with the quickest response, the participant who has been participating the longest in a trivia gaming session.

[0011] In some further embodiments, the trivia gaming content offered to the participants in the current trivia gaming session comprises an offer for purchase.

[0012] In some embodiments, the trivia gaming content offered to the participants in the current trivia gaming session is a combination of some or all of the content described above.

[0013] In some embodiments, the at least one filtering condition is a selection of trivia gaming content not previously offered to any participant corresponding to the at least one client system requesting participation in the current trivia gaming session.

[0014] In some other embodiments, the at least one filtering condition is a selection of trivia gaming content offered previously to the fewest number of participants corresponding to the at least one client system requesting participation in the current trivia gaming session.

[0015] In some other embodiments, the at least one filtering condition is a selection of trivia gaming content offered previously to at most a selected maximum number of participants corresponding to the at least one client system requesting participation in the current trivia gaming session. In various embodiments, the selected maximum number may be a fixed number, may be selected based on the number of total participants in the current trivia gaming session or may be selected in another manner.

[0016] In some further embodiments, the trivia gaming content comprises trivia questions and the at least one filtering condition is a selection of the trivia questions answered incorrectly the maximum number of times in one or more previous trivia gaming session or answered incorrectly at least on a selected proportion of the instances when the trivia questions have been presented. In various embodiments, the selected proportion may be a predetermined value, may be selected to permit a specific or sufficient number of trivia questions to be available for the current trivia gaming session or may be selected in another manner.

[0017] In some embodiments, the trivia gaming content comprises trivia questions, and the at least one filtering condition is a selection of the trivia questions answered with the most delay in one or more previous trivia gaming session or answered after a selected delay. The selected delay may be a predetermined time period, may be selected to permit a spe-

cific or sufficient number of trivia questions to be available for the current trivia gaming session or may be selected in another manner.

[0018] In some embodiments, the at least one filtering condition is a combination of some or all of the filtering conditions described above.

[0019] In another aspect, in at least one embodiment described herein, there is provided a gaming management system for providing a trivia gaming session to at least one client system, the gaming management system being configured to interface with the at least one client system. The system comprises at least one processor configured to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions; store the database of participant records in a memory; establish a database of trivia gaming content; store the database of trivia gaming content in the memory; receive, from the at least one client system, a request to participate in the current trivia gaming session; and dynamically generate a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

[0020] In some embodiments, the at least one processor is configured to perform the methods as described above.

[0021] In another aspect, in at least one embodiment described herein, there is provided a computer-readable medium storing computer-executable instructions. The instructions cause a processor to perform a method of operating a gaming management system, the gaming management system being configured to interface with at least one client system, the method comprising: operating at least one processor to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions; storing the database of participant records in a memory; operating the at least one processor to establish a database of trivia gaming content; storing the database of trivia gaming content in the memory; receiving, from the at least one client system, a request to participate in the current trivia gaming session; and dynamically generating a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

[0022] In some embodiments, the instructions cause the processor to perform the methods as described above.

[0023] Other features and advantages of the present application will become apparent from the following detailed description taken together with the accompanying drawings. It should be understood, however, that the detailed description and the specific examples, while indicating preferred embodiments of the application, are given by way of illustration only, since various changes and modifications within the spirit and scope of the application will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] A preferred embodiment of the present invention will now be described in detail with reference to the drawings, in which:

[0025] FIG. 1 is a block diagram of components interacting with a gaming management system in accordance with an example embodiment;

[0026] FIG. 2 is a block diagram of components interacting with a gaming management system in accordance with another example embodiment;

[0027] FIG. 3 is a block diagram of a gaming management system in accordance with an example embodiment;

[0028] FIG. 4 is a process flow diagram for a method of providing trivia gaming content in accordance with an example embodiment; and

[0029] FIG. 5 is a process flow diagram for a method of providing trivia gaming content in accordance with another example embodiment.

[0030] The drawings are provided for the purposes of illustrating various aspects and features of the example embodiments described herein. For simplicity and clarity of illustration, elements shown in the Figures have not necessarily been drawn to scale. Further, where considered appropriate, reference numerals may be repeated among the Figures to indicate corresponding or analogous elements.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0031] Various apparatuses or processes will be described below to provide an example of at least one embodiment of the claimed subject matter. No embodiment described below limits any claimed subject matter and any claimed subject matter may cover processes, apparatuses, devices or systems that differ from those described below. The claimed subject matter is not limited to apparatuses, devices, systems or processes having all of the features of any one apparatus, device, system or process described below or to features common to multiple or all of the apparatuses, devices, systems or processes described below. It is possible that an apparatus, device, system or process described below is not an embodiment of any claimed subject matter. Any subject matter that is disclosed in an apparatus, device, system or process described below that is not claimed in this document may be the subject matter of another protective instrument, for example, a continuing patent application, and the applicants, inventors or owners do not intend to abandon, disclaim or dedicate to the public any such subject matter by its disclosure in this document.

[0032] Furthermore, it will be appreciated that for simplicity and clarity of illustration, where considered appropriate, reference numerals may be repeated among the figures to indicate corresponding or analogous elements. In addition, numerous specific details are set forth in order to provide a thorough understanding of the example embodiments described herein. However, it will be understood by those of ordinary skill in the art that the example embodiments described herein may be practiced without these specific details. In other instances, well-known methods, procedures and components have not been described in detail so as not to obscure the example embodiments described herein. Also, the description is not to be considered as limiting the scope of the example embodiments described herein.

[0033] The various embodiments of the devices, systems and methods described herein may be implemented using a combination of hardware and software. These embodiments may be implemented in part using computer programs executing on programmable devices, each programmable device including at least one processor, an operating system,

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one or more data stores (including volatile memory or non-volatile memory or other data storage elements or a combination thereof), at least one communication interface and any other associated hardware and software that is necessary to implement the functionality of at least one of the embodiments described herein. For example, and without limitation, the computing device may be a server, a network appliance, an embedded device, a computer expansion module, a personal computer, a laptop, a personal data assistant, a cellular telephone, a smart-phone device, a tablet computer, a wireless device or any other computing device capable of being configured to carry out the methods described herein. The particular embodiment depends on the application of the computing device.

[0034] In some embodiments, the communication interface may be a network communication interface, a USB connection or another suitable connection as is known by those skilled in the art. In other embodiments, the communication interface may be a software communication interface, such as those for inter-process communication (IPC). In still other embodiments, there may be a combination of communication interfaces implemented as hardware, software, and a combination thereof.

[0035] In at least some of the embodiments described herein, program code may be applied to input data to perform at least some of the functions described herein and to generate output information. The output information may be applied to one or more output devices, for display or for further processing.

[0036] At least some of the embodiments described herein that use programs may be implemented in a high level procedural or object oriented programming and/or scripting language or both. Accordingly, the program code may be written in C, Java, SQL or any other suitable programming language and may comprise modules or classes, as is known to those skilled in object oriented programming. However, other programs may be implemented in assembly, machine language or firmware as needed. In either case, the language may be a compiled or interpreted language.

[0037] The computer programs may be stored on a storage media (e.g. a computer readable medium such as, but not limited to, ROM, magnetic disk, optical disc) or a device that is readable by a general or special purpose computing device. The program code, when read by the computing device, configures the computing device to operate in a new, specific and predefined manner in order to perform at least one of the methods described herein.

[0038] Furthermore, some of the programs associated with the system, processes and methods of the embodiments described herein are capable of being distributed in a computer program product comprising a computer readable medium that bears computer usable instructions for one or more processors. The medium may be provided in various forms, including non-transitory forms such as, but not limited to, one or more diskettes, compact disks, tapes, chips, and magnetic and electronic storage. In alternative embodiments the medium may be transitory in nature such as, but not limited to, wire-line transmissions, satellite transmissions, internet transmissions (e.g. downloads), media, digital and analog signals, and the like. The computer useable instructions may also be in various formats, including compiled and non-compiled code.

[0039] The various embodiments disclosed herein generally relate to improved techniques of providing content during a trivia gaming session. Content during a trivia gaming session may include any content that contributes towards a user experience during a trivia gaming session. Such content may include trivia questions and trivia games of various types, advertising during trivia games, merchandise or services for purchase, rewards and prizes, and other related content.

[0040] Reference is first made to FIG. 1, illustrating a block diagram of components interacting with a gaming management system in accordance with an example embodiment. Trivia gaming system 100 of FIG. 1 includes one or more client systems 120 and a gaming management system 160. The client system(s) 120 and gaming management system 160 communicate with each other via network 140.

[0041] Network 140 may be any network or network components capable of carrying data including the Internet, Ethernet, plain old telephone service (POTS) line, public switch telephone network (PSTN), integrated services digital network (ISDN), digital subscriber line (DSL), coaxial cable, fiber optics, satellite, mobile, wireless (e.g. Wi-Fi, WiMAX), SS7 signaling network, fixed line, local area network (LAN), wide area network (WAN), a direct point-to-point connection, mobile data networks (e.g., Universal Mobile Telecommunications System (UMTS), 3GPP Long-Term Evolution Advanced (LTE Advanced), Worldwide Interoperability for Microwave Access (WiMAX), etc.), and others, including any combination of these.

[0042] Client system 120 may be any networked computing device, including a processor and memory, capable of communicating with a network. A computing device may be a personal computer, workstation, server, portable computer, mobile phone, laptop wirelessly coupled to an access point (e.g. a wireless router, a cellular communications tower, etc.), a wirelessly enabled personal data assistant (PDA) or smart phone, a terminal, a tablet computer, a game console over a wired or wireless connection, WAP phone, or a combination of these.

[0043] Client system 120 typically includes one or more input devices, such as a keyboard, mouse, camera, touch screen and a microphone etc., and also includes one or more output devices such as a display screen and a speaker etc. Client system 120 has a network interface for connecting to network 140 in order to communicate with other components within system 100.

[0044] In various embodiments, client system 120 comprises a client which may be an application, such as a computing application, application plug-in, a widget, mobile device application, Java™ application, or web browser executed by the client system 140 in order to send or transmit data.

[0045] Gaming management system 160 may be a server system that has one or more servers with computing processing abilities and memory such as database(s) or file system(s). Although one gaming management system 160 is shown for clarity, there may be multiple gaming management systems 160 distributed over a wide geographic area and connected via e.g. network 140. Gaming management system 160 has a network interface for connecting to network 140 in order to communicate with other components and to serve web pages and other computing applications. The gaming management system 160 is configured to receive and transmit data to one or more client systems 140.

[0046] Gaming management system 160 is configured to provide content for trivia gaming sessions to users of client

system **120**. A trivia gaming session may be hosted on a server and may be connected to a series of individual client systems through a network. In some cases, gaming management system **160** provides access to trivia gaming sessions in exchange for an entry fee.

[0047] Gaming management system **160** is configured to provide one or more trivia gaming content including trivia questions and trivia games of different types, advertisements during trivia games, merchandise or services for purchase, rewards and prizes, and other related content to client systems **120**.

[0048] In some cases, gaming management system **160** is coupled to a sponsor server to provide advertisements to client systems **120**. Sponsor system may be any networked computing device, including a processor and memory, capable of communicating with a network, such as network **140**. Sponsor system is a server system that provides promotional services for one or more products and/or services. Sponsor system may comprise one or more media servers for providing multimedia content, such as video and audio advertisement content to the gaming management system **160**. In some other cases, gaming management system **160** and sponsor system are integrated into a single system.

[0049] Reference is first made to FIG. **2**, illustrating a block diagram of components interacting with a gaming management system in accordance with another example embodiment. Trivia gaming system **200** of FIG. **2** includes a venue **210**, one or more remote client systems **220**, a communications controller **230**, network **240**, and a gaming management system **250**.

[0050] Venue **210** is any location, indoor or outdoor, such as a cinema, theatre, conference hall, presentation hall, restaurant, bar, an amphitheatre, stadium or other outdoor or indoor area where a plurality of players engage in a trivia gaming session and where the attention of participants can be focused on large central display.

[0051] As illustrated, venue **210** includes a display system **205** and one or more local client systems **215**. Display system **205** comprises one or more display means, such as, for example, one or more computer monitors, television screens, projection screens etc. which provides a display corresponding to the trivia gaming session. One or more local client systems **215** are analogous to client systems **120** of FIG. **1** and are used by participants to participate in the trivia gaming session.

[0052] In one embodiment, the display system **205** displays trivia questions and participants operate the local client systems **215** to provide answers to the trivia questions. In some other embodiments, the display system **205** displays trivia session related advertisements. In such embodiments, trivia questions appear on the local client system **215** and answers are also provided on the local client system **215**. In various cases, answers may be provided by entering the answer itself or entering a letter or number corresponding to the answer selected by the participant. Answers may alternatively by provided by selecting (e.g. by clicking or tapping) one out of many available options.

[0053] In some cases, one or more local client systems **215** comprise an input means for providing input instructions and a secondary screen for display. In some other cases, one or more local client systems **215** comprise only an input means.

[0054] Gaming management system **250** interfaces with the venue **210** through communications controller **230**, which controls high speed wireless (radio frequency) and/or wired communication within the venue **210** as well as to and from the venue **210**.

[0055] Remote client systems **220** are client systems analogous to client systems **120** of FIG. **1**. Remote client systems **220***a* and **220***b* are located remotely from the display system **205**. A remote client system **220** communicates to and from other remote client systems **220**, local client systems **215** and gaming management system **250** via network **240**.

[0056] Gaming management system **250** is analogous to gaming management system **160** of FIG. **1**. Gaming management system **250** comprises a local gaming management system **260** and a remote gaming management system **270**.

[0057] Local gaming management system **260** is a server or group of servers configured to communicate with various components within the venue **210**. In some cases, the local gaming management system **260** is located inside the venue **210**. In some other cases, the local gaming management system **260** is located outside but in the vicinity of the venue **210**. Remote gaming management system **270** is a server or group of servers located remotely from the venue **210**. In most cases, the remote gaming management system **270** interacts with the venue **210** via network **240**.

[0058] Gaming management system **250** is configured to generate and provide customized content during the trivia gaming session, where the content is customized based on historical patterns of the players currently participating in the session. The gaming management system **250** is further configured to customize the content offered during the trivia gaming session based on other factors, such as, for example, player preferences, geographical data, likes and dislikes, interaction with content etc. Content offered by the gaming management system **250** during the trivia gaming session may include content, such as, for example, trivia questions, trivia games, advertising during, before or after trivia games, merchandise or services for purchase, rewards and prizes, and other related content that provides a wholesome trivia gaming session experience to the players.

[0059] Gaming management system **250** is configured to provide trivia questions in the trivia gaming session based on historical play patterns of the players currently participating in the session. In some cases, gaming management system **250** determines how many players in the session have seen each of the potential questions selected to be displayed, and eventually display only those questions that have been seen by the fewest or none of the current participants.

[0060] Gaming management system **250** is also configured to determine the type of trivia game to be offered to the participants in the current trivia gaming session. Gaming management system **250** analyzes the history of current participants to determine which trivia games have been played by the fewest or none of the current players, and offers those trivia games in the trivia gaming session.

[0061] Gaming management system **250** is also configured to provide special offers to players based on players' historical patterns with the special offers. Special offer or offers provided by the gaming management system **250** allow the participant to make an instant perchance. In some cases, the gaming management system **250** analyzes the history of previous offers and purchases among the current participants to determine which of the offers would be best received by the majority of the players. In some other cases, the gaming management system **250** analyzes the history of previous

offers and purchases among the current participants to determine which offers have been seen by the fewest or none of the current participants.

[0062] Gaming management system 250 is also configured to provide rewards and prizes to players based on players' historical patterns with the rewards and prizes. Gaming management system 250 analyzes the history of previous rewards and prizes provided to the players to determine which rewards and prizes would be best received by the majority of the current participants.

[0063] In some cases, the gaming management system 250 offers rewards and prizes that have not been offered to the players in the past or over a predetermined duration of time. In some other cases, the gaming management system 250 offers rewards and prizes that have been received by the fewest of the current players. In some further cases, the gaming management system 250 offers rewards and prizes that have been the most popular among the participants in the past. The popularity of the rewards and prizes may be gauged based on analyzing which rewards and prizes are redeemed or claimed by the participants and how quickly after winning are the rewards and prizes redeemed or claimed.

[0064] In some cases, the awards may be offered to the participants based on other criteria, such as, for example, the participant with the quickest response, the participant who has been participating the longest in a trivia gaming session.

[0065] Gaming management system 250 is also configured to offer one or more advertisements to the players before, after or during the trivia gaming session. The one or more advertisements are offered to the participants based on players' historical patterns. The advertisements offered to the participants may be interactive or non-interactive and include multimedia content for promoting brands, products, and services etc.

[0066] In some cases, gaming management system 250 analyzes the history of previous advertisements offered to the players and offer the advertisements that have been provided to the fewest or none of the current players. In some other cases, gaming management system 250 offers those interactive advertisements that have the highest participant interaction rate in the past.

[0067] Gaming management system 250 is configured to monitor trivia gaming content historically offered to players currently participating in the trivia gaming session. In some cases, the historical data or player pattern is determined based on information directly received from the users, such as, for example, demographic data, e.g. age, gender, and user preferences, e.g. likes, dislikes, hobbies etc. Such information may be received from the user during registration or polling. In some other cases, the historical data or player pattern is determined based on the record of the content previously offered to the participants or the client systems, and stored in a memory module, such as memory module 320 of FIG. 3 as discussed below.

[0068] Referring now to FIG. 3, there is illustrated a block diagram of a gaming management system 300, such as gaming management system 160 of FIG. 1 and gaming management system 250 of FIG. 2. Gaming management system 300 includes a processor 310, a non-transitory memory 320, a communication module 330, and a content generation module 340.

[0069] Content generation module 340 operates within the gaming management system 300 to configure processor 310 to provide interactive and non-interactive activities. Each of the communication module 330 and content generation module 340 is executed by processor 310 within the gaming management system 300.

[0070] Memory module 320 is a storage module that communicates with the processor 310 and includes one or more relational databases (such as a Structured Query Language (SQL) database), or other suitable data storage devices. The memory module 320 storage devices are configured to host data about the participants, client systems corresponding to the participants and trivia gaming content corresponding to the participants and/or client systems participating in the trivia gaming session both currently and in the past.

[0071] Memory module 320 is configured to store a participant profile or database, which stores a plurality of information associated with the current and previous participants of the trivia gaming session. Some examples of the participant information stored in the participant profile include, but are not limited to: identification information (e.g. name, data of birth, age, location, preferences etc.); trivia gaming content related information, such as names, types, difficulty level and/or number of trivia games and questions, names, types and/or number of advertisements watched and/or interacted with, rewards or prizes won or offered to the participant, rewards or prizes redeemed or claimed by the participant, special offers provided to the participants, purchases made by the participants etc.

[0072] In some cases, the memory module 320 stores profiles based on client systems, where each client system corresponds to one or more participants. Similar to the participant profile, the client system profile stores a plurality of information such as, for example, identification information of the participant or participants associated with the client system, and trivia gaming content related information, as mentioned above, for each participant associated with the client system. In some cases, where the trivia gaming content related information for each participant is not available, the memory module 320 stores the aggregate trivia gaming content related information for all participants associated with the client system.

[0073] Memory module 320 further stores a database of available trivia gaming content. For example, memory module 320 includes a plurality of trivia questions, trivia games, prizes and rewards, offers, advertisements etc. from which the trivia gaming content offered to the participants is selected. Such databases may be updated periodically or at some predetermined times. Such databases may alternatively or concurrently be updated as and when new content becomes available. In most cases, the databases are updated by operator(s) of gaming management system 300.

[0074] Communication module 330 may include any variety of software or hardware modules facilitating communication over a network. In some embodiments, communication module 330 may allow gaming management system 300 to communicate with client systems, such as client systems 120 of FIG. 1, client systems 215 located within the venue 210 in FIG. 2, and/or client systems 220 located remotely from the venue 210 in FIG. 2, over a network, such as network 110 of FIG. 1 or network 240 of FIG. 2.

[0075] Content generation module 340 is a storage and processing module configured to manage the operation of one or more gaming management systems in accordance with the teachings herein. Content generation module 340 may con-

tain software objects or components executed by the processor **310** to control function of the gaming management system **300**.

[0076] In various embodiments, content generation module **340** contain filtering instructions for configuring processor **310** to determine trivia gaming content to be offered to the participants. Content generation module **340** configures the processor **310** to access participant and/or client system profile in memory module **320** and determine which trivia gaming content to be offered to the participants or client systems based on the instructions.

[0077] In some cases, the content generation module **340** contain filtering instructions or conditions requiring the trivia gaming content that is viewed by or offered to the fewest or none of the current participants to be offered to the current participants. In some other cases, the content generation module **340** contain instructions requiring the trivia gaming content that is best received by the majority of the current participants to be offered to the current participants. In some further cases, the content generation module **340** contains other filtering instructions or condition based on which the trivia gaming session is offered to the current participants.

[0078] Referring back to FIG. **2**, in one embodiment of the invention, the remote gaming management system **270** is configured to generate trivia gaming session content, and the local gaming management system **260** is configured to receive the generated content from the remote gaming management system **270** and provide it to the client systems **215** located in the venue **210**. In this embodiment, the client systems **220** located remotely from the venue **210** receive the trivia gaming session content from the remote gaming management system **270** via network **240**. The trivia gaming session content generated by the remote gaming management system **270** is based on the current participants of the trivia gaming session, which includes participants corresponding to client systems **215** located in the venue **210** and client systems **220** located remotely from the venue **210**.

[0079] In some cases, the local gaming management system **260** may be further configured to process the trivia gaming session content received from the remote gaming management system **270** to correspond only to the current participants or current gaming systems **215** participating in the trivia gaming session within the venue **210**.

[0080] In another embodiment, the local gaming management system **260** is configured to generate the trivia gaming session content for the participants or gaming systems **215** currently participating in the trivia gaming session within the venue **210**. In this embodiment, the remote gaming management system **270** generates trivia gaming session content for the participants or gaming systems **220** located remotely from the venue **210**.

[0081] Reference is next made to FIG. **4**, which illustrates a process flow **400** for a method of providing trivia gaming content in accordance with an example embodiment. The process **400** is carried out by a gaming management system, such as gaming management system **160** of FIG. **1**, gaming management system **250** of FIG. **2** and gaming management system **300** of FIG. **3**.

[0082] Method **400** begins at **405**, where a gaming management system begins a trivia gaming session. At **410**, the gaming management system identifies the participants currently participating in a trivia gaming session. In some cases, the

gaming management system identifies the client systems corresponding to participants currently participating in the trivia gaming session.

[0083] At **415**, the gaming management system retrieves the trivia questions previously offered to the current participants. Gaming management system can retrieve the previously offered trivia questions based on participant or client system profiles stored in a memory module, such as memory module **320** of FIG. **3**.

[0084] At **420**, the gaming management system selects trivia questions to be offered to the participants by filtering a database of trivia questions based on one or more applicable filtering conditions and questions previously offered to current participants. The database of trivia questions is stored in a memory module, such as memory module **320** of FIG. **3**.

[0085] In some cases, the filtering condition applied is a selection of new trivia questions. In such cases, the gaming management system selects from the database those trivia questions that have never been previously provided to the participants currently participating in the trivia gaming session.

[0086] In some other cases, the filtering condition applied is a selection of least used trivia questions. In such cases, the gaming management system selects from the database those trivia questions that have been previously offered to the fewest number of current participants.

[0087] In some further cases, the filtering condition applied is a selection of toughest trivia questions. In such cases, the gaming management system selects from the database those trivia questions that have been answered incorrectly the maximum number of times by some or all of the current participants.

[0088] These filtering conditions are provided as examples only. Any other conditions to filter a database of trivia gaming content, such as trivia gaming questions, may also be used by the gaming management system.

[0089] At **425**, a selected list of trivia questions is provided to the participants.

[0090] Reference is next made to FIG. **5**, which illustrates a process flow **500** for a method of providing trivia gaming content in accordance with an example embodiment. The process **500** is carried out by a gaming management system, such as gaming management system **160** of FIG. **1**, gaming management system **250** of FIG. **2** and gaming management system **300** of FIG. **3**.

[0091] Method **500** begins at step **505**, where a gaming management system begins a trivia gaming session. In some cases, the trivia gaming session is considered to have been started when, for example, an online website offering the trivia gaming session is accessed, or an app on a mobile device is launched etc.

[0092] At **510**, the gaming management system selects a trivia game from a database of trivia games. The trivia game may be selected based on participant selection. The trivia game may also be selected based on the historical analysis of the trivia games played by the current participants. In the latter case, the trivia game played by the fewest or none of the current participants is offered to the current participants.

[0093] At **515**, the gaming management system selects and offers a plurality of trivia questions to the participants based on the analysis of the trivia questions previously provided to the current participants. In various cases, the trivia questions are offered based on the process flow as described in FIG. **4**.

[0094] At **520**, the gaming management system selects one or more advertisements to be provided to the participants. The advertisements are selected based on analysis of the advertisements previously provided to the current participants of the trivia gaming session. In various cases, the advertisements are selected by filtering a database of advertisements based on one or more conditions, such as, for example, advertisements viewed by the fewest or none of the current participants, advertisements most popular among the current participants (e.g. as gauged by interaction with the advertisements in the case of interactive advertisement) etc.

[0095] Advertisements may be provided to the participants at a pre-determined duration of time, such as, for example, at the end of first round of the trivia gaming session, **5** minutes from the commencement of the trivia gaming session etc. Gaming management system may be configured to trigger one or more advertisements when a certain genre of question or questions is offered. For example, if the trivia questions relates to a car engine, the gaming management system may be configured to select and offer a car commercial that has been offered to the fewest or none of the current participants.

[0096] At **525**, the gaming management system determines if the trivia game has ended. If the trivia game has not ended, or only one or more rounds in a multi-round trivia game have ended, the process flow returns to step **515**.

[0097] If the trivia game has ended, the process flow proceeds to step **530**. At **530**, the trivia gaming session, determines the winner and provides prizes or rewards to the winner (s). The prizes or rewards are based on the historical analysis of the previous prizes and/or rewards offered to the winner.

[0098] In some cases, the gaming management system offers rewards that have not been offered to the winner or winners in the past or over a predetermined duration of time. In some other cases, the gaming management system offers rewards that have been received by the fewest of the current winners. In some further cases, the gaming management system offers rewards that have been received by the fewest of all the current participants in the trivia gaming session. In some other cases, the gaming management system may offer rewards that have been the most popular among the participants in the past.

[0099] At **535**, the trivia gaming session ends.

[0100] It will be appreciated that numerous specific details are set forth in order to provide a thorough understanding of the exemplary embodiments described herein. However, it will be understood by those of ordinary skill in the art that the embodiments described herein may be practiced without these specific details. In other instances, well-known methods, procedures and components have not been described in detail so as not to obscure the embodiments described herein. The scope of the claims should not be limited by the preferred embodiments and examples, but should be given the broadest interpretation consistent with the description as a whole.

We claim:

1. A method of operating a gaming management system to provide a current trivia gaming session, the gaming management system being configured to interface with at least one client system, the method comprises:

operating at least one processor to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions;

storing the database of participant records in a memory;

operating the at least one processor to establish a database of trivia gaming content;

storing the database of trivia gaming content in the memory;

receiving, from the at least one client system, a request to participate in the current trivia gaming session; and

dynamically generating a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

2. The method of claim **1**, wherein the offered trivia gaming content comprises trivia questions.

3. The method of claim **1**, wherein the offered trivia gaming content comprises trivia games of different types.

4. The method of claim **1**, wherein the offered trivia gaming content comprises an advertisement related to a trivia question offered during the trivia gaming session.

5. The method of claim **1**, wherein the offered trivia gaming content comprises a reward offered to a winner of a trivia game.

6. The method of claim **1**, wherein the offered trivia gaming content comprises an offer for purchase.

7. The method of claim **1**, wherein the at least one filtering condition is a selection of trivia gaming content not previously offered to any participant corresponding to the at least one client system requesting participation in the current trivia gaming session.

8. The method of claim **1**, wherein the at least one filtering condition is a selection of trivia gaming content offered previously to the fewest number of participants corresponding to the at least one client system requesting participation in the current trivia gaming session.

9. The method of claim **1**, wherein the at least one filtering condition is a selection of trivia gaming content offered previously to fewer than a selected maximum number of participants corresponding to the at least one client system requesting participation in the current trivia gaming session.

10. The method of claim **1**, wherein the trivia gaming content comprises trivia questions, and the at least one filtering condition is a selection of the trivia questions answered incorrectly the maximum number of times in one or more previous trivia gaming session.

11. The method of claim **1**, wherein the trivia gaming content comprises trivia questions, and the at least one filtering condition is a selection of the trivia questions answered incorrectly at least on a selected proportion of the instances on which the trivia questions have presented in one or more previous trivia gaming session.

12. The method of claim **1**, wherein the trivia gaming content comprises trivia questions, and the at least one filtering condition is a selection of the trivia questions answered with the most delay in one or more previous trivia gaming session.

13. The method of claim **1**, wherein the trivia gaming content comprises trivia questions, and the at least one filtering condition is a selection of the trivia questions answered after a selected delay in one or more previous trivia gaming session.

14. A gaming management system for providing a trivia gaming session to at least one client system, the gaming management system being configured to interface with the at

least one client system, the gaming management system comprising at least one processor configured to:

    establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions;

    store the database of participant records in a memory;

    establish a database of trivia gaming content;

    store the database of trivia gaming content in the memory;

    receive, from the at least one client system, a request to participate in the current trivia gaming session; and

    dynamically generate a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

    15. The gaming management system of claim **14**, wherein the at least one processor is further configured to perform the method as defined in any one of claims **2** to **13**.

    16. A computer-readable medium storing computer-executable instructions, the instructions for causing at least one processor to perform a method of operating a gaming management system, the gaming management system being configured to interface with at least one client system, the method comprising:

    operating at least one processor to establish a database of participant records, each participant record identifying trivia gaming content offered to the corresponding participant in one or more previous trivia gaming sessions;

    storing the database of participant records in a memory;

    operating the at least one processor to establish a database of trivia gaming content;

    storing the database of trivia gaming content in the memory;

    receiving, from the at least one client system, a request to participate in the current trivia gaming session; and

    dynamically generating a plurality of trivia gaming content items from the database of the trivia gaming content based on the trivia gaming content offered to the participants corresponding to the at least one client system in one or more previous trivia gaming sessions and at least one filtering condition.

    17. The computer readable medium of claim **14**, wherein the method is further defined according to any one of claims **2** to **13**.

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