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Intelligence Technique for Query Optimization Using NLP & Fuzzy System

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Abstract— *The main objective of this research work is to evolve fuzzy logic through improvement Intelligent Decision Support System Model for Health Care Planners so that novel & hidden knowledge patterns can be generated to automate & quicken the process of decision making in clinical diagnosis as well as other domains of health care management. In the healthcare sector quality demands are rising for designing expert systems for medical diagnosis. At the same time growing capture of biological, clinical, administrative data and integration of distributed and heterogeneous databases create a completely new base for medical quality and cost management. Against this background we applied intelligent data mining methods for analyzing medical repositories. In order to reach the main goal of the research, applications of fuzzy logic are to be explored on medical databases to discover knowledge. we have used databases namely health disease, Immunization Program (Polio Database), and Medical Dataset of Patients collected from free Internet repository, Public health care sector and from renowned private nursing homes. This implementation uses innovatively designed fuzzy logic rules so that it can be queried and then consulted in a proper, defined way helping in beneficial future analysis. This campaign can classified immunization programmers into Efficient, Satisfactory and Poor categories based on the number of children immunized and number of houses left subsequently with the observation for improvement. Analysis of this type of classification facilitates identification of areas needing attention and more resources to improve performance. These experiments can work synergistically which can produce single knowledge pattern or different pieces of knowledge patterns so that health care planners can take advantage of this knowledge discovery to lower healthcare costs while improving healthcare quality. The results of the experiment shows that fuzzy logic integrated knowledge discovery on immunization data helps decision makers to improve the efficiency of Immunization Programmers in Indian States by proper monitoring and categorization of the health centers, supervisors of health schemes, and their performances. These results can simulate the answer of the research question:* ***"Can we provide optimized answers to a medical problem which is imprecise, partial truth and uncertain?"***

Keywords- *Health Care, Knowledge Discovery, Fuzzy Logic, Intelligent Decision Support System, immunization, classification.*

1. INTRODUCTION

This implementation uses innovatively designed fuzzy logic rules so that it can be queried and then consulted in a proper, defined way helping in beneficial future analysis. This campaign can classified immunization programmers into *Efficient*, *Satisfactory* and *Poor* categories based on the number of children immunized and number of houses left subsequently with the observation for improvement. Analysis of this type of classification facilitates identification of areas needing attention and more resources to improve performance. These experiments can work synergistically which can produce single knowledge pattern or different pieces of knowledge patterns so that health care planners can take advantage of this knowledge discovery to

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lower healthcare costs while improving healthcare quality. *Fuzzy Logic* through improvement Intelligent Decision Support System Model for Health Care Planners presents a novel approach of knowledge discovery on Polio Immunization Database by integrating fuzzy logic using MATLAB to improve the efficiency of immunization programmers in Indian States. For this experiment Polio Immunization Database collected from 12 primary health care centers containing 27 attributes in total and 175 instances used to perform this experiment. This experiment has been performed using MATLAB *FIS* (Fuzzy Inference System) editor to design fuzzy logic rules from Polio Immunization Dataset.

2. EXPERIMENT

The main objective of this experiment in particular is to use knowledge discovery on Polio Immunization Database by integrating fuzzy logic using MATLAB to improve the efficiency of immunization programmers in Indian States. The results of the experiment shows that fuzzy logic integrated knowledge discovery on immunization data helps decision makers to improve the efficiency of Immunization Programmers in Indian States by proper monitoring and categorization of the health centers, supervisors of health schemes, and their performances. We used Polio Immunization Database collected from 12 primary healthcare centers containing 27 attributes in total and 175 instances used to perform this experiment.
In order to perform this experiment we used MATLAB *FIS* (Fuzzy Inference System) editor to design fuzzy logic rules from Polio Immunization Dataset.
The basic principle of Fuzzy Logic rules design is that IF A applies and B also applies then C is the output. So here, instead of using only exact numerical figures, we use the imprecise or vague data values. Fuzzy logic rules in our case from the Polio Immunization Dataset.

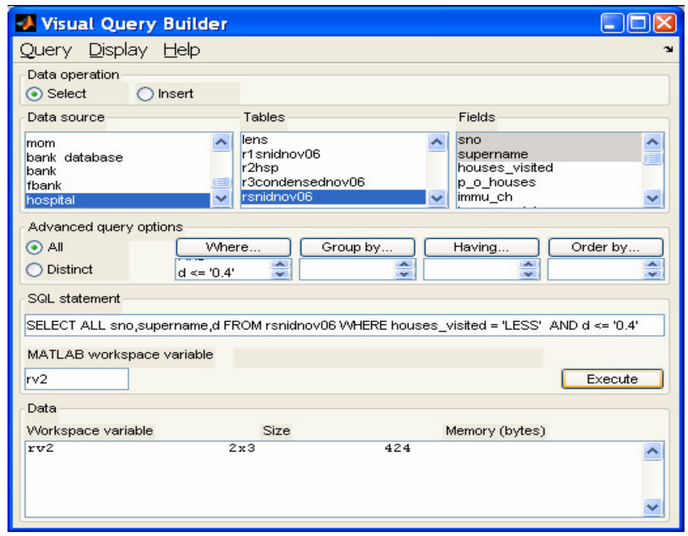
- *IF (Remaining X houses are LOW) AND (OPV expenditure is HIGH) THEN (SUPERVISOR is EXCELLENT)*
- *IF (Remaining X houses are MEDIUM) AND (OPV expenditure is MIDIUM) THEN (SUPERVISOR is SATISFACTORY)*
- *IF (Remaining X houses are HIGH) AND (OPV expenditure is LOW) THEN (SUPERVISOR is POOR)*

There can be further more rules like this and these rules will help us to fetch specific matching tuples (cases) for observation and we shall be able to query our database firmly.

Following is a sample query based on above-mentioned rules:
SELECT super name from polio immunization
WHERE Total immunized children >500 AND Rem_x houses is LOW.

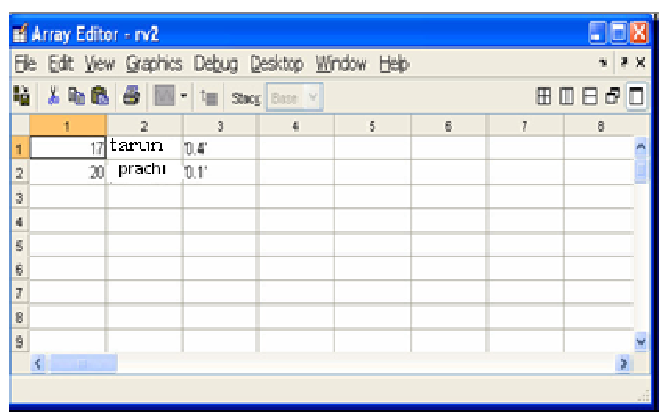
In order to get answer of the following queries mentioned above integrating rules crafted with Fuzzy Logic Toolbox (FIS) and output has been extracted using VQB. The output steps have been presented using stepwise snapshots of VOB.

SELECT ALL sno, supername, d
FROM polio immunization
WHERE houses visited = 'LESS' AND d<='0.4'



as shown in **Figure 1**

Double-clicking the variable in the VQB Data area gives view of the data in the Array Editor as below is the result of our executed query as shown in *Figure 1.2*



We can view results in table, chart, and report formats using the display menu data view as shown in *figure 1.3*. After executing a query, we select data from the display menu. the query results appear in a figure window. The display shows only the unique values for each field, so we do not read each row as a single record.

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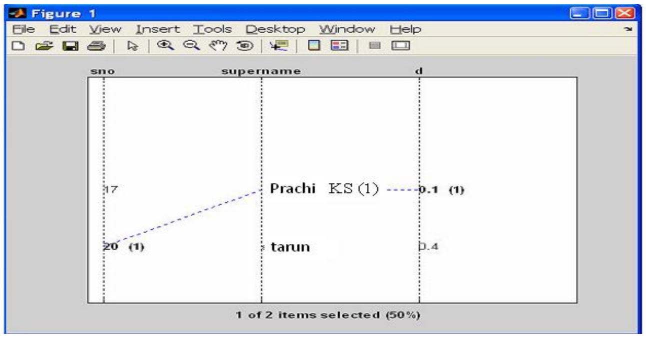
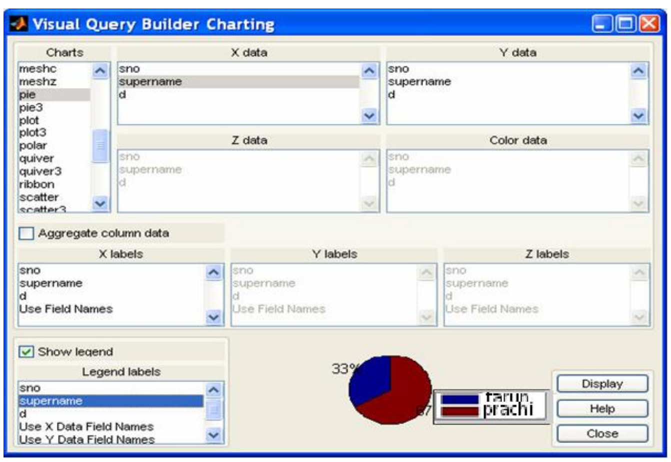


Figure 1.2: Step 3 of Query

We click a value in the display, for example super name, to see the associated values. The data associated with the selected value is shown in bold and connected via a dotted line. For example, pravin ks sno 20 as shown in *Figure 1.2*.



After executing a query, select Chart from the Display menu refer figure 1.3. The Charting dialog boxappears. We select the type of chart we want to display from the Charts list box. For example, we have selected pie to display a pie chart. Now we select the data we want to display in the chart from the X data, Y data, and Z data list boxes. For the pie chart example, we have selected super name from the X data list. To display a legend, which maps the colors to the stock numbers, we select the Show legend check box. The Legend labels become available for us to select from. Here we have selected super name from the Legend labels list box to display a pie chart of super name data. Now we click Display. The pie chart appears in a figure window as shown in figure 1.4

3. RESULT

In this experiment we have designed and modeled a real fuzzy deductive medical database covering about twelve primary health centers. This implementation uses innovatively designed Fuzzy Logic rules so that it can be queried and then consulted in a proper, defined way helping in beneficial future analysis. This campaign can classified immunization programmers into Efficient, Satisfactory and Poor categories based on the number of children immunized and number of houses left subsequently with the observation for improvement. Analysis of this type of classification facilitates identification of areas needing attention and more resources to improve performance.

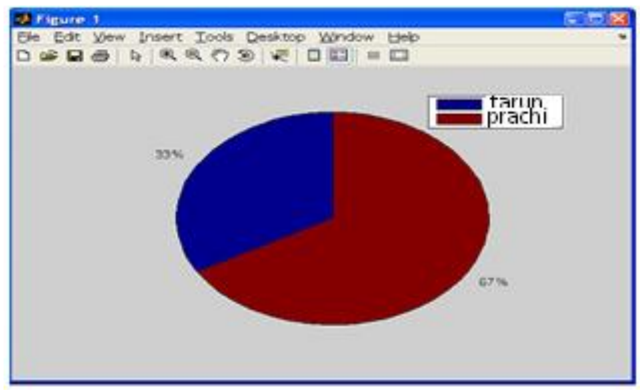


Figure 1.4: Step 5 of Query

Fuzzy Logic through improvement Intelligent Decision Support System Model for Health Care Planners presents a novel approach of knowledge discovery on Polio Immunization Database by integrating fuzzy logic using MATLAB to improve the efficiency of immunization programmers in Indian States. For this experiment Polio Immunization Database collected from 12 primary health care centers containing 27 attributes in total and 175 instances used to perform this experiment. This experiment has been performed using MATLAB *FIS* (Fuzzy Inference System) editor to design fuzzy logic rules from Polio Immunization Dataset. This experiment has been performed using MATLAB *FIS* (Fuzzy Inference System) editor to design fuzzy logic rules from Polio Immunization Dataset. The basic principle Of these rules is that IF A applies and B also applies then C is the output. So here, instead of using only exact numerical figures, we use the imprecise or vague data values. Fuzzy logic rules in our case from the Polio Immunization Dataset.

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IF (Remaining X houses are HIGH) A

4. DISCUSSION

The results of the experiment shows that fuzzy logic integrated knowledge discovery on immunization data helps decision makers to improve the efficiency of Immunization Programmers in

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Indian States by proper monitoring and categorization of the health centers, supervisors of health schemes, and their performances. These results can simulate the answer of the research question.
Can we provide optimized answers to a medical problem which is imprecise, partial truth and uncertain.

5. CONCLUSION

We have also analyzed the designed Fuzzy Logic Rules to infer critical patterns, results and relationships from the available healthcare data which will further help in proper monitoring and categorization of the health centers, supervisors of health schemes, their performances etc to name a few. This implementation uses innovatively designed fuzzy logic rules so that it can be queried and then consulted in a proper, defined way helping in beneficial future analysis. This campaign can classified immunization programmers into *Efficient*, *Satisfactory* and *Poor* categories based on the number of children immunized and number of houses left subsequently with the observation for improvement. Analysis of this type of classification facilitates identification of areas needing attention and more resources to improve performance.

REFERENCES

1. System identification for fuzzy controllers .Time-Varying Image Processing and Moving Object Recognized...
2. System identification for fuzzy controllers Time-Varying Image Processing and Moving Object Recognition, 4, 1997,
G. Castellano, G. Attolico, T. D'Orazio, E. Stella, A. Distante
3. Fuzzy Control with Reference Model-Following Response Fuzzy Theory Systems
4. Fuzzy Control with Reference Model-Following Response Fuzzy Theory Systems, 1999,
C.M. Liaw, Y.S. Kung
5. Fuzzy system technologies at Siemens R & D Fuzzy Sets and Systems
6. Fuzzy system technologies at Siemens R & D Fuzzy Sets and Systems, Volume 63, Issue 3, 10 May 1994 Hans Hellendoorn, Rainer Palm
7. Realization of linear outputs by using mixed fuzzy logic... Fuzzy Sets and Systems
8. Realization of linear outputs by using mixed fuzzy logics Fuzzy Sets and Systems, Volume 58, Issue 3, 24 September 1993, Ching-Chang Wong.