METHOD AND SYSTEM FOR ESTABLISHING LOCATION-BASED LEADERBOARD

FIELD OF INVENTION

Embodiments of the present invention are related to online games and more specifically to methods and systems for establishing location-based leaderboards.

BACKGROUND OF THE INVENTION

Several of today's most popular computer game platforms (e.g., XBOX 360, PS3, etc.) implement leaderboards to establish a ranking system for users of their devices. For example, for a particular game title, all users of that game may be ranked according to certain criteria including: best score by game mode, best overall score, wins/losses, total features unlocked, etc. This allows users to compare their performance to other users under similar settings.

However, an issue arises when determining sample size for establishing leaderboards. Currently, gaming platforms are set up to use leaderboards that rank all users who have played a particular game title under similar settings. Such leaderboards do not enable a user to rank himself against a smaller subset of users. Specifically, such leaderboards do not allow a user to determine his rank in relation to his area (e.g., city, county, state, etc.).

There are some types of location-based leaderboards. However, these location-based leaderboards may just grab the closest few, e.g., 10 or 100, other users around a given user's location to provide a sampling instead of cold-hard ranking of the type one would obtain with a traditional leaderboards.

It is within this context that embodiments of the present invention arise.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1**A is a schematic illustrating a gaming environment in which a location-based leaderboard may be implemented according to an embodiment of the present invention.

FIG. **1**B is a flow diagram illustrating said method for establishing a location-based leaderboard according to an embodiment of the present invention.

FIG. **2** illustrates an example of a world partitioned into regions and sub-regions arranged in a hierarchy using a hierarchical spatial data structure according to an embodiment of the present invention.

FIGS. **3**A-**3**C are schematic diagrams illustrating examples of a computer game system implementing a method for establishing a location-based leaderboard.

FIG. **4** illustrates a block diagram of a computer server apparatus that may be used to implement a method for establishing a location-based leaderboard by a computer game system according to an embodiment of the present invention.

FIG. **5** illustrates a block diagram of a client device that may be used to implement a method for establishing a location-based leaderboard by a computer game system according to an embodiment of the present invention.

FIG. **6** illustrates an example of a non-transitory computer readable storage medium in accordance with an embodiment of the present invention

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

FIG. **1**A is a schematic illustrating a gaming environment implementing a method for establishing a location-based leaderboard accompanied by a flow diagram illustrating said method according to an embodiment of the present invention. A user **101** of a computer system **103** may interact with a game running on the system **103** by way of a user interface **113** (e.g., wireless controller). The computer game system **103** may be connected to a visual display **102** configured to display images associated with the game running on the computer game system **103**.

By way of example, and not by way of limitation, the computer system **103** may include a client device **104**, such as a video game console. The display **102** may be directly or indirectly connected to the client device **104** by a wired or wireless connection. Similarly, the user interface may be connected to the client device **104** by a wired or wireless connection. In the computer system **103**, the client device **104** may be connected to a server **106** and/or other client devices **108** via a network **110**. The client device **104**, server **106** and other client devices **108** may be implemented as general purpose computers that operate as special purpose computers when programmed by suitable software. Alternatively, client device **104**, server **106** and other client devices **108** may be implemented as special purpose built hardware implemented, e.g., using, inter alia, application-specific integrated circuit (ASIC) components. The client devices **104**, **106** may be implemented in a variety of ways, including as computers, video game consoles, portable gaming devices, portable communication devices, cellular telephones, consumer electronic devices, set top boxes, servers, clients, networked devices, and the like. The clients **104**, **108**, and server **106** may be equipped with conventional mechanisms to transmit and receive information via the network **110**, such as ports, network cards, receivers, modems, and so on.

The network **110** is representative of many different network types, including public networks (e.g., the Internet) and proprietary networks. The network **110** may be implemented using wireless technologies (e.g., radiofrequency, microwave, cellular, and the like), wire-based technologies (e.g., cable, fiber optic, twisted pair wire, co-axial cable, and the like), or any combination of wired and/or wireless technologies. Any one of many diverse protocols and formats may be used to package data and transmit it among the client device **104**, server **106** and other client devices **108**.

In embodiments of the present invention, different users may play video games via the computer system **103**. Each user may have an account registered with the server **106** and the server may keep track of each user's activities with respect to the game. By way of example, and not by way of limitation, the computer system **103** may be a computer game system in which the server **106** keeps track of a user's game scores. A user **101** playing a game on the computer system **103** may want to know how his score ranks in relation to other users playing in a similar location. By way of example, and not by way of limitation, this location may encompass the user's neighborhood, city, state, or country. Being able to identify his rank amongst a smaller subset of opposing users allows the user to gain a clearer perspective on his skill level and ability. For example, a user who is ranked 500,000 out of 1,000,000 users can hardly gain any insight from that ranking, because the sample is too great to formulate any relevant conclusions. However, that same user may be ranked 10 out of 500 in his neighborhood, a status that may provide plenty of insight regarding his aptitude for playing a particular game. Moreover, being ranked 10th out of 500 implies being highly skilled, perhaps boosting user morale or providing a user with more incentive to continue playing that particular game; whereas being ranked $500{,}000^{th}$ out of 1,000,000 implies being average, which might tend to discourage a user from