

A Vertical Fragmentation Strategy for Distributed Database and Fuzzy Logic

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Abstract— Distributed info (DDB) has been developed for determination the matter of big quantity of uploaded information over completely different network sites. Fragmentation is one in all the foremost vital strategies/solutions so as to distribute the organization's info in keeping with its 3 sort (vertical, horizontal, mixed/hybrid). In traffic lights, a basic management engineering drawback, a recognition error happens in symbolic logic once the amber and red lightweights are on. U logic properly recognises all logic states for a light. The distributed info systems are developed for leveling the load and scattering the info over completely different sites on a company. so as to distribute the info on completely different sites of a company, fragmentation strategies are used. This paper proposes an in depth switch model for the medium voltage cascaded H-bridge multi-level electrical converter drive and induction motor system victimisation symbolic logic controller. The model includes the aggregate impact of Associate in Nursing MVD, Associate in Nursing induction motor, and their system, and thus, it will accurately represent the dynamic responses of the motor drive system below Disturbances. Voltage and frequency each are trusted system modelling. A sensitivity study is conducted to judge the impact of the model parameter variation on dynamic response characteristics.

Keywords: MVD, DDB, DDBMS

I. INTRODUCTION

DDB could be a assortment of fragment/distributed information unit that logically belongs to the identical system and spreads over a electronic network sites. the first issue of distributed information is to style the fragmentation and allocation strategy. Distributed direction system (DDBMS) is that the code that enables the management of DDB and makes the method of distribution additional transparency. There are several ways to distribute the organization information like replication, allocation and fragmentation ways. Thus, the final goals of DDB are to recipient dependability and practicality with high performance. Distributed process is a good thanks to improve dependability and performance of a information system. Distribution of knowledge could be a assortment of fragmentation, allocation and replication processes. Distributed Databases that are getting very hip currently days with the outline of distributed information surroundings, fragmentation and horizontal fragmentation technique. Horizontal fragmentation has a very important impact in up the applications performance that's powerfully plagued by distributed databases style part. A several valued probabilistic logic may emulate universe information. whereas there are associate array of the many valued logic and chance logic systems . this paper can propose U logic as {a solution|an associateswer} that integrates at an intrinsic

level several valued logic and chance. supported pure mathematics, U logic includes variety of distinctive logic systems: U8, U4, U2 and U0. U8 is associate eight valued logicsystem with the first variables: true, false and neutral and alternative variables not-true, not-false, not-neutral and universal and null. classical logic with logic state true equals universal and false equals null. U0 is contradiction within which all logic states are equivalent. mathematical logic is associate infinite valued logic originally based mostly upon the work of Polish expert. Three-valued non-classical logic with logic states T (truth), F (falsity), $\frac{1}{2}$ (indeterminate). His reasoning was based mostly upon a future contingent gedanken: whether or not he would be in national capital within the following year. He reasoned that nowadays matters was neither true nor false however doubtless either. Hence, he believed that a flaw had been found in bivalent system of logic and therefore the third „indeterminate“ logic state may well be posited. Fuzzy logic rejects the principle of excluded middle with a variety of truth values between truth associated falsity permitting an infinite range of logic states. Truth equals one and falsity equals zero. to get mathematical logic definitions [8], let A and B be discretionary assertions..

A. Fragmentation Aims to Improve

dependability , Performance , Balanced storage capability and prices Communication prices , Security .The subsequent data is employed to determine fragmentation: – Quantitative information: frequency of queries, site, wherever question is run, property of the queries, etc. – Qualitative information: kinds of access of knowledge, read/write, etc.

B. Data Fragmentation

Data fragmentation permits North American nation to interrupt one object into 2 or a lot of segments or fragments. every fragment is hold on at any web site over a network. information fragmentation data is hold on within the distributed information catalog (DDC). from that it's accessed by the dealing methodor (TP) to process user requests. Three Types of Fragmentation Strategies:

Horizontal fragmentation, Vertical fragmentation and Mixed fragmentation.

C. Vertical Fragmentation

It is a subset of a relation whi Get Google Chrome Extension Limit: 1000 words / search.ch is created by a subset of columns.

D. Horizontal Fragmentation

Horizontal fragmentation, divides one relation R into subsets of rows exploitation question predicates. It reduces question process prices by choosing the horizontal fragments that are engineered and therefore the original relation is reconstructed by union of the fragments. In short, every

fragment represents the equivalent of a get statement, with the wherever clause on one attribute.

E. Mixed Fragmentation (Hybrid Fragmentation)

The Mixed/Hybrid fragmentation is Combination of horizontal and vertical fragmentations. This sort is most advanced one, as a result of each sorts are employed in that horizontal and vertical fragmentation of the decibel application. the initial relation is obtained back by be part of or union operations.

F. Query Processing Problem (cont.)

In a distributed system, rel. pure mathematics isn't enough to specific execution strategy. It should be supplemented with operations for exchanging information between sites. the simplest sites to method information should even be hand-picked. This will increase the answer house.

II. PROCEDURE OF VERTICAL FRAGMENTATION

A. Data Replication

Data replication refers to the storage of knowledge copies at multiple sites served by a electronic network. Fragment copies is keep at many sites to serve specific data requirements Replicated knowledge aresubject to the mutual consistency rule. The mutual consistency rule needs that everyone copies of knowledge fragments be identical. Therefore, to keep up knowledge consistency among the replicas, the DDBMS should make sure that a info update is performed the

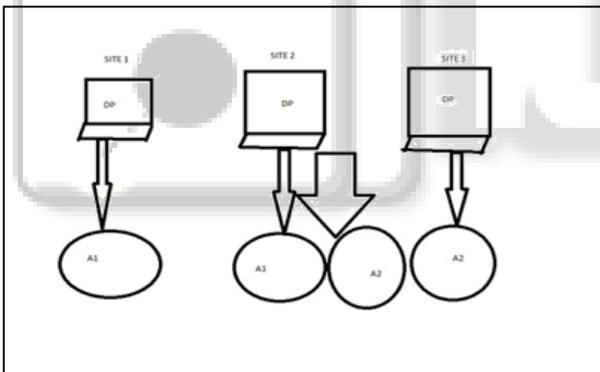


Fig. 1: Data Replication

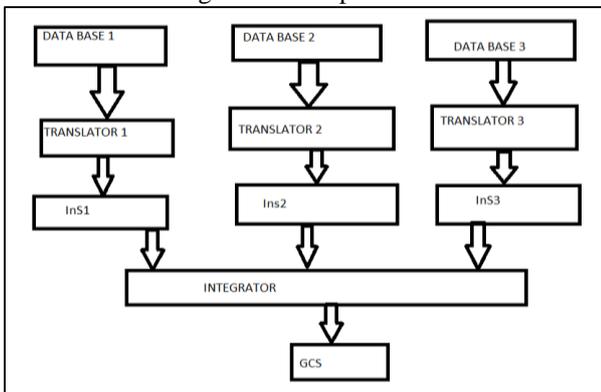


Fig. 2: mixed fragmentation

3 replication situations exist:

A totally replicated information stores multiple copies of every information fragment at multiple sites. during this case, all information fragments are replicated. a totally

replicated information may be impractical thanks to the overhead it imposes on the system. A part replicated information stores multiple copies of some information fragments at multiple sites. Most DDBMSs are able to handle the part replicated information well. Associate in Nursingunreplicated information stores every information fragment at one website. Therefore, there aren't any information fragments.

B. Data Allocation

Data allocation describes the method of deciding wherever to find knowledge. Knowledge allocation methods are as follows: With centralized knowledge allocation, the whole info is keep at one website. With divided knowledge allocation, the info is split into 2 or a lot of disjointed components (fragments) and keep at 2 or a lot of sites. With replicated knowledge allocation, copies of 1 or a lot of info fragments are keep at many sites.

C. Data Distributed:

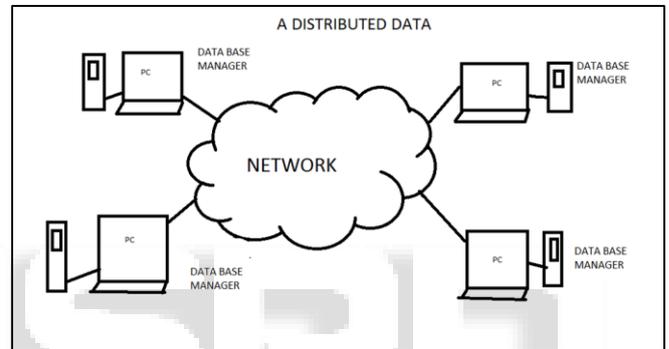


Fig. 3: Data Distributed

D. Fuzzy Logic

Fuzzy technique for thinking could be a quite completely different revered interest within which reality estimations of things may well be any true blue range some place around zero and one. By partition, in Boolean strategy for thinking, reality estimations of things may be zero or one. Fuzzy technique for thinking has been reached intent on handle the probability of halfway truth, wherever reality quality might extend between fully certifiable and all false. Moreover, once story factors are utilised, these degrees may well be managed by explicit points of confinement.

Routinely Fuzzy technique for thinking management structure is delivered utilizing four vast sections showed on Figure fuzzification interface.

E. Fuzzy Logic System

Today management systems are ordinarily represented by numerical models that take when the laws of fabric science, random models or models that have up out of scientific explanation. A general bother of such engineered model is that the manner by that to maneuver from Associate in Nursing offered issue to Associate in Nursing applicable numerical model. while not a doubt, today's propelled computer innovation makes it conceivable; but overseeing such systems remains overly unclear. These unclear systems will be rearranged by utilizing a resilience edge for a wise live of inexactitude, dubiousness and instability amid the demonstrating stage. As a result, not whole consummate.

same missing data information has formally complete up being agreeable in learning based mostly systems.

F. Importance of Fuzzy Logic

Fuzzy logic may be a precise problem-solving methodology that's ready to handle multi valued numerical knowledge and linguistic information. In formal logic, a press release will assume any real price between zero and one, representing the degree to that a part belongs to a given set. It makes the event of any system abundant easier and easier. Formal logic mechanisms may end up in higher accuracy and drum sander management. Finally, formal logic deals with degrees of truth /crisp set (zero, ones) and degrees and membership. Membership functions characterize the blurriness during a fuzzy set whether or not the weather within the set are continuous or separate. It will represent during a graphical kind for ultimate use within the mathematical formalisms of fuzzy pure.

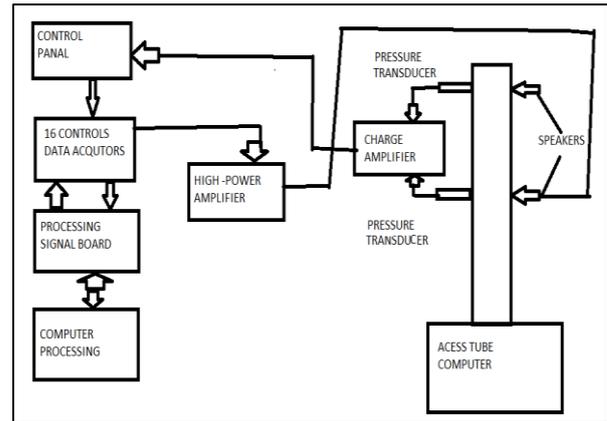
G. Advantages of Fuzzy Logic

Passy logic isn't the sole thanks to reason with Design procedure of fuzzy logic controller ambiguous ideas however it sees to be the foremost apt to perform approximation up to speed engineering promenade the previous concerns, a number of the foremost necessary blessings the

H. Applications

The field of applications has been growing within the last decade. Aside from the initial fuzzy management of a cement oven, one among the pioneer application planned by Mandaml, fuzzy management has been applied to a spread of processes From appliances and do mestic devices (dishwashers, cameras, ..) to essentially complicated processes, like waste-water treatment. .a variety of controllers are provided pletedgspe during a Am workplace.

III. BLOCK DIAGRAM OF FUGGY LOGIC



A. Fussy Logic Controller:

Advantage of mathematical logic controller helpful cases

- 1) The management processes are too advanced to research by typical quantitative technique
- 2) The supply of data are taken qualitatively, directly or uncertainty.

B. Advantage of FLC:

- 1) Paradal or distributor controller.multiple fuzzy-complex on one system
- 2) Linguistic management human data.

C. Design procedure of fuzzy logic controller

- 1) Determination of state variables and management variables.
- 2) Determination of reasoning technique .
- 3) Determination of fuzzification technique .
- 4) Discretization and social control of state variable house.
- 5) Partition of variable house.
- 6) Construction of fuzzy rule base.
- 7) Determination of defuzzification strategy.
- 8) check and calibration .

Sl.no	Title	Author	Year of publication	Content distributed
1.	The Dynamic Load Model for Medium Voltage Cascaded H-Bridge Multi-Level Inverter fed IM Drive System using Fuzzy Logic Controller.	V. Raja Sekhar, S. Sridhar, B. SreeBhavani.	2018	The software system that permits the management of the DDB and makes the distribution transparent to the users.
2.	The U Logic offer advantages over Fuzzy Logic	GraemeHeald	2018	In traffic lights, a basic control engineering problem, a recognition error occurs in fuzzy logic when the amber and red light are on. U logic correctly recognises all logic states for a traffic light.
3.	The Fragmentation Techniques in Distributed Database.	Akashkumar Patel, RakshitkumarHirapara, VivekkumarDhamecha.	2014	The features of fuzzy set's membership function that can help the DDB's designer to specify the importance ratio for each attribute according to analyzing the application and its queries. Because membership function gives imprecisely measurement results.

IV. CONCLUSION

It is necessary to manage and associate acceptable methodology for information fragmentation so as to utilize the resources associated so it should pick a correct and economical fragmentation methodology to complement the facility of distributed info system.

Distributed info is a crucial analysis space as a result of it wants additional effort to utilize the obtainable resources with the proper placement of data/fragment and also the program/application across an electronic network sites. The fragmentation represents the unit of distribution. The success of any fragmentation strategy depends on the correct selection/choice of acceptable partitions on the appropriate web site per the organization's want. We tend to explore the vertical fragmentation technique mistreatment the conception of formal logic. As mentioned higher than, all the time fuzzy is best than crisp logic. It deals with various ranges of knowledge (numeric or linguistics). A tenet steps are introduced to convert any system into a fuzzy-based system. DDB's designer is accountable for determinant and hard the importance of any attribute (weight) by mistreatment the application's question log to assign the correct worth of its membership operate. This changed vertical fragmentation strategy are often applied to any optimized technique to seek out the most effective fragmentation allocation.

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