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Educational Decision Making System Using Indexing & Dynamic Hashing

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ABSTRACT

This paper introduces the system which is the Educational Decision Making System which gives education information. This system will make educational decisions very much easier. It provides several functionalities like browsing the educational information to make educational decisions. By using map it shows suitable region to apply new educational scheme and also shows in which region which scheme is active.

Key words: Decision support system, decision making system, dynamic hashing, Map based output, Education based decisions

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INTRODUCTION

Decision making is important for any management and effective decision making which gives better efficiency [1]. In decision making firstly collect current information status, apply the logic to that information and design the schema. Among that schema we have to select the best alternative schema in each round. For decision making enough information should be provided. This information is provided in map & text format as well as educational information is also used in combination. By browsing the system it will be easier to get the educational information which will be useful for students, parents or any other interested user. In a single look it gives clear idea about current educational schemes in different regions. It is very easier to find suitable region to apply new scheme. It maintains an incredibly broad scope of application. This paper attempts to demonstrate how DMS can give policy makers another way of displaying and manipulating demographic and statistical data. The intention is not to entirely move away from tables and graphs [2]; these are important data manipulation and display tools. Workforce development and community college funding, however, is very much a geographic problem. Displaying and manipulating data as such provides a unique and important vantage point from which one may be more capable of making informed decisions affecting the individuals within the boundaries that make up planning units.

The main objective of this paper is to make available educational decision making information easily. User can browse the system and can make educational decisions easily, fast and much effectively [3]. This system supports map based as well as text based queries and produce output in text as well as map format. It provides different decisions related with single and multiple factor based scheme.

DECISION MAKING SYSTEMS (DMS)

Decision Making Systems (DMS) developed in parallel with the concept of decision support systems (DSS). A DMS [4] is an interactive, computer-based system designed to support a user or group of users in achieving a higher effectiveness of decision making while solving a semi-structured problem. It is designed to assist the education planner with guidance in making education use decisions. It provides several functionalities like browsing the educational information to make educational decisions. By using map it shows suitable region to apply new educational scheme and shows in which region which scheme is active. It supports single factor based scheme, two factor based scheme and multiple factor based scheme.
A DMS is sometimes referred to as a policy support system. An educational decision support system typically consists of the following components [5]:
(a) Single Factor Based Decision System (b) Multiple Factor Based Decision System

A database management system – This system holds and handles the educational data. A standalone system for this is called an educational decision making system (EDMS). A library of potential models that can be used to forecast the possible outcomes of decisions it is an interface to aid the user's interaction with the computer system and to assist in analysis of outcomes.

Decision Support System (DSS)

The Decision Support System (DST) [6] is a field-based collection system using commercial-off-the-shelf (COTS) smart phones, customized software, and a robust information management backend known as Fusion Portal with a deployable sensor fusion system known as Fusion View that enables information to flow from the point of capture to an analyst in near real-time regardless of location or physical proximity. DST is designed to operate in a variety of environments and supports a variety of mission sets such as counterinsurgency operations (COIN), counter-narcotic missions (CN), and humanitarian assistance and disaster response (HA/DR). The overarching principle of DST is the development of a user-friendly data collection tool that utilizes automated information systems to enable unstructured data to be collected, processed, and structured for analysis and visualization in a variety of analytic packages. Fusion View [7] enables real-time integration of disparate sensor systems that provides a powerful common operating picture critical for today's decision makers. Fusion Portal allows for data to be exported and analyzed using geospatial, geo-statistical, link, and social network analysis in addition to enabling the exchange of information with external databases such as the Worldwide Civil Information Database (WCID), the International Studies of Violent Groups (ISVG), and the Combined Information Data Network Exchange (CIDNE).

Map Based Output

It shows output on the map produced by text based queries due to which system becomes user friendly. Map based output is a system whose outputs are based on values derived from a pre-defined look up table. The inputs to the system are usually values taken from user of system and are used to index the output values in the lookup table and shows output on map. Map based output focuses on a specific theme or subject area, whereas in a general map the variety of phenomenon geological, educational, political regularly appears together. The contrast between the both of them lies in the fact maps use the base data as coastlines, boundaries and places, only as point of reference for the phenomenon being mapped. In general maps the base data as landforms, lines of transportation, settlements, and political boundaries are there for their own sake. Map based output also emphasize variation of one or a small number of geographic scheme distributions. These distributions may be physical phenomena such as climate or human characteristics such as population density and health issues. Barbara Petchenik [8] described the difference as 'in place, about space.' While general reference maps show where something is in space, maps tell a story about that place.

Maps are sometimes referred to as graphic essays that portray variations and interrelationships of geographical distributions. Location, of course, is also important to provide a reference base of where selected phenomena are occurring. Common examples are maps of demographic data such as population density. When designing a scheme map, cartographers must balance a number of factors in order to effectively represent the data. Besides scheme accuracy, and aesthetics, quirks of human visual perception and the presentation format must be taken into account. In addition, the audience is of equal importance. Who will 'read' the scheme map and for what purpose helps define how it should be designed. A political scientist might prefer having information mapped within clearly delineated county boundaries (choropleth maps). A state biologist could certainly benefit from county boundaries being on a map, but nature seldom falls into such smooth, man-made delineations. In which case, a dissymmetric map charts the desired information underneath a transparent county boundary map for easy location referencing.

Data Administration

It supports for data entry, updating the existing data in the system which is very important for correct decision making.

Text Query & Map Query

A text query [9] is a special type of database query supported by databases. The queries differ from SQL queries in several important ways. It shows output on the map produced by text based queries due to which system becomes user friendly.

EDUCATIONAL DATABASE

This system uses educational database system. Educational database system is a database system which offers educational data in its data model and query language. It supports data types in its implementation, providing at least indexing and efficient algorithms for retrieval of database. There is a need to manage education schemes data which means data related to regions use of indexing and dynamic hashing for fast access of data which provides fast access to maps.

PROCEDURE

Step 1:

HashEnqueue (X)
Hash to the appropriate bucket using a modulus
And a hashing function applied to X
Double the hash table size if the number of events
Is greater than 2* number of buckets
End HashEnqueue

Step 2:

HashDequeue
Search all buckets for the event with minimum time
If no events are found
Then take the minimum time event
Remove the item from the table
Halve the hash table size of the number of events
Is less than 0.5* number of buckets
EndHashDequeue

Step 3:

HashCancel (X)
Hash to the appropriate bucket by applying the hashing function to X
Locate X and remove it from the bucket list
End HashCancel

TECHNIQUE

Stage 1:

S=System

S= {I, O, Ψ, C}

Where,

O= {Dec, Prec, Cavg} is output

Where,

Dec is the decision given by system
Prec is precision

Stage 2:

Let D(S)= {F1,….Fn} denote a decision based on the factors
F1 …. Fn .
let weight(w1) and weight (wn)denote the weight of the factors.
F1- First factor Fn- nth factor
D(s)- Decision System w1- Weight of first factor wn- Weight of nth factor Then,
a)Weight(w1)= x
b)Weight(wn) = y
If F=2 then,
Weight (Si) = Weight (w1) + Weight (wn).
If Weight (Si) = Min then
Best suited region.

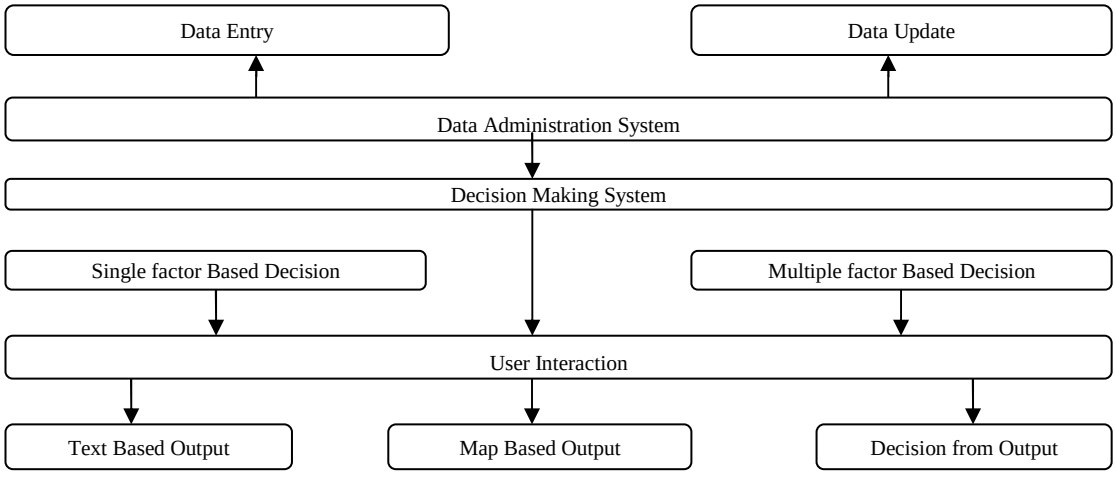

Fig.1 System Architecture

RESULTS AND DISCUSSION

Accuracy of EIRDMS is increased to 90% from 85%. It shows increase in precision up to 90%. Like existing method it supports for single factor based decision making with improved accuracy. It supports the concept of multiple factor based decision making system in which schemes based on multiple factors can be activated in different regions. Balanced accuracy of EIRDMS is 75%. Retrieval time of data from dataset is minimized from 25 ms to 15 ms in this system. Searching takes constant time on average in the EIRDMS and load factor for system is O (n). Large volume of information is available in this system which is required to make smart educational decisions. Addition of new information and updating information will increase the accuracy of the decisions given by this system.

CONCLUSION

Designed educational decision making which is the leading information platform. It provides information to make smart educational decisions. It provides large number of educational factors with values. Text based presentation as well as values on the map are possible with this system. It is open to public. It contains water resource information to make water resource related decision. Anyone who accesses the system can probably acquire what they want to assist their decisions.

REFERENCES

[1] Wang A, Guo W, Xu G, Jia J and Wen D, GIS-Based Educational Decision-Making System, *IEEE GSIS*, Nanjing **2009**.
[2] Oregon State Board of Education GIS Decision Support Pilot Project. *http://www.oregon.gov*
[3] Mohsin MFM, Manaf M, Norita Md Norwawi, Wahab MHA, The Development of Hash Indexing Technique in Case Retrieval, *4th International Symposium on Information Technology*, Malasiya ,**2010**.
[4] Kang SH and Lau SK, Intelligent Knowledge Acquisition with Case-Based Reasoning Techniques, *Proc. the 13th Australasian Conference on Information Systems*, Melbourne, Australia, **2002**, p.1-8.
[5] Wang A, Guo W, Xu G, Jia J and Wen D, GIS-Based Educational Decision Making System *IEEE International Conference on Grey Systemss and Intelligent Services*, Nanjing, China, **2009,** p. 1198-1202.
[6] Svetlana M and Marc HS, Decision Support System for Managing Educational Capacity Utilization, *IEEE Transactions on Education*, **2007**,Vol. 50, No. 2, p.143-150.
[7] Gionis A and Tassa T, Minimal Loss of Information Algorithms, LNCS 4698, 2007, *Springer*, p. 439–450.
[8] Rong P, Qiang Y and Sinno JP, Mining Competent Case Bases for Case-Based Reasoning Artificial Intelligence, *Elsevier Journal of Artificial Intelligence* **2007**,171, 211-227.
[9] Mantaras RLD, Mcsherry D, Bridge D, Leake D, Smyth B, Craw S, Faltings B, Maher ML and Cox MT, Retrieval, Reuse, Revision and Retention in Case-Based Reasoning, 2005, *The Knowledge Engineering Review*, Vol 20, No 3 p.215-240.
[10] Gomatam, S, Karr, AF and Sanil AP, Data Swapping as a Decision Problem, *Journal of Official Statistics*, **2005**, 21, 4, p. 635–656.