ENTITY DISPLAY PRIORITY IN A DISTRIBUTED GEOGRAPHIC INFORMATION SYSTEM

RELATED APPLICATION DATA

[0001] This application claims the benefit of U.S. Provisional Application No. 60/726,505, filed on Oct. 12, 2005, which is hereby incorporated by reference in its entirety.

BACKGROUND

Field

[0002] The invention relates to mapping systems, and more particularly, to techniques for prioritizing geographical entities for placement on geographical displays.

Description of the Related Art

[0003] A geographic information system (GIS) is a system for archiving, retrieving, and manipulating data that has been stored and indexed according to the geographic coordinates of its elements. The system generally can utilize a variety of data types, such as imagery, maps, and tables. Historically, GIS technology has been used for scientific and governmental investigations (e.g., to identify geographical areas adversely impacted by pollution or over-building), resource management (e.g., regional forestry observation), and development planning (e.g., suburban development of under-utilized geographic areas).

[0004] More recently, GIS technology is being integrated into Internet-based mapping applications. Users can annotate digital map locations with placemarks (e.g., designated on the map with an icon or other graphic). Some placemarks allow the user to write a brief description relevant to the location marked by the placemark, while other placemarks allow the user to change the style of icons and/or labels associated with the placemark. However, in many instances, the number of available placemarks is significant.

[0005] What is needed, therefore, are techniques for prioritizing which placemarks (as well as other map entities) to display on a GIS-based map.

SUMMARY

[0006] The above need is met by techniques for generating prioritized entity data described herein.

[0007] In an embodiment, a geographic information system (GIS) comprises information about a plurality of geospatial entities and is configured to prioritize the geospatial entities according to a ranking mechanism. The ranking mechanism uses data about a meta attribute of a geospatial entity to determine the geospatial entity's priority. The meta attribute may vary in different implementations but in one embodiment comprises the quality of information available about a geospatial entity.

[0008] In another embodiment, a computer-implemented method can be used to rank geospatial entities. The method comprises several steps including receiving geospatial entity data, evaluating attributes of geospatial entities included in the received geospatial entity data, ranking the geospatial entities based on the evaluation, and storing the ranked geospatial entity data.

[0009] Another embodiment of the present invention provides one or more machine-readable mediums (e.g., one or more compact disks, diskettes, servers, memory sticks, or hard drives) encoded with instructions, that when executed by one or more processors, cause the one or more processors to carry out a process for ranking geospatial entities. This process can be, for example, similar to or a variation of the methodologies described herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a block diagram of a GIS system with entity ranking capabilities in accordance with an embodiment of the invention.

[0011] FIG. **2** is a block diagram of the entity ranking module shown in FIG. **1**, according to one embodiment of the present invention.

[0012] FIG. **3** illustrates a method for generating and providing prioritized entities in accordance with an embodiment of the invention.

[0013] FIG. **4** illustrates a method for requesting and receiving a map including prioritized placemarks in accordance with an embodiment of the invention.

[0014] FIG. **5** depicts a GIS map that includes prioritized placemarks in accordance with an embodiment of the invention.

[0015] The figures depict various embodiments of the present invention for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the invention described herein.

DETAILED DESCRIPTION

[0016] A geographic information system (GIS) is disclosed that provides users with a greater degree of flexibility, utility, and information. The system may also be configured as a distributed geographic information system (DGIS). The system employs techniques for prioritizing which placemarks (as well as other map entities) to display on a GIS-based map.

General Overview

[0017] It is common practice in Geographic Information Systems to provide mechanisms to select a subset of available geographic features for display based on any of several criteria. For example, one might load a database of world cities into such a system and then request to see only those cities within the United States, those cities with populations exceeding one million persons, or perhaps those cities meeting both of these criteria. In this last case, only the markers for New York City, Los Angeles, Chicago, Houston, Philadelphia, San Diego, Detroit, and Dallas would be displayed if 1990 population data were being used.

[0018] Further, some interactive Geographic Information Systems support different feature visibility criteria at different viewing distances. For example, a selection criteria might be constructed that would show only cities exceeding one million in population when the view was of the North American continent (viewing distance 1), then include additional cities exceeding 100,000 in population when the viewpoint is lowered to include a single state in the display area (viewing distance 2), and finally modified to include smaller cities as the view lowers within a state or county (viewing distance 3). These and related techniques are